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FINAL INVESTIGATION OF HAWTHORN FORMATION AND VADOSE SOIL AT OPERABLE UNIT 4 (OU 4) NTC ORLANDO FL

3/12/2009

TETRA TECH

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

March 12, 2009

Commander Southeast
Naval Facilities Engineering Command
ATTN: Mr. Art Sanford
4130 Faber Place Drive, Suite 202
North Charleston, SC 29405

Reference: CLEAN Contract No. N62467-04-D-0055
Contract Task Order No. 0002

Subject: Final Investigation of the Hawthorn Formation and Vadose Soil for Operable Unit 4
Naval Training Center, Orlando, Florida
Change Pages

Dear Mr. Sanford:

Please find enclosed change pages (cover, spine, title page, signature page, and pages 5-3 and 5-4) for the Final Investigation of the Hawthorn Formation and Vadose Soil for Operable Unit 4 at the former NTC Orlando. Please replace pages in your draft copy with the pages provided. The only change from the draft is the addition of a recommendation to perform a comprehensive Hawthorn zone groundwater sampling event. The final document is also provided in CD format for your use.

If you have any questions, please contact me at (865) 220-4701.

Sincerely,

Teresa K. Grayson

Teresa K. Grayson
Task Order Manager

Enclosure

c: Mike Singletary, NAVFAC SE
David Grabka, FDEP
Greg Fraley, USEPA Region 4
Sam Naik, CH2M Hill, Atlanta
Chris Pike, Tetra Tech NUS, Pittsburgh
Mark Perry, Tetra Tech NUS, Pittsburgh
Debbie Humbert, Tetra Tech NUS, Pittsburgh (cover letter only)
File 471007001

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Comprehensive **L**ong-term **E**nvironmental **A**ction **N**avy

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Investigation of the Hawthorn Formation and Vadose Soil for Operable Unit 4

Naval Training Center
Orlando, Florida

Contract Task Order 0002

March 2009

BRAC Program Management Office Southeast
4130 Faber Place Drive, Suite 202
North Charleston, South Carolina 29405

TETRA TECH NUS, Inc.

INVESTIGATION OF THE HAWTHORN FORMATION AND VADOSE SOIL FOR OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

COMPREHENSIVE LONG-TERM ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:

Department of the Navy
Base Realignment and Closure
Program Management Office Southeast
4130 Faber Place Drive
North Charleston, South Carolina 29405

Submitted by:

Tetra Tech NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh, Pennsylvania 15220

CONTRACT NO. N62467-04-D-0055
CONTRACT TASK ORDER 0002

MARCH 2009

PREPARED UNDER THE SUPERVISION OF:

Teresa K. Grayson

TERESA K. GRAYSON
TASK ORDER MANAGER
TETRA TECH NUS, INC.
OAK RIDGE, TENNESSEE

APPROVED FOR SUBMITTAL BY:

Debra M Humbert

DEBRA M. HUMBERT
PROGRAM MANAGER
TETRA TECH NUS, INC.
PITTSBURGH, PENNSYLVANIA

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PROFESSIONAL GEOLOGIST CERTIFICATION

I hereby certify that this document, *Investigation of the Hawthorn Formation and Vadose Soil for Operable Unit 4, Naval Training Center, Orlando, Florida,* was prepared under my direct supervision in accordance with acceptable standards of geological practice.

Allan T. Jenkins 3/12/09

Allan T. Jenkins, P.G. / Date
License No. PG-0000663

ALLAN T. JENKINS
LICENSE
No. 0000663
STATE OF
FLORIDA
PROFESSIONAL GEOLOGIST

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ACRONYMS

ABB-ES	ABB Environmental Services, Inc.
ags	above ground surface
amsl	above mean sea level
bgs	below ground surface
BTOC	below top of casing
cDCE	*cis*-1,2- dichloroethene
CH2MHILL	CH2MHILL Constructors, Inc.
cm/sec	centimeters per second
CMT	continuous multi-channel tubing
CSM	conceptual site model
CTL	cleanup target level
CVOC	chlorinated volatile organic compound
DCE	dichloroethene
°C	degrees Celsius
DNAPL	dense non-aqueous phase liquid
DO	dissolved oxygen
DRMO	Defense Reutilization and Marketing Office
EISOPQAM	Environmental Investigations Standard Operating Procedures and Quality Assurance Manual
FDEP	Florida Department of Environmental Protection
feet/day	feet per day
feet/year	feet per year
FH	falling head
f_{oc}	fraction of organic carbon
GCTL	Groundwater Cleanup Target Level
g/cc	grams per cubic centimeter
gpm	gallons per minute
Hi	instantaneous head change
HLA	Harding Lawson Associates
Ho	initial head change
Ht	theoretical head change
IDW	investigation-derived waste
ITRC	Interstate Technology and Regulatory Council
K	conductivity
Kh	horizontal hydraulic conductivity
$KMnO_4$	potassium permanganate
Koc	organic carbon partition coefficient
Kv	vertical hydraulic conductivity
LHC	lower Hawthorn clay
LTM	long-term monitoring

μg/kg	micrograms per kilogram
μg/L	micrograms per liter
mg/L	milligrams per liter
mg/kg	milligrams per kilogram
ml	milliliter
mm	millimeter
MNA	monitored natural attenuation
MS	matrix spike
MSD	matrix spike duplicate
mV	millivolts
NA	natural attenuation
NAVFAC SE	Naval Facilities Engineering Command, Southeast
nM	nanomole
NTC	Naval Training Center
NTU	nephelometric turbidity unit
ORP	oxidation reduction potential
OU	Operable Unit
PCE	tetrachloroethene
PID	photoionization detector
POP	Project Operations Plan
PVC	polyvinyl chloride
QC	quality control
R	coefficient of retardation
RH	rising head
RPD	relative percent difference
SA	Study Area
SCTL	Soil Cleanup Target Level
SOP	Standard Operating Procedure
S.U.	standard unit
TCE	trichloroethene
To	time lag
TOC	total organic carbon
TtNUS	Tetra Tech NUS, Inc.
UHC	upper Hawthorn clay
USCS	unified soil classification system
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VC	vinyl chloride
VOC	volatile organic compound
WBZ	water-bearing zone

EXECUTIVE SUMMARY

A series of previous environmental investigations conducted at Operable Unit (OU) 4, located at Area C of the former Naval Training Center (NTC) in Orlando, Florida, identified chlorinated volatile organic compounds (CVOCs) in soil and groundwater. As a result of the contamination, OU 4 property has been restricted to non-residential (i.e., commercial/industrial) use. The contamination release originated from the former laundry and dry-cleaning facility (former Building 1100), and resulted in a plume within the surficial aquifer that has migrated westward toward Lake Druid. More recent investigation of the upper Hawthorn clay (UHC), an aquitard unit that marks the bottom of the surficial aquifer, indicated that areas of the clay were highly contaminated and that CVOCs had penetrated the clay into an underlying water-bearing zone consisting of 30 to 60 feet of sand interbedded with silty sand, clayey sand, and shell layers lying within the upper Hawthorn Group. A groundwater plume was detected near the middle of the Hawthorn water-bearing zone (WBZ) within a layer of coarse sand, pebbles, and mostly broken shells.

The purpose of this investigation was to assess the lithology of the Hawthorn Group, to determine the lateral and vertical extents of the CVOC contaminant plume within the Hawthorn WBZ, to evaluate soil contamination within the clay units above and below the WBZ, and to investigate the newly accessible vadose soil beneath former Building 1100, which has been demolished.

Fieldwork

The field activities, conducted by Tetra Tech NUS, Inc. (TtNUS) during June to August, and October 2006, consisted of the following:

- Collection of surface soil and vadose soil samples at 12 locations within the footprint of the former base laundry building (former Building 1100).
- Drilling and soil sampling of one deep soil boring (275 feet total depth) to investigate the lithology of the Hawthorn Group and evaluate the presence of deeper aquifer zones and potential contamination of deeper groundwater.
- Drilling and soil sampling of six soil borings (134 to 144 feet total depth) into the Hawthorn WBZ. Soil and groundwater profile samples were collected at selected depth intervals during the drilling of each of six soil borings. The six borings were each completed as continuous multi-channel tubing (CMT) monitoring wells, and groundwater samples were obtained from specific depth intervals after purging of selected CMT channels.

- Measurement of groundwater elevations and collection of groundwater samples from previously installed Hawthorn wells.
- Aquifer slug testing in five of the previously installed 2-inch Hawthorn monitoring wells.

Vadose Soil Sampling

Vadose soil sampling under the footprint of former Building 1100 was conducted on July 26, 2006. Prior to sampling, a sample grid with 25-foot staggered centers was established over the target area that incorporated the locations of the former dry cleaning machines in the northern portion of the former building and the east-west trending floor drain that ran between the machines and the surge tank positioned immediately west of the building. Within the sampling grid, samples were collected from eight locations at depths of 1 to 2 feet below ground surface (bgs) and 6 to 7 feet bgs (just above the water table).

An additional four locations were sampled on October 24, 2006, in an attempt to determine the lateral and vertical extent of vadose soil contamination that exceeded the Soil Cleanup Target Levels (SCTLs). At each of the four locations, samples were collected from three intervals, 1 to 2 feet bgs, 3 to 4 feet bgs, and 6 to 7 feet bgs.

Soil Borings and Profile Sampling

One soil boring was installed to a depth of 275 feet bgs to log the lithology of the Hawthorn Group and evaluate potential groundwater contamination pathways based on lithology and the hydraulic/physical properties of the deeper materials. Another six soil borings were installed to depths of 134 to 144 feet bgs to focus on the contaminated WBZ that lies between the UHC and lower Hawthorn clay (LHC).

The borings were performed using sonic drilling technology, which uses rotation, vibration, and down-pressure to advance the tooling. Each boring was drilled by advancing a 6-inch diameter outer barrel/casing in 10-foot increments. The outer casing was left in place and at depths of interest advancement of the outer casing was temporarily halted and a 10-foot long, 4-inch diameter inner barrel was advanced 10 feet below the depth of the outer casing to collect the soil core. The core was taken to the on-site geologist for soil vapor screening, lithologic description, and soil sampling. After the soil core was removed, another 10-foot section of outer casing was attached and advanced, and the soil coring process was repeated until the total target depth was reached. The outer casing was left in the ground until completion of CMT well installation.

During boring advancement, deep subsurface soil samples and screening-level groundwater profile samples were collected within the Hawthorn between depths of 56 to 136 feet bgs. Soil samples were

collected for laboratory volatile organic compound (VOC) analysis, total organic carbon (TOC) analysis, and for determination of selected geotechnical properties. Two Shelby tube samples were collected for permeability testing. In addition to the laboratory analyses, on-site VOC analysis was conducted on split soil and groundwater aliquots using a head-space analysis methodology (i.e., Color Tec apparatus).

CMT Well Installation

Six CMT monitoring wells (OLD-13-65D through OLD-13-70D) were installed in the investigation boreholes during June and July 2006. Six of the available seven channels in each multi-channel well were ported for sampling at varying depths. The well tubing was prepared by experienced drilling subcontractor personnel per TtNUS's direction. The location of the ported/screened intervals were marked on the appropriate channel by measuring from the bottom of the casing, and the well channels were ported (i.e., slotted) and screened per the manufacturer's specifications. Each screen interval was constructed of multiple sample ports that extend along a 5-foot section of the well channel, except one well channel with a 4-foot screen interval and one with a 10-foot screen interval. The mid-points of the screen depth intervals for the six CMT wells ranged from 51 to 142 feet bgs.

Monitoring Well Sampling

During late July 2006, TtNUS collected groundwater samples from each of the seven pre-existing 2-inch diameter Hawthorn monitoring wells concurrent with a groundwater monitoring event conducted by CH2MHILL Constructors, Inc. (CH2MHILL) who is conducting periodic monitoring at OU 4. The TtNUS samples were submitted to Accutest Laboratories for analysis of VOCs. In late July and early August 2006, TtNUS sampled a selected number of channels from each of the six CMT wells. In October 2006, TtNUS collected discrete interval groundwater samples from channel 2 of CMT well 66D to evaluate the performance of the CMT well screens. The channels were purged and sampled and the samples transported to Accutest Laboratories in Orlando for analysis with standard turnaround times.

Groundwater Levels

Groundwater levels were measured in the 13 Hawthorn wells during July 25 to August 2, 2006. The depths to water in the 2-inch wells and the CMT wells were each measured prior to sampling events. The difference in the two measurement dates was deemed to have no significant influence on water levels because no rainfall was recorded for the site and surrounding area during this time interval and because the low hydraulic gradient measured at the site indicates low potential for rapid fluctuations in potentiometric head. Despite the different measurement dates, the data from the two sets of wells (pre-existing wells and the new CMT wells) were consistent and considered satisfactory for determining the direction of groundwater flow and horizontal hydraulic gradient. The water level measurements collected from different

depth intervals (i.e., channels) in the CMT wells confirm that the UHC partially confines the Hawthorn WBZ and showed that the groundwater elevation was higher in the overlying surficial aquifer. The groundwater flow direction within the central portion of the Hawthorn WBZ is toward the north-northwest. Based on a United States Geological Survey (USGS) report for Orange County (USGS, 2004), the prevailing groundwater flow direction for the underlying Floridan aquifer is eastward in the Orlando area.

Aquifer Testing

A series of slug tests was performed in five of the previously installed 2-inch diameter Hawthorn wells on July 28-29, 2006. Four tests, two rising head (RH) and two falling head (FH), were performed in each well. Well response data were recorded using a data logger and subsequently downloaded onto a laptop computer. The horizontal hydraulic conductivity (Kh) values from the slug tests ranged between 0.5 and 12.5 feet per day (feet/day) with a geometric mean of 3.6 feet/day [0.0013 centimeters per sec (cm/sec)]. This range is consistent with published literature values for unconsolidated fine sand aquifers.

The two Shelby tube cores obtained from the confining clay strata, the UHC at 62.5 and the LHC at 143 feet bgs, were submitted to the laboratory for FH permeability testing. Vertical hydraulic conductivity (Kv) results for the samples were 1.47E-06 cm/sec (0.004 feet/day) and 7.12E-05 cm/sec (0.202 feet/day), for the UHC and LHC, respectively. This range is consistent with published literature values for unconsolidated silts and clays.

Conclusions and Recommendations

Table ES-1 summarizes the contaminants found in the target zones of the investigation conducted by TtNUS, as follows: vadose soil underlying release areas within the former laundry facility (i.e., machinery and floor drains in former Building 1100); deep subsurface soil, underlying and in proximity to the area of the surface releases, associated with the upper Hawthorn Group (i.e., UHC, WBZ, and LHC); and groundwater within the Hawthorn WBZ. The pertinent Florida Department of Environmental Protection (FDEP) cleanup target levels (CTLs) for each medium are provided in the tables and are shown in bold type for any chemical that was detected at concentrations that exceeded the SCTLs or the Groundwater Cleanup Target Levels (GCTLs).

TABLE ES-1

MEDIA-SPECIFIC SUMMARY OF DETECTED CHEMICALS

Vadose Soil Samples (µg/kg)							
Chemical	Cas No.	No. Samples	No. Detects	Min	Max	Leach To GW SCTL	Industrial Direct Contact SCTL
Acetone	67-64-1	28	2	21.3	23.6	25000	68000000
Tetrachloroethene	127-18-4	28	28	4.6	55900	**30**	**18000**
Toluene	108-88-3	28	1	157	157	500	60000000
Trichloroethene	79-01-6	28	12	1.6	7.5	30	9300

Deep Subsurface Soil (µg/kg)						
Chemical	CAS No.	No. Samples	No. Detects	Min	Max	Leach to GW SCTL
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60
Acetone	67-64-1	26	9	18	62.4	25000
Carbon Disulfide	75-15-0	26	26	3.3	39.1	5600
Chloroform	67-66-3	26	1	3.1	3.1	400
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400
Tetrachloroethene	127-18-4	26	4	121	2150	**30**
Trichloroethene	79-01-6	26	4	2.5	373	**30**

Groundwater Profile Samples (µg/L)						
Chemical	CAS No.	No. Samples	No. Detects	Min	Max	GCTL
2-Butanone	78-93-3	26	1	5.5	5.5	4200
Acetone	67-64-1	26	5	5.2	33.3	6300
Bromodichloromethane	75-27-4	26	13	0.77	13.7	**0.6**
Carbon Disulfide	75-15-0	26	2	1.3	1.5	700
Chlorodibromomethane	124-48-1	26	6	1.3	4.9	**0.4**
Chloroform	67-66-3	26	24	0.93	38.9	70
***cis*-1,2-Dichloroethene**	156-59-2	26	3	1.4	367	**70**
Tetrachloroethene	127-18-4	26	7	5.7	29900	**3**
Toluene	108-88-3	26	1	1.7	1.7	40
Trichloroethene	79-01-6	26	6	2.2	1890	**3**

TABLE ES-1 (continued)

MEDIA-SPECIFIC SUMMARY OF DETECTED CHEMICALS

Hawthorn Monitoring Well Samples (µg/L)						
Chemical	CAS No.	No. Samples	No. Detects	Min	Max	GCTL
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	**7**
2-Butanone	78-93-3	45	1	4.4	4.4	4200
Acetone	67-64-1	45	6	1.9	27.9	6300
Benzene	71-43-2	45	1	1	1	1
Carbon Disulfide	75-15-0	45	7	0.43	77.1	700
Chloroform	67-66-3	45	7	0.65	3.2	70
***cis*-1,2-Dichloroethene**	156-59-2	45	22	1	1980	**70**
Methyl Acetate	79-20-9	22	1	2.4	2.4	3000
Methylene Chloride	75-09-2	45	2	2.3	3.7	5
Tetrachloroethene	127-18-4	45	23	0.55	52600	**3**
Total Xylenes	1330-20-7	45	4	1.2	19.9	20
trans-1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100
Trichloroethene	79-01-6	45	20	0.32	2030	**3**
Vinyl Chloride	75-01-4	45	4	0.7	1.1	**1**
Iron	7439-89-6	22	21	30.8	11600	**300**
Manganese	7439-96-5	22	22	0.486	420	**50**

Notes
GCTL – Groundwater Cleanup Target Level
GW – groundwater
SCTL – Soil Cleanup Target Level
µg/kg – micrograms per kilogram
µg/L – micrograms per liter
Bold entries indicate exceedances of criteria

The vadose soil sample results show that tetrachloroethene (PCE) is the primary contaminant detected in both the surface soil samples (0 to 2 feet bgs) and subsurface soil samples (2 to 7 feet bgs). PCE exceeded the industrial SCTL for direct contact of 18,000 micrograms per kilogram (µg/kg) in only 1 of 12 surface soil samples with a concentration of 55,900 µg/kg. Resampling adjacent to the hot spot produced a sample concentration of 4,120 µg/kg that demonstrates the heterogeneity of the soil contamination and indicates that the lateral extent of surface soil exceeding the industrial SCTL is relatively small, an area with a radius of probably only a few feet. However, all 12 surface soil samples contained concentrations of PCE that ranged between 40 and 55,900 µg/kg, and each exceeded the PCE SCTL for leaching to groundwater of 30 µg/kg. In the subsurface soil (sample intervals of 3 to 4 feet and 6 to 7 feet) there were no exceedances of the industrial SCTL but 13 of 16 samples exceeded the leaching SCTL.

The investigation of deep soil contamination focused on the UHC and LHC intervals that define the upper and lower boundaries of the Hawthorn WBZ at the site. Most of the deep soil samples were collected

from portions of the UHC that showed greater relative impacts based on real-time semi-quantitative analysis of soil samples using the Color Tec method during the field investigation. Previous investigation results (CH2MHILL, 2005a) also indicated that the UHC was highly contaminated at some locations. Deep soil samples collected below the UHC showed generally decreasing concentrations with depth, and samples of the LHC indicated little to no impacts from the release of CVOCs at the site. The extent of impacts to the UHC was evaluated using samples collected from the soil borings installed by TtNUS during June and July 2006, and the deep soil samples (not shown in the table above) collected by CH2MHILL during their previous investigation of potential source areas (CH2MHILL, 2005a). Collectively, the results of all soil samples from the UHC demonstrate that this predominantly clay unit lying at the base of the surficial aquifer contains relatively high concentrations of CVOCs in the form of sorbed contamination and possibly residual dense non-aqueous phase liquid (DNAPL). The area of impacted soil in the UHC with relatively high PCE concentrations (i.e. greater than 3,000 µg/kg), was estimated to be approximately 4,800 square feet, or 0.11 acre. The thickness of the impacted soil ranged from 2 up to 16 feet at some locations.

Groundwater from the Hawthorn WBZ contained concentrations of CVOCs, specifically PCE, trichloroethene (TCE), cis-1,2-dichlorethene (cDCE), 1,1-DCE, and vinyl chloride (VC), that exceeded the GCTLs. The areal distribution of the CVOC plume appeared to be limited to an area near the center of the former laundry facility (former Building 1100) based on sampling conducted in July and August of 2006. However, subsequent sampling conduct in February 2008 suggests that the plume limit extends beyond the northern NTC property at this time. Bromodichloromethane and chlorodibromomethane were detected at relatively low concentrations (maximum 13.7 and 4.8 µg/L, respectively) in the groundwater profiling samples. The concentrations exceeded the GCTLs, but these chemicals were not detected in the monitoring wells samples; they are attributed to the potable water used during the soil boring process that was not completely purged from the formation prior to collecting the profiling samples.

Recommendations

- The area for direct contact risk from vadose soil for future industrial use appears to be localized. Based on current controlled site access there is little potential for exposure. Direct contact risk and soil leaching to groundwater should be further evaluated following completion of ongoing remedial action for shallow groundwater.

- Monitor for the presence of DNAPL in source area monitoring wells and remove if observed. DNAPL was found in Hawthorn wells 60D and 62D during routine groundwater sampling in July 2006 and removed by pumping.

- Sample all channels of CMT wells 68D, 69D, and 70D located along northern site property line. Add select channels to long-term monitoring (LTM) program.

- Continue groundwater investigation of the Hawthorn WBZ off-site north of the site boundary. This recommendation is based on the results of groundwater sampling performed in early 2008 indicating CVOC concentrations greater than GCTLs in groundwater collected from wells OLD-13-69D and OLD-13-70D.

1.0 INTRODUCTION

TtNUS conducted vadose soil sampling and a groundwater investigation of a deep aquifer zone (i.e., the upper Hawthorn Group WBZ), underlying Study Area (SA) 13, located at OU 4. OU 4 is located at Area C of the former NTC in Orlando, Florida. Figure 1-1 shows the location of Area C, and Figure 1-2 presents a site plan of OU 4 showing site features including monitoring wells installed prior to and during this investigation. The fieldwork was performed from June to August, and in October 2006 in accordance with the technical approach and methods detailed in the *Work Plan for Operable Unit 4* (TtNUS, 2006b). This report documents the field activities and presents the results of the investigation.

1.1 SITE DESCRIPTION

OU 4 consists of SAs 12 [Defense Reutilization and Marketing Office (DRMO) Warehouses and Salvage Yard], 13 (former base laundry and dry cleaning facility), and 14 (DRMO Storage Area). SA 13 (i.e., the laundry and dry-cleaning facility), former Building 1100, and the affected area, is the primary focus for OU 4 and this investigation. The eastern portion of the site has been developed and is relatively flat lying with ground elevations ranging from 113 to 110 feet above mean sea level (amsl). Immediately west of former Building 1100, the site is mostly vegetated as the ground slopes gently westward down to the shoreline of Lake Druid at an elevation of approximately 100 feet amsl. Lake Druid consists of a roughly circular body of water approximately 16.5 acres in size with a maximum depth of approximately 14 feet near its center.

Former Building 1100 was constructed in 1943 and dry-cleaning operations began in 1958, or possibly earlier. Figure 1-3 presents a plan schematic of former Building 1100 and shows the locations of potential release sources. Wastewater from the laundry machines was discharged to the sanitary sewer through “badly deteriorated drainage trenches” (not shown) in the floor [ABB Environmental Services, Inc. (ABB-ES), 1996]. The floor trenches discharged to a single pipe connected to a settling and surge tank. Due to the volume of water from the laundry process, a 30,000-gallon surge tank was installed in the mid-1960’s (see Figure 1-3). Waste filters from the dry-cleaning machines were also generated at the facility. PCE was separated from the water and filters by heating the assemblies in a pressure cooker shown as the “Filter Cooker” in the northern portion of the building. Operations ceased in the fall of 1994, and all laundry equipment (both conventional water-based and dry-cleaning) was subsequently removed from the building. The building was demolished in 2004.

A series of environmental investigations conducted at OU 4 identified the presence of CVOC contamination in soil and groundwater originating from the laundry. CVOCs have penetrated the surficial aquifer and the UHC aquitard unit at the bottom of the surficial aquifer. Below the UHC lies a WBZ consisting of 30 to 60 feet of sand interbedded with silty sand, clayey sand, and shell layers.

A groundwater plume was first detected near the middle of the WBZ within a layer of coarse sand, pebbles, and shells during an investigation conducted in 2004 (CH2MHILL, 2005a).

The primary groundwater contaminants at OU 4 are PCE, TCE, and cDCE. During previous investigations, the plume in the deeper Hawthorn WBZ at OU 4 was determined to be located beneath the northern portion of former Building 1100, and the former dry cleaning operations and floor drains in this building are assumed to be the source of the contamination. The highest concentrations of the three primary contaminants were detected during sampling conducted in 2004 and 2005 in monitoring wells OLD-13-60D (i.e., 60D) and 62D (Figure 1-4). The demolition of the dry cleaning facility in 2004 provided access to vadose soils in this suspected source area.

As a result of the CVOC contamination detected in subsurface soil and groundwater, the OU 4 property is restricted to non-residential (i.e., commercial/industrial) use. This report focuses, therefore, on the applicable cleanup criteria for the site, industrial direct contact and leaching to groundwater SCTLs for vadose soils and the GCTLs for groundwater in the Hawthorn WBZ, for the specific contaminants that exceed those criteria.

1.2 PURPOSE AND OBJECTIVES

The purpose of this investigation was to investigate the vadose soil beneath the former dry cleaning facility, to assess the lithology of the Hawthorn Group, to determine the lateral and vertical extents of the CVOC contaminant plume within the Hawthorn WBZ, and to evaluate soil contamination within the clay units above and below the WBZ. The objective of the vadose soil investigation was to:

- Identify impacts to vadose soil beneath the suspected area of release at the former dry-cleaning facility.

Groundwater contamination had previously been detected to depths of approximately 150 feet beneath the former dry cleaning facility (CH2MHILL, 2005a). The objectives of the investigation in the Hawthorn Group were as follows:

- Perform one boring in a “clean” area down to the upper Floridan aquifer to investigate the lithology and hydrostratigraphy of the Hawthorn Group. Collect soil and/or groundwater screening samples from zones of interest.

- Collect and analyze groundwater samples to investigate the lateral and vertical extent of the Hawthorn groundwater plume below a depth of about 70 feet to a depth of approximately 150 feet bgs.

- Collect and analyze soil samples from the clay aquitard unit(s) and the WBZ matrix in the Hawthorn to determine the following chemical and geotechnical properties: particle size distribution, dry bulk density, specific gravity, permeability, TOC, and VOCs.
- Install monitoring wells in the Hawthorn WBZ between the upper and lower clay aquitards.
- Collect and analyze groundwater samples from existing Hawthorn wells and from selected screened intervals of newly installed CMT wells.
- Perform aquifer testing of the Hawthorn WBZ using selected deep wells to evaluate the hydraulic conductivity of the interval through which the plume was migrating.

TtNUS conducted the field activities to accomplish these objectives during June, July, August, and October 2006.

1.3 PROJECT GUIDANCE

The *Project Operations Plan for Site Investigations and Remedial Investigations* (ABB-ES, 1997) was prepared and implemented to ensure that all consultants planned and executed their field activities in a manner consistent with Naval Facilities Engineering Command, Southeast (NAVFAC SE) and regulatory requirements. The investigation generally followed the methods and procedures as described in the Project Operations Plan (POP), but implemented alternate methods and procedures, where applicable, in accordance with more recent guidance published by the FDEP, United States Environmental Protection Agency (USEPA), and others as follows:

- Region 4, Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (EISOPQAM), (USEPA, 2001a).
- USEPA. Current Perspectives in Site Remediation and Monitoring: Using the Triad Approach to Improve Cost-Effectiveness of Hazardous Waste Site Cleanups. EPA-542-R-01-016 (2001b).
- Standard Operating Procedures (SOPs) for Laboratory Operations and Sample Collection Activities (FDEP, 2002).
- Crumbling, D.M., J. Griffith, and D.M. Powell. Improving Decision Quality: Making the Case for Adopting Next-Generation Site Characterization Practices (2003).
- Interstate Technology and Regulatory Council (ITRC). Technical and Regulatory Guidance for the Triad Approach: A New Paradigm for Environmental Project Management (2003).

- Health and safety aspects of worked performed by TtNUS at NTC Orlando were controlled in accordance with the *Health and Safety Plan for Performing Investigative Work and Sampling at Operable Unit 4* (TtNUS, 2006a).

2.0 ENVIRONMENTAL SETTING

2.1 SURFACE FEATURES AND TOPOGRAPHY

OU 4 comprises 13.8 acres, of which 2.1 acres are part of the eastern portion of Lake Druid. The remaining 11.7 acres lie to the east of the lake and include approximately 9.2 acres that are developed and 2.5 acres of wooded land. Some of the natural vegetation at the site (east of Lake Druid) has been replaced with phytoremediation plantings (Figure 1-2). The developed area consists of the location of the former laundry/dry cleaning facility (former Building 1100), warehouses, roadways, parking lots, and cleared land. The topography of the site ranges between 113 to 100 feet amsl and slopes westward toward Lake Druid.

2.2 LAND USE

Prior to 1940, land areas that were to become NTC facilities were residential, agricultural, or undeveloped. From 1940 until base closure in 1999, the NTC facilities were operated by various Department of Defense entities including the United States Army Air Corps, the United States Air Force, and the United States Navy. Area C contained warehouses, a small office building, other storage facilities, and the base laundry and dry cleaning facility. Built in 1943, the laundry and dry cleaning facility was operated until 1994, and the building was demolished in February 2004.

Current land use adjacent to the northern boundary of OU 4, surrounding Lake Druid to the west, and along the southwestern border of the site, is residential. Adjacent properties along the southeastern corner and the entire eastern boundary are commercial. The current anticipated future land use at OU 4 is commercial/industrial and recreational.

2.3 REGIONAL GEOLOGY AND HYDROGEOLOGY

The site is located on the Orlando Ridge, which is believed to be a remnant of the “Hawthorn Delta.” The Orlando Ridge is part of the dissected northwest-southeast trending ridge system that includes the Mount Dora and Lake Wales ridges. The surfaces of the ridges represent mature karst topography, as evidenced by the numerous circular lakes. The Orlando area is underlain by Pleistocene or younger undifferentiated marine deposits consisting of silty sand and clayey, silty sand with thin beds of silty clay. Underlying the surficial sediments is the Hawthorn Group of Miocene-Pliocene age, which is characterized by phosphatic gray-green clay, clayey sand and silt, and lenses of phosphatic sand and phosphatic limestone. The Hawthorn Group overlies late Eocene marine limestone of the Ocala Formation (USGS, 2004). The highly eroded Ocala Formation is locally approximately 25 feet thick, but is absent in many parts of Orange County. The Ocala Formation overlies the Avon Park Formation, which includes the Lake City Limestone, both of middle Eocene age.

The aquifer system underlying the Orlando area consists of, in order of increasing depth, the surficial aquifer, the intermediate confining unit, and the Floridan aquifer system. The surficial aquifer system is an unconfined sand aquifer that extends from the water table to the top of the Hawthorn Group, and may be locally divided into a series of aquifers by discontinuous beds or lenses of silty clay. The water table ranges in depth from 2 to 12 feet bgs. The surficial aquifer is recharged by rainfall, seepage from surface waters, and upward leakage from confined aquifers.

The intermediate confining unit consists of small lenses of permeable material, such as limestone, shell, or sand, within the predominantly clayey sediments of the Hawthorn Group. These lenses are usually small in both vertical and horizontal extent and typically do not have sufficient yields to justify their use as potable water sources.

The Floridan aquifer system is the principal artesian aquifer in Orange County where the former NTC is located. It includes all or parts of the Avon Park and Ocala Formations, and the typical basal limestone of the Hawthorn Group. The general groundwater flow direction in the Floridan aquifer is to the east, but it may be locally directed towards pumping water supply wells.

2.4 SITE GEOLOGY AND HYDROGEOLOGY

The surficial aquifer at OU 4 is an unconfined aquifer that extends from the ground surface to approximately 70 feet bgs and is primarily composed of unconsolidated, poorly sorted, medium dense to dense, fine-grained quartz sand with varying amounts of silt and clay. Contained within the surficial aquifer at OU 4 is a partially cemented layer (sometimes referred to as hard pan) located approximately 15 to 20 feet bgs, with varying thickness that averages approximately 5 feet. Although it acts as an aquitard, this hard pan layer does not act as a hydraulic or chemical confining layer or barrier. Groundwater flow in the surficial aquifer is predominantly horizontal and westerly toward Lake Druid. There is, however, a downward component of flow that is interpreted from a measured site-wide downward hydraulic gradient between shallow and deep wells. As a result, the entire thickness of the surficial sand (from the water table to the top of the Hawthorn Group) is available for the potential transport of contaminants. The base of the surficial aquifer is defined by the upper clay of the underlying Hawthorn Group.

The upper portion of the Hawthorn Group at OU 4 contains upper and lower clay layers (UHC and LHC) separated by a WBZ comprised of phosphatic, mostly fine-grained sands, carbonate shell beds, and silty and clay-rich interbeds. The UHC occurs at a depth of approximately 56 to 70 feet bgs, ranges from about 6 to 36 feet in thickness, and consists of two clay units separated by a layer of loose, coarse to medium grained shell hash at most boring locations at OU 4. This clay marks the bottom of the overlying surficial aquifer and acts to confine the underlying WBZ.

Below the UHC lies a WBZ consisting of approximately 30 to 60 feet of sand interbedded with silty sand, clayey sand, and shell layers. Water levels from monitoring wells completed in the Hawthorn WBZ indicate that the groundwater flow direction is generally north. Groundwater elevations in the Hawthorn wells, at approximately 100 feet amsl, are approximately 3 to 5 feet lower than those historically observed in the overlying surficial aquifer. This demonstrates a downward gradient from the surficial aquifer to the Hawthorn WBZ. The Hawthorn WBZ is considered a semi-confined aquifer system, which implies some hydraulic connection with the overlying surficial aquifer. A groundwater plume containing CVOCs was detected near the middle of the WBZ within a layer of relatively permeable sediments (sand, pebbles, and shells) in wells screened between 100 to 120 feet bgs.

The LHC was encountered at depths of about 127 to 145 feet bgs in the borings installed during the latest round of investigation. This clay was observed to be up to 18 feet thick at boring location SB01 and was underlain by predominantly clay, sandy clay, and clayey sand units to a total drilled depth of 275 feet in this boring. The Ocala Formation limestones, which underlie the Hawthorn Group and define the upper extent of the Floridan aquifer system, were expected to occur at a depth of 200 to 210 feet bgs at OU 4, but these beds were not specifically identified during the drilling and logging of SB-01. Figure 2-1 provides a visual representation of the conceptual site model (CSM) for OU 4 that was presented in the Remedial Action Work Plan (CH2MHILL, 2007).

2.5 CONTAMINANT REGIME

Site investigations from 1997 to 2005 [Harding Lawson Associates (HLA), 2001; CH2MHILL, 2005a, 2005b, and 2006a and 2006b] identified CVOCs in the upper and lower portions of the surficial aquifer (5 to 70 feet bgs) and within the upper sands and clays of the upper Hawthorn Group (greater than 60 to 70 feet bgs). The larger surficial aquifer plume extends westward across the northern portion of the site and follows the path of groundwater flow toward Lake Druid. Antimony was identified in a smaller area south of the CVOC plume and is restricted to that area. The antimony plume is currently monitored semi-annually (CH2MHILL, 2006a).

Contaminants of concern in groundwater include PCE, TCE, cDCE, VC, and antimony. Contaminants of concern in Lake Druid surface water are those listed for groundwater with the addition of trans-1,2-DCE, but do not include antimony. Site investigations prior to 2004 identified two potential CVOC source areas, one within the upper surficial aquifer beneath the dry cleaning operations located in the northern portion of former Building 1100 (northern plume), and a second smaller plume south of the building that contained antimony and comparatively low concentrations of CVOCs (southern plume). Investigations after 2004 corroborated the northern plume area directly beneath the dry cleaning area of former Building 1100 as a source area, and identified the presence of two additional potential CVOC source areas at the site. The first includes the deep portion of the surficial aquifer and the underlying UHC layer (60 to 80 feet bgs) located

directly beneath the area of the former dry cleaning machines (see Figure 1-3). The second consists of the UHC layer (70 to 80 feet bgs) directly beneath the area of the former dry cleaning facility surge tank located along the west wall of former Building 1100. All CVOC contamination at the site is attributed to spills and leaks associated with dry cleaning activities. DNAPL has only been found in deep wells 60D and 62D (Hawthorn well) during the July 2006 sampling event.

Analyses of soil samples and membrane interface probe readings from the 2004 investigation (CH2MHILL, 2005a) indicate that the UHC contains relatively high concentrations of CVOCs that provide a source of dissolved contamination for the lower portion of the overlying surficial aquifer and for the underlying WBZ of the Hawthorn Group. Soil samples collected from the LHC did not indicate the presence of contamination at that depth (i.e., 127 to 145 feet bgs).

The groundwater plume data for the Hawthorn WBZ suggest that contaminants in the subsurface have migrated to the southeast from the release area associated with the former dry cleaning machines perhaps by gravity flow of DNAPL (see Figure 1-3). However, uncertainty about the contaminant release points and the potential for DNAPL migration along the structural slope of the clay layers suggests that the migration of contamination in the upper Hawthorn Group is complex. Groundwater data from 2006 suggest that the deep dissolved plume has migrated beyond the northern perimeter of the former laundry facility and perhaps beyond the property boundary (i.e., Building 1100).

Fine-grained and well consolidated beds/lenses within the surficial aquifer, notably the hard pan, may have caused slowing of vertical contaminant migration (DNAPL or dissolved), resulting in the enhancement of horizontal migration and sorption of PCE, thereby creating more laterally extensive source areas. The release of DNAPL indicates that source areas may be at locations that would not be expected based solely on groundwater flow directions. Likewise, contamination in the Hawthorn Group, particularly in the UHC, may also be found in areas not anticipated based solely on groundwater flow direction.

2.6 INTERIM REMEDIAL ACTIONS

Interim remedial actions for the surficial aquifer at OU 4 have included in-well air stripping of VOCs, phytoremediation tree farms at several locations around former Building 1100, and pilot-scale and full-scale in situ chemical oxidation systems using injection/extraction wells to circulate an oxidant [potassium permanganate ($KMnO_4$)] through the source areas. Currently, a groundwater extraction and treatment system is operating at OU 4 that consists of two extraction wells, a low-profile tray air stripper, and associated field piping and controls. Treated groundwater is discharged by permit to the City of Orlando sanitary sewer. Additionally, enhanced in-situ anaerobic reductive dechlorination via substrate injection is currently being conducted in areas of high CVOC concentrations in the surficial aquifer.

3.0 INVESTIGATION ACTIVITIES

Investigation of the upper Hawthorn Group was performed by TtNUS between June and October 2006. The initial field activities were performed between June 15 and July 26, 2006. A subsequent mobilization to collect additional vadose soil samples and groundwater samples from CMT well 66D was performed on October 24, 2006. The investigation period of performance is summarized below:

Period of Performance	Activity
Soil Boring / CMT Well Installation	
6/15 - 7/02/2006	Performed soil borings SB01 through SB07 and collected soil and groundwater "profile" samples and soil geotechnical samples
6/27 - 6/30/2006	Installed CMT wells 65D, 66D
7/10 - 7/14/2006	Installed CMT wells 67D, 68D, 69D, 70D
Groundwater Sampling	
7/25 - 7/26/2006	Sampled existing wells 58D through 64D (split CH2MHILL samples)
7/28 - 7/29/2006	Performed aquifer slug testing in wells 58D, 59D, 61D, 63D, 64D
7/31 - 8/02/2006	Sampled CMT wells 65D through 70D
10/24/2006	Performed discrete interval sampling of CMT well 66D, channel #2
Vadose Soil Sampling	
7/26/2006	Sampled vadose soil (SB-001 through SB-008) (1-2 feet, 6-7 feet bgs)
10/24/2006	Sampled vadose soil (SB-009 through SB-012) (1-2 feet, 3-4 feet, 6-7 feet bgs)

3.1 VADOSE SOIL INVESTIGATION

3.1.1 Soil Sampling

The initial phase of vadose soil sampling was conducted on July 26, 2006. Prior to sampling, a sample grid with 25-foot staggered centers was established over the target area that incorporated the locations of the former dry cleaning machines in the northern portion of former Building 1100 and the east-west trending floor drain that ran between the machines and the surge tank that was positioned immediately west of the building (Figure 1-3). Within the sampling grid, soil samples were collected from eight locations (SB-001 through SB-008) at depths of 1 to 2 feet bgs and 6 to 7 feet bgs (above the water table). All samples were collected using a clean hand auger, and aliquots were collected from each sample depth and placed in methanol-preserved, 40-milliliter (ml) vials provided by the laboratory for VOC analysis. The soil boring locations were marked with a pin flag and surveyed by a Florida licensed surveyor on August 15, 2007.

The laboratory results for VOCs in the initial phase of vadose soil sampling showed concentrations that exceeded the CTLs. In addition, the initial sampling phase results indicated a trend for higher VOC concentrations toward the northeast. Therefore, an additional four locations (SB-009 through SB-012) were sampled on October 24, 2006, in an attempt to determine the lateral and vertical extent of vadose soil contamination that exceeded the CTLs. The horizontal locations of borings SB-009 through SB-012 were field measured from surveyed boring SB-003. At each of the four locations, samples were collected from three intervals, 1 to 2 feet bgs, 3 to 4 feet bgs, and 6 to 7 feet bgs. These samples were collected and managed in the same manner as discussed above.

3.1.2 Sample Management

Sample Numbering

The soil samples were numbered as follows:

NTC13TNNNDD

where: NTC = Naval Training Center
13 = two-digit SA designation (13)
T = sample type (U for vadose soil)
NNN = sample location designation (e.g., 001)
DD = sample depth in feet bgs (e.g., 12 for 1 to 2 feet bgs)

For example, a vadose soil sample collected at the first location (001) from the 1- to 2-foot depth interval would be designated NTC13U00112. Samples for field duplicates were identified with a "blind" number (e.g., NTC13FD06150601) that replaced the location number and the sample depth and were documented in the field notes along with the corresponding environmental sample. The blind number included the six-digit date of duplicate sample collection and a two-digit sample number indicating the sequence of duplicates collected. In this report, duplicates are identified in data tables by the addition of “-D” to the end of the sample number.

QC Samples

Quality control (QC) samples were collected at the following frequencies:

- One field duplicate per 10 environmental samples.
- One trip blank per cooler containing samples for VOC analysis.
- One matrix spike (MS)/matrix spike duplicate (MSD) per 20 environmental samples.

"MS/MSD" was added to the sample number on the labels and the chain-of-custody form. Additional sample volume was collected for each MS and MSD set. No reusable equipment was used for sampling; thus, decontamination and collection of associated rinsate and field blanks were not required.

Sample Handling, Chain of Custody, and Shipping

Sample collection procedures and site conditions at the time of sampling were documented on sample forms and/or field notes. Samples were collected in prepared containers supplied by the laboratory, chain-of-custody log sheets were generated, and coolers were used to transport samples. Environmental samples and associated QC samples were iced, preserved as appropriate, and either picked up at the site by the subcontract fixed-base laboratory personnel, or transported by the field team on a daily basis to the laboratory.

3.2 SOIL BORING AND SAMPLING

3.2.1 Drilling Operations

Prior to drilling, each boring location was cleared for underground utilities by "daylighting", a process that uses vacuum to create a nominal 6-inch diameter hole to a depth of 8 feet. No utilities were observed at any location, but boring SB07 was moved approximately 3 feet due to proximity to an underground water line indicated by a nearby fire hydrant. The new location was cleared by hand to a depth of 5 feet.

All drilling was performed using sonic drilling technology that uses rotation, vibration, and down-pressure to advance the tooling. The vibration, in conjunction with potable water and/or groundwater, causes localized liquefaction of the soil around the casing as it is pushed downward. Each boring was drilled by advancing a 6-inch diameter outer barrel/casing in 10-foot increments. The outer casing was left in place and a 10-foot long, 4-inch diameter inner barrel was advanced to 10 below the depth of the outer casing to collect the soil core. The sample barrel was withdrawn from the borehole and the core was removed and collected in 5-foot sections of polyethylene bagging. The entire core was taken to the geologist for vapor screening, lithologic description, and soil sample collection as specified in the Work Plan (TtNUS, 2006b). After the sample was removed, another 10-foot section of outer casing was attached and advanced, and the soil coring process was repeated until the target depth was reached. The outer casing was left in the ground for CMT well installation. All down-hole tooling was decontaminated, and soil and groundwater were containerized and handled as investigation-derived waste (IDW) as specified in Section 6.0 of the Work Plan. Soil boring logs are provided in Appendix A.

3.2.2 Soil Profile Sampling and Analysis

Soil profile sampling was conducted within the Hawthorn between depths of approximately 56 to 145 feet bgs. Deep soil samples were collected at selected depths from each soil core at each boring location.

Selected samples were collected for analysis of VOCs, TOC, and geotechnical properties. Two Shelby tube samples were also collected for permeability testing. All samples were collected in new containers supplied by the laboratory or manufacturer. For fixed-base laboratory VOC analysis, soil aliquots were collected from the core and placed in methanol-preserved 40 ml vials. These vials were transported to Accutest Laboratories in Orlando, Florida with a request for 24-hour turnaround times. Soil sampling was conducted per Section 3.3.2.3 of the Work Plan (TtNUS, 2006b); Tables 1 through 4 of the Work Plan provide the sampling rationale and criteria.

In addition to the laboratory analyses, an on-site analysis was conducted on split soil aliquots using a head-space analysis methodology (i.e., Color Tec apparatus). For this analysis, approximately 15 grams of soil were added to a 40 ml vial containing 30 ml of de-ionized water. The samples were then shaken to disaggregate the material, placed in a heated water bath, and brought to a temperature of approximately 100 degrees Fahrenheit. Each sample was then placed in the Color Tec apparatus and the headspace gas was extracted through the vial septum by means of a syringe attached to a vacuum pump. The extracted gas was passed through a gas color-detection tube to determine total CVOC concentrations.

3.2.3 Groundwater Profile Sampling and Analysis

Groundwater profile sampling was conducted within the Hawthorn between depths of approximately 65 to 135 feet bgs. Groundwater screening samples were collected from each boring at multiple depths by using a 10-foot-long sampler constructed of a stainless steel wire-wound screen with a pneumatic packer at the top. After the inner, 4-inch diameter soil core barrel was withdrawn through the outer 6-inch casing to retrieve the soil core (see Section 3.2.1), the groundwater sampler was attached to the inner drill rod and was lowered into the open borehole created by the core barrel; polyethylene tubing running through the drill rod was connected to a submersible pump placed in the screened sampler. When the sampler was in place, the packer was inflated, thereby sealing the top of the open borehole inside the lower end of the outer casing. Between 25 and 45 gallons of water were purged [pumping rates from 1.5 to 2.5 gallons per minute (gpm)] from the sampler to remove fine-grained material and any potable water released to the formation during drilling. After purging, the pumping rate was decreased and laboratory-supplied 40 ml vials, preserved and unpreserved, were filled for VOC analysis. The preserved vials were transported to Accutest Laboratories for analysis with 24-hour turnaround times. The unpreserved vials were used for on-site CVOC screening using the Color Tec method (see Section 3.2.2). Groundwater sample intervals are provided on the boring logs (Appendix A). Groundwater sampling was conducted per Section 3.3.2.3 of the Work Plan (TtNUS, 2006b).

3.2.4 Sample Management

Sample Numbering

The subsurface soil and groundwater profiling samples were numbered as follows:

NTC13TNNNNDDDDDD

where:	NTC	=	Naval Training Center
	13	=	two-digit SA designation (13)
	T	=	sample type (U for subsurface soil, G for groundwater)
	NNNN	=	sample location designation (e.g., SB01)
	DDDDDD	=	sample depth in bgs (e.g., 115120 for 115 to 120 feet bgs)

For example, a soil sample collected at location SB01 from the 99- to 100-foot depth interval would be designated NTC13USB01099100, and a groundwater profiling sample collected at location SB01 from 115 to 125 feet bgs would be designated NTC13GSB01115125. Samples for field duplicates were identified with a “blind” number (e.g., NTC13FD06150601) that replaced the location number and the sample depth and were documented in the field notes along with the corresponding environmental sample. The blind number included the six-digit date of duplicate sample collection and a two-digit sample number indicating the sequence of duplicates collected.

Quality Control Samples, Sample Handling, Chain of Custody, and Shipping

QC samples and sample handling, chain of custody, and shipping were performed as described in Section 3.1.2.

3.3 CMT WELL INSTALLATION AND SAMPLING

3.3.1 CMT Well Installation

CMT monitoring wells OLD-13-65D (65D), 66D, 67D, 68D, 69D and 70D were installed in the groundwater profiling investigation boreholes during June and July 2006 (Figure 1-2). Six of the available seven channels in each CMT well were ported, plugged, and covered with stainless steel screened mesh to allow sampling at varying depths (center channel number 7 at the bottom of each well was not used). The wells were prepared by CMT certified drilling subcontractor personnel under controlled conditions in an on-site, Navy-owned warehouse. Oversight was provided by TtNUS’ field operations leader who completed the CMT construction and installation training course prior to this field effort. The well tubing was received from the manufacturer in rolls. To prepare the well, the required length of tubing was first rolled out onto polyethylene sheeting and allowed to relax (to lessen the curvature of the tubing). Next the screen/slotted

intervals were marked on the appropriate channel by measuring from the bottom of the casing. Channel 1 is identified by a "v" shaped marking on the outside of the channel that runs the entire length of the tubing. Screen depths follow the numerical sequence of the channels, that is, channel 1 has the shallowest screen interval and channel 6 has the deepest. The well channels were ported (i.e., slotted) and wrapped with stainless steel screen mesh per the manufacturer's specifications, as specified in Section 3.3.2.4 of the Work Plan (TtNUS, 2006b). Each screen interval was constructed of multiple sample ports that extend along a 5-foot section of the well channel, except well 68D channel 1, which has a 4-foot screen internal and well 68D channel 6, which has a 10-foot screen interval. Great care was used to ensure that neighboring channels were not accidentally cut or breached during preparation. When the well was finished, the screen sections were again measured by TtNUS personnel for correct vertical position. After the final check, the casing was placed in clean polyethylene bagging prior to transport to the well site for installation.

Prior to well installation, each borehole was sounded to check the depth. Where needed, bentonite chips and/or fine sand were added until the required borehole depth was achieved. Obtaining the correct boring depth was important in order to ensure that screen intervals intersected the targeted water bearing zones. The wells were installed as specified in Section 3.3.2.4 of the Work Plan (TtNUS, 2006b) except rather than insert a tremie pipe into the annulus, the filter pack sand was placed by pouring from the top of the outer drill casing (left in place to avoid borehole collapse, to prevent vertical migration of groundwater, and to assist in the well installation). This method of filter pack placement was used to avoid possible damage to well screens or centralizers with a tremie pipe. Bentonite chips were placed by pouring from above, as well. Well 65D is located in a paved roadway and was completed below grade using a flush mount well box; the remaining wells are located in unpaved areas and were completed above grade with protective casings. Well pads and protective casings were constructed as specified in the Work Plan. Following installation well locations and top of casing elevations were surveyed by a Florida licensed surveyor. Well completion logs and survey data are provided in Appendix B.

Each well was developed a minimum of 24 hours after well installation using a peristaltic pump. Polyethylene tubing was specified in the Work Plan for well development and sampling, but it was found to be too soft and flexible to insert into the CMT channels beyond a depth of about 23 feet. Teflon® tubing, being much stiffer, was used and a section of appropriate length was dedicated to each well channel. Section 3.3.2.4 of the Work Plan (TtNUS, 2006b) details well development procedures. The monitoring well development records are provided in Appendix C.

3.3.2 Groundwater Sampling

On July 25 and 26, 2006, TtNUS collected groundwater samples from selected existing Hawthorn monitoring wells (58D through 64D) during a groundwater monitoring event conducted by CH2MHILL who

conducts operation, maintenance, and sampling for the groundwater remediation systems at the site. These samples were collected as split samples with CH2MHILL and submitted to Accutest Laboratories for analysis of VOCs.

Between July 31 and August 2, 2006, TtNUS also sampled selected channels from each CMT well that had recently been installed. On October 24, 2006, TtNUS collected three discrete interval groundwater samples from channel 2 of CMT well 66D to evaluate the performance of the CMT well screens. The channels were purged and sampled as specified in Section 3.3.2.5 of the Work Plan (TtNUS, 2006b). The samples were transported to Accutest Laboratories for analysis per Section 3.3.1.3 of the Work Plan with standard turnaround times. The groundwater sampling logs are provided in Appendix C.

The following CMT well channels were sampled during the July/August 2006, event:

- 65D – channel #4
- 66D – channel #1, #2, #4, and #6
- 67D – channel #4
- 68D – channel # 3, #5, and #6
- 69D – channel #3, #5, and #6
- 70D – channel #4

Sample Numbering

The monitoring well samples were numbered as follows:

NTC13TNNNCDD

where:	NTC	=	Naval Training Center
	13	=	two-digit SA designation (13)
	T	=	sample type (G for groundwater)
	NNN	=	sample location designation (e.g., 65D)
	C	=	CMT well channel (e.g., 1 through 6)
	DD	=	sample rounds (e.g., first well sample is 01)

For example, the first groundwater sample collected at well 69D from channel 5 was designated NTC13G69D501. Sample numbering was altered for the October 24, 2006, discrete interval sampling of CMT well 66D. The round number (DD) was replaced by the sampling depth. Samples for field duplicates were identified with a “blind” number that included the six-digit date of collection and two-digit sequence number (e.g., NTC13FD06150601). The corresponding environmental sample was noted in the field logbook.

QC Samples

QC samples and sample handling, chain of custody, and shipping were performed as described in Section 3.1.2.

3.4 AQUIFER SLUG TESTS

Slug tests were conducted at wells 58D, 59D, 61D, 63D, and 64D on July 28 and 29, 2006, in order to estimate the horizontal hydraulic conductivity of the Hawthorn WBZ. A series of four tests were conducted at each well as follows:

- test #1, FH (slug in)
- test #2, RH (slug out)
- test #3, FH (slug in), and
- test #4, RH (slug out)

For each test, the water level in the well was quickly changed (i.e., “slugged”) by adding or removing a solid, weighted polyvinyl chloride (PVC) slug of known volume. For tests #1 and #2 at each well a 1.5-foot long by 1.5-inch diameter Schedule 40 PVC slug was used; for tests #3 and #4 at each well a 3-foot long slug of similar construction was used. Based on the slug dimensions, the volume of the 1.5-foot slug was 0.018 cubic and the volume of the 3-foot slug was 0.037 cubic feet. For the 2-inch diameter wells tested, these slugs produce a theoretical head change (Ht) of 0.8 and 1.6 feet, respectively. Water levels were measured and recorded during each slug test using a down-hole pressure transducer and data logger (InSitu MiniTroll®). Data were collected using a logarithmic time scale to increase the data resolution during the early stages of the well response.

4.0 INVESTIGATION RESULTS

The focus of this investigation included the uppermost portion of the Hawthorn Group that lies immediately below the sediments that comprise the surficial aquifer. This target interval contains the UHC that lies between 56 to 93 feet bgs; a middle section of predominantly sand-sized sediments that includes interbeds of shell fragments, sands with varying proportions of silt and clay, clay, and mudrock that lies between the upper and lower Hawthorn clays; and the LHC, the top of which lies between 127 to 142 feet bgs. Geologic cross sections A-A' through D-D' that depict the Hawthorn Group lithology for the depth of the investigation are presented as Figures 4-1 through 4-4; the location of the cross-section transects are shown on each figure. Soil boring logs are provided in Appendix A. A detailed description of the Hawthorn geology, hydrogeology, and the nature and extent of contamination is presented in the following sections.

4.1 HAWTHORN GEOLOGY

4.1.1 Upper Hawthorn Clay

Over much of the investigation area the UHC is comprised of an upper clay (3 to 12 feet thick) and a lower clay or clay-rich sand (0 to 15 feet thick) separated by an approximately 10-foot thick coarse-grained unit composed principally of broken mollusk shells (i.e., shell hash). The total thickness of these units ranges up to 36 feet. This sequence is shown to be laterally continuous north to south, but the coarse-grained unit appears to thin and pinch out toward the west at wells 64D and 70D (Figures 4-1 and 4-3). The shell unit grades from a shell-rich sandy gravel, to a loose shell hash, to lightly-cemented coquina that is saturated. This shell unit was identified as discontinuous lenses of shell-rich clay in an east-west cross section, originally prepared by CH2MHILL (2005a), and included as Figure 6 of the Work Plan (TtNUS, 2006b). Figure 4-1 shows the same transect as Work Plan Figure 6, but adds well 65D (SB03) located to the east. A soil core was not recovered from the 75- to 85-foot interval at 65D; although the lithology of this interval was not observed, the inability of the sampler to retain the sample suggests that the loose, gravelly shell-hash material was present. Figure 4-3 (cross-section C-C'), trends east-west along the northern border of OU 4, and incorporates well 70D (SB06), well 69D (SB05), and well 68D (SB07). The UHC clay-shell-clay sequence is present at 68D, but the shell-rich interval is not present at 70D. Well 69D (SB05), located between 70D and 68D, had only a partial sample return (3 feet of clay from 65 to 68 feet bgs) for the 65- to 75-foot interval. The depth at which the clay stopped, 68 feet, correlates to the upper clay/shell unit contact at 68D (SB07). As discussed above, the observations suggest that the UHC shell-rich unit is present at 69D, but due to the low degree of consolidation of this material, the sample dropped out of the barrel while it was being retracted.

4.1.2 Hawthorn Water-Bearing Zone

The WBZ underlying the UHC begins between 80 to 93 feet bgs, is comprised of well to moderately sorted, very fine- to medium-grained sands, and ranges from 36 to 62 feet in thickness. It also contains some sandy clay interbeds and lenses of silt and/or clay. Within this unit is an approximately 5-foot thick, coarser-grained zone beginning at about 105 feet bgs. This zone contains cobbles and gravels, predominantly mudstone fragments, in a sandy matrix with few fines. Shells and shell fragments, abundant in sands above and within the gravel zone, are sparse in sands below the gravel zone. Cobbles as large as 3 inches in diameter were observed. This gravelly zone was found in all borings except SB07 (well 68D), which is located in the northeastern corner of the investigated area (Figures 4-3 and 4-4). At 69D and 70D, west of and in line with 68D, this zone is the uppermost in a sequence of gravel and sand interbeds terminating at the lower Hawthorn clay contact. At wells 60D, 65D, and 66D this coarser-grained zone (gravel at well 65D, coarse sand at 60D and 66D) is directly underlain by 3 to 6 feet of clay. The screened interval of all pre-existing Hawthorn wells (wells 58D through 64D) intersects this coarse-grained zone near the middle of the Hawthorn WBZ.

4.1.3 Lower Hawthorn Clay

All borings were drilled to a depth sufficient to identify the contact of the WBZ with the underlying LHC that ranged from 127 to 142 feet bgs (see Figures 4-1 through 4-4). Borings to be converted to CMT wells were terminated just below (less than or equal to 10 feet) this contact. Boring SB01 was drilled to a depth of 275 feet bgs to determine the thickness of the LHC and observe the lithology of the sedimentary units down to the Floridan aquifer (i.e., top of the Ocala Limestone). At boring SB01, the upper contact of the LHC was observed at 140 feet bgs and the bottom of the moist to dry, dense fissile clay extended to 158 feet bgs. A deeper unit that could be uniquely identified as the Ocala Limestone (a white limestone) was not encountered. The decision to suspend drilling was based on the predominantly fine-grained nature and very low moisture content of 107 feet of core observed below the LHC. This interval was principally comprised of clay, sandy clay, and clayey sand, with a few intervals containing gravel-sized rock fragments. Other sediments observed include three relatively thin gravel zones, two sand layers (one with shell fragments, one with gravel/pebbles), a 0.5-foot thick mudrock bed, and a 3-foot thick limestone bed (see boring log for SB01 in Appendix A).

4.2 HAWTHORN HYDROGEOLOGY

Previous investigation of the Hawthorn included the installation of seven 2-inch diameter monitoring wells (58D through 64D) screened near the center of the Hawthorn WBZ (CH2MHILL, 2005a). These wells were completed with 10 feet of screen positioned approximately 100 to 110 feet bgs (elevation of +12 to

-9 feet amsl). TtNUS installed seven deep borings during the summer of 2006, six of which were completed as CMT wells (65D through 70D). Each CMT well contains six channels, each with a 5-foot long ported and screened interval positioned at six different depths in the WBZ; a 4-foot ported/screened interval was installed for channel #1, and a 10-foot ported/screened interval was installed for channel #6 in well 68D. The depth interval of each channel is presented in Table 4-1. In each of the 13 Hawthorn wells the water level rises above the screen interval and above the UHC, and lies approximately 5 to 13 feet bgs. Boring SB01, the first boring installed by TtNUS, was drilled to a total depth of 275 feet bgs to characterize the geology down to the top of the Floridan aquifer. No significant water-bearing zones (saturated materials with a thickness greater than 5 feet) were observed below the LHC, and field screening of soil samples using a photoionization detector (PID) below the LHC did not indicate the presence of VOC contamination. A well was not completed in SB01.

4.2.1 Groundwater Flow Direction

The groundwater flow direction for the Hawthorn WBZ was determined by measuring water levels in wells screened within the WBZ between the UHC and LHC, plotting the groundwater elevation for each well on a site map, and contouring the elevation data to represent the Hawthorn potentiometric surface across the site. The groundwater flow direction was then selected based on the direction of groundwater flow lines drawn perpendicular to the potentiometric surface contours. The top of each well casing has been surveyed with respect to a national geodetic vertical elevation datum and the groundwater elevation in each well was determined by subtracting the measured depth to water from the top of casing elevations for each measurement event. Seven 2-inch diameter wells installed during October 2004 were measured during five separate monitoring events and the data are provided in Table 4-1. During the October 2004 measurement event, an anomalous depth to water was recorded for well 59D as was noted in the report by CH2MHILL (2005a). Free product was found in well 62D during the July 2006 event, therefore, no water level measurement was recorded.

Six CMT wells were installed by TtNUS during June 2006 and a round of water levels was recorded for all well channels on August 2, 2006 (Table 4-1). These data, coupled with the July 25, 2006, water level measurements collected by CH2MHILL from the 2-inch wells, were used to construct a site-wide potentiometric surface map that is presented as Figure 4-5. Only the data from CMT channel #4 were used (except channel #5 for well 68D) to construct the potentiometric surface map because these intervals were consistent with the depth and stratigraphy of the screen intervals of the 2-inch wells. Although 0.7 inches of rainfall were recorded for the Orlando area on July 25, 2006, no precipitation was recorded at the site on that date. Furthermore, no rainfall was recorded for the Orlando area or at the site between July 26 and August 2, 2006, and the elevation data from the two measurement events appear to be consistent (e.g., a difference of only 0.15 was noted between adjacent wells 60D and 66D for these

two dates). In addition to Figure 4-5, potentiometric surface maps for three previous measurement events (May 2005, June 2005, and April 2006) for only the 2-inch wells are provided in Appendix D (Figures D-1, D-2, and D-3). As demonstrated by the potentiometric surface maps, the groundwater flow direction for the Hawthorn WBZ is consistently towards the north.

The water level measurements from the six CMT wells provide data that can be used to evaluate the potential for vertical groundwater flow between the surficial aquifer and the Hawthorn WBZ and within the Hawthorn WBZ itself. Figure D-4 (Appendix D) shows the groundwater elevation and potentiometric surface plot using only the August 2, 2006, measurements for each successively deeper CMT well channel (i.e. channel #1 through #6). It should be noted that each sequential well channel is positioned in approximately the same hydrostratigraphic zone for all of the CMT wells, as follows:

- All channel #1's (except 70D) are at the bottom of the surficial aquifer.
- All channel #2's are mostly within the shell hash of the UHC.
- Channels #3 through #6 are mostly within the sandy and gravelly-shell Hawthorn WBZ at successively deeper intervals.

From Figure D-4 in Appendix D, it can be seen that the flow direction for the uppermost CMT channels #1 and #2 is to the west, which is consistent with historical data that show flow in the surficial aquifer toward Lake Druid. Flow directions based on the potentiometric surface contours derived for CMT channels #3 through #6 representing the Hawthorn WBZ are, however, all towards the north. The data also show that a relatively large potentiometric head elevation difference (greater than 1 foot) exits between channels #1 through #3, whereas the difference between successive channels #3 through #6 is typically small (a few tenths of a foot). These data suggest that there is a potential for vertical migration of groundwater from the surficial aquifer down to the Hawthorn WBZ, but that flow within the Hawthorn is relatively horizontal and in a different direction than the overlying surficial aquifer (a 90 degree change in flow direction from the west in the surficial aquifer to the north in the Hawthorn WBZ).

A plot of groundwater elevation verses time for the five water level measurement events in the seven 2-inch monitoring wells is provided in Figure D-5 (Appendix D). This plot shows that the Hawthorn water levels have remained relatively stable at approximately 98 feet amsl when measured during the spring and summer seasons between May 2005 and July 2006; water levels were 2 to 2.5 feet higher when the wells were first installed in October 2004. A plot of groundwater elevation verses CMT channel depth (i.e., groundwater elevation profile) for the August 2, 2006, measurement event is also provided (Figure D-6, Appendix D). This plot shows the relatively large change in potentiometric elevation with depth between well channels #1 and #3 and the relative consistency for the deeper channels. The wide disparity in water levels between CMT wells for channel #2 is attributed to variation in the lithology of the

UHC interval across the site and some variation in the depth of the screen within the interval of relatively high vertical gradient across the low conductivity clays present in the UHC interval.

4.2.2 Groundwater Gradient

The horizontal hydraulic gradient for the Hawthorn WBZ was calculated using the potentiometric elevation data presented in Table 4-1. Two sets of 2-inch diameter wells that represent upgradient and downgradient locations, per the potentiometric surface maps shown in Figure 4-5 and in Appendix D, were selected to calculate the horizontal gradient for all five water level measurement events. These data are presented in the top half of Table 4-2. Based on these data, the average horizontal hydraulic gradient was calculated to be 0.002 towards the north. Data from the deeper channels for a pair of CMT wells in the Hawthorn WBZ, that represent a wider cross section of the site, were only available for the August 2006 measurement event. These data are presented in the bottom half of Table 4-2. Based on these synoptic data, the average horizontal hydraulic gradient for the four depth intervals (i.e., channels #3 through #6) was 0.003 toward the north in August 2006.

Vertical hydraulic gradients were calculated using the August 2, 2006, potentiometric elevation data for the CMT wells presented in Table 4-3. The data for adjacent CMT well channels was used to calculate the incremental vertical gradient from the bottom of the surficial aquifer (i.e., channels #1 to #2) down to the bottom of the Hawthorn WBZ (i.e., channels #5 to #6) for each CMT well. The average vertical gradients for all wells were as follows:

- Channel #1 to #2 = 0.202
- Channel #2 to #3 = 0.197
- Channel #3 to #4 = 0.008
- Channel #5 to #6 = 0.023

These data demonstrate the order of magnitude greater vertical gradient that exists across the UHC, between the surficial aquifer and the Hawthorn WBZ (#1 to #2 and #2 to #3), compared to the relatively low gradients that exist within the more permeable and coarser grained water-bearing sediments deeper in the Hawthorn WBZ. The lowest vertical gradient is shown for channels #3 to #4 that represents the sandy and gravelly zone near the mid section of the Hawthorn WBZ where horizontal flow is expected to dominate.

4.2.3 Slug Testing Results

A series of four slug tests was performed at each well to aid the evaluation of the presence of altered, near-well conditions (i.e., well skins). Such conditions resulting from fine particles disturbed/mobilized during drilling, from compaction/disturbance of the formation, or from the introduction of a filter pack, are nearly

always produced during drilling and well installation. If present, well skins may complicate the test analysis or obliterate the true well response during a slug test, or result in the selection of an unrepresentative estimate of horizontal hydraulic conductivity, Kh, particularly if the response from only a single slug test is available from any given well. Based on recommendations of James Butler (1998), the FH#1 and RH#2 tests were conducted using the same initial head change but the direction of water flow was reversed between the two tests (out of and into the well); and for the FH#3 and RH#4 tests, the magnitude of head change was increased (doubled). In addition to illuminating the presence of well skins, the series of tests allows the analyst to evaluate the appropriateness of using conventional slug-test theory to assess the well's response. Regardless, as stated by Butler (1998), "the hydraulic conductivity estimate obtained from a slug test should always be viewed as a lower bound on the hydraulic conductivity in the vicinity of the well".

For each slug test the change in water pressure, due to the change in the height of the water column over the transducer placed in the lower portion of each well, was recorded and converted into feet of head change [instantaneous head change (Hi)] by the data logger. As selected during the data logger setup, the upward change in water level resulting from a FH test (slug in) is displayed in the data sets as positive numbers, whereas, the water level change from RH tests (slug out) are negative numbers; both data sets approach zero head change over time (i.e., return to static). Plots of the head change data versus time are provided as the first of two plots provided for each well in Appendix E.

Following the recommendation of Butler (1998), the normalized head response versus the log10 of time for the series of slug tests conducted at each well was plotted to evaluate the presence of well skins and the appropriateness of conventional well theory for evaluation of the data sets (see second plot for each well in Appendix E). Normalized head was calculated by dividing each recorded Hi by the initial head change (Ho) that was visually selected from the initial head response at each well (i.e., Hi/Ho). It should be noted that the selected Ho was very consistent (for both the short and long slug tools) for the tests conducted at each well and across all wells. The response of each well to each of the four tests can be compared using the basic time lag (To) (Hvorslev, 1951), which is the time (after start of test) at which normalized head attains a value of 0.37. Because To is inversely proportional to Kh, the normalized head plots provide a quick and convenient method for quantifying the variation in the Kh estimate from each test at each well. Per Butler (1998), significant differences in the To (and thus Kh) values at a given well and inflections in the data curves provide diagnostic signatures that can be used to evaluate well skins and the appropriate model required to evaluate the test data. As can be seen in the plots of the normalized head data verse time provided in Appendix E, the values of To for each test are very consistent for all tested wells with only a 1.2 to 1.4 magnitude of change between the minimum and maximum To values. One exception occurred during FH#1 at well 64D that resulted in a 2.2 magnitude of change compared to the other tests conducted at this well. The last three successive tests conducted

in well 64D (i.e., RH#2, FH#3, and RH#4) showed more consistent values for To, but each took a longer time relative to FH#1, which is indicative of lower Kh. This response is suggestive of a reduction in Kh related to the mobilization of fine particles, or possibly biomass, into the filter pack or screen during the testing. Additional well development may be needed to ascertain the true slug test response for this well.

The geologic boring logs for the wells at the site show that the Hawthorn WBZ, in which all the wells are completed, consists of interbedded fine sands, shells, and silty or sandy clay, and clayey sand (CH2MHILL, 2005a). Each well tested was completed with 10 feet of 2-inch diameter well screen approximately 100 to 110 feet bgs. The static water levels in the wells demonstrate that all of the well screens were submerged. Comparison of the screen intervals with the boring logs shows that the hydraulic properties across the 10-foot screened interval are likely to vary somewhat due to vertical variation in lithology. The Kh result for each well represents, therefore, an average for all lithologies spanned by the screened interval of each well.

The hydrogeologic conceptual model of the Hawthorn WBZ suggests the presence of a moderately conductive, fine-grained porous aquifer that is confined or semi-confined. Additionally, all the well screens were submerged below the potentiometric surface and boundary effects from the unsaturated zone during the slug testing are unlikely to be significant. Based on these conditions and the normalized head responses for the multiple slug tests performed at each well, the slug test results were analyzed using the Bouwer and Rice (1976) model for a fully penetrating well in a confined aquifer (Bouwer, 1989). The analysis of the data was implemented using the AQTESOLV® for Windows computer software program (HydroSOLVE, 1998) version 2.13. For each analysis a best-fit straight line was visually matched to the data. A summary of the pertinent inputs for the analysis and the resulting Kh estimates is provided as Table 4-4.

The overall range of Kh for the Hawthorn WBZ, based on the average of four slug tests performed in each of the five wells that were tested, ranged between 0.5 to 12.5 feet/day with a geometric average of 3.6 feet/day, or 0.0013 cm/sec. With the exception of well 64D, the test results indicated that all of the well responses were consistent with conventional slug test theory, that boundary effects were not significant, and that the well development was not a significant source of data error. From a review of the boring logs and from the slug test results, there is no directly apparent reason for the order-of-magnitude lower value for Kh (Table 4-4) at well 61D (located near the center of former Building 1100) compared to the other four wells that were tested. The screen was set at 99 to 109 feet bgs for well 61D, consistent with the other wells; however, the boring log for this location did not include descriptions above 110 feet bgs. Review of the remaining Hawthorn well boring logs shows that an interval of mudrock (broken in the soil cores) and sand with increasing silt and clay content was encountered at this approximate depth interval at some locations, which, if predominant at this location and depth, could account for a lower Kh compared to the remaining

wells that were screened across predominantly well- to poorly-graded fine sand. The AQTESOLV® input/output sheets for the slug test analysis are provided following the data plots in Appendix E.

4.2.4 Groundwater Velocity

The sequence of sediments lying in the Hawthorn WBZ represents a porous, permeable medium for which Darcy's Law is deemed applicable. Using this law, the groundwater flow velocity is directly proportional to the hydraulic gradient and the Kh and is inversely proportional to the effective porosity. Using Darcy's Law, the average linear groundwater velocity may be calculated using the following equation (Freeze and Cherry, 1979):

$$Vs = (Kh \times i)/n_e$$

where:
Vs = average linear groundwater velocity
Kh = bulk horizontal hydraulic conductivity
i = hydraulic gradient
n_e = effective porosity of the aquifer

Using the geometric mean value for Kh from the slug testing, 3.6 feet/day, the average horizontal gradient (0.002) presented in section 4.1.5, and assuming an effective porosity of 0.3, the calculated average linear groundwater velocity is 0.024 feet/day, or about 8.8 feet per year (feet/year) in the Hawthorn WBZ.

4.3 NATURE AND EXTENT OF CONTAMINATION

4.3.1 Soil

A total of 28 vadose soil samples (not including duplicates) were collected from locations SB-001 through SB-012 (Figure 4-6). Samples were analyzed for VOCs at Accutest Laboratories. The results were used to investigate a possible source area. Deep soil samples were collected within the Hawthorn at depths ranging from approximately 56 to 145 feet bgs. Selected samples were analyzed for VOCs, TOC, and geotechnical properties at Accutest Laboratories. Split soil samples for VOCs were also analyzed in the field using the Color Tec process. Results were used to identify locations of contaminated soil that could act as source material for release of CVOCs to groundwater.

4.3.1.1 Vadose Soil Sampling

The laboratory results for vadose soil sampling are summarized in Table 4-5 for surface soil samples (1 to 2 feet bgs) and subsurface soil samples (greater than 2 feet bgs). The complete set of validated laboratory

results is provided in Appendix F. The results from the initial phase of sampling conducted at locations SB-001 through SB-008 on July 26, 2006, showed that the concentration of PCE in the surface soil sample from SB-003 exceeded the SCTLs for residential and industrial direct contact risk. Subsequently, a second phase of vadose soil sampling was conducted at locations SB-009 through SB-012 on October 24, 2006. Sample location SB-009 was placed adjacent to former location SB-003 to investigate the vertical concentration gradient in the soil and locations SB-010, -011, and -012 were spaced farther from SB-003 to evaluate the lateral extent of the contamination. Table 4-5 shows that PCE was the primary contaminant detected in both the surface and subsurface soil samples. TCE and toluene were also detected, but neither was detected at concentrations greater than their respective industrial SCTLs. The PCE results for surface and subsurface soil samples are shown in Figures 4-6 and 4-7.

As shown in Table 4-5 and Figure 4-6, PCE exceeded the residential and industrial SCTLs for direct contact risk at only one of 12 surface soil samples (location SB-003). Based on the steep concentration gradient observed between locations SB-009 and SB-003, it appears that the lateral extent of soil that exceeds the industrial SCTL is relatively small; likely an area with a radius of only a few feet. It was noted, however, that PCE concentrations in all 12 surface soil samples, which ranged between 40 µg/kg and 55,900 µg/kg, exceeded the SCTL of 30 µg/kg for leaching to groundwater. PCE concentrations in 12 of the 16 subsurface samples also exceeded the leaching SCTL.

As shown in Table 4-5 and Figure 4-6, none of the subsurface soil samples exceeded the SCTL for PCE for industrial direct contact risk. As mentioned earlier, future site use is restricted to non-residential. Sample locations SB-001 through SB-010 showed a distinct decline in PCE concentration with depth, but an increase was shown for locations SB-011 and SB-012. It was also noted that none of the intermediate-depth subsurface soil samples (3 to 4 feet bgs,) collected at locations SB-009 through SB-012, exceeded the industrial SCTLs for PCE. Figure 4-7 provides a graphic representation of the areas and depth intervals of vadose soil contamination with respect to the SCTLs.

4.3.1.2 Deep Soil Profiling

Deep soil profile sampling was conducted within the Hawthorn between depths of approximately 56 to 136 feet bgs at seven soil boring locations (see Figure 1-2). These samples were collected to identify the location of any highly contaminated soils that could act as source material for a continued release of VOCs to groundwater. The deep soil samples were collected at selected depths from soil cores at each boring location, SB01 through SB07. The soil samples were submitted to the fixed-base laboratory for analysis of VOCs and sample splits were analyzed on site using the Color Tec methodology. The results of the analyses (i.e., total CVOCs) of interest were recorded on the boring logs (Appendix A), and all

detected chemicals are summarized in Table 4-6. The complete set of validated laboratory results is provided in Appendix F.

As can be seen on the boring logs, the deep soil profile samples were collected from predominantly finer grained interbeds (i.e., UHC and LHC) that were deemed more likely to retain VOCs due to their clay content and potential for higher organic carbon (compared to sand or gravel lithologies). Furthermore, these intervals were deemed potential chemical barriers that would indicate if DNAPL had successfully passed through the aquifer. A soil sample was also collected from the 100 to 110 feet bgs interval at several borings to coincide with the depth interval of the well screen for the existing 2-inch monitoring wells completed in the Hawthorn WBZ. Additional samples were collected at depths of interest within the contaminated interval at SB04 (completed as well 66D).

As shown by the data presented in Table 4-6, only PCE and TCE were detected at concentrations that exceeded the SCTLs for leaching. VOCs in deep soil related to the release of PCE were only detected in samples from boring SB04 that was located adjacent to existing well 60D in the known area of subsurface contamination. Soil samples from the six perimeter soil borings located to the north, east, and south of well 60D did not contain detectable concentrations of VOCs (concentrations of acetone and carbon disulfide below CTLs are considered laboratory artifacts). The chemicals detected at SB04 included PCE, TCE, cDCE, and 1,1-DCE as shown in Table 4-6. PCE and TCE were the most frequently detected VOCs and PCE was detected at concentrations greater than all other VOCs at SB04 (well 66D).

To examine the extent of PCE contamination in the UHC, the results of soil samples from the 2004 investigation (CHM2HILL, 2005a) were combined with the current investigation results to present a more complete evaluation. Only the deep soil results that correlate with the UHC (i.e., 56 to 93 feet bgs) were used in this analysis. The data incorporated from the 2004 investigation are summarized in Appendix G, Table G-1. This interval was targeted because the physical properties and chemical results indicate that the UHC is a zone of relatively high contamination, and the stratigraphic location of the UHC suggests that it acts as a source of dissolved contamination for both the overlying surficial aquifer and for the underlying Hawthorn WBZ. The results for PCE in the UHC soil are shown in Figure 4-8 and were used to interpolate the concentration of PCE across the site. A total of nine soil samples within the more highly impacted soils (i.e., greater than 3,000 µg/kg of PCE, or 100 times the SCTL for leaching) define an area where the concentrations of PCE in soil may be sufficient to result in groundwater concentrations of 300 µg/L, or greater [i.e., the default Natural Attenuation Source concentration (FDEP, 2005)]. However, no UHC soil concentration suggests the presence of DNAPL (i.e., no result greater than 849,000 µg/kg) based on previous NAPLANAL (Mariner et al., 1997) model calculations that used site specific concentrations of total organic carbon in the soil (CHM2HILL, 2005a). Areas of UHC soil that exceed the SCTL for leaching to groundwater (30 µg/kg) are also shown on Figure 4-8, but are considered highly

interpretative due to the data spacing. The contours greater than 30 µg/kg in the figure were allowed to encompass both of the more highly impacted areas because the east-west drain that ran between the former laundry machines and the surge tank along this path is considered a likely release mechanism.

4.3.1.3 Soil Total Organic Carbon

A total of 16 samples collected from boring locations SB01, SB03, and SB06 were analyzed for TOC and the results are summarized in Table 4-7. Soil samples from "clean" locations/depth intervals, as determined by field screening, were submitted for analysis of TOC to avoid biasing the results by the inclusion on anthropogenic carbon sources (i.e., contaminants).

Four samples collected from the UHC that were analyzed for TOC had an average concentration of 3,923 mg/kg, or a fraction of organic carbon (f_{oc}) of 0.0039. Ten samples collected and analyzed for TOC, from predominantly fine grained intervals (silty sand, clayey sands) within the WBZ, had an average concentration of 1,604 mg/kg, or a f_{oc} of 0.0016. Two samples collected from the LHC that were analyzed for TOC had an average concentration of 3,840 mg/kg, or a f_{oc} of 0.0038.

4.3.1.4 Soil Geotechnical Properties

Similar to the TOC samples discussed above, only samples from selected "clean" locations (i.e., borings SB01, SB03, and SB06) were submitted for grain size, bulk density, percent solids, and specific gravity. In addition, two Shelby tube samples, one from the UHC and one from the LHC, were collected at SB02 for permeability testing. A summary of analytical results is provided in Table 4-7. The bulk density results were determined to be invalid and are not shown in the table. The grain size distribution reports and plots are included in Appendix H. Each size distribution plot shows the percent of fines along the y axis and grain size [in millimeters (mm)] along the x axis. The percent of fines correlates to the amount of sample that passes through a wire mesh screen of certain size (2 mm, 1 mm, etc.). These mesh sizes correlate with Wentworth Class names for certain ranges in grain size (gravel, sand, silt, etc.). For comparison, the grain size curves for samples collected from the same general lithology in different locations are plotted on the same graph.

As indicated in Table 4-7, the clays in UHC and LHC sediments contained an average concentration of TOC ranging from 3,840 to 3,923 mg/kg; more than twice the average observed in the sands and gravels of the WBZ. The percent solids results for the clays were lower than for the sandy sediments in the WBZ, and assuming that all the samples were saturated, indicate that the clays also contained a greater porosity than the sandy intervals. Vertical permeability of the UHC and LHC lies in the 10^{-5} to 10^{-6} cm/sec range and is consistent with the fine-grained material observed in the cores from similar depth intervals. Specific gravity was similar for the UHC and the WBZ samples with an average of 1.4 standard units

(S.U.); the lower average result of 1.0 S.U. for the LHC was biased by one spuriously low result for one of the two samples that were analyzed from this interval.

4.3.2 Groundwater

Groundwater profile screening samples were collected during the drilling of soil borings at locations SB02 through SB07 (Figure 1-2). Split groundwater samples from selected depth intervals were sent to Accutest Laboratories and were also analyzed in the field using the Color Tec process. The profile screening results were used to obtain near real-time analytical results for total CVOCs in groundwater to aid in-field decision making. After installation and development of the CMT wells, the profile screening results were also used, in conjunction with lithologic mapping and soil screening results, to select which of the six CMT well channels (i.e., which depth intervals) at each location were purged and sampled. Ultimately, 20 groundwater samples (not including duplicates) were collected from the seven 2-inch monitoring wells and the six CMT wells to assess the nature and extent of the groundwater plume. Details are provided in the following sections.

4.3.2.1 Groundwater Profiling

Groundwater screening profile samples were collected at multiple depths during the drilling of each soil boring (except SB01) and analyzed for VOCs at a fixed-base laboratory with 24-hour turnaround requested; split samples were analyzed on-site using the Color Tec method. These data were utilized in the field to aid in targeting the depths at which the sampling ports for the planned CMT wells should be located within the Hawthorn WBZ, and also to determine if the perimeter boring/well locations were appropriately located to define the lateral extent of the plume. A total of 26 profile samples were collected along with three duplicate samples. The results for both the Color Tec analyses and the lab-analyzed profiling samples were recorded on the boring logs provided in Appendix A, and the laboratory results for all detected chemicals are summarized in Table 4-8. The complete set of validated laboratory results is provided in Appendix F. It should be noted that duplicate sample results and the average results of duplicate samples are provided in the data tables.

The CVOC results for all Color Tec and laboratory analyses were non-detect with the exception of the samples from all depths at location SB04 (well 66D) and at one depth interval (105 to 115 feet bgs, laboratory result only) at SB05 (well 69D). As seen in Table 4-8, PCE, TCE, and cDCE were detected in the profile samples at concentrations that exceeded the GCTLs. Bromodichloromethane and dichlorobromethane were also detected at concentrations greater than the GCTLs; however, these VOCs are considered artifacts of the use of potable water during drilling immediately prior to conducting the profile sampling. The results show that PCE and TCE were detected above their GCTLs in most of the

SB04 profile samples within the Hawthorn WBZ, between depths of 65 to 135 feet bgs; cDCE was only detected between the depths of 105 and 125 feet bgs and was greater than the GCTL only in the 105- to 115-foot sample interval. Only cDCE was detected at SB05, well below the GCTL, and only in the sample from the 105- to 115-foot depth interval.

The groundwater profile sample results for PCE, TCE, and cDCE were plotted on depth profiles for each soil boring location as shown in Figures 4-9 through 4-11. The figures demonstrate the relationship of the depth intervals that were sampled across the site and a profile of the contaminant concentrations with depth. Because detections greater than the GCTL occurred only at location SB04, the borings are simply presented in numerical order; the locations are shown on Figure 1-2. As can be seen in these profile plots, the contaminant concentrations at SB04 are highest across the 70- to 80- and 100- to 110-foot depth intervals, and decreasing concentration trends are indicated below these depths. A review of the boring log for SB04 (provided in Appendix A) shows that the highest concentrations correlate with the UHC interval and a sandy clay unit lying near the middle of the Hawthorn WBZ (see Figure 4-2). The boring log and Table 4-6 also show relatively high concentrations of CVOCs associated with soil samples collected from these clay-rich soil intervals. The clay-rich zones are interpreted to provide greater adsorption of CVOCs migrating vertically through the WBZ, and thus result in higher soil and groundwater concentrations, whereas the underlying sandy, coarser grained sediments provide greater groundwater flow rates and accordingly greater dilution of CVOCs.

4.3.2.2 Monitoring Well Sampling

A total of 20 groundwater samples plus 2 duplicates were collected from wells completed in the Hawthorn WBZ, between July 25 and August 2, 2006. The samples were collected from the seven 2-inch monitoring wells and from a total of 13 channels selected from the six CMT wells and submitted to the fixed-base laboratory for analysis of VOCs and selected geochemical and water quality parameters. These data are used to define the lateral and vertical extent of impacts from the migration of chlorinated solvents into the Hawthorn WBZ from the overlying surficial aquifer. The laboratory results for all detected chemicals in groundwater are summarized in Table 4-9 for the 2006 samples and for previous sampling events that included only the seven 2-inch wells. Samples collected by TtNUS may be identified in the table by sample numbers that begin with “NTC”. It should be noted that results for samples collected by TtNUS and CH2MHILL from the 2-inch wells on the same day (split samples; VOC analysis only) and a set of three samples plus a duplicate collected from multiple depths in channel #4 of CMT well 66D (dated October 24, 2006) are also provided in Table 4-9. These data are discussed in more detail below. The complete set of validated laboratory results is provided in Appendix F.

As seen in Table 4-9, PCE, TCE, cDCE, 1,1-DCE, and VC were detected at concentrations that exceeded the GCTLs; PCE, TCE, and cDCE were detected in a high percentage of the total number of samples collected. The results for the July-August 2006 sampling presented on Figure 4-12 (tag map) show that the highest concentrations of CVOCs were detected at wells 60D, 62D, and 66D located near the middle and north-central portion of the former Building 1100 in close geographic proximity to former laundry machines where releases were deemed likely to have occurred based on process knowledge, soil contamination, and groundwater contamination in the surficial aquifer. Relatively low concentrations of PCE, TCE, and cDCE (all below GCTLs) were detected at well 69D located near the northern site boundary in a direction directly downgradient of well 66D.

The monitoring well sample results for PCE, TCE, and cDCE were plotted on depth profiles along three east-west cross sections that represent the northern, central, and southern portion of the site as shown in Figures 4-13 through 4-15. The figures demonstrate the relationship of the intervals that were sampled across the site and provide a profile view of the contaminant concentrations with depth. These data were also presented on the geologic cross sections (Figures 4-1 through 4-4). Although concentrations of 1,1-DCE and VC exceeded their GCTLS, profiles were not prepared for these chemicals because of their marginal maximum concentrations relative to their GCTLs; furthermore, their exceedances occurred only at wells 62D and 66D, which are highly contaminated by PCE and/or TCE. Similar to the groundwater profiling results presented in Section 4.1.9.1, the contaminant concentrations at wells 60D/66D and 62D are highest across the 70- to 80- and 100- to 110-foot depth intervals and show decreasing trends below these depths. These two depths correlate with the UHC interval and typically a sandy clay unit lying near the middle of the Hawthorn WBZ. Relatively high concentrations of CVOCs were detected in soil samples collected from these same depth intervals. The clay-rich zones are interpreted to provide greater adsorption and retardation of CVOCs migrating vertically through the WBZ, and thus result in higher soil and groundwater concentrations. The CMT well data show that samples collected at depths consistent with the coarser grained sediments within the Hawthorn WBZ below these two depth intervals demonstrate a decreasing concentration gradient vertically and laterally (away from the source area) across the site. The areal extent of the CVOC plume as defined in 2006 in the Hawthorn is shown in Figures 4-16, 4-17, and 4-18, for PCE, TCE, and cDCE, respectively.

4.3.2.3 Groundwater Split Sample Results

Periodic groundwater sampling at OU 4 conducted by CH2MHILL includes the seven 2-inch diameter monitoring wells that are completed in the Hawthorn WBZ. A scheduled sampling event was conducted by CH2MHILL during TtNUS's field investigation. CH2MHILL purged and sampled well 59D on July 19, 2006; the remaining six Hawthorn wells (i.e., 58D through 64D, except 59D) were purged and sampled by CH2MHILL on July 25-26, 2006. TtNUS collected groundwater samples at six of the seven wells

following completion of sampling by CH2MHILL (on the same day); TtNUS purged and sampled well 59D on July 25, 2006. Both sets of samples were analyzed at independent laboratories for VOCs; samples collected by TtNUS were also analyzed for geochemical parameters of interest for investigating potential reductive dechlorination of the CVOCs that are present in the groundwater. Both sets of sample results are provided in Table 4-9 and in Appendix F.

A summary of the split sample results and the repeat sampling at 59D are provided in Table 4-10. Inspection of the data reveals that the results were essentially non-detect for the CVOCs of concern in the samples from wells 58D, 59D, 61D, and 64D. The results for the split and repeat samples are consistent at these locations indicating that the variability associated with the entire sampling and laboratory process for low concentration samples was low, thus indicating good total precision for the data.

The relative percent difference (RPD) for the results from wells 60D, 62D, and 63D is presented as a means of comparing the results; no comparison was attempted for the chemicals for which one or both of the results were non-detect. As indicated by the RPD, variability was relatively high for all CVOCs of concern at wells 60D and 63D and lower at 62D. The data for 63D may indicate that samples containing low concentrations are more susceptible to sampling variability; laboratory variability is deemed less likely because duplicate analyses performed by the laboratories are routinely very precise (low RPDs). The data for 62D suggest that samples containing high concentrations are relatively unaffected by sampling variability, although it should be noted that DNAPL was detected in this well the day before sampling and the presence of DNAPL may provide a strong source for dissolved concentrations in the well that may mitigate sampling variability. The data for 60D are inconsistent with the data from the other two wells, in that this well contained relatively high concentrations but the results indicate much greater variability. An additional sample collected on August 3, 2006, just eight days later, suggests greater variability in the data for this well. One possible explanation for 60D is that the well is located near, but not within, a DNAPL zone. Published literature (Cohen and Mercer, 1993) has identified highly variable groundwater concentrations as an indicator of nearby DNAPL sources.

4.3.2.4 Well 66D Multi-Depth Sampling

On October 24, 2006, TtNUS conducted depth-specific sampling within one well channel at CMT well 66D. As described above, each well channel in the CMT wells was “screened” by cutting multiple ports, each approximately 5/8-inch in diameter, spaced approximately every 6 inches along a 5-foot section of the channel. Each of the ports was wrapped in a stainless-steel mesh to reduce the migration of fines into the well. However, due to the discovery of DNAPL at well 62D and the location of well 66D in a highly contaminated area, it was deemed prudent to investigate whether the low-flow purging and sampling techniques being used at the site would result in a significant difference in the groundwater sample results

when the sample tubing was placed at different depths within a given well channel. The sampling at 66D was performed by placing the lower end of the sample tubing at three different depths (74, 76, and 79 feet bgs) within channel #4 that was screened from 74 to 79 feet bgs. A duplicate sample was collected with the sample collected at 74 feet bgs. The results are provided in Table 4-9 and in Appendix F.

A summary of the CVOCs detected in the multi-depth samples from well 66D, channel #4, is presented in Table 4-11. The RPD for the results for these depth intervals is presented as a means of comparing the results; the estimated results (i.e. "J" qualified data) were used for chemicals where one or both of the results were qualified. The RPD results indicate that variability in the results increased from the shallow to the deeper samples; however, the overall range in the RPD is considered reasonable. The variability in the multi-depth samples is lower than was seen in two of the three split samples with detected CVOCs (Table 4-10). These data suggest that samples collected by placing the sample tubing at the approximately center point of the screened interval should produce reasonably representative results for the entire screened interval.

4.3.2.5 Dense Non-Aqueous Phase Liquid

The presence of DNAPL was discovered by CH2MHILL during sampling of well 62D on July 25, 2006 when sample tubing was inadvertently placed at the bottom of the well. DNAPL had not been previously detected in any Hawthorn well at the site. Both TtNUS and CH2MHILL subsequently collected groundwater samples from the well, keeping the sample tubing above the level of the DNAPL in the well. The thickness of the accumulated DNAPL was estimated to be 0.02 ft. CH2MHill removed the DNAPL by pumping and submitted a sample for laboratory analysis. The results of which indicated the product was 81 percent PCE (CH2MHill, 2006b). A review of the analytical results over time for well 62D (presented in Table 4-9) shows a wide range in dissolved concentrations, a trait that is noted in the literature for wells located in or very near DNAPL sources (Cohen & Mercer, 1993). DNAPL was also suspected at well 60D based on an inconclusive oil-water probe response, but a sample was not retrieved from the well.

4.3.2.6 Natural Attenuation Evaluation

Natural attenuation of contaminants in groundwater involves relying on natural processes to remediate contaminant concentrations to below regulatory levels. It can be best described as the use of natural physical, chemical, or biological processes to prevent migration of CVOCs, reduce the CVOC concentrations in groundwater, and transform them into innocuous end products. Natural attenuation is a commonly chosen remedial alternative for sites contaminated with chlorinated solvents such as PCE.

Several degradation mechanisms are possible for chlorinated solvent reduction under natural conditions. As described in the USEPA's protocol on monitored natural attenuation of chlorinated solvents (USEPA,

1998), the most common degradation mechanism is reductive dechlorination via sequential anaerobic pathways (iron reduction, methanogenesis, sulfate reduction, etc.). Reductive dechlorination is the most important process in chlorinated solvent biodegradation. The process involves the substitution of chlorine atoms with hydrogen to successively transform the parent compounds of PCE and TCE to the less chlorinated daughter products such as cis-1,2-DCE and VC. Reductive dechlorination can then proceed even further than VC to produce innocuous end products such as ethane and ethene.

In addition to reductive dechlorination, there are several other common nondestructive attenuation mechanisms responsible for chlorinated solvent reduction in groundwater such as advection, dispersion, dilution, adsorption, diffusion, etc. The rates of contaminant reduction via nondestructive mechanisms are slow compared to biodegradation rates. However, these mechanisms still contribute to contaminant reduction when the aquifer geochemistry does not favor biodegradation.

In order to determine if natural attenuation is occurring at a site, both analytical and geochemical sampling must be conducted throughout site monitoring wells. Evaluation of site analytical data can provide verification of natural attenuation occurring at the site by analyzing for the presence of contaminant degradation products. If degradation products (DCE and VC) are present at the site, some level of natural attenuation is occurring. However, to ensure that the aquifer has an adequate reducing environment to sustain complete reductive dechlorination and to determine the efficacy of natural attenuation, additional sampling should be conducted to determine the aquifer geochemistry.

The geochemical nature of the aquifer is a very important factor in determining the feasibility of using natural attenuation to remediate chlorinated solvent contamination. Several geochemical parameters can be used, in conjunction with CVOC analytical data, in determining the potential for MNA to be an effective remedy. At this site, the following geochemical parameters were considered: DO, ORP, pH, dissolved gases (ethene, ethene, and methane), iron, manganese, alkalinity, carbon dioxide, hydrogen, and various anions. Data analyzed below is from the July 2006 sampling event.

Based on the comparison with USEPA protocol and criteria in the Principles and Practices of Enhanced Anaerobic Bioremediation of Chlorinated Solvents (Parsons, 2004), OU4 monitoring well data indicate that some natural bioattenuation is occurring within the Hawthorn formation. Many of the monitoring wells within the OU4 area showed strong evidence for natural biological reductive dechlorination of chlorinated solvents. In particular, the three main plume monitoring wells (60D, 62D, and 66D) that have shown CVOC concentrations in groundwater significantly higher than GCTLs show favorable conditions for reductive dechlorination. Specific findings are described below.

- At all three wells within the plume (60D, 62D, and 66D), cis-1,2-DCE is present at all depths. Because cis-1,2-DCE is assumed to be produced from the biodegradation of PCE and TCE at this site, the presence of this daughter product is a strong indication that CVOCs are being naturally degraded within the plume. At well 66D, the maximum cis-1,2-DCE concentration has been found in the depth interval 75 to 80 feet bgs, consistent with the maximum PCE and TCE concentration within the same depth interval. At well 69D, in the sample from channel #5 (110 to 115 feet bgs), cis-1,2-DCE was the CVOC found at the highest concentration. This indicates that reductive dechlorination is occurring as groundwater moves downgradient.

- Dissolved oxygen concentrations are generally less than 0.5 mg/L in most of the Hawthorn-screened monitoring wells, particularly in the areas where higher PCE concentrations exist. DO concentrations at these levels are essential for reductive dechlorination as the required anaerobic bacteria generally cannot function at DO concentrations greater than 0.5 mg/L.

- pH at the site ranges from 7.0 to 8.5; this is suitable for complete reductive dechlorination.

- ORP data also indicate moderate to strongly reducing conditions in the aquifer, highly conducive to reductive dechlorination. The ORP was negative for all sampled intervals of all wells, ranging from -45 millivolts (mV) to -212 mV.

- Ethene is produced by the complete reductive dechlorination of CVOCs. On average, the wells containing CVOCs exhibit ethene concentrations more than an order of magnitude higher (and in many cases, two orders of magnitude higher) than other wells. This indicates that complete reductive dechlorination is occurring.

- Chloride is produced during the reductive dechlorination process. Although it is a conservative indicator, chloride concentrations typically greater than twice the background level of the aquifer indicate that reductive dechlorination processes are occurring. Upgradient monitoring well 67D was used as a background well for comparison purposes. Chloride concentrations exceeded two times the background value in several OU4 Hawthorn-screened monitoring wells, with the highest chloride concentrations in monitoring wells 60D and 62D (the locations of the highest PCE concentrations). Comparison to other wells that do not contain CVOCs is less definitive, but indicates that, in general, the chloride concentrations in the contaminated wells is higher than in the non-contaminated wells.

- After DO has been depleted by the microorganisms, nitrate is the next favored electron acceptor. As a result, nitrate concentrations greater than 1.0 mg/L in the contaminated portion of the aquifer could hinder reductive dechlorination. Nitrate concentrations were less than 1.0 mg/L in all Hawthorn-screened monitoring wells.

- During reductive dechlorination of the lesser-chlorinated CVOCs (DCE and VC), ferrous iron can be produced by the microbial activity. As a result, ferrous iron concentrations greater than 1.0 mg/L may be an indicator that the aquifer is suitable for biodegradation of VC. Both monitoring wells 62D and 66D (upper screened interval) have slightly elevated ferrous iron concentrations. Its presence indicates that daughter products such as cis-1,2-DCE and VC could be degrading, with native microorganisms using iron as the electron acceptor (forming ferrous iron in the process) and the contaminant (DCE or VC) as the energy source.

- Once the microbial bacteria have exhausted the DO, nitrate, and iron, sulfate is likely to be the next favored electron acceptor. Sulfate concentrations greater than 20 mg/L can reduce reductive dechlorination effectiveness due to competition with the chlorinated solvents as the favored electron acceptor. Both monitoring wells 60D and 62D have very little sulfate present.

- The presence of methane in the aquifer greater than 0.5 mg/L is a powerful indicator that suggests strongly reducing conditions. Both monitoring wells 60D and 62D have methane concentrations greater than 0.5 mg/L.

- Groundwater hydrogen measurements can be used to indirectly estimate the potential efficacy of MNA. Hydrogen concentrations of 1 nanoMolar (nM), or higher typically indicate conditions favorable for complete reductive dechlorination of chlorinated solvents. Hydrogen concentrations greater than 1 nM are present in all monitoring wells

- Data from other compounds such as nitrite, carbon dioxide, and total inorganic carbon are inconclusive.

Based on the groundwater data collected thus far from monitoring wells screened in the Hawthorn zone, it appears that the aquifer conditions are suitable for reductive dechlorination of the chlorinated solvent contamination and the process is occurring. However, DNAPL present as a continuing source in the aquifer will preclude natural attenuation from achieving substantial reductions in source area CVOC concentrations in a reasonable timeframe.

4.3.2.7 Contaminant Migration

The hydrogeologic and analytical data presented in the previous sections suggest that lateral contaminant migration has occurred within the Hawthorn WBZ. The lateral extent of the PCE plume can be estimated by dividing the average linear groundwater velocity, Vs, by the retardation factor, R, for PCE in the aquifer to obtain an estimate of the contaminant velocity, Vc, and then multiplying this value by the time, t, since the release occurred.

Retardation of PCE assuming equilibrium partitioning in the WBZ can be estimated as follows:

R = 1 + [(dry bulk density)(Kd)/(porosity)]

Kd, the partitioning coefficient, may be empirically derived as the product of the organic-carbon partition coefficient, Koc, times the fraction of organic carbon, foc, in the aquifer matrix. The FDEP (2005) lists a value of Koc for PCE as 155 liters per kilogram. The foc for the WBZ is 0.0016 based on the soil total organic carbon content presented in Table 4-7. The dry bulk density and porosity are estimated to be 1.5 g/cc and 0.4, respectively, for the more laterally continuous sandy intervals that lie within the WBZ. Substituting these values into the above equation results in a value of R = 1.93 for PCE. Dividing the value of Vs, presented in Section 4.2.4, by R results in an estimate for Vc as follows:

Vc = Vs/R = (0.024 ft/day)/(1.93) = 0.0124 ft/day, or 4.5 ft/yr

Based on a start date of 1958 for dry cleaning operations at the laundry facility located in former Building 1100, a release may have occurred 50 years ago. Using this value as a maximum time for plume development results in a down gradient contaminant migration distance of 225 ft. It should be noted that this conservative estimate does not account for potential chemical degradation or attenuation of PCE in the aquifer.

4.3.2.8 Additional Monitoring Well Sampling

In January 2008, during the routine semi-annual groundwater monitoring event, CH2MHill sampled 3 channels of selected CMT wells along the northern property boundary: OLD-13-68D channel 5, OLD-13-69D channel 4, and OLD-13-70D channel 4. The preliminary analytical results indicated the PCE concentration from well OLD-13-69D channel 4 was 1,500 μg/L. Channel 4 of well OLD-13-69D had not previously been sampled. Channels 3, 5, and 6 were selected for sampling in 2006 based on the results of groundwater profile samples. Tetra Tech subsequently sampled channels 4 and 5 of well OLD-13-69D in April 2008. The validated analytical results for the 2008 samples are presented in Appendix I.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The vadose soil sample results show that PCE is the primary contaminant detected in both the surface soil samples (0 to 2 feet bgs) and subsurface soil samples (3 to 7 feet bgs). PCE exceeded the industrial SCTL for direct contact of 18,000 µg/kg in only 1 of 12 surface soil samples with a concentration of 55,900 µg/kg. Resampling adjacent to the hot spot produced a sample concentration of 4,120 µg/kg that indicates that the lateral extent of surface soil exceeding the industrial SCTL is relatively small, an area with a radius of probably only a few feet. However, the SCTL for soil leaching to groundwater of 30 µg/kg was exceeded in all 12 surface soil samples. In the subsurface soil (sample intervals of 3 to 4 feet and 6 to 7 feet bgs), there were no exceedances of the industrial SCTL, but 13 of 16 samples exceeded the soil leaching to groundwater SCTL.

The investigation of deep soil contamination focused on the UHC and LHC intervals that mark the bottom of the surficial aquifer and the bottom of the Hawthorn WBZ at the site, respectively. Most of the deep soil samples were collected from the UHC that displayed greater impacts during the field investigation based on semi-quantitative analysis using the Color Tec method. Deep soil samples collected below the UHC showed generally decreasing concentrations with depth and samples of the LHC indicated little to no impacts from the release of CVOCs at the site. The highest concentration of CVOCs was observed for PCE, followed by TCE and cDCE. The extent of impacts to the UHC was evaluated using samples collected from the mostly perimeter soil borings installed by TtNUS during June and July 2006, but also deep soil samples collected by CH2MHILL during their previous investigation of potential source areas (CH2MHILL, 2005a). Collectively, the results of all soil samples from the UHC demonstrate that this predominantly clay unit lying at the base of the surficial aquifer contains relatively high concentrations of CVOCs in the form of sorbed contamination and possibly DNAPL. This sorbed mass will likely contribute to the longevity of the plume by means of back diffusion following completion of ongoing remedial actions for surficial aquifer groundwater. The area of impacted soil in the UHC at concentrations greater than 3,000 µg/kg (ranging from 3,900 to 490,000 µg/kg) was estimated to be approximately 4,800 square feet, or 0.11 acre. The thickness of the impacted UHC soil ranged from 2 up to 16 feet at some locations. The area of impact for all CVOCs of concern lies within the PCE impact area; TCE was typically observed at an order of magnitude lower concentration in soil compared to PCE, while cDCE was lower than either chemical.

Groundwater from the Hawthorn WBZ contained concentrations of CVOCs, specifically PCE, TCE, cDCE, 1,1-DCE, and VC, that exceeded the GCTLs. The areal distribution of the CVOC plume above the GCTL for PCE based on the 2006 sample data was limited to an area of approximately 23,000 square feet, or 0.5 acre, near the center of the former laundry facility (former Building 1100). The downgradient extent of

the TCE plume (i.e., concentration greater than GCTL) appeared to lie within the Navy property at that time, and the plume limits for all CVOCs of concern were encompassed by the limit of the PCE plume. Bromodichloromethane and chlorodibromomethane were detected in the groundwater profiling samples at relatively low maximum concentrations (13.7 and 4.9 µg/L, respectively) that exceeded the GCTLs. These chemicals were not detected in the completed monitoring wells samples; they are deemed an artifact of the potable water used during the soil boring process that was not completely purged from the formation prior to collecting the profiling samples.

The groundwater flow direction towards the north and extension of the CVOC plume in that direction provide evidence of plume migration to the north within the Hawthorn WBZ. This flow direction is approximately 90 degrees from the groundwater flow direction and plume migration in the overlying surficial aquifer that is primarily west toward Lake Druid. The groundwater hydraulic data and plume data also demonstrate that flow and migration in the Hawthorn WBZ is mostly independent of conditions in the surficial aquifer and suggests little, if any, influence from Lake Druid or the groundwater extraction system operating at OU4 in the surficial aquifer.

Based on site soil samples analyzed for foc (see Section 4.3.1.3), an estimated value of 1.5 g/cc for dry bulk density and a total porosity of 0.4 for the water-bearing sands, and a literature value for the organic carbon partition coefficient (K_{oc}) of 155 liters per kilogram, a coefficient of retardation (R) for PCE is calculated to be 1.9 for the Hawthorn WBZ. Based on the calculated groundwater velocity and R, the dissolved PCE flow velocity in the Hawthorn WBZ is estimated to be 4.5 feet/year. Considering that a release may have occurred as long as 50 years ago, an estimate of the plume length based on the PCE flow velocity could be 225 feet, a distance which neglects the effects of dispersion and attenuation.

Chemical and geochemical indicator parameters suggest that conditions in the Hawthorn WBZ are conducive for reductive dechlorination of the CVOCs; however, additional sampling data are required to substantiate data trends. The presence of DNAPL in the Hawthorn WBZ adds an additional uncertainty to the ability of NA to stabilize and limit the downgradient migration of the plume.

Groundwater from the Hawthorn WBZ containing concentrations of CVOCs greater than their respective GCTLs has migrated north to the site property line and potentially extending off-site. Analytical results from sampling channel 5 of well OLD-13-68D in 2006 and 2008 indicate no detectable CVOCs. Analytical results from groundwater collected from channel 4 of well OLD-13-70D in 2006 indicated no CVOCs, but the results of 2008 sampling indicate a concentration of PCE of 4.8 µg/L. However, analytical results from groundwater collected from channel 4 of well OLD-13-69D, which was not previously sampled, showed a concentration of PCE of 1,980 µg/L in 2008.

5.1 RECOMMENDATIONS

- The area for direct contact risk from vadose soil for future industrial use appears to be localized. Based on current controlled site access there is little potential for exposure. Direct contact risk and soil leaching to groundwater should be further evaluated following completion of ongoing remedial action for surficial aquifer groundwater.

- Monitor for the presence of DNAPL in source area monitoring wells and remove if observed. DNAPL was found in Hawthorn wells 60D and 62D during routine groundwater sampling in July 2006 and removed by pumping.

- Sample all channels of CMT wells 68D, 69D, and 70D located along northern site property line. Additional rounds of well sampling are needed to prove the plume limits are defined and to substantiate NA trends (show that the plume is stable or decreasing in size).

- Continue groundwater investigation of the Hawthorn WBZ off-site north of the site boundary. This recommendation is based on the results of groundwater sampling performed in early 2008 indicating CVOC concentrations greater than GCTLs in groundwater collected from wells OLD-13-69D and OLD-13-70D.

- Per FDEP comments on the draft Hawthorn report (January 26, 2009), sample all Hawthorn zone wells and all channels of CMT wells one time to provide a baseline for long-term monitoring (LTM). Add select wells to LTM program.

For future consideration:

- Vadose soils contain concentrations of PCE that may leach and result in a groundwater concentration that exceeds the GCTL of 3 µg/L in the surficial aquifer. Removal of Building 1100 has exposed these soils and may have lead to increased infiltration of rainfall and leaching. Monitoring of a shallow surficial aquifer well in the immediate vicinity of the contaminated vadose soils could provide data needed to determine if leaching is occurring at levels of concern. Implementation of a groundwater remediation action in this area may preclude this approach; however, the remedial action should provide abatement of the impacts of potential leaching. Therefore, monitoring for the impacts of soil leaching may be a future action for consideration following completion of the groundwater remediation project.

- An additional factor for consideration is that monitored natural attenuation has been proposed as the long term remediation action for the surficial aquifer. If this remedy is approved, then it will be a foregone conclusion that the aquifer will have a certain capacity for naturally attenuating PCE in the groundwater and a source concentration in groundwater greater than the GCTL of 3 µg/L for PCE may be acceptable. As an example, if the Natural Attenuation Default Source concentration of 300 µg/L for PCE is substituted in the equation for determining a site-specific SCTL for leaching, then a soil concentration of 3,000 mg/kg may be acceptable and the area of concern in vadose soil could be substantially reduced, or no action may be necessary based on the capacity of natural attenuation at the site.

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FIGURES

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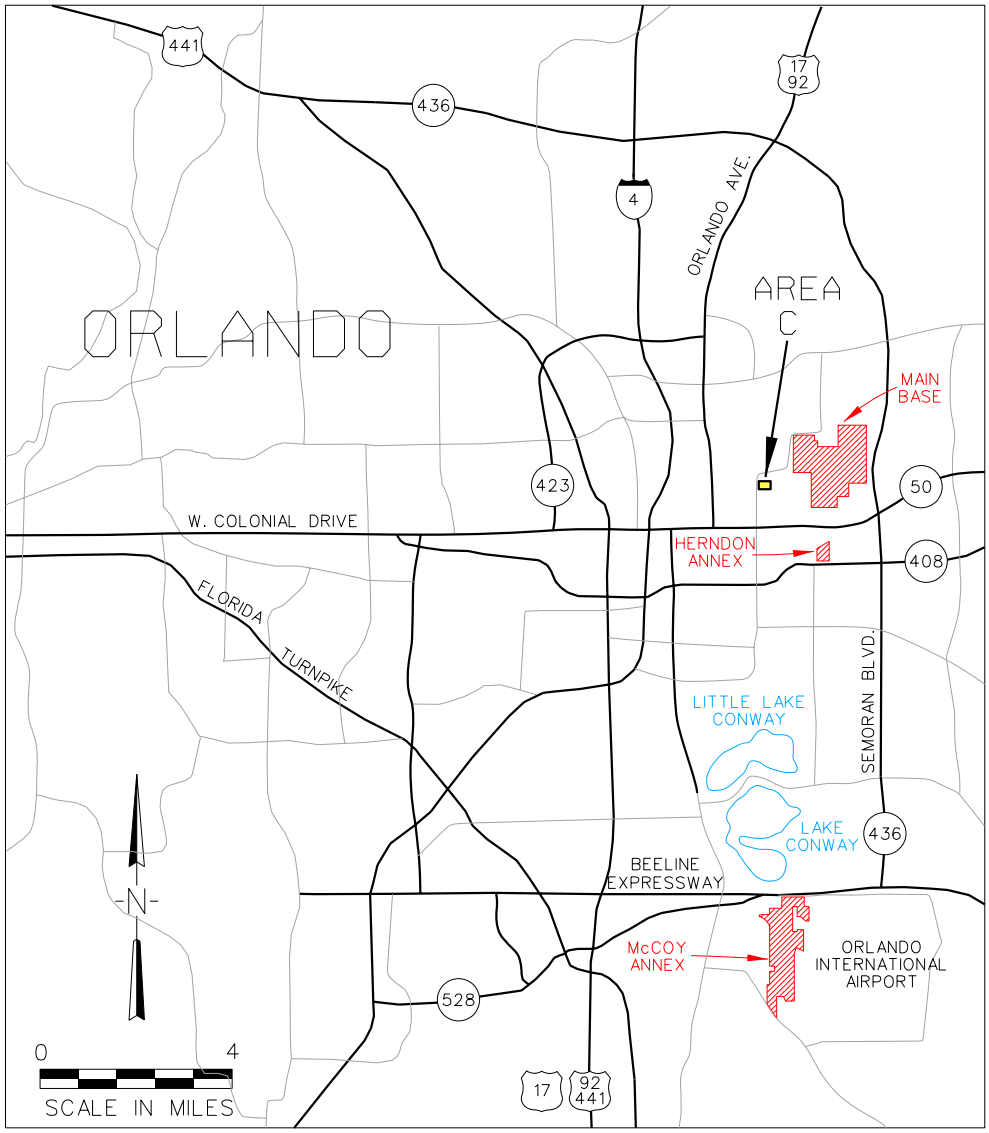
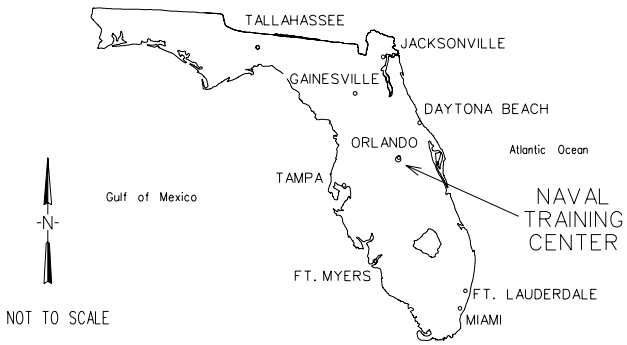
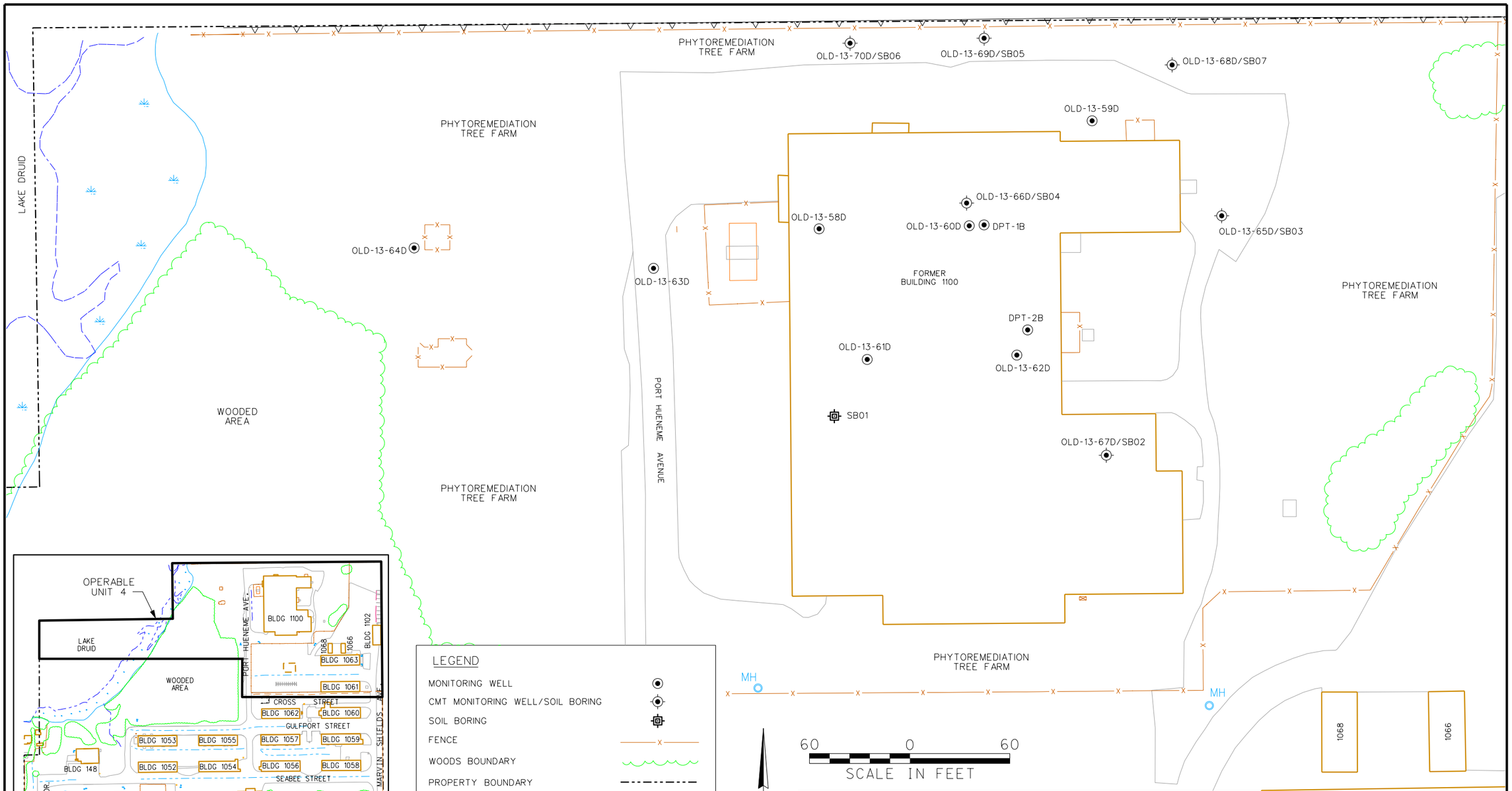




DRAWN BY ILG	DATE 7-15-08	**SITE LOCATION MAP AREA C**	CONTRACT NO. **N62467-04-D-0055**
CHECKED BY TKG	DATE 7-15-08		OWNER NO. ----------
REVISED BY ---	DATE ---------	**NAVAL TRAINING CENTER ORLANDO, FLORIDA**	APPROVED BY --- / DATE ---------
SCALE AS NOTED			DRAWING NO. **FIGURE 1-1** / REV. **0**

CAD FILE NO./DATE: k:\dgn\from NUS 12-28-07\Oak Ridge Drafting\NTC Orlando\oc-004H.dgn



AREA C

LEGEND

- MONITORING WELL
- CMT MONITORING WELL/SOIL BORING
- SOIL BORING
- FENCE
- WOODS BOUNDARY
- PROPERTY BOUNDARY
- DRAINAGE/EDGE OF WATER
- MARSH AREA

NOTE

MONITORING WELL LOCATIONS FOR WELLS OLD-13-66D AND OLD-13-68D THROUGH OLD-13-70D SURVEYED ON AUGUST 15,2006. MONITORING WELL LOCATION FOR OLD-13-65D SURVEYED ON SEPTEMBER 18, 2006. LOCATIONS OF SB01 AND OLD-13-67D BASED ON GPS DATA.

SOURCE:

ROADS, BUILIDINGS, ETC. ARE FROM A PHOTOGRAMMETRIC SURVEY BY DEMAPS, INC. AND REPS, INC. IN 1997.

DRAWN BY JFF	DATE 04-05-06	
CHECKED BY MJC	DATE 04-06-06	
REVISED BY ILG	DATE 07-30-08	
SCALE AS NOTED		

SITE MAP
OPERABLE UNIT 4 - AREA C

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

CONTRACT NO. N62467-04-D-0055	
OWNER NO. -------	
APPROVED BY ---	DATE ---------
DRAWING NO. FIGURE 1-2	REV. 0

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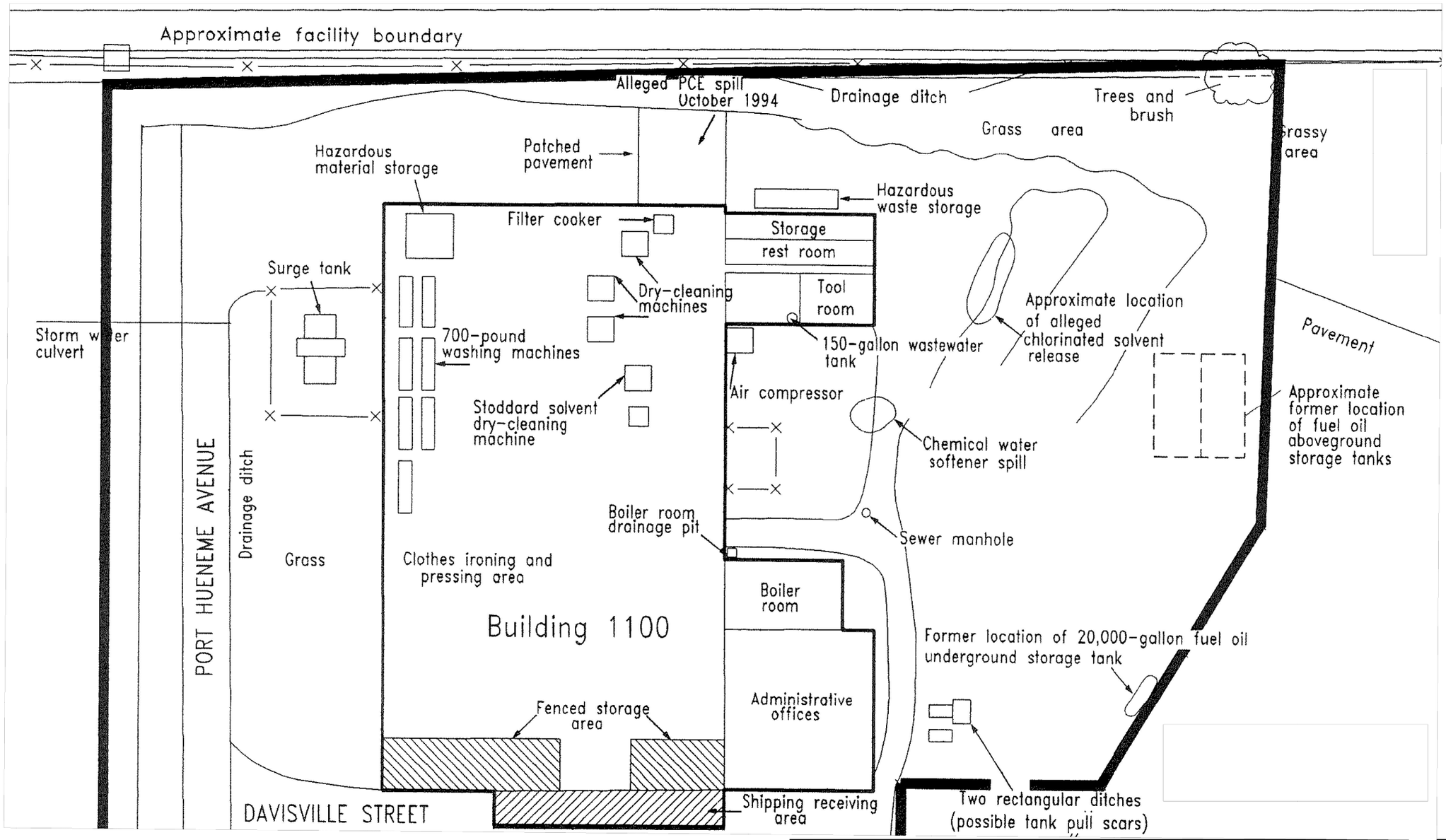

SOURCE:
ENVIRONMENTAL BASELINE SURVEY (ABB-ES, 1994).

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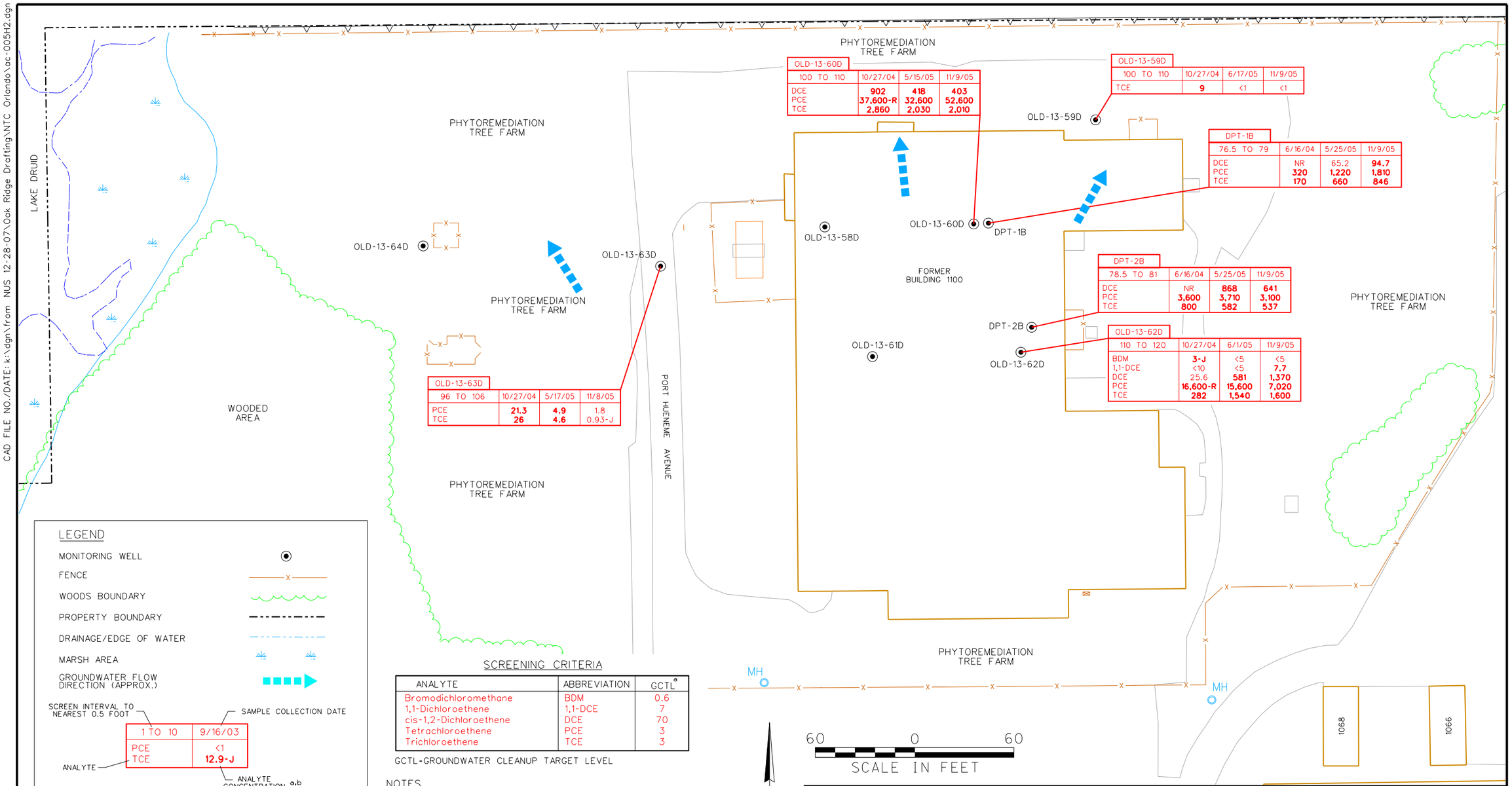
CHECKED BY AJ	DATE 09-29-07		OWNER NO. -------
REVISED BY ILG	DATE 07-15-08		APPROVED BY --- / DATE --------
SCALE AS NOTED			DRAWING NO. FIGURE 1-3 / REV. 0

CAD FILE NO./DATE: k:\dgn\from NUS 12-28-07\Oak Ridge Drafting\NTC Orlando\oc-005H2.dgn



OLD-13-60D			
100 TO 110	10/27/04	5/15/05	11/9/05
DCE	**902**	**418**	**403**
PCE	**37,600-R**	**32,600**	**52,600**
TCE	**2,860**	**2,030**	**2,010**

OLD-13-59D			
100 TO 110	10/27/04	6/17/05	11/9/05
TCE	**9**	<1	<1

DPT-1B			
76.5 TO 79	6/16/04	5/25/05	11/9/05
DCE	NR	65.2	**94.7**
PCE	**320**	**1,220**	**1,810**
TCE	**170**	**660**	**846**

DPT-2B			
78.5 TO 81	6/16/04	5/25/05	11/9/05
DCE	NR	**868**	**641**
PCE	**3,600**	**3,710**	**3,100**
TCE	**800**	**582**	**537**

OLD-13-62D			
110 TO 120	10/27/04	6/1/05	11/9/05
BDM	**3-J**	<5	<5
1,1-DCE	<10	<5	**7.7**
DCE	25.6	**581**	**1,370**
PCE	**16,600-R**	**15,600**	**7,020**
TCE	**282**	**1,540**	**1,600**

OLD-13-63D			
96 TO 106	10/27/04	5/17/05	11/8/05
PCE	**21.3**	**4.9**	1.8
TCE	**26**	**4.6**	0.93-J

LEGEND

MONITORING WELL

FENCE

WOODS BOUNDARY

PROPERTY BOUNDARY

DRAINAGE/EDGE OF WATER

MARSH AREA

GROUNDWATER FLOW DIRECTION (APPROX.)

SCREEN INTERVAL TO NEAREST 0.5 FOOT — SAMPLE COLLECTION DATE

1 TO 10	9/16/03
PCE	<1
TCE	**12.9-J**

ANALYTE — ANALYTE CONCENTRATION a,b

ESTIMATED CONCENTRATION	J
NOT REPORTED	NR
RESULT REJECTED	R

a-CONCENTRATION IN MICROGRAMS PER LITER (µg/L)

b-BOLD CONCENTRATION INDICATES EXCEEDANCE

SCREENING CRITERIA

ANALYTE	ABBREVIATION	GCTL[a]
Bromodichloromethane	BDM	0.6
1,1-Dichloroethene	1,1-DCE	7
cis-1,2-Dichloroethene	DCE	70
Tetrachloroethene	PCE	3
Trichloroethene	TCE	3

GCTL=GROUNDWATER CLEANUP TARGET LEVEL

NOTES

1. DATA ARE SHOWN FOR LOCATIONS WITH SCREENING CRITERIA EXCEEDANCES.
2. WELLS SAMPLED JUNE/OCTOBER 2004, MAY/JUNE 2005 AND NOVEMBER 2005

SOURCE:

ROADS, BUILIDINGS, ETC. ARE FROM A PHOTOGRAMMETRIC SURVEY BY DEMAPS, INC. AND REPS, INC. IN 1997.

DRAWN BY JFF	DATE 04-05-06
CHECKED BY MJC	DATE 04-06-06
REVISED BY ILG	DATE 07-18-08
SCALE AS NOTED	

VOC EXCEEDANCES IN HAWTHORN GROUNDWATER 2004 THROUGH 2005 OPERABLE UNIT 4 - AREA C

NAVAL TRAINING CENTER ORLANDO, FLORIDA

CONTRACT NO. N62467-04-D-0055	
OWNER NO. --------	
APPROVED BY ---	DATE --------
DRAWING NO. FIGURE 1-4	REV. 0

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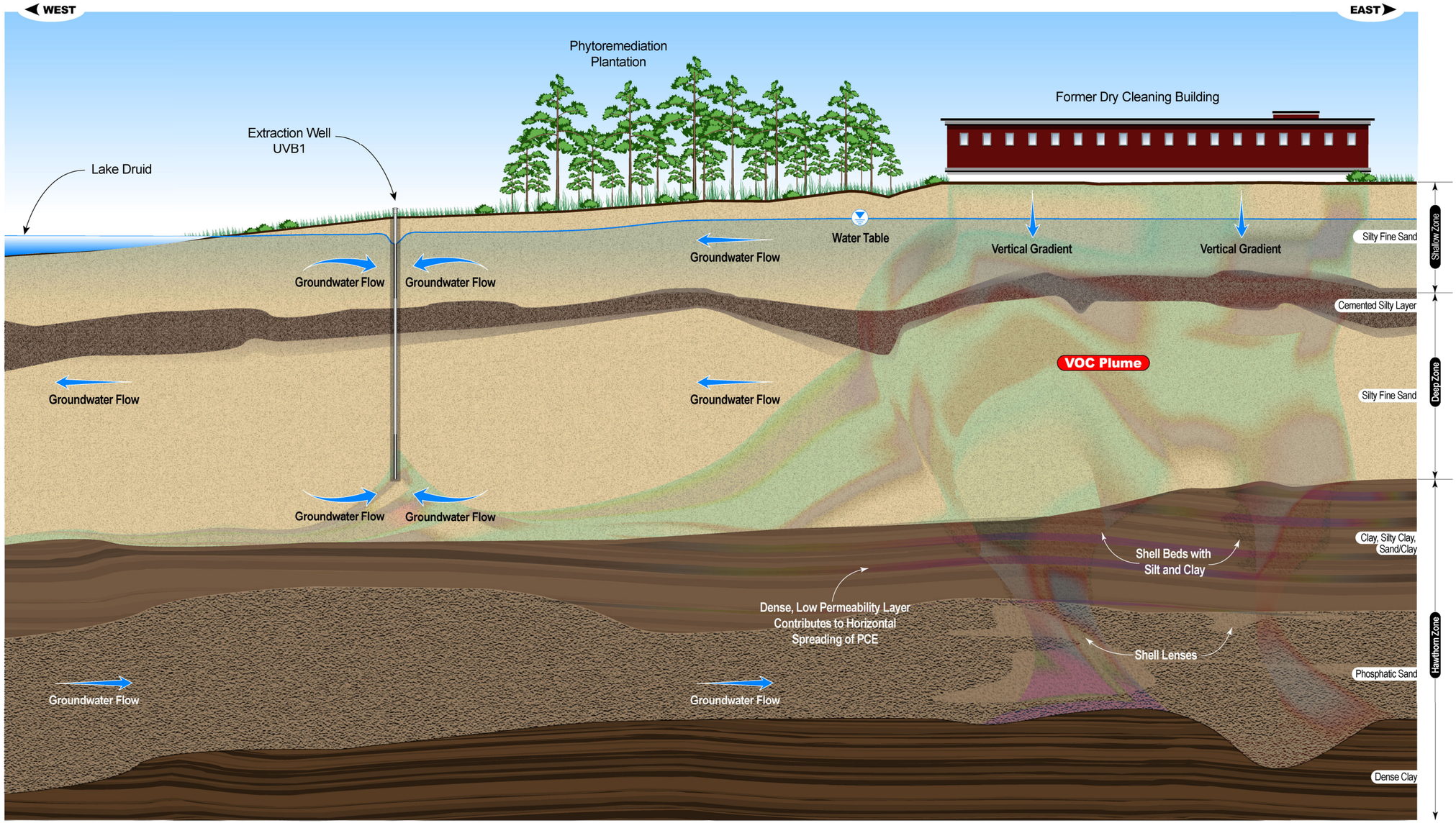

SOURCE:
REMEDIAL ACTION WORK PLAN (CH2MHILL, 2006).

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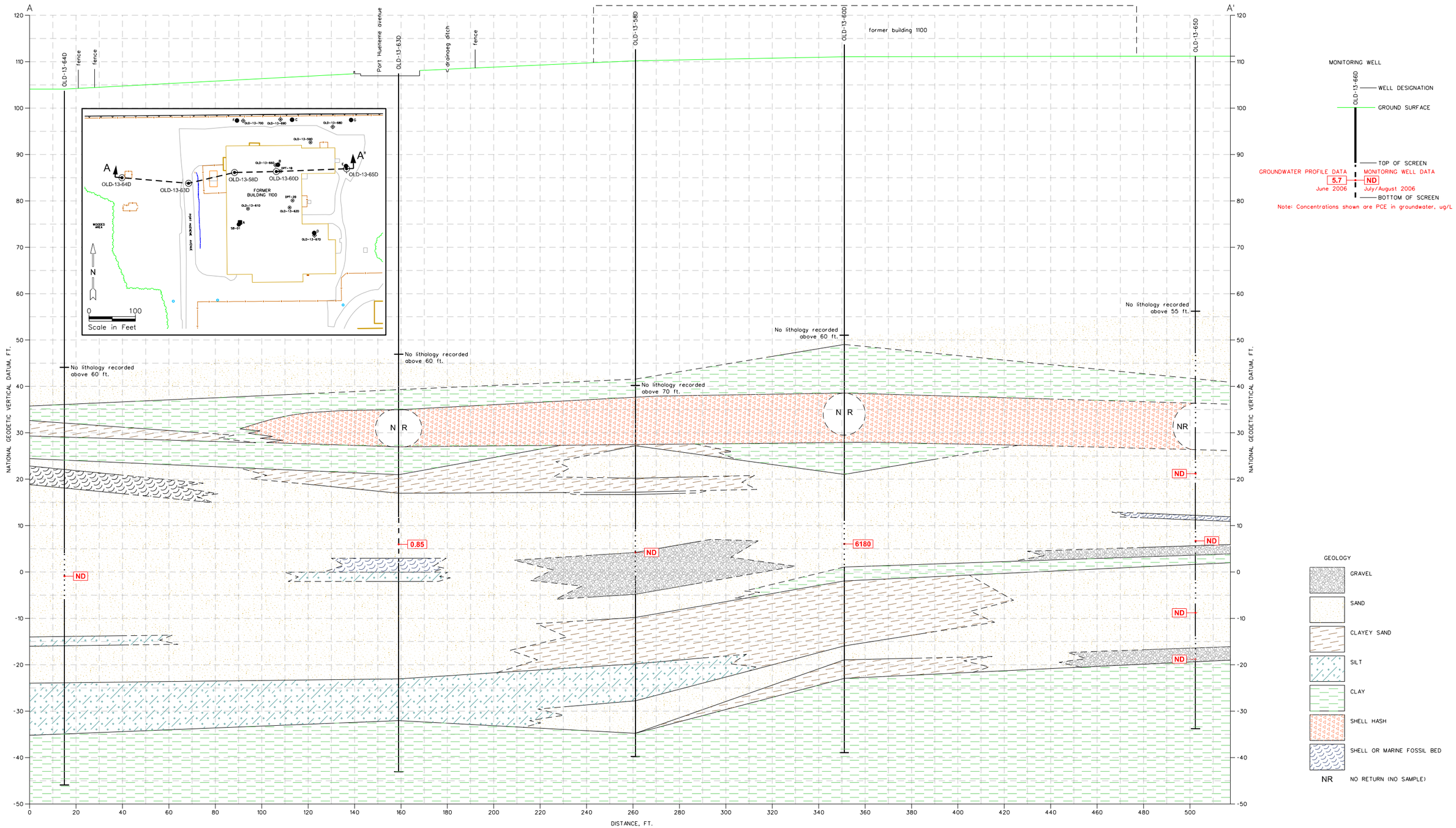
CHECKED BY AJ	DATE 09-29-07		OWNER NO. 112G00891
REVISED BY ILG	DATE 07-15-08		APPROVED BY --- / DATE --------
SCALE AS NOTED			DRAWING NO. FIGURE 2-1 / REV. 0

CAD FILE NO./DATE: k:\dgn\navy\orlando\sites\AreaC\AC-102.dgn



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CHECKED BY TKG	DATE 05-25-06		OWNER NO. ---------
REVISED BY ILG	DATE 7-23-08	NAVAL TRAINING CENTER ORLAND, FLORIDA	APPROVED BY --- / DATE --------
SCALE AS NOTED			DRAWING NO. FIGURE 4-1 / REV. 0

CAD FILE NO.: k:\dgn\navy\orlando\sites\AreaC\AC-103.dgn

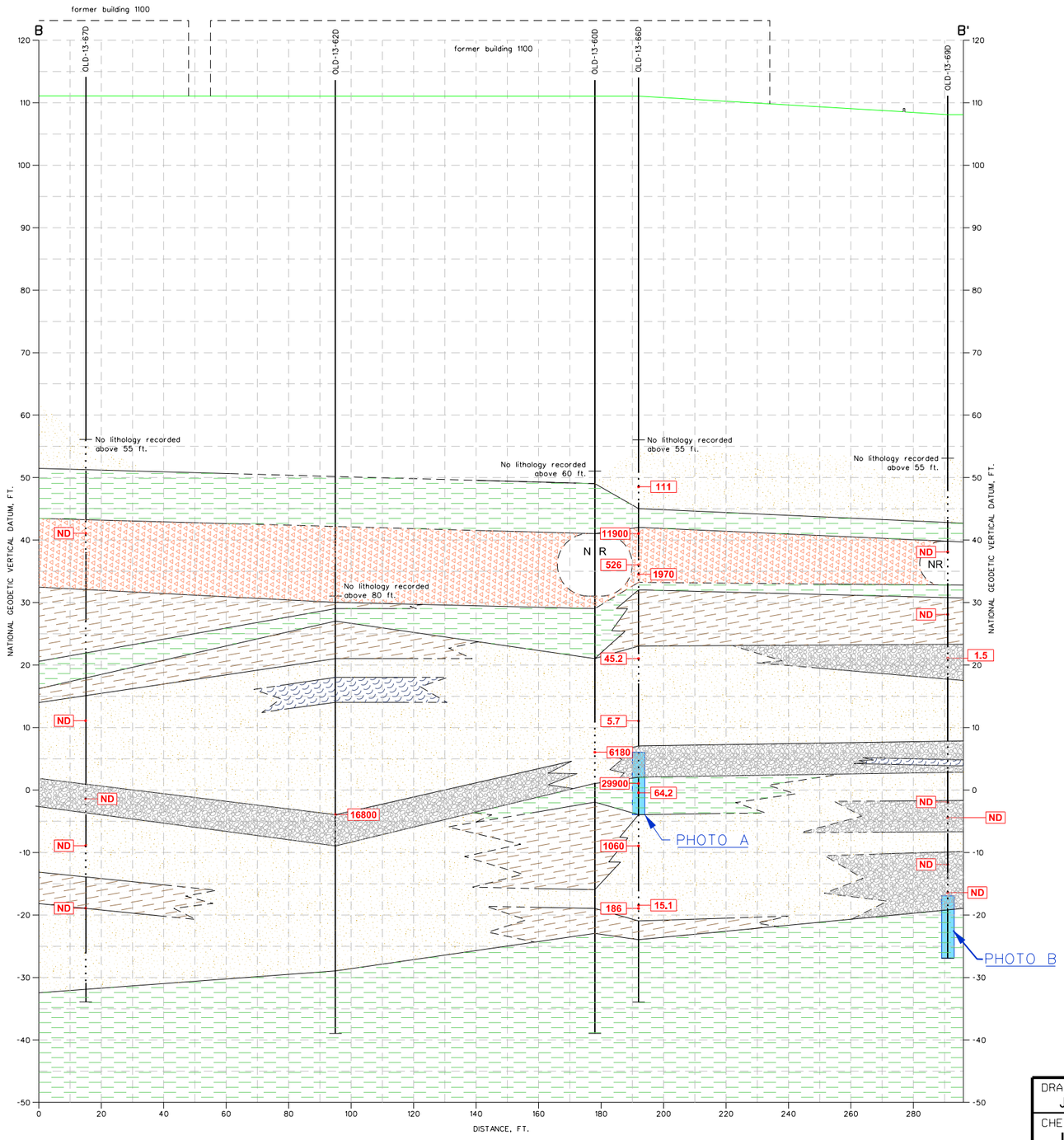
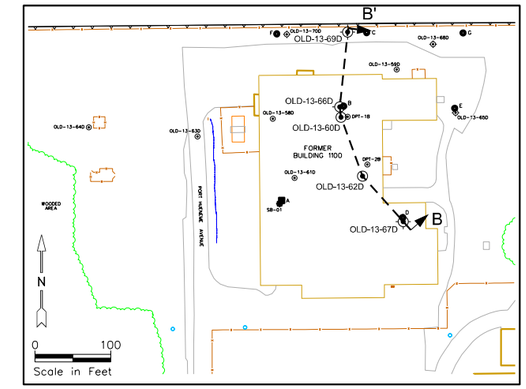


PHOTO A
OLD-13-66D 105'bgs TO 115'bgs
(6.05' TO -3.95' MEAN SEA LEVEL)

PHOTO B
OLD-13-69D 125'bgs TO 135'bgs
(-16.9' TO -26.9' MEAN SEA LEVEL)



MONITORING WELL
OLD-13-66D — WELL DESIGNATION
GROUND SURFACE
TOP OF SCREEN
GROUNDWATER PROFILE DATA — MONITORING WELL DATA
5.7 — June 2006
ND — July/August 2006
BOTTOM OF SCREEN
Note: Concentrations shown are PCE in groundwater, ug/L

GEOLOGY
- GRAVEL
- SAND
- CLAYEY SAND
- SILT
- CLAY
- SHELL HASH
- SHELL OR MARINE FOSSIL BED
- NR — NO RETURN (NO SAMPLE)

DRAWN BY JFF	DATE 5-25-06	INTERPRETIVE HYDROGEOLOGIC CROSS SECTION B-B' OPERABLE UNIT 4 - AREA C	CONTRACT NO. N62467-04-D-0055
CHECKED BY INL	DATE 5-25-06		OWNER NO. ----------
REVISED BY ILG	DATE 4-23-08	NAVAL TRAINING CENTER ORLANDO, FLORIDA	APPROVED BY --- / DATE --------
SCALE AS NOTED			DRAWING NO. FIGURE 4-2 / REV. 0

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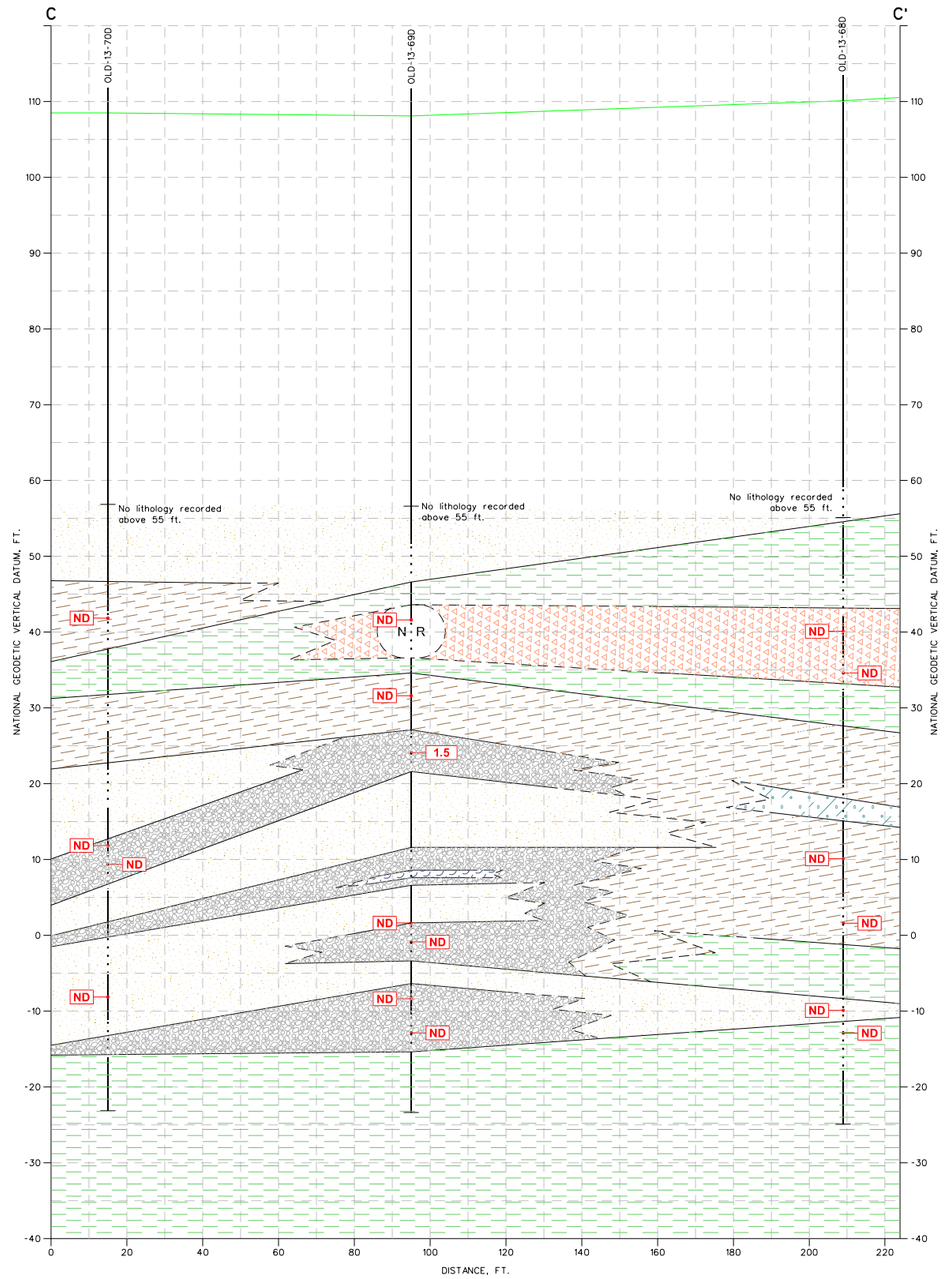

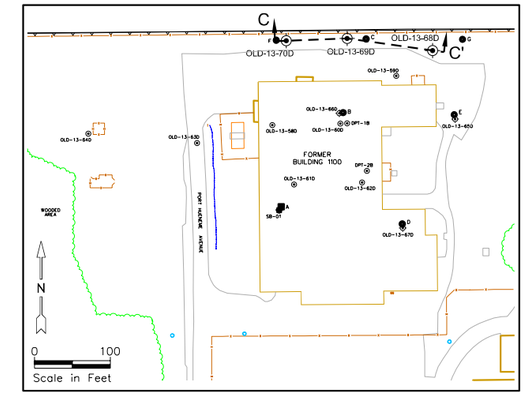

MONITORING WELL

OLD-13-66D — WELL DESIGNATION

GROUND SURFACE

TOP OF SCREEN

GROUNDWATER PROFILE DATA — MONITORING WELL DATA

5.7 June 2006 — ND July/August 2006

BOTTOM OF SCREEN

Note: Concentrations shown are PCE in groundwater, ug/L

GEOLOGY

- GRAVEL
- SAND
- CLAYEY SAND
- SILT
- CLAY
- SHELL HASH
- SHELL OR MARINE FOSSIL BED
- NR — NO RETURN (NO SAMPLE)

DRAWN BY JFF	DATE 7-27-06	INTERPRETIVE HYDROGEOLOGIC CROSS SECTION C-C' OPERABLE UNIT 4 - AREA C NAVAL TRAINING CENTER ORLANDO, FLORIDA	CONTRACT NO. N62467-04-D-0055
CHECKED BY INL	DATE 7-27-06		OWNER NO. ----------
REVISED BY ILG	DATE 7-23-08		APPROVED BY --- / DATE --------
SCALE AS NOTED			DRAWING NO. FIGURE 4-3 / REV. 0

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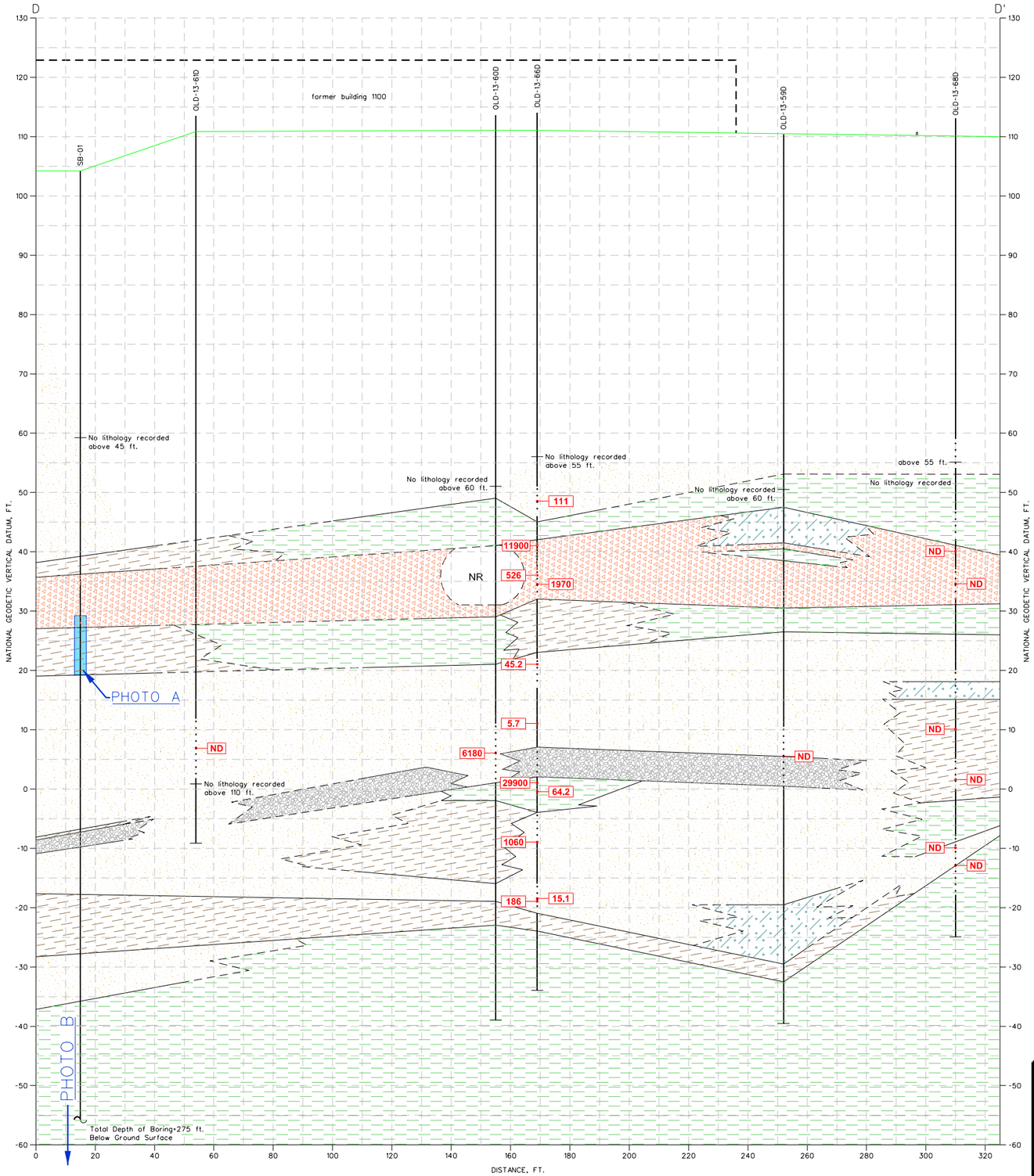
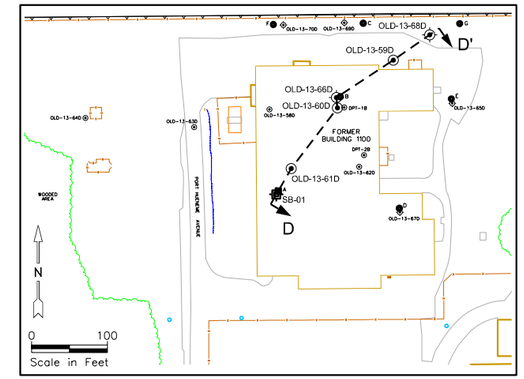


PHOTO A
SB-01 75'bgs TO 85'bgs
(29.2' TO 19.2' MEAN SEA LEVEL)

PHOTO B
SB-01 265'bgs TO 275'bgs
(-160.8' TO -170.8' MEAN SEA LEVEL)

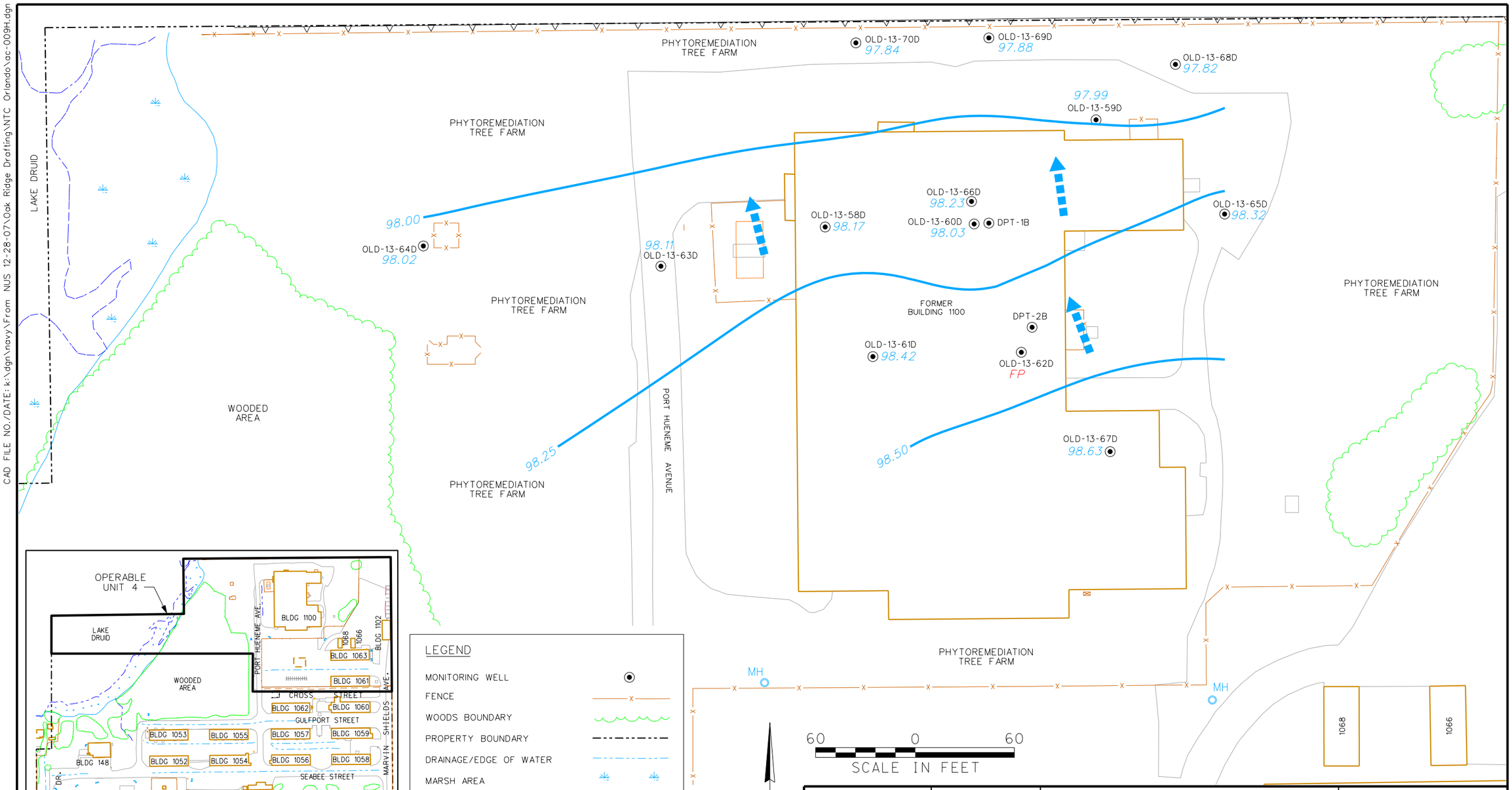


MONITORING WELL
OLD-13-66D — WELL DESIGNATION
GROUND SURFACE
TOP OF SCREEN
GROUNDWATER PROFILE DATA: 5.7 June 2006
MONITORING WELL DATA: ND July/August 2006
BOTTOM OF SCREEN
Note: Concentrations shown are PCE in groundwater, ug/L

GEOLOGY
- GRAVEL
- SAND
- CLAYEY SAND
- SILT
- CLAY
- SHELL HASH
- SHELL OR MARINE FOSSIL BED
- NR — NO RETURN (NO SAMPLE)

DRAWN BY JFF	DATE 5-25-06	INTERPRETIVE HYDROGEOLOGIC CROSS SECTION D-D' OPERABLE UNIT 4 - AREA C	CONTRACT NO. N62467-04-D-0055
CHECKED BY INL	DATE 5-25-06		OWNER NO. ---------
REVISED BY ILG	DATE 7-23-08	NAVAL TRAINING CENTER ORLANDO, FLORIDA	APPROVED BY --- / DATE --------
SCALE AS NOTED			DRAWING NO. FIGURE 4-4 / REV. 0

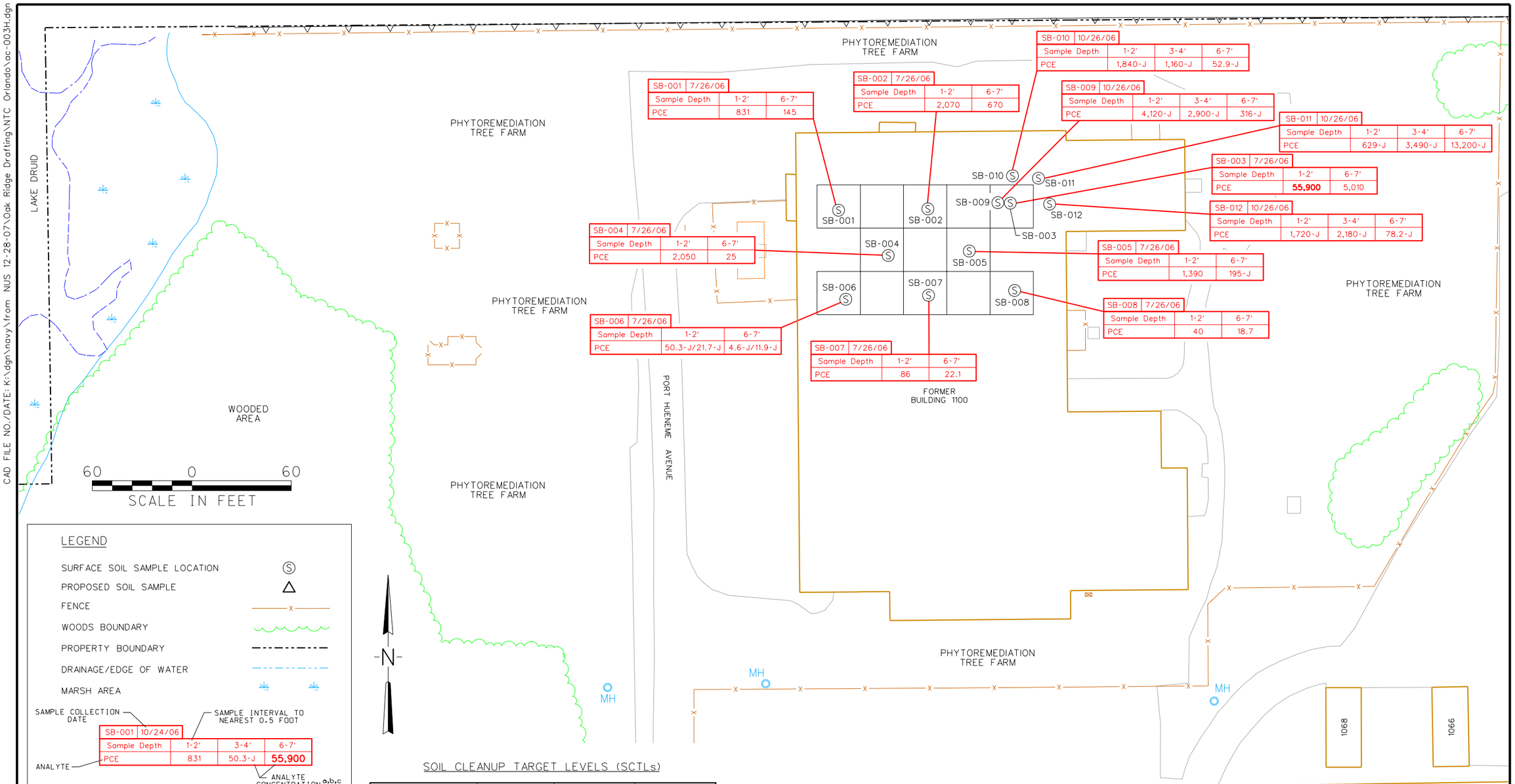
CAD FILE NO./DATE: k:\dgn\navy\From NUS 12-28-07\Oak Ridge Drafting\NTC Orlando\ac-009H.dgn



SOURCE:
ROADS, BUILIDINGS, ETC. ARE FROM A PHOTOGRAMMETRIC SURVEY BY DEMAPS, INC. AND REPS, INC. IN 1997.

DRAWN BY JFF	DATE 04-10-06	HAWTHORN POTENTIOMETRIC SURFACE MAP JULY-AUGUST 2006 OPERABLE UNIT 4 - AREA C NAVAL TRAINING CENTER ORLANDO, FLORIDA	CONTRACT NO. N62467-04-D-0055
CHECKED BY MJC	DATE 04-10-06		OWNER NO. ----------
REVISED BY ILG	DATE 7-28-08		APPROVED BY --- / DATE --------
SCALE AS NOTED			DRAWING NO. FIGURE 4-5 / REV. 0

CAD FILE NO./DATE: K:\dgn\navy\from NUS 12-28-07\Oak Ridge Drafting\NTC Orlando\ac-003H.dgn



SB-001	7/26/06	
Sample Depth	1-2'	6-7'
PCE	831	145

SB-002	7/26/06	
Sample Depth	1-2'	6-7'
PCE	2,070	670

SB-010	10/26/06		
Sample Depth	1-2'	3-4'	6-7'
PCE	1,840-J	1,160-J	52.9-J

SB-009	10/26/06		
Sample Depth	1-2'	3-4'	6-7'
PCE	4,120-J	2,900-J	316-J

SB-011	10/26/06		
Sample Depth	1-2'	3-4'	6-7'
PCE	629-J	3,490-J	13,200-J

SB-003	7/26/06	
Sample Depth	1-2'	6-7'
PCE	**55,900**	5,010

SB-012	10/26/06		
Sample Depth	1-2'	3-4'	6-7'
PCE	1,720-J	2,180-J	78.2-J

SB-004	7/26/06	
Sample Depth	1-2'	6-7'
PCE	2,050	25

SB-005	7/26/06	
Sample Depth	1-2'	6-7'
PCE	1,390	195-J

SB-006	7/26/06	
Sample Depth	1-2'	6-7'
PCE	50.3-J/21.7-J	4.6-J/11.9-J

SB-008	7/26/06	
Sample Depth	1-2'	6-7'
PCE	40	18.7

SB-007	7/26/06	
Sample Depth	1-2'	6-7'
PCE	86	22.1

LEGEND

- SURFACE SOIL SAMPLE LOCATION (S)
- PROPOSED SOIL SAMPLE △
- FENCE
- WOODS BOUNDARY
- PROPERTY BOUNDARY
- DRAINAGE/EDGE OF WATER
- MARSH AREA

SAMPLE COLLECTION DATE — SAMPLE INTERVAL TO NEAREST 0.5 FOOT

SB-001	10/24/06		
Sample Depth	1-2'	3-4'	6-7'
PCE	831	50.3-J	**55,900**

ANALYTE — ANALYTE CONCENTRATION a,b,c

a-CONCENTRATION IN MICROGRAMS PER KILOGRAM (µg/kg)
b-BOLD CONCENTRATION INDICATES EXCEEDANCE OF INDUSTRIAL SCTL
c-ESTIMATAED VALUE: "J"

SOURCE:
ROADS, BUILIDINGS, ETC. ARE FROM A PHOTOGRAMMETRIC SURVEY BY DEMAPS, INC. AND REPS, INC. IN 1997.

SOIL CLEANUP TARGET LEVELS (SCTLs)

ANALYTE	ABBREVIATION	SCTL[a] LEACHABILITY	SCTL[a] INDUSTRIAL
Tetrachloroethene	PCE	30	18,000

NOTES

1. DATA ARE SHOWN FOR LOCATIONS WITH SCREENING CRITERIA EXCEEDANCES.
2. SOIL SAMPLE LOCATIONS SB-001 THROUGH SB-008 SURVEYED ON SEPTEMBER 18, 2006.

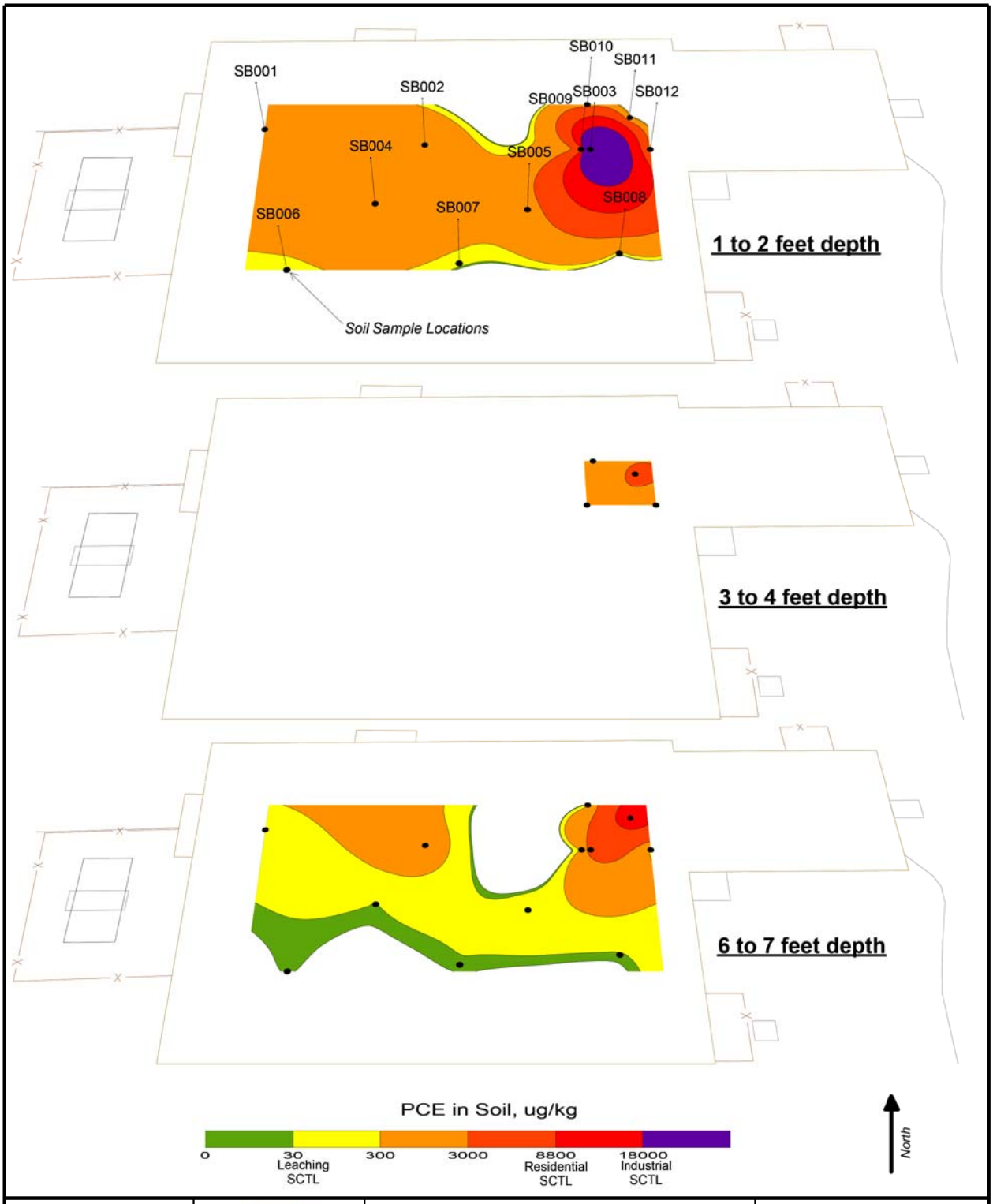
DRAWN BY JFF	DATE 09-11-06	
CHECKED BY TKG	DATE 09-11-06	
REVISED BY ILG	DATE 8-1-08	
SCALE AS NOTED		

PCE IN VADOSE SOIL
JULY AND OCTOBER 2006
OPERABLE UNIT 4 - AREA C

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

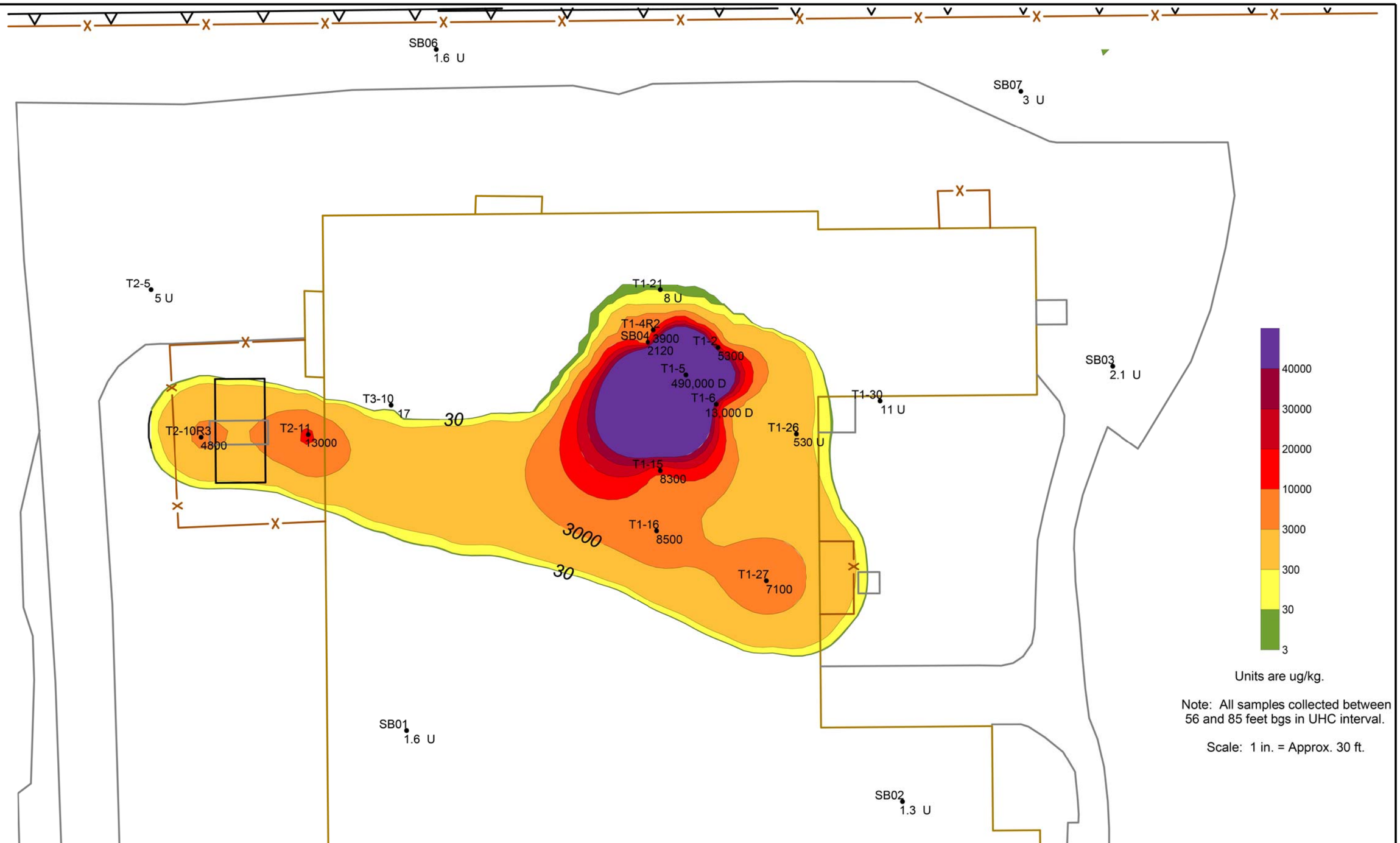
CONTRACT NO. **N62467-04-D-0055**
OWNER NO. ----------
APPROVED BY --- DATE --------
DRAWING NO. **FIGURE 4-6** REV. **0**

CAD FILE NO./DATE: k:\dgn\navy\ORLANDO\SITES\OU4\OU04-033.dgn



DRAWN BY ILG	DATE 7-30-08	PCE IN VADOSE SOIL OPERABLE UNIT 4 - AREA C JULY AND OCTOBER 2006 NAVAL TRAINING CENTER ORLANDO, FLORIDA	CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 7-30-08		OWNER NO. ----------
REVISED BY ---	DATE --------		APPROVED BY --- / DATE --------
SCALE AS NOTED			DRAWING NO. FIGURE 4-7 / REV. 0

CAD FILE NO./DATE: k:\dgn\navy\ORLANDO\SITES\OU4\OU04-032.dgn



NOTES

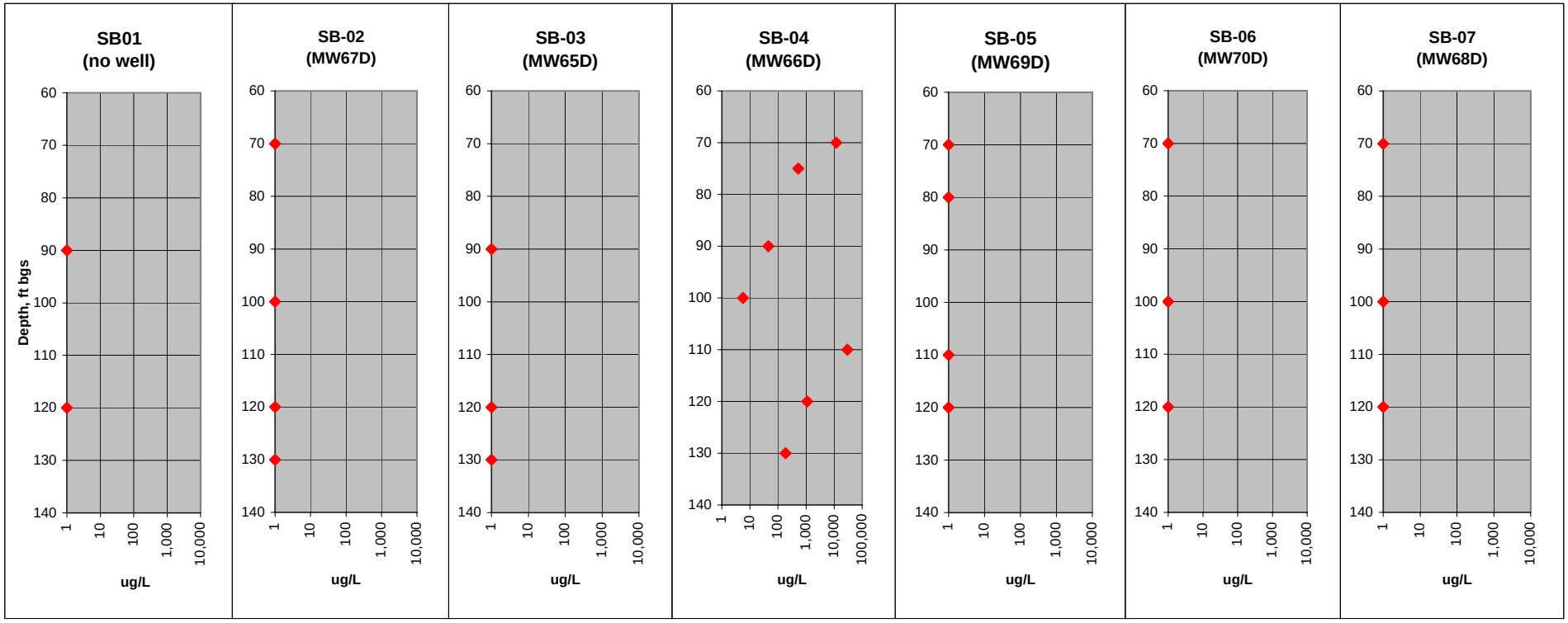
SAMPLE LOCATIONS WITH A T1, T2, AND T3 PREFIX ARE FROM 2004 CH2M HILL INVESTIGATION (SUMMARY OF HYDROGEOLOGIC INVESTIGATION ACTIVITIES AT OPERABLE UNIT 4, FORMER NTC ORLANDO, TECHNICAL MEMORANDUM, FEBRUARY 2005).

DRAWN BY ILG	DATE 8-1-08	HISTORICAL PCE IN UPPER HAWTHORN CLAY SOIL OPERABLE UNIT 4 - AREA C NAVAL TRAINING CENTER ORLANDO, FLORIDA	CONTRACT NO. N62467-04-D-0055
CHECKED BY TKG	DATE 8-1-08		OWNER NO. --------
REVISED BY ---	DATE --------		APPROVED BY --- / DATE --------
SCALE AS NOTED			DRAWING NO. FIGURE 4-8 / REV. 0

FIGURE 4-9

PCE IN HAWTHORN GROUNDWATER PROFILE SAMPLES
JUNE-JULY 2006
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

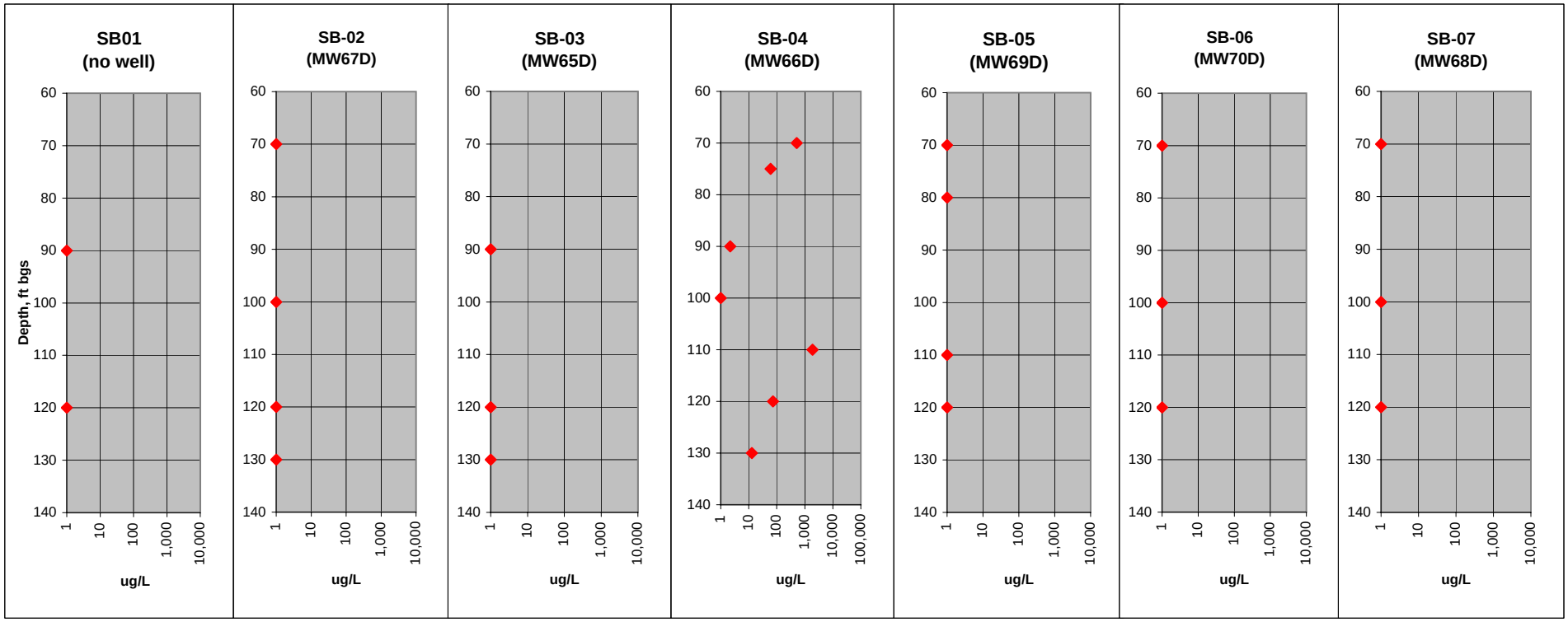


Note:
Non-detect "U" results shown as "1" on log scale.

FIGURE 4-10

TCE IN HAWTHORN GROUNDWATER PROFILE SAMPLES
JUNE-JULY 2006
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

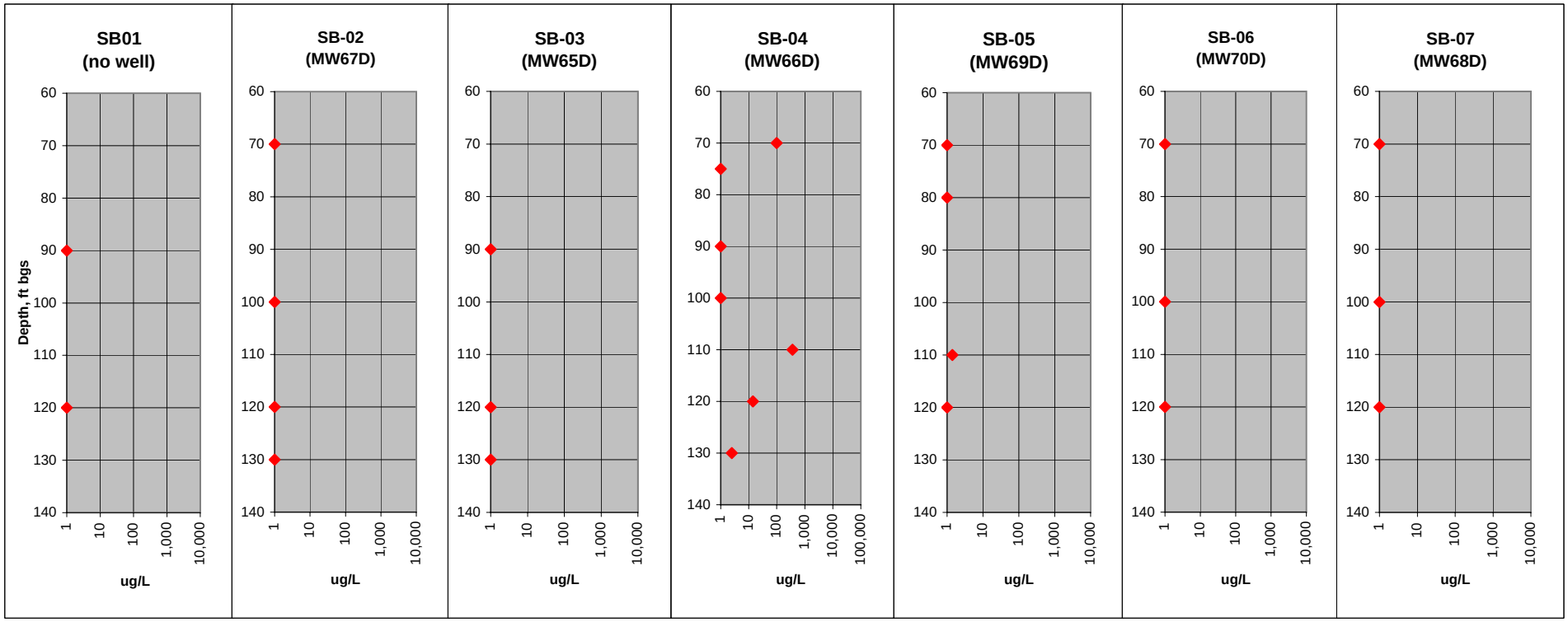


Note:
Non-detect "U" results shown as "1" on log scale.

FIGURE 4-11

cDCE IN HAWTHORN GROUNDWATER PROFILE SAMPLES
JUNE-JULY 2006
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA



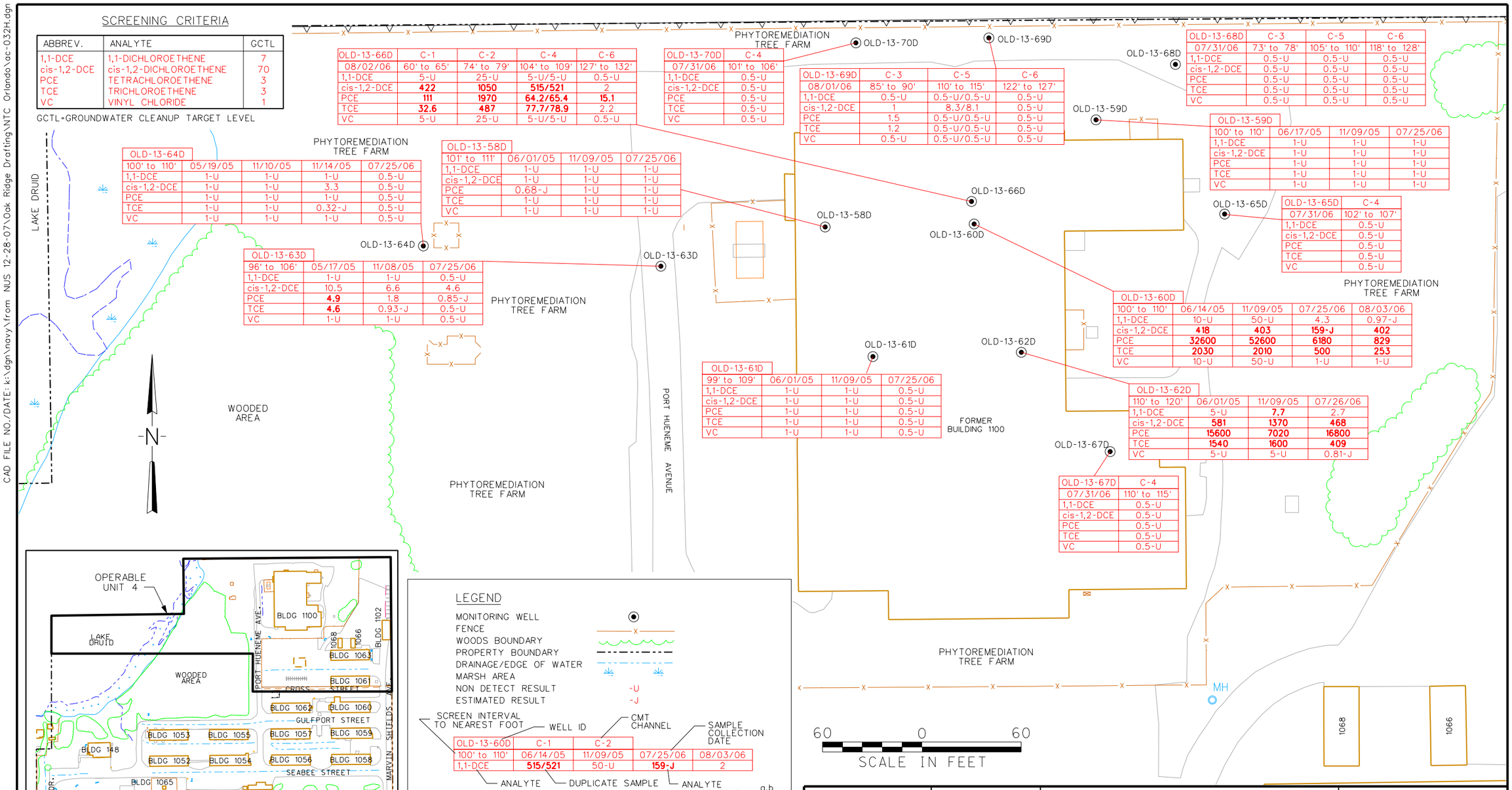
Note:
Non-detect "U" results shown as "1" on log scale.

CAD FILE NO./DATE: k:\dgn\navy\from NUS 12-28-07\Oak Ridge Drafting\NTC Orlando\oc-032H.dgn

SCREENING CRITERIA

ABBREV.	ANALYTE	GCTL
1,1-DCE	1,1-DICHLOROETHENE	7
cis-1,2-DCE	cis-1,2-DICHLOROETHENE	70
PCE	TETRACHLOROETHENE	3
TCE	TRICHLOROETHENE	3
VC	VINYL CHLORIDE	1

GCTL=GROUNDWATER CLEANUP TARGET LEVEL



OLD-13-66D	C-1	C-2	C-4	C-6
08/02/06	60' to 65'	74' to 79'	104' to 109'	127' to 132'
1,1-DCE	5-U	25-U	5-U/5-U	0.5-U
cis-1,2-DCE	**422**	**1050**	**515/521**	2
PCE	**111**	**1970**	**64.2/65.4**	**15.1**
TCE	**32.6**	**487**	**77.7/78.9**	2.2
VC	5-U	25-U	5-U/5-U	0.5-U

OLD-13-70D	C-4
07/31/06	101' to 106'
1,1-DCE	0.5-U
cis-1,2-DCE	0.5-U
PCE	0.5-U
TCE	0.5-U
VC	0.5-U

OLD-13-69D	C-3	C-5	C-6
08/01/06	85' to 90'	110' to 115'	122' to 127'
1,1-DCE	0.5-U	0.5-U/0.5-U	0.5-U
cis-1,2-DCE	1	8.3/8.1	0.5-U
PCE	1.5	0.5-U/0.5-U	0.5-U
TCE	1.2	0.5-U/0.5-U	0.5-U
VC	0.5-U	0.5-U/0.5-U	0.5-U

OLD-13-68D	C-3	C-5	C-6
07/31/06	73' to 78'	105' to 110'	118' to 128'
1,1-DCE	0.5-U	0.5-U	0.5-U
cis-1,2-DCE	0.5-U	0.5-U	0.5-U
PCE	0.5-U	0.5-U	0.5-U
TCE	0.5-U	0.5-U	0.5-U
VC	0.5-U	0.5-U	0.5-U

OLD-13-59D			
100' to 110'	06/17/05	11/09/05	07/25/06
1,1-DCE	1-U	1-U	1-U
cis-1,2-DCE	1-U	1-U	1-U
PCE	1-U	1-U	1-U
TCE	1-U	1-U	1-U
VC	1-U	1-U	1-U

OLD-13-64D				
100' to 110'	05/19/05	11/10/05	11/14/05	07/25/06
1,1-DCE	1-U	1-U	1-U	0.5-U
cis-1,2-DCE	1-U	1-U	3.3	0.5-U
PCE	1-U	1-U	1-U	0.5-U
TCE	1-U	1-U	0.32-J	0.5-U
VC	1-U	1-U	1-U	0.5-U

OLD-13-58D			
101' to 111'	06/01/05	11/09/05	07/25/06
1,1-DCE	1-U	1-U	1-U
cis-1,2-DCE	1-U	1-U	1-U
PCE	0.68-J	1-U	1-U
TCE	1-U	1-U	1-U
VC	1-U	1-U	1-U

OLD-13-65D	C-4
07/31/06	102' to 107'
1,1-DCE	0.5-U
cis-1,2-DCE	0.5-U
PCE	0.5-U
TCE	0.5-U
VC	0.5-U

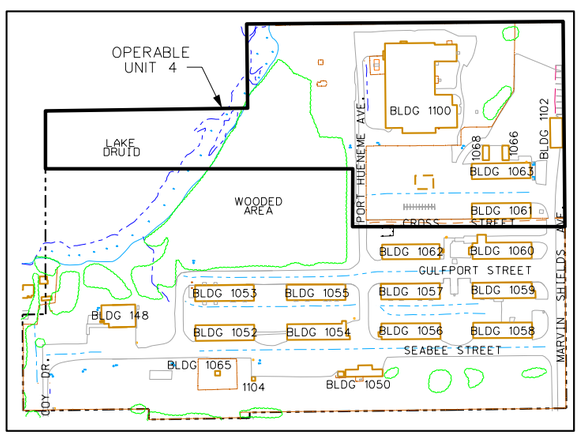
OLD-13-63D			
96' to 106'	05/17/05	11/08/05	07/25/06
1,1-DCE	1-U	1-U	0.5-U
cis-1,2-DCE	10.5	6.6	4.6
PCE	**4.9**	1.8	0.85-J
TCE	**4.6**	0.93-J	0.5-U
VC	1-U	1-U	0.5-U

OLD-13-60D				
100' to 110'	06/14/05	11/09/05	07/25/06	08/03/06
1,1-DCE	10-U	50-U	4.3	0.97-J
cis-1,2-DCE	**418**	**403**	**159-J**	**402**
PCE	**32600**	**52600**	**6180**	**829**
TCE	**2030**	**2010**	**500**	**253**
VC	10-U	50-U	1-U	1-U

OLD-13-61D			
99' to 109'	06/01/05	11/09/05	07/25/06
1,1-DCE	1-U	1-U	0.5-U
cis-1,2-DCE	1-U	1-U	0.5-U
PCE	1-U	1-U	0.5-U
TCE	1-U	1-U	0.5-U
VC	1-U	1-U	0.5-U

OLD-13-62D			
110' to 120'	06/01/05	11/09/05	07/26/06
1,1-DCE	5-U	**7.7**	2.7
cis-1,2-DCE	**581**	**1370**	**468**
PCE	**15600**	**7020**	**16800**
TCE	**1540**	**1600**	**409**
VC	5-U	5-U	0.81-J

OLD-13-67D	C-4
07/31/06	110' to 115'
1,1-DCE	0.5-U
cis-1,2-DCE	0.5-U
PCE	0.5-U
TCE	0.5-U
VC	0.5-U



AREA C

LEGEND

MONITORING WELL
FENCE
WOODS BOUNDARY
PROPERTY BOUNDARY
DRAINAGE/EDGE OF WATER
MARSH AREA
NON DETECT RESULT -U
ESTIMATED RESULT -J

SCREEN INTERVAL TO NEAREST FOOT — WELL ID — CMT CHANNEL — SAMPLE COLLECTION DATE

OLD-13-60D	C-1	C-2		
100' to 110'	06/14/05	11/09/05	07/25/06	08/03/06
1,1-DCE	**515/521**	50-U	**159-J**	2

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

a-GROUNDWATER CONCENTRATIONS IN MICROGRAMS PER LITER (µg/L)
b-BOLD CONCENTRATION INDICATES RESULTS GREATER THAN OR EQUAL TO GCTL.

SOURCE:
ROADS, BUILIDINGS, ETC. ARE FROM A PHOTOGRAMMETRIC SURVEY BY DEMAPS, INC. AND REPS, INC. IN 1997.

NOTE
RESULTS FOR 7/25/06 ARE FROM TETRA TECH NUS SPLIT SAMPLES.

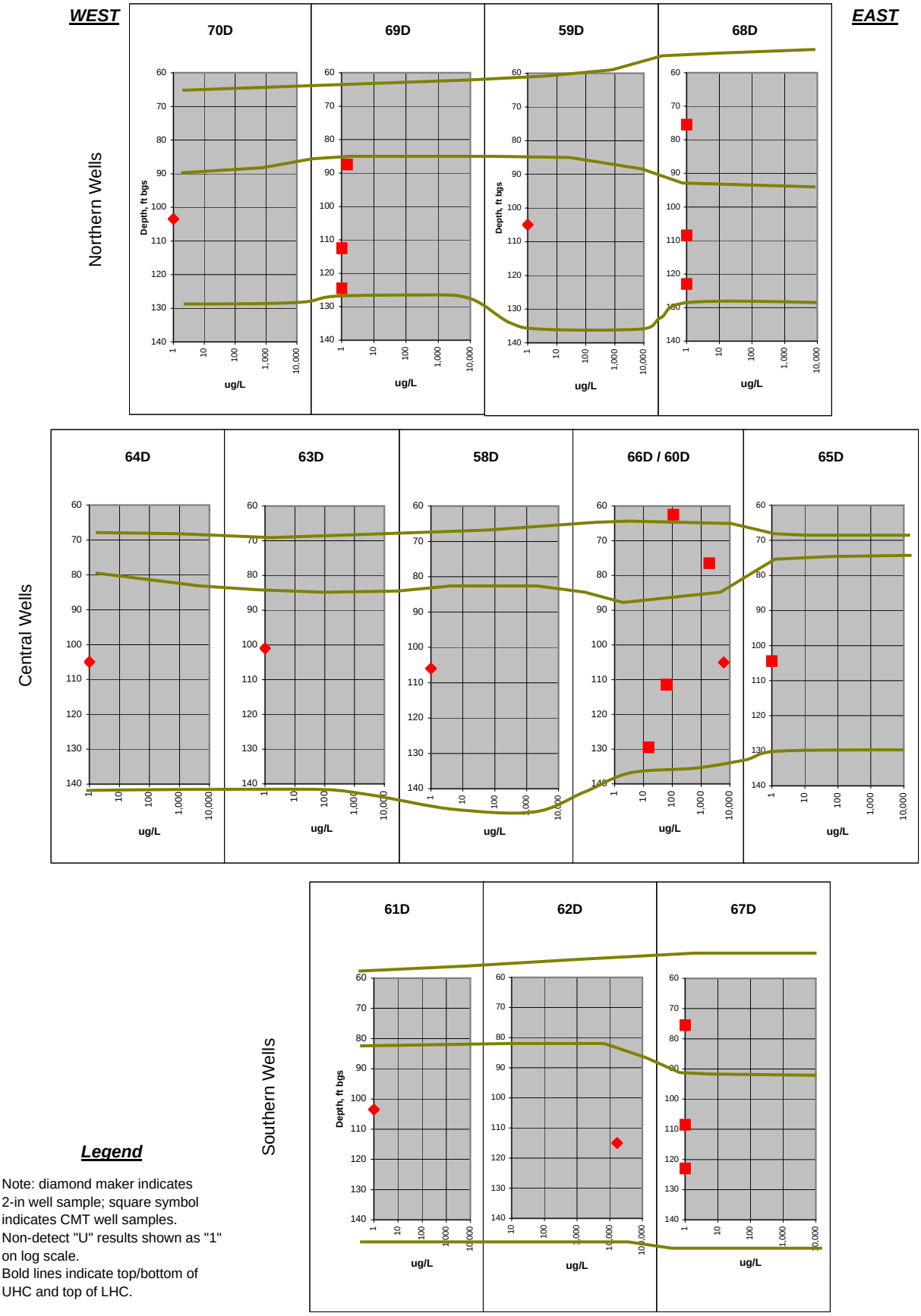
DRAWN BY JFF	DATE 7-13-07	
CHECKED BY AJ	DATE 7-13-07	
REVISED BY ILG	DATE 7-24-08	
SCALE AS NOTED		

CHLORINATED VOCs DETECTED IN HAWTHORN GROUNDWATER MAY 2005 THROUGH AUGUST 2006 OPERABLE UNIT 4 - AREA C

NAVAL TRAINING CENTER ORLANDO, FLORIDA

CONTRACT NO. **N62467-04-D-0055**
OWNER NO. ----------
APPROVED BY --- DATE --------
DRAWING NO. **FIGURE 4-12** REV. **0**

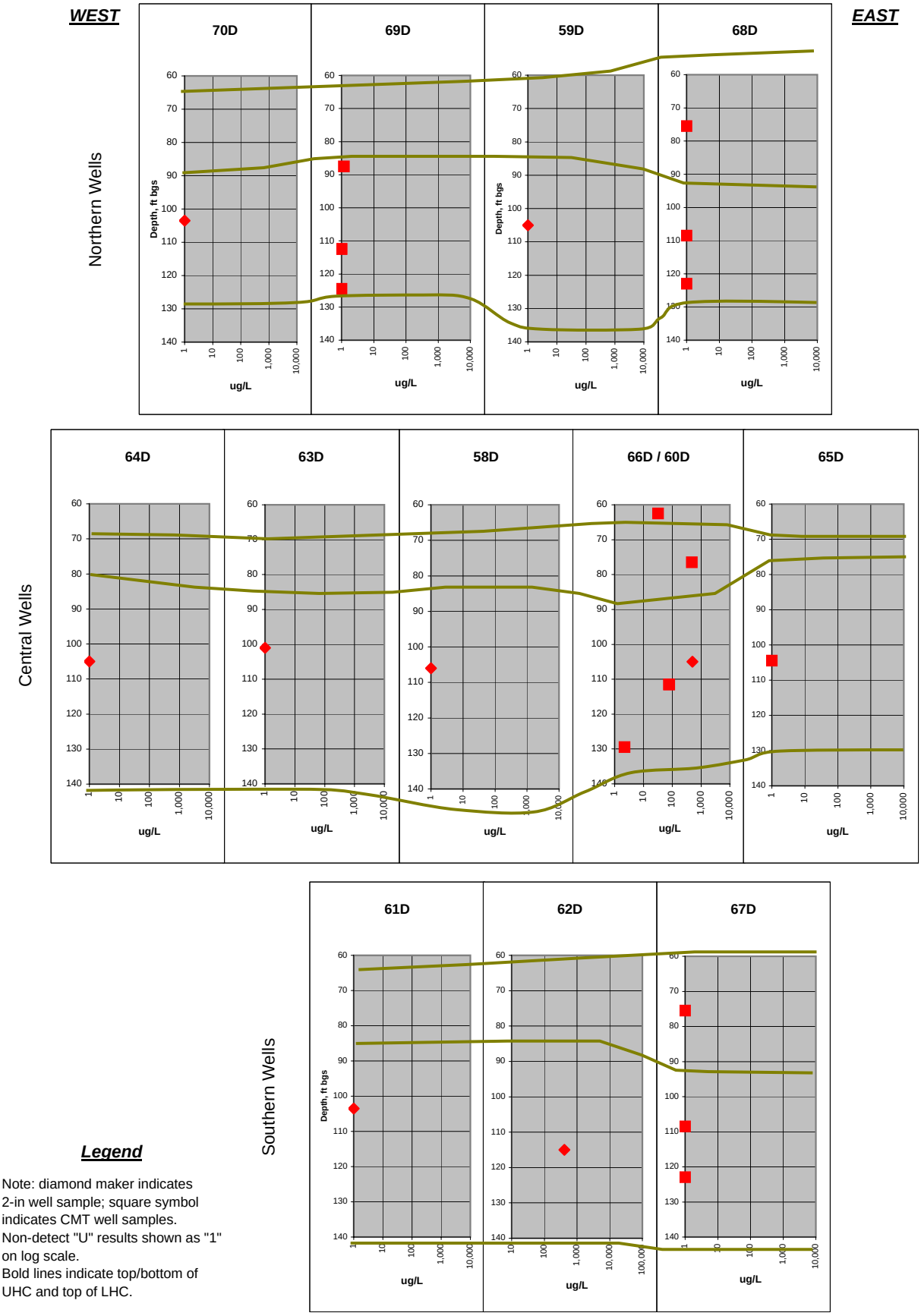
FIGURE 4-13
PCE IN HAWTHORN GROUNDWATER, MONITORING WELLS
JULY-AUGUST 2006
OPERABLE UNIT 4
NAVAL TRAINING CENTER
ORLANDO, FLORIDA



Legend

Note: diamond maker indicates 2-in well sample; square symbol indicates CMT well samples.
Non-detect "U" results shown as "1" on log scale.
Bold lines indicate top/bottom of UHC and top of LHC.

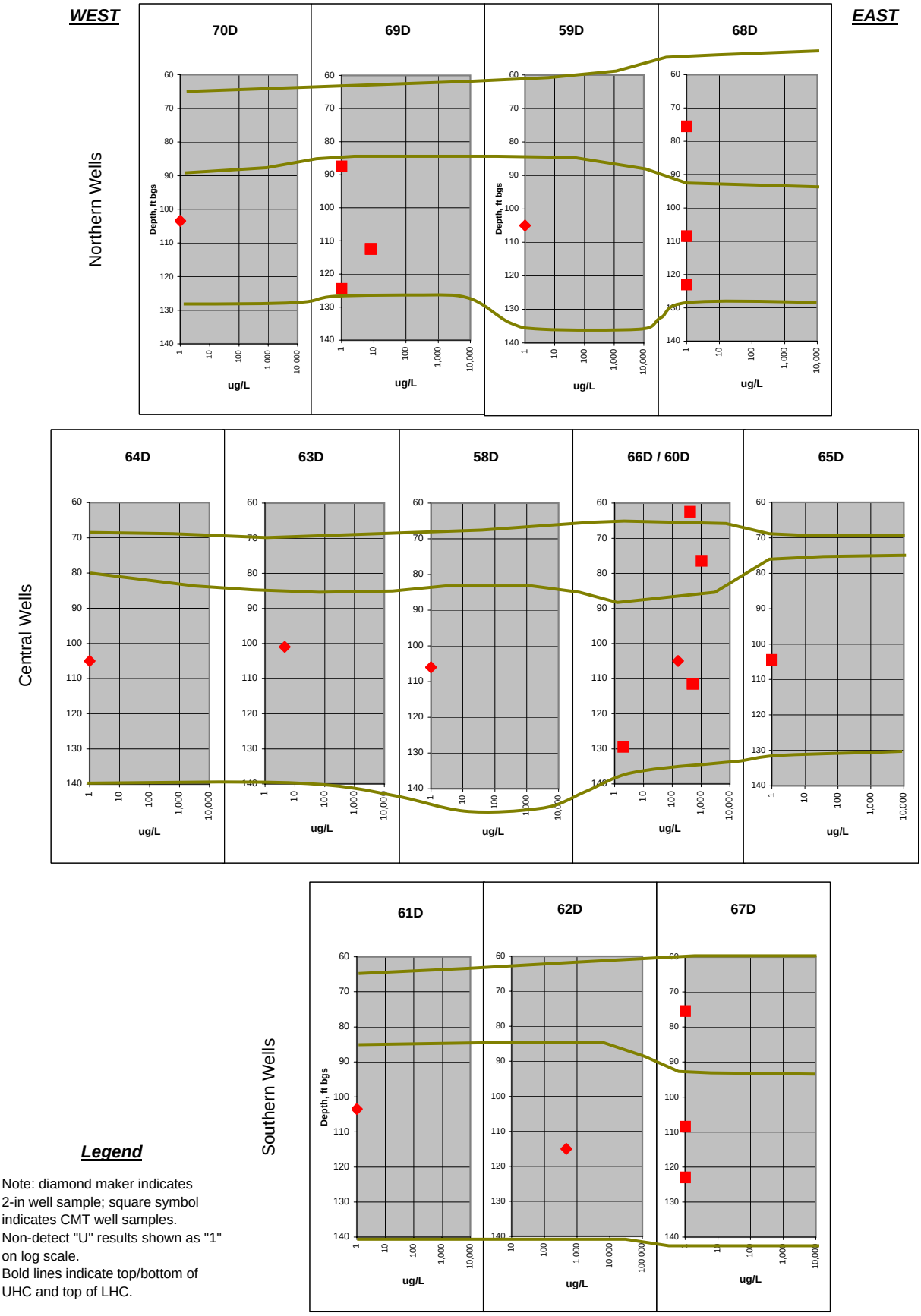
FIGURE 4-14
TCE IN HAWTHORN GROUNDWATER, MONITORING WELLS
JULY-AUGUST 2006
OPERABLE UNIT 4
NAVAL TRAINING CENTER
ORLANDO, FLORIDA



Legend

Note: diamond maker indicates 2-in well sample; square symbol indicates CMT well samples.
Non-detect "U" results shown as "1" on log scale.
Bold lines indicate top/bottom of UHC and top of LHC.

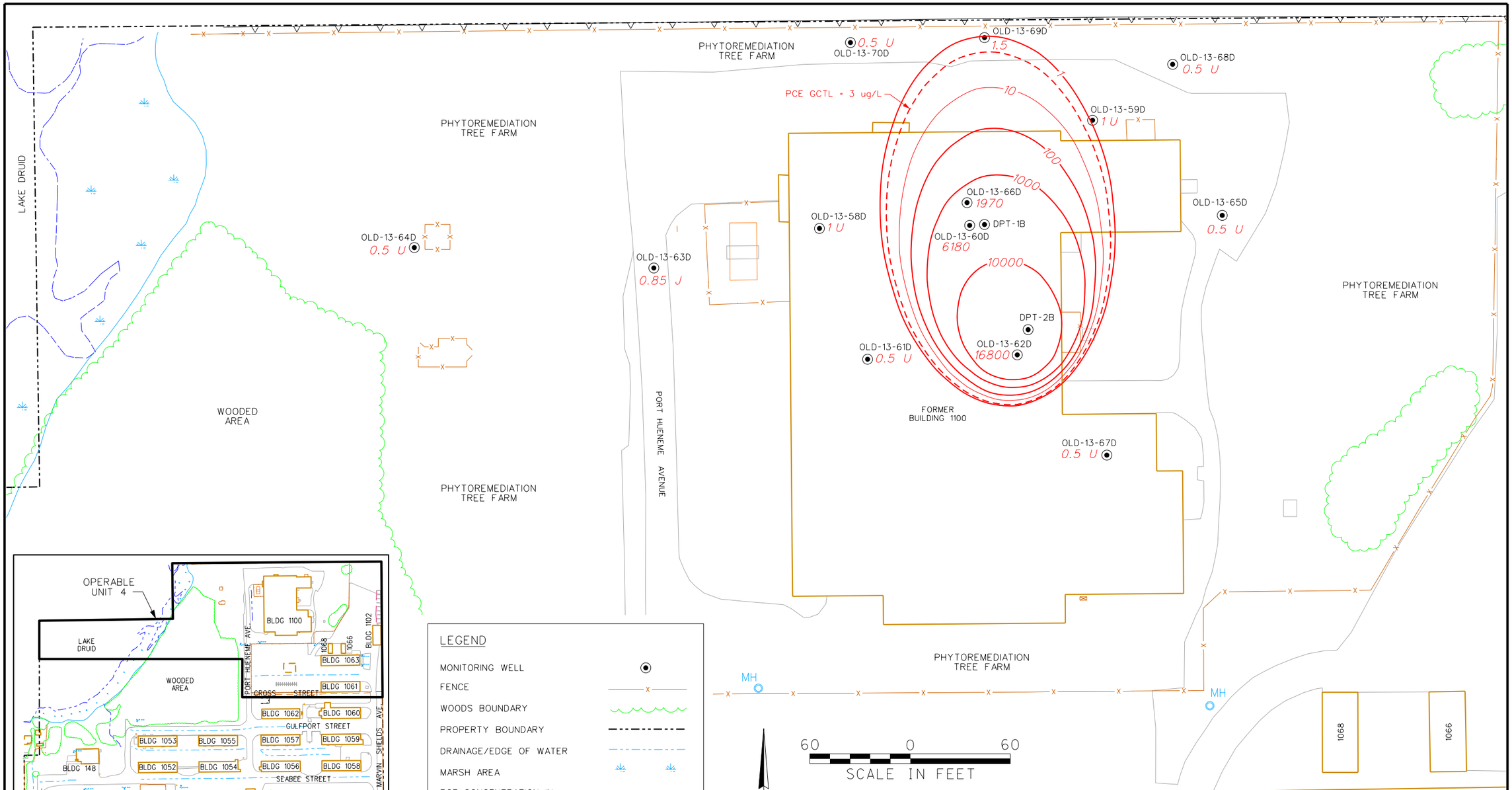
FIGURE 4-15
cDCE IN HAWTHORN GROUNDWATER MONITORING WELLS
JULY-AUGUST 2006
OPERABLE UNIT 4
NAVAL TRAINING CENTER
ORLANDO, FLORIDA

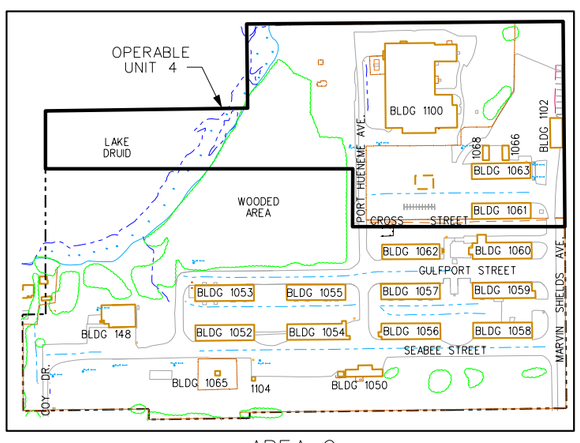


Legend

Note: diamond maker indicates 2-in well sample; square symbol indicates CMT well samples.
Non-detect "U" results shown as "1" on log scale.
Bold lines indicate top/bottom of UHC and top of LHC.

CAD FILE NO./DATE: k:\dgn\from NUS 12-28-07\Oak Ridge Drafting\NTC Orlando\ac-030H.dgn





AREA C

SOURCE:
ROADS, BUILIDINGS, ETC. ARE FROM A PHOTOGRAMMETRIC SURVEY BY DEMAPS, INC. AND REPS, INC. IN 1997.

LEGEND

MONITORING WELL	⊙
FENCE	—x—
WOODS BOUNDARY	
PROPERTY BOUNDARY	
DRAINAGE/EDGE OF WATER	
MARSH AREA	
PCE CONCENTRATION IN GROUNDWATER, UG/L (U IS NONDETECT)	0.5 U
PCE ISOCONCENTRATION CONTOUR, UG/L	
GROUNDWATER CLEANUP TARGET LEVEL	GCTL

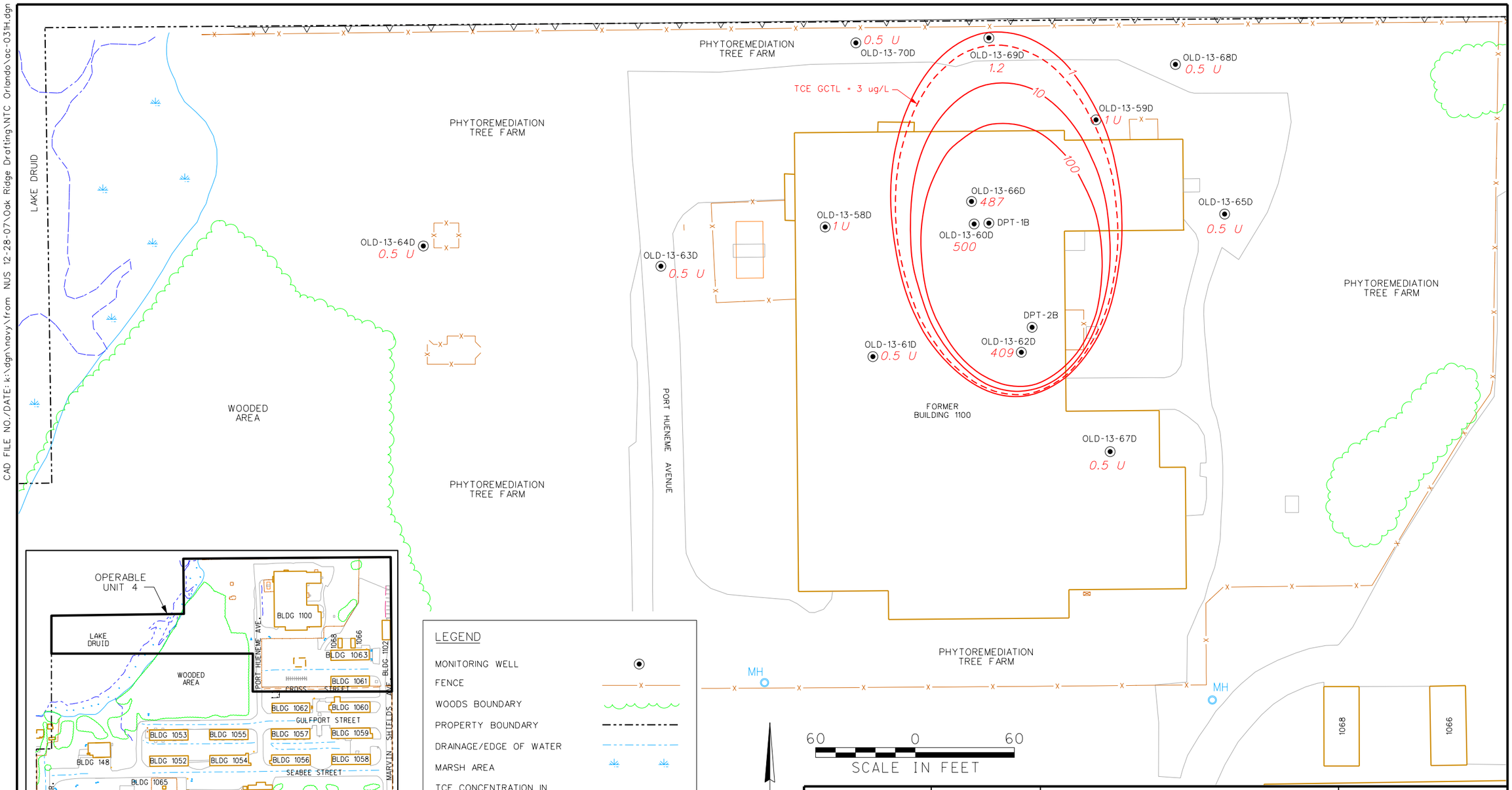
DRAWN BY JFF	DATE 04-10-06
CHECKED BY MJC	DATE 04-10-06
REVISED BY ILG	DATE 7-22-08
SCALE AS NOTED	

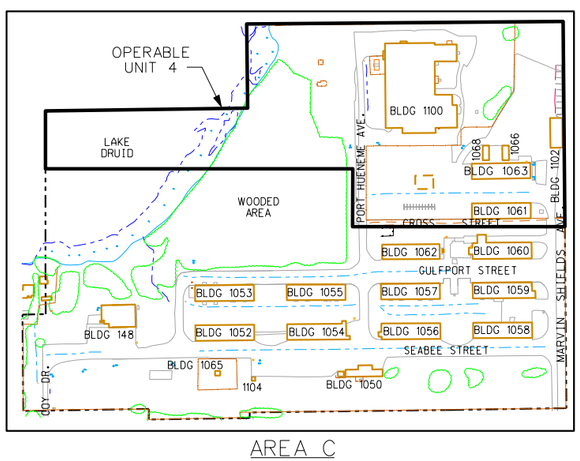
PCE PLUME IN HAWTHORN GROUNDWATER
JULY/AUGUST 2006
OPERABLE UNIT 4 - AREA C

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

CONTRACT NO. N62467-04-D-0055	
OWNER NO. --------	
APPROVED BY ---	DATE
DRAWING NO. FIGURE 4-16	REV. 0

CAD FILE NO./DATE: k:\dgn\navy\from NUS 12-28-07\Oak Ridge Drafting\NTC Orlando\ac-03H.dgn





AREA C

SOURCE:
ROADS, BUILIDINGS, ETC. ARE FROM A PHOTOGRAMMETRIC SURVEY BY DEMAPS, INC. AND REPS, INC. IN 1997.

LEGEND

MONITORING WELL	⊙
FENCE	x
WOODS BOUNDARY	
PROPERTY BOUNDARY	
DRAINAGE/EDGE OF WATER	
MARSH AREA	
TCE CONCENTRATION IN GROUNDWATER, UG/L (U IS NONDETECT)	0.5 U
TCE ISOCONCENTRATION CONTOUR, UG/L	
GROUNDWATER CLEANUP TARGET LEVEL	GCTL

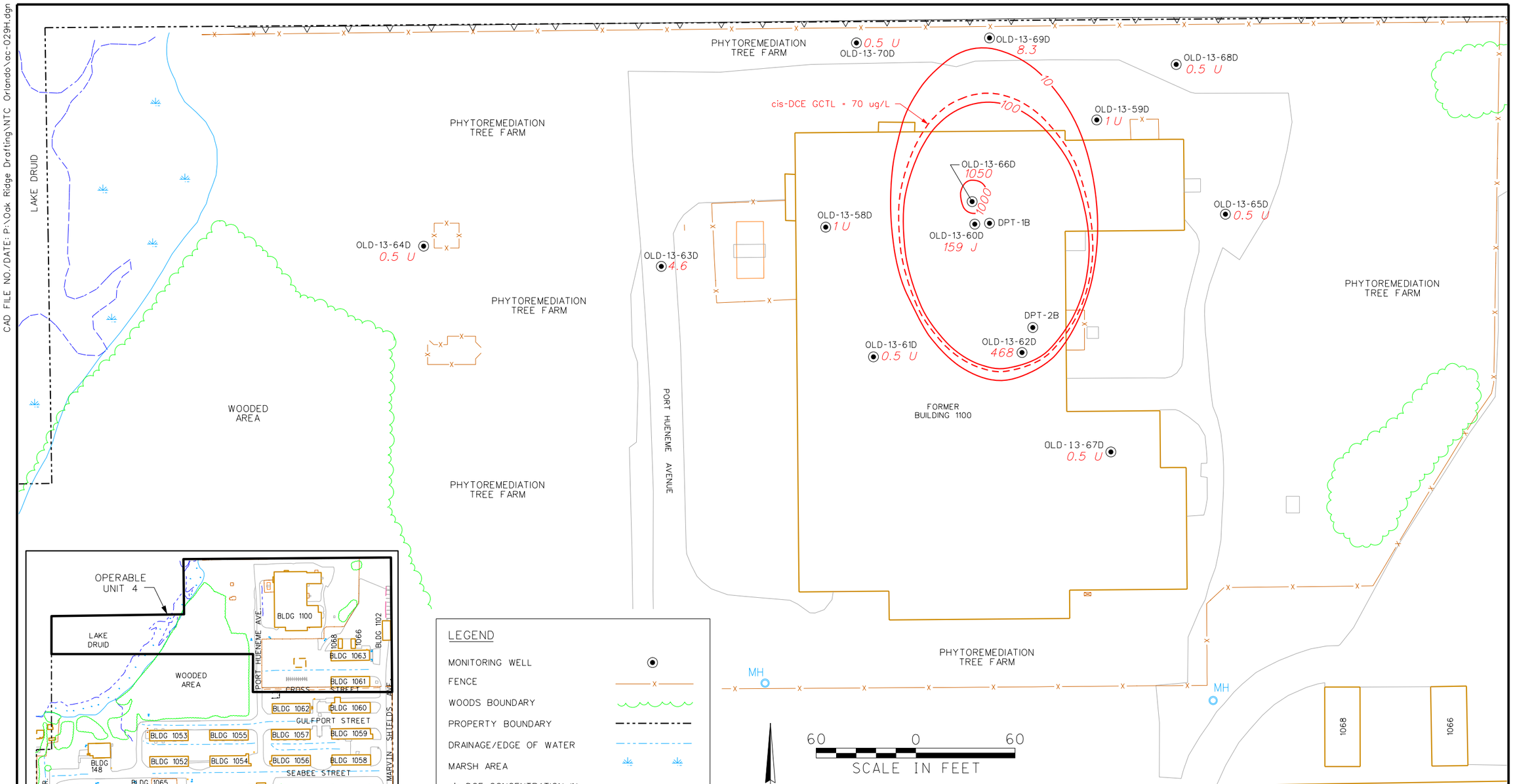
DRAWN BY JFF	DATE 04-10-06
CHECKED BY MJC	DATE 04-10-06
REVISED BY ILG	DATE 7-22-08
SCALE AS NOTED	

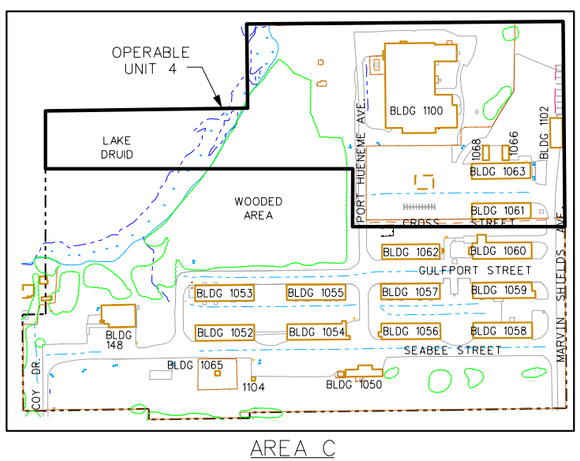
TCE PLUME IN HAWTHORN GROUNDWATER
JULY/AUGUST 2006
OPERABLE UNIT 4 - AREA C

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

CONTRACT NO. N62467-04-D-0055	
OWNER NO. ----------	
APPROVED BY ---	DATE --------
DRAWING NO. FIGURE 4-17	REV. 0

CAD FILE NO./DATE: P:\Oak Ridge Drafting\NTC Orlando\ac-029H.dgn





AREA C

LEGEND

MONITORING WELL	⊙
FENCE	—x—
WOODS BOUNDARY	
PROPERTY BOUNDARY	
DRAINAGE/EDGE OF WATER	
MARSH AREA	
cis-DCE CONCENTRATION IN GROUNDWATER, UG/L (U IS NONDETECT)	0.5 U
cis-DCE ISOCONCENTRATION CONTOUR, UG/L	
GROUNDWATER CLEANUP TARGET LEVEL	GCTL

SOURCE:
ROADS, BUILIDINGS, ETC. ARE FROM A PHOTOGRAMMETRIC SURVEY BY DEMAPS, INC. AND REPS, INC. IN 1997.

DRAWN BY JFF	DATE 04-10-06
CHECKED BY MJC	DATE 04-10-06
REVISED BY ILG	DATE 07-18-08
SCALE AS NOTED	

cDCE PLUME IN HAWTHORN GROUNDWATER
JULY/AUGUST 2006
OPERABLE UNIT 4 - AREA C

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

CONTRACT NO. N62467-04-D-0055	
OWNER NO. --------	
APPROVED BY ---	DATE --------
DRAWING NO. FIGURE 4-18	REV. 0

TABLES

TABLE 4-1

HAWTHORN MONITORING WELL DATA
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID	Channel	Well Diameter (in.)	Total Depth (ft bgs)	Stickup (ft ags)	TOC Elevation (ft amsl)	Top Screen (ft bgs)	Bottom Screen (ft bgs)	Depth to Water (ft BTOC)					Groundwater Elevation (ft amsl)				
								10/26/04	05/05/05	06/01/05	04/01/06	7/25/06 08/2/06*	10/26/04	05/05/05	06/01/05	04/01/06	7/25/06 08/2/06*
OLD-13-58D	--	2	111	2.5	112.67	101	111	12.71	14.27	14.30	15.01	14.50	99.96	98.40	98.37	97.66	98.17
OLD-13-59D	--	2	110	-0.2	110.33	100	110	15.80	12.12	12.15	12.86	12.34	94.53	98.21	98.18	97.47	97.99
OLD-13-60D	--	2	110	2.6	113.67	100	110	13.69	15.24	15.30	15.99	15.64	99.98	98.43	98.37	97.68	98.03
OLD-13-61D	--	2	109	2.6	113.47	99	109	13.30	14.91	14.95	15.63	15.05	100.17	98.56	98.52	97.84	98.42
OLD-13-62D	--	2	120	2.6	113.63	110	120	13.51	15.00	15.07	15.78	FP	100.12	98.63	98.56	97.85	--
OLD-13-63D	--	2	106	-0.4	107.49	96	106	7.60	9.07	9.08	9.82	9.38	99.89	98.42	98.41	97.67	98.11
OLD-13-64D	--	2	110	-0.3	103.75	100	110	2.88	5.53	5.58	6.28	5.73	100.87	98.22	98.17	97.47	98.02
OLD-13-65D	1	1.9	130	-0.1	111.11	64	69	--	--	--	--	7.50	--	--	--	--	103.61
	2					75	80	--	--	--	--	8.21	--	--	--	--	102.90
	3					87	92	--	--	--	--	12.73	--	--	--	--	98.38
	4					102	107	--	--	--	--	12.79	--	--	--	--	98.32
	5					113	118	--	--	--	--	12.85	--	--	--	--	98.26
	6					125	130	--	--	--	--	12.96	--	--	--	--	98.15
OLD-13-66D	1	1.9	132	3.1	114.18	60	65	--	--	--	--	11.01	--	--	--	--	103.17
	2					74	79	--	--	--	--	15.46	--	--	--	--	98.72
	3					89	94	--	--	--	--	15.92	--	--	--	--	98.26
	4					104	109	--	--	--	--	15.95	--	--	--	--	98.23
	5					115	120	--	--	--	--	15.96	--	--	--	--	98.22
	6					127	132	--	--	--	--	16.11	--	--	--	--	98.07
OLD-13-67D	1	1.9	142	3.4	114.45	55	60	--	--	--	--	10.94	--	--	--	--	103.51
	2					68	73	--	--	--	--	15.39	--	--	--	--	99.06
	3					84	89	--	--	--	--	15.74	--	--	--	--	98.71
	4					110	115	--	--	--	--	15.82	--	--	--	--	98.63
	5					120	125	--	--	--	--	15.79	--	--	--	--	98.66
	6					137	142	--	--	--	--	15.79	--	--	--	--	98.66
OLD-13-68D	1	1.9	128	3.4	113.49	51	55	--	--	--	--	9.94	--	--	--	--	103.55
	2					63	68	--	--	--	--	10.05	--	--	--	--	103.44
	3					73	78	--	--	--	--	15.00	--	--	--	--	98.49
	4					90	95	--	--	--	--	15.58	--	--	--	--	97.91
	5					105	110	--	--	--	--	15.67	--	--	--	--	97.82
	6					118	128	--	--	--	--	16.61	--	--	--	--	96.88

TABLE 4-1

HAWTHORN MONITORING WELL DATA
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID	Channel	Well Diameter (in.)	Total Depth (ft bgs)	Stickup (ft ags)	TOC Elevation (ft amsl)	Top Screen (ft bgs)	Bottom Screen (ft bgs)	Depth to Water (ft BTOC)					Groundwater Elevation (ft amsl)				
								10/26/04	05/05/05	06/01/05	04/01/06	7/25/06 08/2/06*	10/26/04	05/05/05	06/01/05	04/01/06	7/25/06 08/2/06*
OLD-13-69D	1	1.9	127	3.5	111.62	60	65	--	--	--	--	8.58	--	--	--	--	103.04
	2					70	75	--	--	--	--	10.86	--	--	--	--	100.76
	3					85	90	--	--	--	--	13.67	--	--	--	--	97.95
	4					100	105	--	--	--	--	13.74	--	--	--	--	97.88
	5					110	115	--	--	--	--	13.79	--	--	--	--	97.83
	6					122	127	--	--	--	--	14.21	--	--	--	--	97.41
OLD-13-70D	1	1.9	128	3.3	111.85	64	69	--	--	--	--	9.32	--	--	--	--	102.53
	2					80	85	--	--	--	--	13.30	--	--	--	--	98.55
	3					90	95	--	--	--	--	13.99	--	--	--	--	97.86
	4					101	106	--	--	--	--	14.01	--	--	--	--	97.84
	5					112	117	--	--	--	--	14.30	--	--	--	--	97.55
	6					123	128	--	--	--	--	13.96	--	--	--	--	97.89

Notes:
ags - above ground surface
amsl - above mean sea level
bgs - below ground surface
BTOC - below top of casing
CMT - continuous multi-channel tubing
FP - indicates free product present
ft - feet
in - inches
O.D. - outer diameter
PVC - polyvinyl chloride
TOC - top of casing
2-inch O.D. wells are constructed of Schedule 40 PVC riser and well screen; 1.9-inch O.D. wells are polyethelene CMT with stainless steel mesh screens.
* CMT water levels and groundwater elevations shown for 7/25/06 were measured on7/26/06 (70D) and 8/2/06; these data represent the best available site-wide synoptic elevation data for the Hawthorn water-bearing zone.

TABLE 4-2

HORIZONTAL HYDRAULIC GRADIENTS
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Pair	Channel	Top Screen (ft bgs)	Bottom Screen (ft bgs)	Distance* (feet)	Groundwater Elevation (ft amsl)					Horizontal Gradient				
					10/26/04	05/05/05	06/01/05	04/01/06	7/25/06 08/02/06**	10/26/04	05/05/05	06/01/05	04/01/06	7/25/06 08/02/06**
OLD-13-61D OLD-13-58D	--	99	109	84	100.17	98.56	98.52	97.84	98.42	0.003	0.002	0.002	0.002	0.003
	--	101	111		99.96	98.4	98.37	97.66	98.17					
OLD-13-62D OLD-13-60D	--	110	120	96	100.12	98.63	98.56	97.85	FP	0.001	0.002	0.002	0.002	--
	--	100	110		99.98	98.43	98.37	97.68	98.03					
OLD-13-67D and OLD-13-69D	3	84	89	263	--	--	--	--	98.71	--	--	--	--	0.003
	3	85	90		--	--	--	--	97.95					
	4	110	115	263	--	--	--	--	98.63	--	--	--	--	0.003
	4	100	105		--	--	--	--	97.88					
	5	120	125	263	--	--	--	--	98.66	--	--	--	--	0.003
	5	110	115		--	--	--	--	97.83					
	6	137	142	263	--	--	--	--	98.66	--	--	--	--	0.005
	6	122	127		--	--	--	--	97.41					

Notes:
amsl - above mean sea level
bgs - below ground surface
CMT - continuous multi-channel tubing
FP - indicates free product present
ft - feet
Averages: 2-inch wells = 0.002; CMT wells = 0.003; All wells = 0.002.
* Horizontal distance between well pairs.

** CMT water levels and groundwater elevation shown for wells 67D and 69D were measured on 8/2/06; these data represent the best available site-wide synoptic elevation data for the Hawthorn water-bearing zone.

TABLE 4-3

VERTICAL HYDRAULIC GRADIENTS
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID	Channel	Top Screen (ft bgs)	Bottom Screen (ft bgs)	Distance* feet	Groundwater Elevation (ft amsl)	Vertical Gradient
					08/02/06	
OLD-13-69D	1	60	65	10	103.04	0.228
	2	70	75		100.76	
	2	70	75	15	100.76	0.187
	3	85	90		97.95	
	3	85	90	15	97.95	0.005
	4	100	105		97.88	
	5	110	115	12	97.83	0.035
	6	122	127		97.41	
OLD-13-65D	1	64	69	11	103.61	0.065
	2	75	80		102.90	
	2	75	80	12	102.90	0.377
	3	87	92		98.38	
	3	87	92	15	98.38	0.004
	4	102	107		98.32	
	5	113	118	12	98.26	0.009
	6	125	130		98.15	
OLD-13-67D	1	55	60	13	103.51	0.342
	2	68	73		99.06	
	2	68	73	16	99.06	0.022
	3	84	89		98.71	
	3	84	89	26	98.71	0.003
	4	110	115		98.63	
	5	120	125	17	98.66	0.000
	6	137	142		98.66	
OLD-13-68D	1	51	55	12.5	103.55	0.009
	2	63	68		103.44	
	2	63	68	10	103.44	0.495
	3	73	78		98.49	
	3	73	78	17	98.49	0.034
	4	90	95		97.91	
	5	105	110	15.5	97.82	0.061
	6	118	128		96.88	
OLD-13-66D	1	60	65	14	103.17	0.318
	2	74	79		98.72	
	2	74	79	15	98.72	0.031
	3	89	94		98.26	
	3	89	94	15	98.26	0.002
	4	104	109		98.23	
	5	115	120	12	98.22	0.013
	6	127	132		98.07	
OLD-13-70D	1	64	69	16	102.53	0.249
	2	80	85		98.55	
	2	80	85	10	98.55	0.069
	3	90	95		97.86	
	3	90	95	11	97.86	0.002
	4	101	106		97.84	
	5	112	117	11	97.55	-0.031
	6	123	128		97.89	

Notes:
amsl - above mean sea level
bgs - below ground surface
ft - feet
Averages: #1-#2 = 0.202; #2-#3 = 0.197; #3-#4 = 0.008; #5-#6 = 0.023.
* Vertical distance between well channel screen mid-points.

TABLE 4-4

SUMMARY DATA FOR SLUG TEST ANALYSES
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID	OLD-13-58D				OLD-13-59D				OLD-13-61D				OLD-13-63D				OLD-13-64D			
Test Type	FH#1	RH#2	FH#3	RH#4	FH#1	RH#2	FH#3	RH#4	FH#1	RH#2	FH#3	RH#4	FH#1	RH#2	FH#3	RH#4	FH#1	RH#2	FH#3	RH#4
Test Date	07/28/06				07/28/06				07/28/06				07/28/06				07/29/06			
Slug[a]	1.5		3		1.5		3		1.5		3		1.5		3		1.5		3	
Well Dia. (in)	2				2				2				2				2			
Top Screen (ft bgs)	101				100				99				96				100			
Bott. Screen (ft bgs)	111				110				109				106				110			
Static DTW (ft BTOC)	14.5				12.26				15.65				9.38				5.73			
Water Col. (ft)	94				98				91				97				104			
Aquifer Thickness (ft)	28				46				37				40				47			
Filter Pack Porosity[b]	0.3				0.3				0.3				0.3				0.3			
Effective Screen Length	10				10				10				10				10			
Effective Screen Radius[c] (ft)	0.25				0.25				0.25				0.25				0.25			
Effective Casing Radius[d] (ft)	0.083				0.083				0.083				0.083				0.083			
Initial Head Change (ft)	0.934	-0.991	2.084	-2.001	1.044	-1.016	2.205	-2.23	1.14	-1.14	2.218	-2.222	1.053	-1.081	2.051	-2.137	1.061	-1.064	2.036	-2.053
Kh (ft/day)[e]	10.9	13.5	11.3	14.4	8.3	7.3	7	5.7	0.41	0.46	0.49	0.64	2.7	2.3	2.5	2.3	8.4	5	5.1	4.1

Notes:

FH - falling head; RH - rising head; DTW - depth to water; BTOC - below top of casing; Col. - column; in - inches; ft - feet; bgs - below ground surface

[a] PVC slug with a 1.5-in diameter; theoretical head change in 2-in. diameter well is 0.8 and 1.6 feet for a 1.5 ft and 3 ft slug length, respectively.

[b] A porosity of 0.3 assumed for 12/20 US sieve size filter sand used in well construction.

[c] Permeability of filter pack assumed to be much greater than formation; therefore, effective screen radius is equal to bore hole radius.

[d] Well screen is submerged several feet below the potentiometric surface and the aquifer is likely confined; therefore, the effective casing radius is the nominal casing radius.

[e] Horizontal hydraulic conductivity estimate using AQTESOLV Bouwer & Rice 1976 model for confined aquifer.

TABLE 4-5

SUMMARY OF DETECTIONS IN VADOSE SOIL BORINGS - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID Sample ID Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. SAMPLES	NO. DETECTIONS	MIN	MAX	SCTL LEACH[1]	SCTL IND[1]	SCTL RES[1]	13SB001 NTC13U00112 1 2 07/26/06	13SB001 NTC13U00167 6 7 07/26/06	13SB002 NTC13U00212 1 2 07/26/06	13SB002 NTC13U00267 6 7 07/26/06
VOLATILE ORGANICS (µg/kg)												
Acetone	67-64-1	28	2	21.3	23.6	25000	68000000	11000000	20 U	20 U	20 U	20 U
Tetrachloroethene	127-18-4	28	28	4.6	55900	**30**	**18000**	**8800**	**831 [L]**	**145 [L]**	**2070 [L]**	**670 [L]**
Toluene	108-88-3	28	1	157	157	500	60000000	7500000	1.6 U	1.6 U	1.6 U	1.6 U
Trichloroethene	79-01-6	28	12	1.6	7.5	30	9300	6400	3 J	2.2 J	3 J	5

TABLE 4-5

SUMMARY OF DETECTIONS IN VADOSE SOIL BORINGS - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. DETECTIONS**	**MIN**	**MAX**	**SCTL LEACH[1]**	**SCTL IND[1]**	**SCTL RES[1]**	**13SB003** **NTC13U00312** **1** **2** **07/26/06**	**13SB003** **NTC13U00367** **6** **7** **07/26/06**	**13SB004** **NTC13U00412** **1** **2** **07/26/06**
VOLATILE ORGANICS (µg/kg)											
Acetone	67-64-1	28	2	21.3	23.6	25000	68000000	11000000	20 U	17 U	1000 U
Tetrachloroethene	127-18-4	28	28	4.6	55900	**30**	**18000**	**8800**	**55900 [R,I,L]**	**5010 [L]**	**2050 [L]**
Toluene	108-88-3	28	1	157	157	500	60000000	7500000	1.6 U	1.4 U	157 J
Trichloroethene	79-01-6	28	12	1.6	7.5	30	9300	6400	7.5	5.1	84 U

TABLE 4-5

SUMMARY OF DETECTIONS IN VADOSE SOIL BORINGS - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. DETECTIONS**	**MIN**	**MAX**	**SCTL LEACH[1]**	**SCTL IND[1]**	**SCTL RES[1]**	**13SB004** **NTC13U00467** **6** **7** **07/26/06**	**13SB005** **NTC13U00512** **1** **2** **07/26/06**	**13SB005** **NTC13U00567** **6** **7** **07/26/06**
VOLATILE ORGANICS (µg/kg)											
Acetone	67-64-1	28	2	21.3	23.6	25000	68000000	11000000	21 U	20 U	18 U
Tetrachloroethene	127-18-4	28	28	4.6	55900	**30**	**18000**	**8800**	25	**1390 [L]**	**195 J [L]**
Toluene	108-88-3	28	1	157	157	500	60000000	7500000	1.7 U	1.6 U	1.4 U
Trichloroethene	79-01-6	28	12	1.6	7.5	30	9300	6400	1.7 U	2.2 J	2 J

TABLE 4-5

SUMMARY OF DETECTIONS IN VADOSE SOIL BORINGS - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. DETECTIONS**	**MIN**	**MAX**	**SCTL LEACH[1]**	**SCTL IND[1]**	**SCTL RES[1]**	**13SB006** **NTC13U00612** **1** **2** **07/26/06**	**13SB006** **NTC13U00612-AVG** **1** **2** **07/26/06**	**13SB006** **NTC13U00612-D** **1** **2** **07/26/06**
VOLATILE ORGANICS (µg/kg)											
Acetone	67-64-1	28	2	21.3	23.6	25000	68000000	11000000	20 U	19.5 U	19 U
Tetrachloroethene	127-18-4	28	28	4.6	55900	**30**	**18000**	**8800**	**50.3 J [L]**	**36 J [L]**	21.7 J
Toluene	108-88-3	28	1	157	157	500	60000000	7500000	1.6 U	1.55 U	1.5 U
Trichloroethene	79-01-6	28	12	1.6	7.5	30	9300	6400	1.6 U	1.55 U	1.5 U

TABLE 4-5

SUMMARY OF DETECTIONS IN VADOSE SOIL BORINGS - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. DETECTIONS**	**MIN**	**MAX**	**SCTL LEACH[1]**	**SCTL IND[1]**	**SCTL RES[1]**	**13SB006** **NTC13U00667** **6** **7** **07/26/06**	**13SB006** **NTC13U00667-AVG** **6** **7** **07/26/06**	**13SB006** **NTC13U00667-D** **6** **7** **07/26/06**
VOLATILE ORGANICS (µg/kg)											
Acetone	67-64-1	28	2	21.3	23.6	25000	68000000	11000000	18 U	18 U	18 U
Tetrachloroethene	127-18-4	28	28	4.6	55900	**30**	**18000**	**8800**	4.6 J	8.25 J	11.9 J
Toluene	108-88-3	28	1	157	157	500	60000000	7500000	1.4 U	1.4 U	1.4 U
Trichloroethene	79-01-6	28	12	1.6	7.5	30	9300	6400	1.4 U	1.4 U	1.4 U

TABLE 4-5

SUMMARY OF DETECTIONS IN VADOSE SOIL BORINGS - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. DETECTIONS**	**MIN**	**MAX**	**SCTL LEACH[1]**	**SCTL IND[1]**	**SCTL RES[1]**	**13SB007** **NTC13U00712** **1** **2** **07/26/06**	**13SB007** **NTC13U00767** **6** **7** **07/26/06**	**13SB008** **NTC13U00812** **1** **2** **07/26/06**	**13SB008** **NTC13U00867** **6** **7** **07/26/06**
VOLATILE ORGANICS (µg/kg)												
Acetone	67-64-1	28	2	21.3	23.6	25000	68000000	11000000	19 U	18 U	19 U	19 U
Tetrachloroethene	127-18-4	28	28	4.6	55900	**30**	**18000**	**8800**	**86 [L]**	22.1	**40 [L]**	18.7
Toluene	108-88-3	28	1	157	157	500	60000000	7500000	1.5 U	1.5 U	1.5 U	1.5 U
Trichloroethene	79-01-6	28	12	1.6	7.5	30	9300	6400	1.5 U	1.5 U	1.5 U	1.5 U

TABLE 4-5

SUMMARY OF DETECTIONS IN VADOSE SOIL BORINGS - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID Sample ID Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. SAMPLES	NO. DETECTIONS	MIN	MAX	SCTL LEACH[1]	SCTL IND[1]	SCTL RES[1]	13SB009 NTC13U00912 1 2 10/24/06	13SB009 NTC13U00934 3 4 10/24/06	13SB009 NTC13U00967 6 7 10/24/06	13SB010 NTC13U01012 1 2 10/24/06
VOLATILE ORGANICS (µg/kg)												
Acetone	67-64-1	28	2	21.3	23.6	25000	68000000	11000000	21 UJ	20 UJ	23.6 J	21.3 J
Tetrachloroethene	127-18-4	28	28	4.6	55900	**30**	**18000**	**8800**	**4120 J [L]**	**2900 J [L]**	**316 J [L]**	**1840 J [L]**
Toluene	108-88-3	28	1	157	157	500	60000000	7500000	1.7 UJ	1.6 UJ	1.5 UJ	1.6 UJ
Trichloroethene	79-01-6	28	12	1.6	7.5	30	9300	6400	4.2 J	1.6 J	1.5 UJ	5.2 J

TABLE 4-5

SUMMARY OF DETECTIONS IN VADOSE SOIL BORINGS - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. DETECTIONS**	**MIN**	**MAX**	**SCTL LEACH[1]**	**SCTL IND[1]**	**SCTL RES[1]**	**13SB010** **NTC13U01034** **3** **4** **10/24/06**	**13SB010** **NTC13U01067** **6** **7** **10/24/06**	**13SB011** **NTC13U01112** **1** **2** **10/24/06**	**13SB011** **NTC13U01134** **3** **4** **10/24/06**
VOLATILE ORGANICS (µg/kg)												
Acetone	67-64-1	28	2	21.3	23.6	25000	68000000	11000000	1000 UJ	19 UJ	15 UJ	860 UJ
Tetrachloroethene	127-18-4	28	28	4.6	55900	**30**	**18000**	**8800**	**1160 J [L]**	**52.9 J [L]**	**629 J [L]**	**3490 J [L]**
Toluene	108-88-3	28	1	157	157	500	60000000	7500000	84 UJ	1.5 UJ	1.2 UJ	69 UJ
Trichloroethene	79-01-6	28	12	1.6	7.5	30	9300	6400	84 UJ	1.5 UJ	2.1 J	69 UJ

TABLE 4-5

SUMMARY OF DETECTIONS IN VADOSE SOIL BORINGS - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. DETECTIONS**	**MIN**	**MAX**	**SCTL LEACH[1]**	**SCTL IND[1]**	**SCTL RES[1]**	**13SB011** **NTC13U01167** **6** **7** **10/24/06**	**13SB012** **NTC13U01212** **1** **2** **10/24/06**	**13SB012** **NTC13U01234** **3** **4** **10/24/06**	**13SB012** **NTC13U01267** **6** **7** **10/24/06**
VOLATILE ORGANICS (µg/kg)												
Acetone	67-64-1	28	2	21.3	23.6	25000	68000000	11000000	1100 UJ	870 UJ	940 UJ	15 UJ
Tetrachloroethene	127-18-4	28	28	4.6	55900	**30**	**18000**	**8800**	**13200 J [R,L]**	**1720 J [L]**	**2180 J [L]**	**78.2 J [L]**
Toluene	108-88-3	28	1	157	157	500	60000000	7500000	87 UJ	70 UJ	75 UJ	1.2 UJ
Trichloroethene	79-01-6	28	12	1.6	7.5	30	9300	6400	87 UJ	70 UJ	75 UJ	1.2 UJ

Notes:
[I] - concentration exceeds industrial SCTL
IND - industrial
J - estimated value
[L] - concentration exceeds leaching to groundwater SCTL
[R] - concentration exceeds residential SCTL
RES - residential
SCTL - Soil Cleanup Target Level
U - less than laboratory method detection limits
µg/kg - micrograms per kilogram
[1] Bold indicates concentration in at least one sample equal to or greater than SCTL.
Only chemicals detected in at least one sample are shown.
Shaded cells indicate result equal to or greater than SCTL.

TABLE 4-6

SUMMARY OF DETECTIONS IN DEEP SOIL SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. DETECTIONS**	**MIN**	**MAX**	**SCTL LEACH[1]**	**13SB01** **NTC13USB01065066** **65** **66** **06/15/06**	**13SB01** **NTC13USB01078079** **78** **79** **06/15/06**	**13SB01** **NTC13USB01089090** **89** **90** **06/15/06**	**13SB01** **NTC13USB01099100** **99** **100** **06/15/06**	**13SB01** **NTC13USB01129130** **129** **130** **06/15/06**
VOLATILE ORGANICS (µg/kg)											
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	1.6 U	1.7 U		1.4 U	
Acetone	67-64-1	26	9	18	62.4	25000	20 U	21 U		17 U	
Carbon Disulfide	75-15-0	26	26	3.3	39.1	5600	8.8	10.1		5.8	
Chloroform	67-66-3	26	1	3.1	3.1	400	1.6 U	1.7 U		1.4 U	
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	1.6 U	1.7 U		1.4 U	
Tetrachloroethene	127-18-4	26	4	121	2150	**30**	1.6 U	1.7 U		1.4 U	
Trichloroethene	79-01-6	26	4	2.5	373	**30**	1.6 U	1.7 U		1.4 U	

TABLE 4-6

SUMMARY OF DETECTIONS IN DEEP SOIL SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. DETECTIONS**	**MIN**	**MAX**	**SCTL LEACH[1]**	**13SB01** **NTC13USB01138139** **138** **139** **06/15/06**	**13SB02** **NTC13USB02057058** **57** **58** **06/16/06**	**13SB02** **NTC13USB02061063** **61** **63** **07/14/06**	**13SB02** **NTC13USB02066067** **66** **67** **06/16/06**	**13SB02** **NTC13USB02107108** **107** **108** **06/17/06**
VOLATILE ORGANICS (µg/kg)											
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	2.6 U	1.3 U		1.3 U	1.2 U
Acetone	67-64-1	26	9	18	62.4	25000	33 U	18 J		16 U	15 U
Carbon Disulfide	75-15-0	26	26	3.3	39.1	5600	5.5 J	11.3		5.4	3.5 J
Chloroform	67-66-3	26	1	3.1	3.1	400	2.6 U	1.3 U		1.3 U	1.2 U
cis -1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	2.6 U	1.3 U		1.3 U	1.2 U
Tetrachloroethene	127-18-4	26	4	121	2150	**30**	2.6 U	1.3 U		1.3 U	1.2 U
Trichloroethene	79-01-6	26	4	2.5	373	**30**	2.6 U	1.3 U		1.3 U	1.2 U

TABLE 4-6

SUMMARY OF DETECTIONS IN DEEP SOIL SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. DETECTIONS**	**MIN**	**MAX**	**SCTL LEACH[1]**	**13SB02** **NTC13USB02107108-AVG** **107** **108** **06/17/06**	**13SB02** **NTC13USB02107108-D** **107** **108** **06/17/06**	**13SB02** **NTC13USB02143144** **143** **144** **06/17/06**	**13SB02** **NTC13USB02143145** **143** **145** **07/15/06**
VOLATILE ORGANICS (µg/kg)										
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	1.2 U	1.2 U	1.3 U	
Acetone	67-64-1	26	9	18	62.4	25000	15 U	15 U	17 U	
Carbon Disulfide	75-15-0	26	26	3.3	39.1	5600	5.45 J	7.4 J	15.9	
Chloroform	67-66-3	26	1	3.1	3.1	400	1.2 U	1.2 U	1.3 U	
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	1.2 U	1.2 U	1.3 U	
Tetrachloroethene	127-18-4	26	4	121	2150	**30**	1.2 U	1.2 U	1.3 U	
Trichloroethene	79-01-6	26	4	2.5	373	**30**	1.2 U	1.2 U	1.3 U	

TABLE 4-6

SUMMARY OF DETECTIONS IN DEEP SOIL SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. DETECTIONS**	**MIN**	**MAX**	**SCTL LEACH[1]**	**13SB03** **NTC13USB03069070** **69** **70** **06/17/06**	**13SB03** **NTC13USB03074075** **74** **75** **06/17/06**	**13SB03** **NTC13USB03103104** **103** **104** **06/18/06**	**13SB03** **NTC13USB03112113** **112** **113** **06/18/06**	**13SB03** **NTC13USB03124125** **124** **125** **06/18/06**
VOLATILE ORGANICS (µg/kg)											
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	2.1 U	1.2 U	1.4 U	1.6 U	
Acetone	67-64-1	26	9	18	62.4	25000	40 J	21.6 J	18 U	21 U	
Carbon Disulfide	75-15-0	26	26	3.3	39.1	5600	39.1	8.9	14.5	9.7	
Chloroform	67-66-3	26	1	3.1	3.1	400	2.1 U	1.2 U	1.4 U	1.6 U	
cis -1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	2.1 U	1.2 U	1.4 U	1.6 U	
Tetrachloroethene	127-18-4	26	4	121	2150	**30**	2.1 U	1.2 U	1.4 U	1.6 U	
Trichloroethene	79-01-6	26	4	2.5	373	**30**	2.1 U	1.2 U	1.4 U	1.6 U	

TABLE 4-6

SUMMARY OF DETECTIONS IN DEEP SOIL SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. DETECTIONS**	**MIN**	**MAX**	**SCTL LEACH[1]**	**13SB03** **NTC13USB03130131** **130** **131** **06/18/06**	**13SB04** **NTC13USB04065066** **65** **66** **06/19/06**	**13SB04** **NTC13USB04068069** **68** **69** **06/19/06**	**13SB04** **NTC13USB04075076** **75** **76** **06/19/06**	**13SB04** **NTC13USB04100101** **100** **101** **06/20/06**
VOLATILE ORGANICS (µg/kg)											
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60		1.3 U	1.3 U	1.4 U	1.2 U
Acetone	67-64-1	26	9	18	62.4	25000		27 J	28.4 J	33.4 J	15 U
Carbon Disulfide	75-15-0	26	26	3.3	39.1	5600		10.5	14.7	11.8	4.4
Chloroform	67-66-3	26	1	3.1	3.1	400		1.3 U	1.3 U	3.1 J	1.2 U
cis -1,2-Dichloroethene	156-59-2	26	1	48	66.6	400		1.3 U	1.3 U	1.4 U	1.2 U
Tetrachloroethene	127-18-4	26	4	121	2150	**30**		**2120**	**121**	**722**	1.2 U
Trichloroethene	79-01-6	26	4	2.5	373	**30**		**83.3**	2.5 J	**66.6**	1.2 U

TABLE 4-6

SUMMARY OF DETECTIONS IN DEEP SOIL SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. DETECTIONS**	**MIN**	**MAX**	**SCTL LEACH[1]**	**13SB04** **NTC13USB04109110** **109** **110** **06/20/06**	**13SB04** **NTC13USB04109110-AVG** **109** **110** **06/20/06**	**13SB04** **NTC13USB04109110-D** **109** **110** **06/20/06**	**13SB04** **NTC13USB04135136** **135** **136** **06/20/06**	**13SB05** **NTC13USB05067068** **67** **68** **06/29/06**
VOLATILE ORGANICS (µg/kg)											
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	1.9 J	1.225 J	1.1 U	1.4 U	1.6 U
Acetone	67-64-1	26	9	18	62.4	25000	15 U	14.5 U	14 U	17 U	43.3 U
Carbon Disulfide	75-15-0	26	26	3.3	39.1	5600	6	5.65	5.3	5.3	7.6
Chloroform	67-66-3	26	1	3.1	3.1	400	1.2 U	1.15 U	1.1 U	1.4 U	1.6 U
cis -1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	66.6	57.3	48	1.4 U	1.6 U
Tetrachloroethene	127-18-4	26	4	121	2150	**30**	**2150 J**	**1615 J**	**1080 J**	1.4 U	1.6 U
Trichloroethene	79-01-6	26	4	2.5	373	**30**	**373**	**308**	**243**	1.4 U	1.6 U

TABLE 4-6

SUMMARY OF DETECTIONS IN DEEP SOIL SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. DETECTIONS**	**MIN**	**MAX**	**SCTL LEACH[1]**	**13SB05** **NTC13USB05076077** **76** **77** **06/29/06**	**13SB05** **NTC13USB05125126** **125** **126** **06/29/06**	**13SB05** **NTC13USB05129130** **129** **130** **06/29/06**	**13SB06** **NTC13USB06074075** **74** **75** **07/01/06**	**13SB06** **NTC13USB06079080** **79** **80** **07/01/06**
VOLATILE ORGANICS (µg/kg)											
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	1.8 U	1.7 U	2.2 U	1.6 U	1.6 U
Acetone	67-64-1	26	9	18	62.4	25000	36.8 U	22 U	28 U	26.7 J	32.5 J
Carbon Disulfide	75-15-0	26	26	3.3	39.1	5600	11.6	7.7	9.1	9.8	6
Chloroform	67-66-3	26	1	3.1	3.1	400	1.8 U	1.7 U	2.2 U	1.6 U	1.6 U
cis -1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	1.8 U	1.7 U	2.2 U	1.6 U	1.6 U
Tetrachloroethene	127-18-4	26	4	121	2150	**30**	1.8 U	1.7 U	2.2 U	1.6 U	1.6 U
Trichloroethene	79-01-6	26	4	2.5	373	**30**	1.8 U	1.7 U	2.2 U	1.6 U	1.6 U

TABLE 4-6

SUMMARY OF DETECTIONS IN DEEP SOIL SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. DETECTIONS**	**MIN**	**MAX**	**SCTL LEACH[1]**	**13SB06** **NTC13USB06107108** **107** **108** **07/01/06**	**13SB06** **NTC13USB06110111** **110** **111** **07/01/06**	**13SB06** **NTC13USB06119120** **119** **120** **07/01/06**
VOLATILE ORGANICS (µg/kg)									
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60		1.4 U	
Acetone	67-64-1	26	9	18	62.4	25000		18 U	
Carbon Disulfide	75-15-0	26	26	3.3	39.1	5600		3.3 J	
Chloroform	67-66-3	26	1	3.1	3.1	400		1.4 U	
cis -1,2-Dichloroethene	156-59-2	26	1	48	66.6	400		1.4 U	
Tetrachloroethene	127-18-4	26	4	121	2150	**30**		1.4 U	
Trichloroethene	79-01-6	26	4	2.5	373	**30**		1.4 U	

TABLE 4-6

SUMMARY OF DETECTIONS IN DEEP SOIL SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. DETECTIONS**	**MIN**	**MAX**	**SCTL LEACH[1]**	**13SB06** **NTC13USB06125126** **125** **126** **07/01/06**	**13SB06** **NTC13USB06130131** **130** **131** **07/01/06**	**13SB07** **NTC13USB07056057** **56** **57** **07/02/06**	**13SB07** **NTC13USB07061062** **61** **62** **07/02/06**
VOLATILE ORGANICS (µg/kg)										
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60		2.1 U	3 U	1.8 U
Acetone	67-64-1	26	9	18	62.4	25000		26 U	62.4 J	23 U
Carbon Disulfide	75-15-0	26	26	3.3	39.1	5600		14.1	27.4	14.2
Chloroform	67-66-3	26	1	3.1	3.1	400		2.1 U	3 U	1.8 U
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400		2.1 U	3 U	1.8 U
Tetrachloroethene	127-18-4	26	4	121	2150	**30**		2.1 U	3 U	1.8 U
Trichloroethene	79-01-6	26	4	2.5	373	**30**		2.1 U	3 U	1.8 U

TABLE 4-6

SUMMARY OF DETECTIONS IN DEEP SOIL SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. DETECTIONS**	**MIN**	**MAX**	**SCTL LEACH[1]**	**13SB07** **NTC13USB07084085** **84** **85** **07/02/06**	**13SB07** **NTC13USB07084085-AVG** **84** **85** **07/02/06**	**13SB07** **NTC13USB07084085-D** **84** **85** **07/02/06**	**13SB07** **NTC13USB07128129** **128** **129** **07/02/06**
VOLATILE ORGANICS (µg/kg)										
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	1.7 U	1.65 U	1.6 U	1.9 U
Acetone	67-64-1	26	9	18	62.4	25000	22 U	21 U	20 U	23 U
Carbon Disulfide	75-15-0	26	26	3.3	39.1	5600	7.1	9.3	11.5	11.1
Chloroform	67-66-3	26	1	3.1	3.1	400	1.7 U	1.65 U	1.6 U	1.9 U
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	1.7 U	1.65 U	1.6 U	1.9 U
Tetrachloroethene	127-18-4	26	4	121	2150	**30**	1.7 U	1.65 U	1.6 U	1.9 U
Trichloroethene	79-01-6	26	4	2.5	373	**30**	1.7 U	1.65 U	1.6 U	1.9 U

Notes:
J - estimated value
SCTL - Soil Cleanup Target Level
U - less than laboratory method detection limit
µg/kg - micrograms per kilogram
[1] Bold indicates concentration in at least one sample exceeded SCTL.
Average value provided for all duplicate samples.
Empty cells indicate parameter not analyzed. Only chemicals detected in at least one sample are shown.
Shaded cells indicate result equal to or greater than leaching to groundwater SCTL.

TABLE 4-7

DEEP SOIL GEOTECHNICAL SUMMARY
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

LOCATION ID	TOP DEPTH (ft bgs)	BOTTOM DEPTH (ft bgs)	SAMPLE DATE	USCS	PERCENT SOLIDS (%)	PERMEABILITY (cm/sec)	SPECIFIC GRAVITY (S.U.)	TOTAL ORGANIC CARBON (mg/kg)
UPPER HAWTHORN CLAY								
13SB01	65	66	06/15/2006	SC	76.0		1.4	2780
13SB01	78	79	06/15/2006	SC	74.0		1.8	3940
13SB02	61	63	06/15/2006	CL		1.47E-06		
13SB03	69	70	06/17/2006	CL	59.0		1.4	5280
13SB06	74	75	07/01/2006	CL	73.0			
13SB06	79	80	07/01/2006	CL	77.0		1.1	3690
Averages =					**71.8**	**1.47E-06**	**1.4**	**3923**
WATER BEARING ZONE (Gravels, Sands, Silts)								
13SB01	89	90	06/15/2006	CL	84.0		1.5	1820
13SB01	99	100	06/15/2006	SP	82.0		1.5	1850
13SB01	129	130	06/15/2006	SC-ML	81.0		1.8	1070
13SB01	138	139	06/15/2006	ML	79.0		0.99	2550
13SB03	103	104	06/18/2006	SP	84.0		1.4	1970
13SB03	112	113	06/18/2006	SP	78.0		1.5	1340
13SB03	124	125	06/18/2006	SC	83.0		1.8	957
13SB06	107	108	07/01/2006	SW	82.0		1.1	1920
13SB06	110	111	07/01/2006	GP	84.0			
13SB06	119	120	07/01/2006	SC	82.0		0.99	941
13SB06	125	126	07/01/2006	GW	80.0		1.2	1620
Averages =					**81.7**		**1.4**	**1604**
LOWER HAWTHORN CLAY								
13SB02	143	145	06/15/2006	CL		7.12E-05		
13SB03	130	131	06/18/2006	CL	79.0		1.3	2290
13SB06	130	131	07/01/2006	CL	71.0		0.7	5390
Averages =					**75.0**	**7.12E-05**	**1.0**	**3840**

Notes:
bgs - below ground surface
cm/sec - centimeters per second
ft - feet
mg/kg - milligrams per kilogram
S.U. - Standard Unit
USCS - Unified Soil Classification System

TABLE 4-8

SUMMARY OF DETECTIONS IN GROUNDWATER PROFILE SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. HITS**	**MIN**	**MAX**	**GCTL[1]**	**13SB01** **NTC13GSB01085095** **85** **95** **06/15/06**	**13SB01** **NTC13GSB01115125** **115** **125** **06/15/06**	**13SB01** **NTC13GSB01115125-AVG** **115** **125** **06/15/06**	**13SB01** **NTC13GSB01115125-D** **115** **125** **06/15/06**
VOLATILE ORGANICS (µg/L)										
2-Butanone	78-93-3	26	1	5.5	5.5	4200	2.5 U	2.5 U	2.5 U	2.5 U
Acetone	67-64-1	26	5	5.2	33.3	6300	5 U	5 U	5 U	5 U
Bromodichloromethane	75-27-4	26	13	0.77	13.7	**0.6**	0.5 U	0.5 U	0.50 U	0.5 U
Carbon Disulfide	75-15-0	26	2	1.3	1.5	700	1 U	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	26	6	1.3	4.9	**0.4**	0.4 U	0.4 U	0.40 U	0.4 U
Chloroform	67-66-3	26	24	0.93	38.9	70	4.8	4.8 J	3.6 J	2.4 J
cis -1,2-Dichloroethene	156-59-2	26	3	1.4	367	**70**	0.5 U	0.5 U	0.50 U	0.5 U
Tetrachloroethene	127-18-4	26	7	5.7	29900	**3**	0.5 U	0.5 U	0.50 U	0.5 U
Toluene	108-88-3	26	1	1.7	1.7	40	0.5 U	0.5 U	0.50 U	0.5 U
Trichloroethene	79-01-6	26	6	2.2	1890	**3**	0.5 U	0.5 U	0.50 U	0.5 U

TABLE 4-8

SUMMARY OF DETECTIONS IN GROUNDWATER PROFILE SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. HITS**	**MIN**	**MAX**	**GCTL[1]**	**13SB02** **NTC13GSB02065075** **65** **75** **06/16/06**	**13SB02** **NTC13GSB02095105** **95** **105** **06/17/06**	**13SB02** **NTC13GSB02115125** **115** **125** **06/17/06**	**13SB02** **NTC13GSB02125135** **125** **135** **06/17/06**
VOLATILE ORGANICS (µg/L)										
2-Butanone	78-93-3	26	1	5.5	5.5	4200	2.5 U	2.5 U	2.5 U	2.5 U
Acetone	67-64-1	26	5	5.2	33.3	6300	5 U	5 U	5 U	5 U
Bromodichloromethane	75-27-4	26	13	0.77	13.7	**0.6**	**1.1**	0.5 U	**0.93 J**	**6.3**
Carbon Disulfide	75-15-0	26	2	1.3	1.5	700	1 U	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	26	6	1.3	4.9	**0.4**	0.4 U	0.4 U	0.4 U	**2.2**
Chloroform	67-66-3	26	24	0.93	38.9	70	3.7	3.4	11.5	20.3
cis -1,2-Dichloroethene	156-59-2	26	3	1.4	367	**70**	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	127-18-4	26	7	5.7	29900	**3**	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	108-88-3	26	1	1.7	1.7	40	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	79-01-6	26	6	2.2	1890	**3**	0.5 U	0.5 U	0.5 U	0.5 U

TABLE 4-8

SUMMARY OF DETECTIONS IN GROUNDWATER PROFILE SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. HITS**	**MIN**	**MAX**	**GCTL[1]**	**13SB03** **NTC13GSB03085095** **85** **95** **06/17/06**	**13SB03** **NTC13GSB03115125** **115** **125** **06/18/06**	**13SB03** **NTC13GSB03125135** **125** **135** **06/18/06**	**13SB04** **NTC13GSB04065075** **65** **75** **06/19/06**
VOLATILE ORGANICS (µg/L)										
2-Butanone	78-93-3	26	1	5.5	5.5	4200	2.5 U	2.5 U	2.5 U	500 U
Acetone	67-64-1	26	5	5.2	33.3	6300	5 U	5 U	5 U	1000 U
Bromodichloromethane	75-27-4	26	13	0.77	13.7	**0.6**	**3.4**	**0.85 J**	0.5 U	100 U
Carbon Disulfide	75-15-0	26	2	1.3	1.5	700	1 U	1 U	1 U	200 U
Chlorodibromomethane	124-48-1	26	6	1.3	4.9	**0.4**	**1.3**	0.4 U	0.4 U	80 U
Chloroform	67-66-3	26	24	0.93	38.9	70	13.1	13.6	18.3	100 U
cis -1,2-Dichloroethene	156-59-2	26	3	1.4	367	**70**	0.5 U	0.5 U	0.5 U	100 U
Tetrachloroethene	127-18-4	26	7	5.7	29900	**3**	0.5 U	0.5 U	0.5 U	**11900**
Toluene	108-88-3	26	1	1.7	1.7	40	0.5 U	0.5 U	0.5 U	100 U
Trichloroethene	79-01-6	26	6	2.2	1890	**3**	0.5 U	0.5 U	0.5 U	**516**

TABLE 4-8

SUMMARY OF DETECTIONS IN GROUNDWATER PROFILE SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. HITS**	**MIN**	**MAX**	**GCTL[1]**	**13SB04** **NTC13GSB04075085** **75** **85** **06/19/06**	**13SB04** **NTC13GSB04085095** **85** **95** **06/20/06**	**13SB04** **NTC13GSB04095105** **95** **105** **06/20/06**	**13SB04** **NTC13GSB04105115** **105** **115** **06/20/06**
VOLATILE ORGANICS (µg/L)										
2-Butanone	78-93-3	26	1	5.5	5.5	4200	25 U	2.5 U	2.5 U	1300 U
Acetone	67-64-1	26	5	5.2	33.3	6300	50 U	5.2 J	5 U	2500 U
Bromodichloromethane	75-27-4	26	13	0.77	13.7	**0.6**	5 U	**8.4**	0.5 U	250 U
Carbon Disulfide	75-15-0	26	2	1.3	1.5	700	10 U	1 U	1 U	500 U
Chlorodibromomethane	124-48-1	26	6	1.3	4.9	**0.4**	4 U	**2.9**	0.4 U	200 U
Chloroform	67-66-3	26	24	0.93	38.9	70	6.5 J	28.2	1.4	250 U
cis -1,2-Dichloroethene	156-59-2	26	3	1.4	367	**70**	5 U	0.5 U	0.5 U	**367 J**
Tetrachloroethene	127-18-4	26	7	5.7	29900	**3**	**526**	**45.2**	**5.7**	**29900**
Toluene	108-88-3	26	1	1.7	1.7	40	5 U	0.5 U	0.5 U	250 U
Trichloroethene	79-01-6	26	6	2.2	1890	**3**	**60.2**	2.2	0.5 U	**1890**

TABLE 4-8

SUMMARY OF DETECTIONS IN GROUNDWATER PROFILE SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. HITS**	**MIN**	**MAX**	**GCTL[1]**	**13SB04** **NTC13GSB04115125** **115** **125** **06/20/06**	**13SB04** **NTC13GSB04115125-AVG** **115** **125** **06/20/06**	**13SB04** **NTC13GSB04115125-D** **115** **125** **06/20/06**	**13SB04** **NTC13GSB04125135** **125** **135** **06/20/06**
VOLATILE ORGANICS (µg/L)										
2-Butanone	78-93-3	26	1	5.5	5.5	4200	50 U	50 U	50 U	13 U
Acetone	67-64-1	26	5	5.2	33.3	6300	100 U	100 U	100 U	25 U
Bromodichloromethane	75-27-4	26	13	0.77	13.7	**0.6**	10 U	10 U	10 U	2.5 U
Carbon Disulfide	75-15-0	26	2	1.3	1.5	700	20 U	20 U	20 U	5 U
Chlorodibromomethane	124-48-1	26	6	1.3	4.9	**0.4**	8 U	8 U	8 U	2 U
Chloroform	67-66-3	26	24	0.93	38.9	70	27.8	27.55	27.3	13.6
cis -1,2-Dichloroethene	156-59-2	26	3	1.4	367	**70**	13.5 J	14.1 J	14.7 J	2.5 U
Tetrachloroethene	127-18-4	26	7	5.7	29900	**3**	**1060**	**1105**	**1150**	**186**
Toluene	108-88-3	26	1	1.7	1.7	40	10 U	10 U	10 U	2.5 U
Trichloroethene	79-01-6	26	6	2.2	1890	**3**	**70.8**	**73.3**	**75.8**	**12.8**

TABLE 4-8

SUMMARY OF DETECTIONS IN GROUNDWATER PROFILE SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. HITS**	**MIN**	**MAX**	**GCTL[1]**	**13SB05** **NTC13GSB05065075** **65** **75** **06/29/06**	**13SB05** **NTC13GSB05075085** **75** **85** **06/29/06**	**13SB05** **NTC13GSB05105115** **105** **115** **06/29/06**	**13SB05** **NTC13GSB05115125** **115** **125** **06/29/06**
VOLATILE ORGANICS (µg/L)										
2-Butanone	78-93-3	26	1	5.5	5.5	4200	2.5 U	2.5 U	2.5 U	2.5 U
Acetone	67-64-1	26	5	5.2	33.3	6300	16.5 U	8.1 U	6.7 U	8.5 U
Bromodichloromethane	75-27-4	26	13	0.77	13.7	**0.6**	**1.6**	**11.3**	0.5 U	**1.7**
Carbon Disulfide	75-15-0	26	2	1.3	1.5	700	1 U	1.5 J	1 U	1 U
Chlorodibromomethane	124-48-1	26	6	1.3	4.9	**0.4**	0.4 U	**4.8**	0.4 U	0.4 U
Chloroform	67-66-3	26	24	0.93	38.9	70	9.5	35.2	5.3	23
cis -1,2-Dichloroethene	156-59-2	26	3	1.4	367	**70**	0.5 U	0.5 U	1.4	0.5 U
Tetrachloroethene	127-18-4	26	7	5.7	29900	**3**	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	108-88-3	26	1	1.7	1.7	40	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	79-01-6	26	6	2.2	1890	**3**	0.5 U	0.5 U	0.5 U	0.5 U

TABLE 4-8

SUMMARY OF DETECTIONS IN GROUNDWATER PROFILE SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. HITS**	**MIN**	**MAX**	**GCTL[1]**	**13SB06** **NTC13GSB06065075** **65** **75** **07/01/06**	**13SB06** **NTC13GSB06095105** **95** **105** **07/01/06**	**13SB06** **NTC13GSB06115125** **115** **125** **07/01/06**	**13SB06** **NTC13GSB06115125-AVG** **115** **125** **07/01/06**
VOLATILE ORGANICS (µg/L)										
2-Butanone	78-93-3	26	1	5.5	5.5	4200	5.5	2.5 U	2.5 U	2.5 U
Acetone	67-64-1	26	5	5.2	33.3	6300	33.3 J	5 U	5.5 J	4 J
Bromodichloromethane	75-27-4	26	13	0.77	13.7	**0.6**	**13.7**	0.5 U	**10.9**	**10.45**
Carbon Disulfide	75-15-0	26	2	1.3	1.5	700	1.3 J	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	26	6	1.3	4.9	**0.4**	**4.9**	0.4 U	**4.2**	**4**
Chloroform	67-66-3	26	24	0.93	38.9	70	38.8	7.5	38.9	36.95
cis -1,2-Dichloroethene	156-59-2	26	3	1.4	367	**70**	0.5 U	0.5 U	0.5 U	0.50 U
Tetrachloroethene	127-18-4	26	7	5.7	29900	**3**	0.5 U	0.5 U	0.5 U	0.50 U
Toluene	108-88-3	26	1	1.7	1.7	40	1.7	0.5 U	0.5 U	0.50 U
Trichloroethene	79-01-6	26	6	2.2	1890	**3**	0.5 U	0.5 U	0.5 U	0.50 U

TABLE 4-8

SUMMARY OF DETECTIONS IN GROUNDWATER PROFILE SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring ID **Sample ID** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. HITS**	**MIN**	**MAX**	**GCTL[1]**	**13SB06** **NTC13GSB06115125-D** **115** **125** **07/01/06**	**13SB07** **NTC13GSB07065075** **65** **75** **07/02/06**	**13SB07** **NTC13GSB07095105** **95** **105** **07/02/06**	**13SB07** **NTC13GSB07115125** **115** **125** **07/02/06**
VOLATILE ORGANICS (µg/L)										
2-Butanone	78-93-3	26	1	5.5	5.5	4200	2.5 U	2.5 U	2.5 U	2.5 U
Acetone	67-64-1	26	5	5.2	33.3	6300	5 U	7.9 J	5 U	5.5 J
Bromodichloromethane	75-27-4	26	13	0.77	13.7	**0.6**	**10**	**1.8**	0.5 U	**0.77 J**
Carbon Disulfide	75-15-0	26	2	1.3	1.5	700	1 U	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	26	6	1.3	4.9	**0.4**	**3.8**	0.4 U	0.4 U	0.4 U
Chloroform	67-66-3	26	24	0.93	38.9	70	35	9.3	0.93 J	4.4
cis -1,2-Dichloroethene	156-59-2	26	3	1.4	367	**70**	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	127-18-4	26	7	5.7	29900	**3**	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	108-88-3	26	1	1.7	1.7	40	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	79-01-6	26	6	2.2	1890	**3**	0.5 U	0.5 U	0.5 U	0.5 U

Notes:
GCTL - Groundwater Cleanup Target Level
J - estimated value
U - less than laboratory method detection limit
µg/L - micrograms per liter
[1] Bold indicates concentration in at least one sample exceeded GCTL.
Shaded cells indicate result equal to or greater than the GCTL.

TABLE 4-9

SUMMARY OF DETECTIONS IN GROUNDWATER - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL[1,2] (µg/L)	OLD1358D 0311358DQ205-20050601 101 111 06/01/05	OLD1358D 0311358DQ405-20051109 101 111 11/09/05	OLD1358D 0311358DQ206-20060725 101 111 07/25/06	OLD1358D NTC13G58D01 101 111 07/25/06
VOLATILE ORGANICS (µg/L)										
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	**7**	1 U	1 U	1 U	1 U
2-Butanone	78-93-3	45	1	4.4	4.4	4200	4 U	4 U	4 U	5 U
Acetone	67-64-1	45	6	1.9	27.9	6300	4 U	4 U	4 U	27.9 J
Benzene	71-43-2	45	1	1	1	1	1 U	1 U	1 U	1 J
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	1 U	1 U	1 U	2 U
Chloroform	67-66-3	45	7	0.65	3.2	70	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	45	22	1	1980	**70**	1 U	1 U	1 U	1 U
Methyl acetate	79-20-9	22	1	2.4	2.4	3000	1 U	1 U	1 U	
Methylene chloride	75-09-2	45	2	2.3	3.7	5	1 U	1 U	1 U	7.5 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	**3**	0.68 J	1 U	0.55 J	1 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	3 U	3 U	3 U	2 U
trans-1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	1 U	1 U	1 U	1 U
Trichloroethene	79-01-6	45	20	0.32	2030	**3**	1 U	1 U	1 U	1 U
Vinyl chloride	75-01-4	45	4	0.7	1.1	**1**	1 U	1 U	1 U	1 U
VOLATILE ORGANICS GASES (µg/L)										
Ethane	74-84-0	22	17	0.028	2.5	--	1.2 U			0.15
Ethene	74-85-1	22	19	0.006	12.8	--	1 U			0.006 J
Methane	74-82-8	22	22	11	1920	--	626			750
INORGANICS (µg/L)										
Iron	7439-89-6	22	21	30.8	11600	**1227**	733			550
Manganese	7439-96-5	22	22	0.486	420	50	45.3			39.8
MISCELLANEOUS PARAMETERS										
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--	129			
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--	121			5.9
Chloride (mg/L)	16887-00-6	22	22	28.1	982	**250**	**528**			**510**
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--	0.776 J			
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--	28			4.8
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10				0.05 U
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1				0.05 U
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--				18
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--				0.06
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--				1.1
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250	4.42			6
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--	2 U			
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--	2.01			0.92

TABLE 4-9

SUMMARY OF DETECTIONS IN GROUNDWATER - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL[1,2] (µg/L)**	**OLD1359D** **0311359DQ205-20050617** **100** **110** **06/17/05**	**OLD1359D** **0311359DQ405-20051109** **100** **110** **11/09/05**	**OLD1359D** **0311359DQ206-20060719** **100** **110** **07/19/06**	**OLD1359D** **NTC13G59D01** **100** **110** **07/25/06**
VOLATILE ORGANICS (µg/L)										
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	**7**	1 U	1 U	1 U	1 U
2-Butanone	78-93-3	45	1	4.4	4.4	4200	4 U	4 U	4 U	5 U
Acetone	67-64-1	45	6	1.9	27.9	6300	10 U	4 U	4 U	10 U
Benzene	71-43-2	45	1	1	1	1	1 U	1 U	1 U	1 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	1 U	1 U	1 U	2 U
Chloroform	67-66-3	45	7	0.65	3.2	70	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	45	22	1	1980	**70**	1 U	1 U	1 U	1 U
Methyl acetate	79-20-9	22	1	2.4	2.4	3000	1 U	1 U	1 U	
Methylene chloride	75-09-2	45	2	2.3	3.7	5	1 U	1 U	1 U	6.3 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	**3**	1 U	1 U	1 U	1 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	3 U	3 U	3 U	2 U
trans-1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	1 U	1 U	1 U	1 U
Trichloroethene	79-01-6	45	20	0.32	2030	**3**	1 U	1 U	1 U	1 U
Vinyl chloride	75-01-4	45	4	0.7	1.1	**1**	1 U	1 U	1 U	1 U
VOLATILE ORGANICS GASES (µg/L)										
Ethane	74-84-0	22	17	0.028	2.5	--	1.2 U			0.052
Ethene	74-85-1	22	19	0.006	12.8	--	1 U			0.086
Methane	74-82-8	22	22	11	1920	--	213			450
INORGANICS (µg/L)										
Iron	7439-89-6	22	21	30.8	11600	**1227**	**1570**			569
Manganese	7439-96-5	22	22	0.486	420	50	47.3			33.8
MISCELLANEOUS PARAMETERS										
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--	183			
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--	167 J			7
Chloride (mg/L)	16887-00-6	22	22	28.1	982	**250**	**526**			**350**
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--	1.82			
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--	9.1			4.5
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10				0.05 U
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1				0.05 U
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--				18
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--				0.071
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--				1.4
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250	5.99			1 U
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--	1.12 J			
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--	0.475 J			1.1

TABLE 4-9

SUMMARY OF DETECTIONS IN GROUNDWATER - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL[1,2] (µg/L)	OLD1360D 0311360DQ205-20050614 100 110 06/14/05	OLD1360D 0311360DQ405-20051109 100 110 11/09/05	OLD1360D 0311360DQ206-20060725 100 110 07/25/06	OLD1360D NTC13G60D01 100 110 07/25/06
VOLATILE ORGANICS (µg/L)										
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	**7**	10 U	50 U	50 U	4.3
2-Butanone	78-93-3	45	1	4.4	4.4	4200	40 U	200 U	200 U	5 U
Acetone	67-64-1	45	6	1.9	27.9	6300	40 U	200 U	200 U	10 U
Benzene	71-43-2	45	1	1	1	1	10 U	50 U	50 U	1 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	10 U	50 U	50 U	2 U
Chloroform	67-66-3	45	7	0.65	3.2	70	10 U	50 U	50 U	1 U
cis-1,2-Dichloroethene	156-59-2	45	22	1	1980	**70**	**418**	**403**	**351 J**	**159 J**
Methyl acetate	79-20-9	22	1	2.4	2.4	3000	10 U	50 U	50 U	
Methylene chloride	75-09-2	45	2	2.3	3.7	5	10 U	50 U	50 U	6.2 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	**3**	**32600**	**52600**	**35800 J**	**6180**
Total xylenes	1330-20-7	45	4	1.2	19.9	20	30 U	150 U	19.9 J	2.9 J
trans-1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	10 U	50 U	50 U	1.1 J
Trichloroethene	79-01-6	45	20	0.32	2030	**3**	**2030**	**2010**	**1900 J**	**500**
Vinyl chloride	75-01-4	45	4	0.7	1.1	**1**	10 U	50 U	50 U	1 U
VOLATILE ORGANICS GASES (µg/L)										
Ethane	74-84-0	22	17	0.028	2.5	--	1.2 U			1.1
Ethene	74-85-1	22	19	0.006	12.8	--	0.52 J			6
Methane	74-82-8	22	22	11	1920	--	74.7			670
INORGANICS (µg/L)										
Iron	7439-89-6	22	21	30.8	11600	**1227**	**2320**			573
Manganese	7439-96-5	22	22	0.486	420	50	**88.1**			**68.6**
MISCELLANEOUS PARAMETERS										
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--	128			
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--	119 J			7.9
Chloride (mg/L)	16887-00-6	22	22	28.1	982	**250**	**621**			**856**
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--	1.44			
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--	20			3.4
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10				0.05 U
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1				0.05 U
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--				18
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--				0.049
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--				1.2
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250	10.7			1 U
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--	2 U			
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--	2.32			0.9

TABLE 4-9

SUMMARY OF DETECTIONS IN GROUNDWATER - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL[1,2] (µg/L)	OLD1360D 0311360DQ206FP-20060803 100 110 08/03/06	OLD1361D 0311361DQ205-20050601 99 109 06/01/05	OLD1361D 0311361DQ405-20051109 99 109 11/09/05	OLD1361D 0311361DQ206-20060725 99 109 07/25/06
VOLATILE ORGANICS (µg/L)										
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	**7**	0.97 J	1 U	1 U	1 U
2-Butanone	78-93-3	45	1	4.4	4.4	4200	4 U	4 U	4 U	4 U
Acetone	67-64-1	45	6	1.9	27.9	6300	4 U	4 U	3 J	4 U
Benzene	71-43-2	45	1	1	1	1	1 U	1 U	1 U	1 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	1 U	1 U	0.43 J	1.2
Chloroform	67-66-3	45	7	0.65	3.2	70	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	45	22	1	1980	**70**	**402**	1 U	1 U	1 U
Methyl acetate	79-20-9	22	1	2.4	2.4	3000	1 U	1 U	2.4	1 U
Methylene chloride	75-09-2	45	2	2.3	3.7	5	1 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	**3**	**829**	1 U	1 U	1 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	3 U	3 U	3 U	3 U
trans-1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	2.4	1 U	1 U	1 U
Trichloroethene	79-01-6	45	20	0.32	2030	**3**	**253**	1 U	1 U	1 U
Vinyl chloride	75-01-4	45	4	0.7	1.1	**1**	1 U	1 U	1 U	1 U
VOLATILE ORGANICS GASES (µg/L)										
Ethane	74-84-0	22	17	0.028	2.5	--		1.2 U		
Ethene	74-85-1	22	19	0.006	12.8	--		1.6		
Methane	74-82-8	22	22	11	1920	--		1920		
INORGANICS (µg/L)										
Iron	7439-89-6	22	21	30.8	11600	**1227**		424		
Manganese	7439-96-5	22	22	0.486	420	50		44.7		
MISCELLANEOUS PARAMETERS										
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--		94		
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--		85.4		
Chloride (mg/L)	16887-00-6	22	22	28.1	982	**250**		**982**		
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--		1.73		
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--		160000		
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10				
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1				
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--				
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--				
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--				
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250		4.18		
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--		2 U		
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--		2.07		

TABLE 4-9

SUMMARY OF DETECTIONS IN GROUNDWATER - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL[1,2] (µg/L)	OLD1361D NTC13G61D01 99 109 07/25/06	OLD1362D 0311362DQ205-20050601 110 120 06/01/05	OLD1362D 0311362DQ405-20051109 110 120 11/09/05	OLD1362D 0311362DQ206-20060726 110 120 07/26/06	OLD1362D NTC13G62D01 110 120 07/26/06
VOLATILE ORGANICS (µg/L)											
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	**7**	0.5 U	5 U	**7.7**	10 U	2.7
2-Butanone	78-93-3	45	1	4.4	4.4	4200	2.5 U	20 U	20 U	40 U	2.5 U
Acetone	67-64-1	45	6	1.9	27.9	6300	5 U	20 U	20 U	40 U	5 U
Benzene	71-43-2	45	1	1	1	1	0.5 U	5 U	5 U	10 U	0.5 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	1 U	77.1	12.6	10 U	1 U
Chloroform	67-66-3	45	7	0.65	3.2	70	0.5 U	1.6 J	5 U	10 U	0.5 U
cis -1,2-Dichloroethene	156-59-2	45	22	1	1980	**70**	0.5 U	**581**	**1370**	**488**	**468**
Methyl acetate	79-20-9	22	1	2.4	2.4	3000		5 U	5 U	10 U	
Methylene chloride	75-09-2	45	2	2.3	3.7	5	3 U	2.3 J	3.7 J	10 U	1 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	**3**	0.5 U	**15600**	**7020**	**12900**	**16800**
Total xylenes	1330-20-7	45	4	1.2	19.9	20	1 U	15 U	15 U	30 U	1 U
trans -1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	0.5 U	5 U	1.3 J	10 U	0.92 J
Trichloroethene	79-01-6	45	20	0.32	2030	**3**	0.5 U	**1540**	**1600**	**385**	**409**
Vinyl chloride	75-01-4	45	4	0.7	1.1	**1**	0.5 U	5 U	5 U	10 U	0.81 J
VOLATILE ORGANICS GASES (µg/L)											
Ethane	74-84-0	22	17	0.028	2.5	--	0.028	1.5			2.5
Ethene	74-85-1	22	19	0.006	12.8	--	0.29	12.8			9
Methane	74-82-8	22	22	11	1920	--	260	69.4			700
INORGANICS (µg/L)											
Iron	7439-89-6	22	21	30.8	11600	**1227**	1130	50 U			**1660**
Manganese	7439-96-5	22	22	0.486	420	50	**60**	0.486 J			**59.9**
MISCELLANEOUS PARAMETERS											
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--		18			
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--	0.82 J	26.6			7.6
Chloride (mg/L)	16887-00-6	22	22	28.1	982	**250**	**556**	**579**			**946**
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--		2.49			
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--	5.8	3800			41
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10	0.05 U				0.05 U
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1	0.05 U				0.25 U
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--	18				18
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--	0.042				0.25
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--	4.1				1.7
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250	1 U	23.6			6
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--		0.4 J			
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--	0.91	4.95			1

TABLE 4-9

SUMMARY OF DETECTIONS IN GROUNDWATER - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL[1,2] (µg/L)	OLD1363D 0311363DQ205-20050517 96 106 5/17/2005	OLD1363D 0311363DQ405-20051108 96 106 11/08/05	OLD1363D 0311363DQ206-20060725 96 106 07/25/06	OLD1363D NTC13G63D01 96 106 07/25/06
VOLATILE ORGANICS (µg/L)										
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	**7**	1 U	1 U	1 U	0.5 U
2-Butanone	78-93-3	45	1	4.4	4.4	4200	4 U	4 U	4 U	2.5 U
Acetone	67-64-1	45	6	1.9	27.9	6300	4 U	1.9 J	4 U	5 U
Benzene	71-43-2	45	1	1	1	1	1 U	1 U	1 U	0.5 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	8.8	0.43 J	2.1	1 U
Chloroform	67-66-3	45	7	0.65	3.2	70	1 U	1 U	1 U	0.5 U
cis-1,2-Dichloroethene	156-59-2	45	22	1	1980	**70**	10.5	6.6	10.1	4.6
Methyl acetate	79-20-9	22	1	2.4	2.4	3000	1 U	1 U	1 U	
Methylene chloride	75-09-2	45	2	2.3	3.7	5	1 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	**3**	**4.9**	1.8	**4.1**	0.85 J
Total xylenes	1330-20-7	45	4	1.2	19.9	20	3 U	3 U	3 U	1 U
trans-1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	1 U	1 U	1 U	0.5 U
Trichloroethene	79-01-6	45	20	0.32	2030	**3**	**4.6**	0.93 J	**5.1**	0.5 U
Vinyl chloride	75-01-4	45	4	0.7	1.1	**1**	1 U	1 U	1 U	0.5 U
VOLATILE ORGANICS GASES (µg/L)										
Ethane	74-84-0	22	17	0.028	2.5	--	0.76 J			0.11
Ethene	74-85-1	22	19	0.006	12.8	--	4.3			0.76
Methane	74-82-8	22	22	11	1920	--	1550			470
INORGANICS (µg/L)										
Iron	7439-89-6	22	21	30.8	11600	**1227**	423			518
Manganese	7439-96-5	22	22	0.486	420	50	47.4			40.5
MISCELLANEOUS PARAMETERS										
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--	112			
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--	95.7			6.7
Chloride (mg/L)	16887-00-6	22	22	28.1	982	**250**	201			**300**
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--	4.12			
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--				1500
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10				0.61
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1				0.05 U
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--				17
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--				0.16
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--				7.3
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250	1.8			6
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--	2 U			
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--	3.23			2.6

TABLE 4-9

SUMMARY OF DETECTIONS IN GROUNDWATER - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL[1,2] (µg/L)	OLD1364D 0311364DQ205-20050519 100 110 05/19/05	OLD1364D 0311364DQ405-20051110 100 110 11/10/05	OLD1364D 0311364DQ405-20051110-D 100 110 11/10/05	OLD1364D 0311364DQ405-20051114-D 100 110 11/14/05
VOLATILE ORGANICS (µg/L)										
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	**7**	1 U	1 U	1 U	1 U
2-Butanone	78-93-3	45	1	4.4	4.4	4200	4 U	4 U	4 U	4 U
Acetone	67-64-1	45	6	1.9	27.9	6300	4 U	4 U	4 U	4 U
Benzene	71-43-2	45	1	1	1	1	1 U	1 U	1 U	1 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	1 U	1 U	1 U	1 U
Chloroform	67-66-3	45	7	0.65	3.2	70	1 U	1 U	1 U	1 U
cis -1,2-Dichloroethene	156-59-2	45	22	1	1980	**70**	1 U	1 U	1 U	3.3
Methyl acetate	79-20-9	22	1	2.4	2.4	3000	1 U	1 U	1 U	1 U
Methylene chloride	75-09-2	45	2	2.3	3.7	5	1 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	**3**	1 U	1 U	1 U	1 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	3 U	3 U	3 U	3 U
trans -1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	1 U	1 U	1 U	1 U
Trichloroethene	79-01-6	45	20	0.32	2030	**3**	1 U	1 U	1 U	0.32 J
Vinyl chloride	75-01-4	45	4	0.7	1.1	**1**	1 U	1 U	1 U	1 U
VOLATILE ORGANICS GASES (µg/L)										
Ethane	74-84-0	22	17	0.028	2.5	--	1.2 U			
Ethene	74-85-1	22	19	0.006	12.8	--	1 U			
Methane	74-82-8	22	22	11	1920	--	127			
INORGANICS (µg/L)										
Iron	7439-89-6	22	21	30.8	11600	**1227**	189			
Manganese	7439-96-5	22	22	0.486	420	50	9.54			
MISCELLANEOUS PARAMETERS										
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--	216			
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--	262			
Chloride (mg/L)	16887-00-6	22	22	28.1	982	**250**	38.7 J			
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--	2.08			
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--	4.7			
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10				
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1				
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--				
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--				
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--				
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250	1.57			
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--	2 U			
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--	1 U			

TABLE 4-9

SUMMARY OF DETECTIONS IN GROUNDWATER - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID							OLD1364D	OLD1364D	OLD1365D	OLD1366D	OLD1366D	OLD1366D
Sample Number							0311364DQ206-20060725	NTC13G64D01	NTC13G65D401	NTC13G66D101	NTC13G66D201	NTC13G66D401
Depth to Top of Screen, ft bgs	CAS	NO. OF	NO. OF	MIN.	MAX.	FLORIDA	100	100	102	60	74	104
Depth to Bottom of Screen, ft bgs	NO.	SAMPLES	DETECTS	CONC.	CONC.	GCTL[1,2]	110	110	107	65	79	109
Sample Date				(µg/L)	(µg/L)	(µg/L)	07/25/06	07/25/06	07/31/06	08/02/06	08/02/06	08/02/06
VOLATILE ORGANICS (µg/L)												
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	**7**	1 U	0.5 U	0.5 U	5 U	25 U	5 U
2-Butanone	78-93-3	45	1	4.4	4.4	4200	4 U	2.5 U	4.4 J	25 U	130 U	25 U
Acetone	67-64-1	45	6	1.9	27.9	6300	4 U	5 U	11.9 J	50 U	250 U	50 U
Benzene	71-43-2	45	1	1	1	1	1 U	0.5 U	0.5 U	5 U	25 U	5 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	1 U	1 U	1 U	10 U	50 U	10 U
Chloroform	67-66-3	45	7	0.65	3.2	70	1 U	0.5 U	0.5 U	5 U	25 U	5 U
cis -1,2-Dichloroethene	156-59-2	45	22	1	1980	**70**	1 U	0.5 U	0.5 U	**422**	**1050**	**515**
Methyl acetate	79-20-9	22	1	2.4	2.4	3000	1 U					
Methylene chloride	75-09-2	45	2	2.3	3.7	5	1 U	1 U	1 U	19.2 U	91.4 U	19.6 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	**3**	1 U	0.5 U	0.5 U	**111**	**1970**	**64.2**
Total xylenes	1330-20-7	45	4	1.2	19.9	20	3 U	1 U	1 U	10 U	50 U	10 U
trans -1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	1 U	0.5 U	0.5 U	5 U	25 U	5 U
Trichloroethene	79-01-6	45	20	0.32	2030	**3**	1 U	0.5 U	0.5 U	**32.6**	**487**	**77.7**
Vinyl chloride	75-01-4	45	4	0.7	1.1	**1**	1 U	0.5 U	0.5 U	5 U	25 U	5 U
VOLATILE ORGANICS GASES (µg/L)												
Ethane	74-84-0	22	17	0.028	2.5	--		0.06	0.19	0.26		0.72
Ethene	74-85-1	22	19	0.006	12.8	--		0.076	0.22	0.91		3.4
Methane	74-82-8	22	22	11	1920	--		500	36	11		180
INORGANICS (µg/L)												
Iron	7439-89-6	22	21	30.8	11600	**1227**		168	1010	**11600**		670
Manganese	7439-96-5	22	22	0.486	420	50		11.5	**100**	**420**		**171**
MISCELLANEOUS PARAMETERS												
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--						
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--		9.2	8.8	23		3.7 J
Chloride (mg/L)	16887-00-6	22	22	28.1	982	**250**		66.4	28.1	57.6		**425 J**
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--						
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--		3.9	3.9	1.5		1.6
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10		0.05 U	0.05	0.05 U		0.05 U
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1		0.42	0.05 U	0.05 U		0.05 U
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--		18	18	18		18
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--		0.06	1.5	0.67		0.36
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--		4.5	6.1	6		3.6
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250		1 U	37.9	33.1		22.7
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--						
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--		1.9	5.4			

TABLE 4-9

SUMMARY OF DETECTIONS IN GROUNDWATER - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL[1,2] (µg/L)	OLD1366D NTC13G66D401-D 104 109 08/02/06	OLD1366D NTC13G66D601 127 132 08/02/06	OLD1366D NTC13G66D274 74 10/24/06	OLD1366D NTC13G66D274-D 74 10/24/06	OLD1366D NTC13G66D276 76 10/24/06	OLD1366D NTC13G66D279 79 10/24/06
VOLATILE ORGANICS (µg/L)												
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	**7**	5 U	0.5 U	2.8	25 U	2.9	3.4
2-Butanone	78-93-3	45	1	4.4	4.4	4200	25 U	2.5 U	2.5 U	130 U	2.5 U	2.5 U
Acetone	67-64-1	45	6	1.9	27.9	6300	50 U	5 U	5 U	250 U	5 U	5 U
Benzene	71-43-2	45	1	1	1	1	5 U	0.5 U	0.5 U	25 U	0.5 U	0.5 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	10 U	1 U	1 U	50 U	1 U	1 U
Chloroform	67-66-3	45	7	0.65	3.2	70	5 U	0.5 U	0.5 U	25 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	156-59-2	45	22	1	1980	**70**	**521**	2	**1220**	**1320**	**1280**	**1980**
Methyl acetate	79-20-9	22	1	2.4	2.4	3000						
Methylene chloride	75-09-2	45	2	2.3	3.7	5	19.7 U	1 U	1 U	50 U	1 U	1 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	**3**	**65.4**	**15.1**	**9840**	**9250**	**9140**	**6520**
Total xylenes	1330-20-7	45	4	1.2	19.9	20	10 U	1 U	1.3 J	50 U	1.2 J	1 U
trans-1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	5 U	0.5 U	6.1	25 U	8.8	21.8
Trichloroethene	79-01-6	45	20	0.32	2030	**3**	**78.9**	2.2	**1170**	**1170**	**1120**	**1100**
Vinyl chloride	75-01-4	45	4	0.7	1.1	**1**	5 U	0.5 U	0.7 J	25 U	0.74 J	**1.1**
VOLATILE ORGANICS GASES (µg/L)												
Ethane	74-84-0	22	17	0.028	2.5	--						
Ethene	74-85-1	22	19	0.006	12.8	--						
Methane	74-82-8	22	22	11	1920	--						
INORGANICS (µg/L)												
Iron	7439-89-6	22	21	30.8	11600	**1227**						
Manganese	7439-96-5	22	22	0.486	420	50						
MISCELLANEOUS PARAMETERS												
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--						
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--						
Chloride (mg/L)	16887-00-6	22	22	28.1	982	**250**						
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--						
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--						
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10						
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1						
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--						
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--						
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--						
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250						
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--						
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--						

TABLE 4-9

SUMMARY OF DETECTIONS IN GROUNDWATER - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL[1,2] (µg/L)	OLD1367D NTC13G67D401 110 115 07/31/06	OLD1368D NTC13G68D301 73 78 07/31/06	OLD1368D NTC13G68D501 106 111 07/31/06	OLD1368D NTC13G68D601 118 128 07/31/06	OLD1369D NTC13G69D301 85 90 08/01/06	OLD1369D NTC13G69D501 110 115 08/01/06
VOLATILE ORGANICS (µg/L)												
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	**7**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	78-93-3	45	1	4.4	4.4	4200	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Acetone	67-64-1	45	6	1.9	27.9	6300	5 U	7.3 J	5 U	5 U	5 U	5.1 J
Benzene	71-43-2	45	1	1	1	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	67-66-3	45	7	0.65	3.2	70	0.78 J	3.2	0.5 U	0.5 U	0.65 J	1.6
cis -1,2-Dichloroethene	156-59-2	45	22	1	1980	**70**	0.5 U	0.5 U	0.5 U	0.5 U	1	8.3
Methyl acetate	79-20-9	22	1	2.4	2.4	3000						
Methylene chloride	75-09-2	45	2	2.3	3.7	5	1 U	1 U	1 U	1 U	1.7 U	2 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	**3**	0.5 U	0.5 U	0.5 U	0.5 U	1.5	0.5 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	1 U	1 U	1 U	1 U	1 U	1 U
trans -1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	79-01-6	45	20	0.32	2030	**3**	0.5 U	0.5 U	0.5 U	0.5 U	1.2	0.5 U
Vinyl chloride	75-01-4	45	4	0.7	1.1	**1**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
VOLATILE ORGANICS GASES (µg/L)												
Ethane	74-84-0	22	17	0.028	2.5	--	0.15		0.13		0.46	0.49
Ethene	74-85-1	22	19	0.006	12.8	--	0.051		0.052		0.27	0.71
Methane	74-82-8	22	22	11	1920	--	460		380		81	330
INORGANICS (µg/L)												
Iron	7439-89-6	22	21	30.8	11600	**1227**	30.8		646		278	630
Manganese	7439-96-5	22	22	0.486	420	50	41.1		**78.4**		**63.9**	**184**
MISCELLANEOUS PARAMETERS												
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--						
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--	5.3		6.4		5.9	3.3 J
Chloride (mg/L)	16887-00-6	22	22	28.1	982	**250**	73.8		37.9		45.5	100
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--						
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--	2.8		48		2.7	31
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10	0.05 U		0.16		0.05 U	0.05 U
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1	0.05 U		0.05 U		0.05 U	0.05 U
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--	18		18		19	18
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--	0.38		0.21		2	0.23
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--	1.5		2.7		1.9	1.8
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250	16.1		8.3		28	104
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--						
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--	1.5		1.9			

TABLE 4-9

SUMMARY OF DETECTIONS IN GROUNDWATER - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL[1,2] (µg/L)	OLD1369D NTC13G69D501-D 110 115 08/01/06	OLD1369D NTC13G69D601 122 127 08/01/06	OLD1370D NTC13G70D401 101 106 07/31/06
VOLATILE ORGANICS (µg/L)									
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	**7**	0.5 U	0.5 U	0.5 U
2-Butanone	78-93-3	45	1	4.4	4.4	4200	2.5 U	2.5 U	2.5 U
Acetone	67-64-1	45	6	1.9	27.9	6300	5.1 J	5 U	5 U
Benzene	71-43-2	45	1	1	1	1	0.5 U	0.5 U	0.5 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	1 U	1 U	1 U
Chloroform	67-66-3	45	7	0.65	3.2	70	1.5	0.75 J	1.2
cis-1,2-Dichloroethene	156-59-2	45	22	1	1980	**70**	8.1	0.5 U	0.5 U
Methyl acetate	79-20-9	22	1	2.4	2.4	3000			
Methylene chloride	75-09-2	45	2	2.3	3.7	5	2 U	1 U	1.1 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	**3**	0.5 U	0.5 U	0.5 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	1 U	1 U	1 U
trans-1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	0.5 U	0.5 U	0.5 U
Trichloroethene	79-01-6	45	20	0.32	2030	**3**	0.5 U	0.5 U	0.5 U
Vinyl chloride	75-01-4	45	4	0.7	1.1	**1**	0.5 U	0.5 U	0.5 U
VOLATILE ORGANICS GASES (µg/L)									
Ethane	74-84-0	22	17	0.028	2.5	--			0.19
Ethene	74-85-1	22	19	0.006	12.8	--			0.13
Methane	74-82-8	22	22	11	1920	--			160
INORGANICS (µg/L)									
Iron	7439-89-6	22	21	30.8	11600	**1227**			680
Manganese	7439-96-5	22	22	0.486	420	50			**121**
MISCELLANEOUS PARAMETERS									
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--			
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--			9.5
Chloride (mg/L)	16887-00-6	22	22	28.1	982	**250**			**356 J**
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--			
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--			880
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10			0.05 U
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1			0.05 U
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--			18
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--			0.15
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--			3.7
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250			24.6
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--			
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--			2.1

Notes:
bgs - below ground surface
ft - feet
J - estimated value
mg/L - milligrams per liter
nM - nanomoles
U - less than laboratory method detection limit
µg/L - micrograms per liter
[1] Background screening value for iron (1,227-µg/L) used in place of GCTL to determine exceedance of criterion.
[2] Bold indicates concentration in at least one sample exceeded GCTL.

Empty cells indicate parameter not analyzed.
Shaded cell indicates result equal to or greater than GCTL.

TABLE 4-10

SUMMARY OF CVOC DETECTIONS IN SPLIT GROUNDWATER SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID	Florida GCTL (µg/L)	OLD1358D	OLD1358D	OLD1359D	OLD1359D	OLD1361D	OLD1361D	OLD1364D	OLD1364D	OLD1360D	OLD1360D
Contractor		CH2MHILL	TtNUS	CH2MHILL	TtNUS	CH2MHILL	TtNUS	CH2MHILL	TtNUS	CH2MHILL	TtNUS
Top of Screen, ft bgs		101	101	100	100	99	99	100	100	100	100
Bottom of Screen, ft bgs		111	111	110	110	109	109	110	110	110	110
Sample Date		07/25/06	07/25/06	07/19/06	07/25/06	07/25/06	07/25/06	07/25/06	07/25/06	07/25/06	07/25/06
VOLATILE ORGANICS (µg/L)											
1,1-Dichloroethene	7	1 U	1 U	1 U	1 U	1 U	0.5 U	1 U	0.5 U	50 U	4.3
cis -1,2-Dichloroethene	70	1 U	1 U	1 U	1 U	1 U	0.5 U	1 U	0.5 U	**351**	**159**
Tetrachloroethene	3	0.55 J	1 U	1 U	1 U	1 U	0.5 U	1 U	0.5 U	**35800**	**6180**
Trichloroethene	3	1 U	1 U	1 U	1 U	1 U	0.5 U	1 U	0.5 U	**1900**	**500**
Vinyl chloride	1	1 U	1 U	1 U	1 U	1 U	0.5 U	1 U	0.5 U	50 U	1 U

TABLE 4-10

SUMMARY OF CVOC DETECTIONS IN SPLIT GROUNDWATER SAMPLES - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID Contractor Top of Screen, ft bgs Bottom of Screen, ft bgs Sample Date	Florida GCTL (µg/L)	Relative % Diff.	OLD1360D CH2MHILL 100 110 08/03/06	OLD1362D CH2MHILL 110 120 07/26/06	OLD1362D TtNUS 110 120 07/26/06	Relative % Diff.	OLD1363D CH2MHILL 96 106 07/25/06	OLD1363D TtNUS 96 106 07/25/06	Relative % Diff.
VOLATILE ORGANICS (µg/L)									
1,1-Dichloroethene	7	--	0.97 J	10 U	2.7	--	1 U	0.5 U	--
cis-1,2-Dichloroethene	70	75.3	**402**	**488**	**468**	4.2	10.1	4.6	74.8
Tetrachloroethene	3	141.1	**829**	**12900**	**16800**	26.3	**4.1**	0.85	131.3
Trichloroethene	3	116.7	**253**	**385**	**409**	6.0	**5.1**	0.5 U	--
Vinyl chloride	1	--	1 U	10 U	0.81 J	--	1 U	0.5 U	--

Notes:
bgs - below ground surface
CVOC - chlorinated volatile organic compound
ft - feet
GCTL - Groundwater Cleanup Target Level
J - estimated value; "J" qualifiers were removed to allow calculations
U - less than laboratory method detection limit; calculations not performed using "U" results
µg/L - micrograms per liter
% Difference = (abs[X1 + X2] / X2) x 100.
Relative % Difference = (abs[X1 - X2] / (X1 + X2)/2) x 100.
Shaded cells indicate result equal to or greater than GCTL.

TABLE 4-11

SUMMARY OF CVOC DETECTIONS IN MULTI-DEPTH GROUNDWATER SAMPLING - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID Sampling Depth, ft bgs Sample Date	Florida GCTL (µg/L)	OLD1366D 74 10/24/06	OLD1366D 74 10/24/06	OLD1366D 74 - Average 10/24/06	OLD1366D 76 10/24/06	OLD1366D 79 10/24/06	Relative % Diff. 74 - 76 ft	Relative % Diff. 76 - 79 ft	Relative % Diff. 74 - 79 ft
VOLATILE ORGANICS (µg/L)									
1,1-Dichloroethene	7	2.8	25 U	2.8	2.9	3.4	3.5	15.9	19.4
cis-1,2-Dichloroethene	70	**1220**	**1320**	**1270**	**1280**	**1980**	0.8	42.9	43.7
Tetrachloroethene	3	**9840**	**9250**	**9545**	**9140**	**6520**	4.3	33.5	37.7
Trichloroethene	3	**1170**	**1170**	**1170**	**1120**	**1100**	4.4	1.8	6.2
Vinyl chloride	1	0.7	25 U	0.7	0.74	**1.1**	5.6	39.1	44.4

Notes:
bgs - below ground surface
ft - feet
GCTL - Groundwater Cleanup Target Level
J - indicates estimated result; "J" qualifiers were removed to allow calculations
U - indicates less than laboratory method detection limit; calculations not performed using "U" results
µg/L - micrograms per liter
Relative % Difference= (abs[X1 - X2] / (X1 + X2)/2) x 100.
Shaded cells indicate result equal to or greater than GCTL.

TABLE 4-12

FIELD NATURAL ATTENUATION PARAMETERS
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID	**Units**	**OLD1358D**		**OLD1359D**	**OLD1360D**		**OLD1361D**		**OLD1362D**
Sample ID		**0311358DQ206**	**NTC13G58D01**	**NTC13G59D01**	**0311360DQ206**	**NTC13G60D01**	**0311361DQ206**	**NTC13G61D01**	**NTC13G62D01**
Sample Date		**07/25/06**	**07/25/06**	**07/25/06**	**07/25/06**	**07/25/06**	**07/25/06**	**07/25/06**	**07/25/06**
FLOW-THROUGH CELL									
Dissolved Oxygen	mg/L	0.35	0.35	0.16	0.36	0.36	0.17	0.17	
ORP	mV	-88.6	-88.6	-121	-65	-65	-211.9	-211.9	
pH	S.U.	7.33	7.33	7.39	7.08	7.08	7.72	7.72	
Temperature	°C	25.5	25.5	26.9	25.64	25.64	27.23	27.23	
FIELD TEST KITS									
Carbon Dioxide	mg/L		110	110		100		110	110
Dissolved Oxygen	mg/L		4	1		3.5		3.5	1.5
Ferrous Iron	mg/L		3	0		0.5		3	1.3
Hydrogen Sulfide	mg/L		0	0		0		0	0
Sulfide	mg/L		0	0		0		0	0

TABLE 4-12

FIELD NATURAL ATTENUATION PARAMETERS
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID	**Units**	**OLD1363D**		**OLD1364D**		**OLD1365D**	**OLD1366D**		
Sample ID		**0311363DQ206**	**NTC13G63D01**	**0311364DQ206**	**NTC13G64D01**	**NTC13G65D401**	**NTC13G66D101**	**NTC13G66D201**	**NTC13G66D274**
Sample Date		**07/25/06**	**07/25/06**	**07/25/06**	**07/25/06**	**07/31/06**	**08/02/06**	**08/02/06**	**10/24/06**
FLOW-THROUGH CELL									
Dissolved Oxygen	mg/L	0.12	0.12	0.14	0.14	1.14	0.01	0	0.24
ORP	mV	-136		-55.4	-55.4	-125	-111	-125	-144
pH	S.U.	7.69	7.69	7.55	7.55	7.5	7.36	8.21	7.57
Temperature	°C	25.3	25.1	24.9	24.9	27.5	26.5	27.2	24.2
FIELD TEST KITS									
Carbon Dioxide	mg/L		110		105	110	100		
Dissolved Oxygen	mg/L		4		2	1.5	4		
Ferrous Iron	mg/L		0		0	6	2		
Hydrogen Sulfide	mg/L		0		0	0	0		
Sulfide	mg/L		0		0	0	0		

TABLE 4-12

FIELD NATURAL ATTENUATION PARAMETERS
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID	**Units**	**OLD1366D**				**OLD1367D**	**OLD1368D**	
Sample ID		**NTC13G66D276**	**NTC13G66D279**	**NTC13G66D401**	**NTC13G66D601**	**NTC13G67D401**	**NTC13G68D301**	**NTC13G68D501**
Sample Date		**10/24/06**	**10/24/06**	**08/02/06**	**08/02/06**	**07/31/06**	**07/31/06**	**07/31/06**
FLOW-THROUGH CELL								
Dissolved Oxygen	mg/L	0.4	1.02	0	0.09	0.16	1.86	1.21
ORP	mV	-114	-143	-140	-186	-45		
pH	S.U.	7.6	7.6	8.3	7.46	8.4	7.28	7.5
Temperature	°C	24.2	23	26.6	26.8	26.7	28.1	27.7
FIELD TEST KITS								
Carbon Dioxide	mg/L			110		110		120
Dissolved Oxygen	mg/L			4		3.5		1.5
Ferrous Iron	mg/L			0.3		0		0.3
Hydrogen Sulfide	mg/L			0		0		0
Sulfide	mg/L			0		0		0

TABLE 4-12

FIELD NATURAL ATTENUATION PARAMETERS
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID	**Units**	**OLD1368D**	**OLD1369D**			**OLD1370D**
Sample ID		**NTC13G68D601**	**NTC13G69D301**	**NTC13G69D501**	**NTC13G69D601**	**NTC13G70D401**
Sample Date		**07/31/06**	**08/01/06**	**08/01/06**	**08/01/06**	**07/31/06**
FLOW-THROUGH CELL						
Dissolved Oxygen	mg/L	0.28	0	1.25	0.48	0.74
ORP	mV	-133	-137	-166	-160	
pH	S.U.	8.33	8.21	7.66	8	7.3
Temperature	°C	26	25.6	27	26.6	28.6
FIELD TEST KITS						
Carbon Dioxide	mg/L		110	100		125
Dissolved Oxygen	mg/L		3	3		1.8
Ferrous Iron	mg/L		0	0		4
Hydrogen Sulfide	mg/L		0	0		0
Sulfide	mg/L		0	0		0

Notes:
Empty cells indicate parameter not analyzed.
°C - degrees Celcius
mg/L - milligrams per liter
mV - millivolts
ORP Oxidation - reduction potential
S.U. - Standard Unit
µg/L - micrograms per liter

APPENDIX A

SOIL BORING LOGS

Tetra Tech NUS, Inc.

PROJECT NAME:	NTC Orlando - Operable Unit 4	**BORING No.:**	SB01
PROJECT NUMBER:	112G00131	**DATE:**	6/15/06 - 6/16/06
DRILLING COMPANY:	Prosonic	**GEOLOGIST:**	Gary Braganza
DRILLING METHOD:	Sonic	**CONVERTED TO WELL:**	Yes: ___ No: X
DRILLER:	Fred Kraus	**WELL ID:**	NA

Depth (ft bgs)[1]	RUN No.	RUN % Recovery	USCS	Color	Moisture	Primary Description	Secondary Description	PID[2]	GW (ppb) Sample ID	GW (ppb) Color-Tec[3]	GW (ppb) Laboratory[4]	Soil (ppb) Sample ID	Soil (ppb) Color-Tec[3]	Soil (ppb) Laboratory[4]
45	1	100%	SP	Light brown	Moist	Sand, very fine grained	loose, unconsolidated, numerous phosphate grains							
46														
47				Gray										
48														
49														
50														
51														
52														
53														
54														
55	2	100%												
56														
57														
58														
59														
60														
61														
62														
63														
64														
65	3	100%	SC	Medium-gray	Very moist to saturated	Clayey Sand	very fine grained, upper 1', medium dense, mod plastic, lower 2' becomes light grey, soft, slightly plastic					NTC13USB01065066	ND	ND
66														
67														
68														
69			GW	Light gray	Saturated	Sandy Gravel	some silt, minor clay, abundant shells, moldcasts (coquina hash), loosely consolidated							
70														
71														
72														
73														
74														
75	4	100%												
76														
77														
78			SC	Greenish medium gray	Moist	Clayey Sand	fine grained, soft at top, becomes medium dense, slightly plastic, occassional shell fragment					NTC13USB01078079	ND	ND
79														
80														
81														
82														
83														
84														
85	5	100%	SP	Medium greenish-gray	Moist to saturated	Sand	fine grained, some silt, trace clay, soft, becomes medium dense, white shell frags at 90-02' (bivalve shells)	0	NTC13GSB01085095	ND	ND			
86								0						
87								0						
88								0						
89								0				NTC13USB01089090	Geotech Only	
90								0						
91								0						
92								0						
93								0						
94								0						
95	6	100%					some intervals w/ inc.clay, abundant black grains up to 1mm at 95', angular to sub-angular, occassional large black.grains (3-5 mm);							
96														
97														
98														
99												NTC13USB01099100	ND	ND
100														
101														
102														
103														
104														
105	7	100%	SP	Medium greenish-gray	Moist	Sand	>30% black grains up to 2 mm, numerous quartz grains up to 1 mm, 3" diameter mudstone rock frag at 105', very rounded, occ.mudstone frag up to 10 mm, subangular.	0						
106								0						
107								0						
108							continued from above 107-111', fine grained, some silt and clay, med dense	0						
109								0						
110								0						
111			ML-rock	Light gray	Saturated	Silty Clay - Rock	stiff, dry, dense silty clay w/ mudrock frags up to 1", rock layer at 111.5', hard brittle, with numerous shell casts	0						

Tetra Tech NUS, Inc.

PROJECT NAME:	NTC Orlando - Operable Unit 4	**BORING No.:**	SB01
PROJECT NUMBER:	112G00131	**DATE:**	6/15/06 - 6/16/06
DRILLING COMPANY:	Prosonic	**GEOLOGIST:**	Gary Braganza
DRILLING METHOD:	Sonic	**CONVERTED TO WELL:**	Yes: ___ No: X
DRILLER:	Fred Kraus	**WELL ID:**	NA

Depth (ft bgs)[1]	RUN No.	RUN % Recovery	USCS	Color	Moisture	Primary Description	Secondary Description	PID[2]	GW (ppb) Sample ID	GW (ppb) Color-Tec[3]	GW (ppb) Laboratory[4]	Soil (ppb) Sample ID	Soil (ppb) Color-Tec[3]	Soil (ppb) Laboratory[4]
112	7	100%	GW	Light gray	Saturated	Gravelly Sand	gravel up to 2", hard, angular w/ shell casts, some fine grained sand, trace silt in matrix, soft	0						
113								0						
114			SP	Light to medium gray	Moist	Sand	some silt and clay, med dense, few rock frags up to 1", subrounded	0						
115	8	100%						0	NTC13GSB01115125	ND	ND			
116							some silt, med dense to dense, numerous very fine blk grains	0						
117								0						
118								0						
119								0						
120								0						
121								0						
122			SC to ML	Light gray	Moist	Clayey Sand	very fine to fine grained, dense	0						
123								0						
124								0						
125	9	100%					very fine to fine grained, dense, few fine black grains	0						
126								0						
127								0						
128								0						
129								0				NTC13USB01129130	Geotech Only	
130								0						
131								0						
132			SW	Medium gray	Moist to saturated	Sand	fine to medium grained, soft, some clay near top, some light-gray mottling, 3" diameter mudrock frag at 132', numerous rock frags up to 1" near top, subrounded	0						
133								0						
134								0						
135	10	100%	SP to ML	Medium greenish gray	Moist	Sand	very fine to fine grained, soft but becomes dense, clay content inc. downward, numerous very fine black grains near top, grades downward to ML	0						
136								0						
137								0						
138								0				NTC13USB01138139	ND	ND
139								0						
140								0						
141			CL	Dark greenish gray	Moist to dry	Clay	some silt and very fine sand, dense; 151-152', dry and fissile, 3" layer of SP, medium-coarse grained quartz sand with black grains at 152', soft, moist, w/ 0.5-2" rock frags, subrounded; clay at bottom as above 152'	0						
142								0						
143								0						
144								0						
145	11	100%						0						
146														
147														
148														
149														
150														
151														
152														
153														
154														
155	12	100%	CL		Moist to dry	Clay								
156														
157														
158			ML		Moist	Sandy Clay	grades from above CL, dense, w/ thin <1" intervals of more sand, occ.black grains up to 1 mm, subrounded, numerous pebble size black grains in lower 1;', subsangular to subrounded							
159														
160														
161														
162														
163														
164														
165	13	100%	SC-CL-ML	Dark gray to Medium greenish gray	Moist	Clayey Sand to Clay to Sandy Clay	soft, numerous black grains, numerous rock frags < 0.5", subangular, becs darker and dense at 166-168'; 169-174', dense, thin <0.5" sand intervals, grades to below							
166														
167														
168														
169														
170														
171														
172														
173														

Tetra Tech NUS, Inc.

PROJECT NAME:	NTC Orlando - Operable Unit 4	**BORING No.:**	SB01
PROJECT NUMBER:	112G00131	**DATE:**	6/15/06 - 6/16/06
DRILLING COMPANY:	Prosonic	**GEOLOGIST:**	Gary Braganza
DRILLING METHOD:	Sonic	**CONVERTED TO WELL:**	Yes: ___ No: X
DRILLER:	Fred Kraus	**WELL ID:**	NA

Depth (ft bgs)[1]	RUN No.	RUN % Recovery	USCS	Color	Moisture	Primary Description	Secondary Description	PID[2]	GW (ppb) Sample ID	GW (ppb) Color-Tec[3]	GW (ppb) Laboratory[4]	Soil (ppb) Sample ID	Soil (ppb) Color-Tec[3]	Soil (ppb) Laboratory[4]
174	13	100%	GW	Dark gray	Moist	Gravelly Sand	some silt and clay, loose, subangular to subrounded, most gravels are black							
175	14	100%	CL	Dark gray to light greenish gray to medium greenish gray	Moist	Clay	dense with mudrock layer and rock frangs, hard, brittle, loose;							
176														
177														
178														
179							becomes light greenish gray, dense, zone of black staining (organic?) at 177', layer of broken rock frags at 182', subangular;							
180														
181														
182														
183														
184														
185	15	100%	ML				becomes ML, sandy clay, medium greenish gray, soft to dense, abundant black pebbles and rock frags up to 1", subrounded to subangular							
186														
187														
188			CL											
189							dense, mottled laminae of very dark, gray clay, 2" rock frag at 188'							
190														
191														
192														
193														
194														
195	16	100%												
196														
197														
198			SW	Medium greenish gray	Wet	Sand	fine-coarse grained, loose, abundant shell frags 198-202' and 206-207', clay content inc. downward, numerous black grains 205-207' up to 1 mm, subrounded to subangular							
199														
200														
201														
202														
203														
204														
205	17	100%												
206														
207			ML	Medium to dark greenish gray	Moist	Sandy Clay	dense, fossil shark tooth at 206', 1" tck cemented layer at 213'							
208														
209														
210														
211														
212														
213														
214														
215	18	100%												
216														
217														
218														
219														
220			SC	Dark greenish gray	Moist	Clayey Sand	dense, occ.black grains up to 1 mm, subrounded, few rock frags up to 1", subangular, 1" tck cemented layers at 228-230', occ.black grains near bottom, subrounded							
221														
222														
223														
224														
225	19	100%												
226														
227														
228														
229														
230														
231														
232														
233														
234														

Tetra Tech NUS, Inc.

PROJECT NAME:	NTC Orlando - Operable Unit 4	**BORING No.:**	SB01
PROJECT NUMBER:	112G00131	**DATE:**	6/15/06 - 6/16/06
DRILLING COMPANY:	Prosonic	**GEOLOGIST:**	Gary Braganza
DRILLING METHOD:	Sonic	**CONVERTED TO WELL:**	Yes: ___ No: X
DRILLER:	Fred Kraus	**WELL ID:**	NA

Depth (ft bgs)[1]	RUN No.	RUN % Recovery	LITHOLOGY USCS	Color	Moisture	Primary Description	Secondary Description	PID[2]	GW (ppb) Sample ID	GW (ppb) Color-Tec[3]	GW (ppb) Laboratory[4]	Soil (ppb) Sample ID	Soil (ppb) Color-Tec[3]	Soil (ppb) Laboratory[4]
235	20	100%	SC	Dark greenish gray	Slightly moist	Clayey Sand	very stiff							
236														
237														
238														
239														
240			SW		Low moisture content	Gravel								
241			CL	Light greenish gray		Sandy Clay	very stiff, black subrounded grains 1-2 mm, limestone clast at 242' approximately 3" in diameter							
242														
243														
244														
245	21	100%	GC	Light gray		Clayey Gravel	loosely consolidated, numerous black grains, very stiff							
246														
247														
248														
249			GW	Light brown			unconsolidated, core fell apart							
250			SC	Light gray	Moist	Clayey sand and gravel	mudstone cobbles, approximately 2" in diameter, well consolidated, stiff							
251														
252														
253			CL	Greenish gray	Slightly moist	Clay	well consolidated, very stiff, well rounded black grains							
254														
255	22	100%	NA	Gray to medium gray	Moist	Limestone in fine sand	well consolidated, few embedded black grains							
256														
257														
258			CL	Light greenish gray	Slightly moist	Clay	embedded black grains 1-2 mm thick, very stiff							
259														
260														
261														
262														
263			SP	Light gray	Low moisture content	Sand	abundant black grains with large black pebbles, stiff, well consolidated							
264														
265	23													
266														
267														
268														
269														
270														
271														
272														
273														
274														

Notes:
[1] Feet are measured from above the interval line (i.e., the 105 ft depth is at the top of the cell labeled 105).
[2] PID readings listed are from scanning of the soil cores, other readings, such as background or worker breathing zones, are not listed.
[3] Color-Tec results are total CVOCs in part per million per volume (ppmv)
[4] Laboratory results are total CVOCs in parts per billion (ppb) or micrograms per liter (µg/L).

bgs - below ground surface
CVOC - chlorinated volatile organic compound
PID - photoionization detector

Tetra Tech NUS, Inc.

PROJECT NAME:	NTC Orlando - Operable Unit 4	**BORING No.:**	SB02
PROJECT NUMBER:	112G00131	**DATE:**	6/16/06 - 6/17/06
DRILLING COMPANY:	Prosonic	**GEOLOGIST:**	Gary Braganza
DRILLING METHOD:	Sonic	**CONVERTED TO WELL:**	Yes: X No:
DRILLER:	Fred Kraus	**WELL ID:**	OLD-13-67D

Depth (ft bgs)[1]	RUN No.	RUN % Recovery	LITHOLOGY USCS		Color	Moisture	Primary Description	Secondary Description	PID[2]	GW Sample ID	GW Color-Tec[3]	GW Laboratory[4]	Soil Sample ID	Soil Color-Tec[3]	Soil Laboratory[4]
55	1	100%	SM		Gray to dark gray	Moist	Silty Sand	Soft, moderately consolidated	0						
56									0				NTC13USB02057058	ND	ND
57									0						
58									0						
59									0						
60			CL		Greenish-gray	Damp	Clay	Very stiff, minor shell fragments, well consolidated	0				NTC13USB02061063	Geotech	
61									0					Only	
62									0						
63									0						
64									0						
65	2	100%			Light gray-green	Dry		Medium plasticity, stiff, well consolidated, minor shell fragments	0	NTC13GSB02065075	ND	ND			
66									0				NTC13USB02066067	ND	ND
67									0						
68			GW		Light-gray	Saturated	Sandy Gravel with intermittent clay lenses	Loosely consolidated, abundant shell fragments	0						
69									0						
70									0						
71									0						
72									0						
73									0						
74									0						
75	3	100%							0						
76									0						
77									0						
78			SC		Gray-green	Moist	Clayey Sand	Soft, well consolidated, slight plasticity, 3 in large shell fragments at 79'	0						
79									0						
80									0						
81									0						
82									0						
83									0						
84									0						
85	4	100%							0						
86									0						
87					Light Greenish-gray			Soft, fine grained	0						
88									0						
89			CL		Greenish-gray		Clay with fine sands and silt	Medium plasticity, abundant shell fragments, few large up to 2 in	0						
90									0						
91									0						
92									0						
93			SC			Damp	Clayey Sand	Minor shell fragments, well consolidated, stiff, few black grains	0						
94									0						
95	5	100%	SP			Moist	Sand	Fine to medium grain, minor clay, 1" fragmented shell zone @ 93', soft, moderatly consolidated, numerous black grains @ 104'-105' approx 5mm	0	NTC13GSB02095105	ND	ND			
96									0						
97									0						
98									0						
99									0						
100									0						
101									0						
102									0						
103									0						
104									0						
105	6	100%				Saturated	Sand with minor silt and clay	Soft, 30-50% black grains, some up to 2 mm, course quartz grains in matrix, mudstone rock fragments up to 5" diameter, few shell fragments	0						
106									0						
107					Medium greenish-gray		Sand with silt and minor clay	Minor shell fragments and quartz grains, stiff, moderately consolidated	0				NTC13USB02107108	ND	ND
108									0						
109									0						
110									0						
111			GW		Light gray		Gravel in silty clayey matrix	Very stiff, large mudstone rock fragments with embedded black grains approx 4" diameter	0						
112									0						
113									0						
114									0						
115	7	100%	SP		Light to medium gray green	Moist	Sand with silt and clay	Stiff, moderately consolidated, few course quartz grains, minor shell fragments	0	NTC13GSB02115125	ND	ND			
116									0						
117									0						
118									0						
119									0						
120									0						
121									0						
122									0						
123									0						
124									0						

Tetra Tech NUS, Inc.

PROJECT NAME:	NTC Orlando - Operable Unit 4	**BORING No.:**	SB02
PROJECT NUMBER:	112G00131	**DATE:**	6/16/06 - 6/17/06
DRILLING COMPANY:	Prosonic	**GEOLOGIST:**	Gary Braganza
DRILLING METHOD:	Sonic	**CONVERTED TO WELL:**	Yes: **X** No:
DRILLER:	Fred Kraus	**WELL ID:**	OLD-13-67D

Depth (ft bgs)[1]	RUN		LITHOLOGY							GW			Soil		
	No.	% Recovery	USCS		Color	Moisture	Primary Description	Secondary Description	PID[2]	Sample ID	Color-Tec[3]	Laboratory[4]	Sample ID	Color-Tec[3]	Laboratory[4]
125	8	100%	SC		Greenish-gray	Moist	Clayey Sand	Few black grains, very stiff, moderate to well consolidated with few quartz grains, 1-2 mm	0	NTC13GSB02125135	ND	ND			
126									0						
127									0						
128									0						
129									0						
130			SP		Light Gray		Sand with clay and silt	Numerous black grains, stiff to very stiff, moderately consolidated, minor rock fragments	0						
131									0						
132			SW		Gray	Wet	Sand	Fine to medium grained, abundant quartz and black grains, unconsolidated (opened core and fell apart), few mudstone fragments, 1-2 cm diameter	0						
133									0						
134									0						
135	9	100%	SP		Greenish-gray	Dry	Sand increasing silt and clay with depth	Soft, increasing to stiff, numerous black grains, moderately consolidated	0						
136									0						
137									0						
138									0						
139									0						
140									0						
141									0						
142			CL		Dark greenish-gray	Damp	Clay	Very stiff, well consolidated	0						
143									0				NTC13USB02143144	ND	ND
144									0				NTC13USB02143145	Geotech	
145									0					Only	

Notes:
[1] Feet are measured from above the interval line (i.e., the 105 ft depth is at the top of the cell labeled 105).
[2] PID readings listed are from scanning of the soil cores, other readings, such as background or worker breathing zones, are not listed.
[3] Color-Tec results are total CVOCs in part per million per volume (ppmv)
[4] Laboratory results are total CVOCs in parts per billion (ppb) or micrograms per liter (µg/L).

bgs - below ground surface
CVOC - chlorinated volatile organic compound
PID - photoionization detector

Tetra Tech NUS, Inc.

PROJECT NAME:	NTC Orlando - Operable Unit 4	**BORING No.:**	SB03
PROJECT NUMBER:	112G00131	**DATE:**	6/17/06 - 6/18/06
DRILLING COMPANY:	Prosonic	**GEOLOGIST:**	Gary Braganza
DRILLING METHOD:	Sonic	**CONVERTED TO WELL:**	Yes: __X__ No: _____
DRILLER:	Fred Kraus	**WELL ID:**	OLD-13-65D

Depth (ft bgs)[1]	RUN No.	RUN % Recovery	LITHOLOGY USCS	Color	Moisture	Primary Description	Secondary Description	PID[2]	GW Sample ID	GW Color-Tec[3]	GW Laboratory[4]	Soil Sample ID	Soil Color-Tec[3]	Soil Laboratory[4]
55	1	100%	SP	Gray-brown	Moist	Medium grained sand, well sorted	Poorly consolidated, consistant from 55-65	0						
56								0						
57								0						
58								0						
59								0						
60								0						
61								0						
62								0						
63								0						
64								0						
65	2	100%						0						
66								0						
67								0						
68								0						
69			CL	Dark greenish-gray	Dry	Clay	Very stiff, well consolidated, low plasticity, minor silty sand	0				NTC13USB03069070	ND	ND
70								0						
71								0						
72								0						
73								0						
74								0				NTC13USB03074075	ND	ND
75	3	0%	-NA-	Borehole Collapse				0						
76								0						
77								0						
78								0						
79								0						
80								0						
81								0						
82								0						
83								0						
84								0						
85	4	100%	SP	Greenish-gray	Moist	Well sorted sand, increasing clay with depth	Medium to fine grain, soft, abundant shell fragments, zone of shell frags @ 99'-100', moderately consolidated, abundant black grains	0	NTC13GSB03085095	ND	ND			
86								0						
87								0						
88								0						
89								0						
90								0						
91								0						
92								0						
93								0						
94								0						
95	5	100%						0						
96								0						
97								0						
98								0						
99								0						
100								0						
101								0						
102								0						
103								0				NTC13USB03103104	ND	ND
104								0						

Tetra Tech NUS, Inc.

PROJECT NAME:	NTC Orlando - Operable Unit 4	**BORING No.:**	SB03
PROJECT NUMBER:	112G00131	**DATE:**	6/17/06 - 6/18/06
DRILLING COMPANY:	Prosonic	**GEOLOGIST:**	Gary Braganza
DRILLING METHOD:	Sonic	**CONVERTED TO WELL:**	Yes: __X__ No: _____
DRILLER:	Fred Kraus	**WELL ID:**	OLD-13-65D

Depth (ft bgs)[1]	RUN No.	RUN % Recovery	LITHOLOGY USCS	Color	Moisture	Primary Description	Secondary Description	PID[2]	GW Sample ID	GW Color-Tec[3]	GW Laboratory[4]	Soil Sample ID	Soil Color-Tec[3]	Soil Laboratory[4]
105	6	100%	GW	Light greenish-gray	Wet	With silt and gravel fine grained sand	Gravel up to 2" diameter, few shell fragments, poorly consolidated	0						
106								0						
107			SC	Light grayish-brown	Moist	With fine clay grained silty sand	Very stiff, well consolidated, abundant quartz and black grains	0						
108								0						
109			SP	Greenish-gray		Sand with silt and clay	Stiff, well consolidated	0						
110								0						
111								0						
112								0				NTC13USB03112113	ND	ND
113								0						
114								0						
115	7	100%						0	NTC13GSB03115125	ND	ND			
116								0						
117								0						
118			SC	Light greenish-gray	Dry	Sand with increasing clay and silt with depth	Well consolidated, very stiff, numerous black grains, 1-2 mm diameter, few subangular quartz grains	0						
119								0						
120								0						
121				Gray-green	Moist	Fine to medium grain sands	Moderately consolidated, medium stiff	0						
122								0						
123								0						
124								0				NTC13USB03124125	Geotech	
125	8	100%						0	NTC13GSB03125135	ND	ND		Only	
126								0						
127			GC	Greenish-gray		Sandy gravel with increasing clay content	Stiff, well consolidated, embedded mudstone fragments, 1-2 cm diameter, abundant quartz and black grains	0						
128								0						
129								0						
130			CL	Dark greenish-gray	Dry	Clay with minor silt and fine grained sand	Very stiff, well consolidated	0				NTC13USB03130131	Geotech	
131								0					Only	
132								0						
133								0						
134								0						

Notes:
[1] Feet are measured from above the interval line (i.e., the 105 ft depth is at the top of the cell labeled 105).
[2] PID readings listed are from scanning of the soil cores, other readings, such as background or worker breathing zones, are not listed.
[3] Color-Tec results are total CVOCs in part per million per volume (ppmv)
[4] Laboratory results are total CVOCs in parts per billion (ppb) or micrograms per liter (µg/L).

bgs - below ground surface
CVOC - chlorinated volatile organic compound
PID - photoionization detector

Tetra Tech NUS, Inc.

PROJECT NAME:	NTC Orlando - Operable Unit 4	**BORING No.:**	SB04
PROJECT NUMBER:	112G00131	**DATE:**	6/19/06 - 6/20/06
DRILLING COMPANY:	Prosonic	**GEOLOGIST:**	Gary Braganza
DRILLING METHOD:	Sonic	**CONVERTED TO WELL:**	Yes: X No:
DRILLER:	Fred Kraus	**WELL ID:**	OLD-13-66D

Depth (ft bgs)[1]	RUN No.	RUN % Recovery	LITHOLOGY USCS		Color	Moisture	Primary Description	Secondary Description	PID[2]	GW Sample ID	GW Color-Tec[3]	GW Laboratory[4]	Soil Sample ID	Soil Color-Tec[3]	Soil Laboratory[4]
55	1	50%	SP		Dark gray	Moist	Sand - poorly graded	Medium to fine grained, well sorted, poorly consolidated	0						
56									0						
57									0						
58									0						
59									0						
60									0						
61									0						
62									0						
63									0						
64									0						
65	2	100%	CL		Dark greenish-gray	Dry	Clay with minor silt and fine sand	Very stiff, well consolidated, medium to high plasticity	0	NTC13GSB04065075	7.9 - 270	12,416	NTC13USB04065066	72.8-261.9	2,203.3
66									0						
67									0						
68									0				NTC13USB04068069	4.3-8.6	123.5
69			GW		Light gray	Saturated	Sandy gravel with minor clay	Increasing clay with depth, abundant shell fragments (coquina hash), unconsolidated, embedded black grains	0						
70									0						
71									0						
72									0						
73									0						
74									0						
75	3	100%							2.0	NTC13GSB04075085	17.6 - 35.2	586.2	NTC13USB04075076	11.6-21.8	788.6
76									2.0						
77									0.4						
78									0.4						
79			SC		Greenish-gray	moist	Clayey sand with fine sand and silt	Increasing clay with depth, few quartz grains, 1-2 mm, soft, moderately to well consolidated	0.2						
80									0.2						
81									0						
82									0						
83									0						
84									0						
85	4	100%							0	NTC13GSB04085095	1.1 - 1.9	47.4			
86									0						
87									0						
88			SP		Greenish-gray		Sand with silt and clay	Soft, abundant shell fragments from 94'-95', abundant quartz and black grains from 95'-104', moderately consolidated	0						
89									0						
90									0						
91									0						
92									0						
93									0						
94									0						
95	5	100%							0	NTC13GSB04095105	ND	5.7			
96									0						
97									0						
98									0						
99									0						
100									1.7				NTC13USB04100101	ND	ND
101									0						
102									0						
103									0						
104			GW		Dark greenish-gray	moist	Gravel with minor fine sand and silt	Black rounded to subrounded, 1-2 cm, soft, poorly consolidated, larger mudstone fragments, subrounded 4-5 mm diameter	0						

Tetra Tech NUS, Inc.

PROJECT NAME:	NTC Orlando - Operable Unit 4	**BORING No.:**	SB04
PROJECT NUMBER:	112G00131	**DATE:**	6/19/06 - 6/20/06
DRILLING COMPANY:	Prosonic	**GEOLOGIST:**	Gary Braganza
DRILLING METHOD:	Sonic	**CONVERTED TO WELL:**	Yes: X No:
DRILLER:	Fred Kraus	**WELL ID:**	OLD-13-66D

Depth (ft bgs)[1]	RUN		LITHOLOGY							GW			Soil		
	No.	% Recovery	USCS		Color	Moisture	Primary Description	Secondary Description	PID[2]	Sample ID	Color-Tec[3]	Laboratory[4]	Sample ID	Color-Tec[3]	Laboratory[4]
105	6	100%	GW		Dark greenish-gray	moist	Gravel with minor fine sand and silt	Black rounded to subrounded, 1-2 cm, soft, poorly consolidated, larger mudstone fragments, subrounded 4-5 mm diameter	0	NTC13GSB04105115	270-792	32,157			
106					Light gray brown	wet	Gravel in fine sand-silty matrix	large mudstone fragments 4-5 cm diameter, black grains embedded in mudstone 1-2 mm, minor shell fragments, large quartz crystals 1-2 mm, moderately consolidated	6.0						
107									0						
108									31						
109			SC		Greenish-gray	moist	Clay with sand increasing with depth	Fine grained, numerous black quartz grains, soft, moderately consolidated	40				NTC13USB04109110	42.8-114	2,589.60
110									78						
111									0						
112									0						
113									0						
114									0						
115	7	100%	SP				Sand fine to silty	Soft, moderately consolidated, numerous black and quartz grains	0	NTC13GSB04115125	22-44.9	1144.3			
116									3						
117									0						
118									0						
119									0						
120			SC		Light gray-green	Dry	Silty sand	Fine grained, few mudstone fragments dereasing with depth, well consolidated, very stiff	0						
121									0						
122									0						
123					Grayish-green	Moist	Sand fine to silty	Increasing sand with depth, poorly consolidated, abundant black grains, few 1-2 mm subrounded grains, minor shell fragments	0						
124									0						
125	8	100%							0	NTC13GSB04125135	2.6-7.9	198.8			
126									0						
127									0						
128					Greenish-gray		Sand fine to silty	Numerous black grains, very stiff, well consolidated	0						
129									0						
130									0						
131									0						
132					Dark grayish green	Dry	Clayey sand with fine to very fine sand	Well consolidated, very stiff	0						
133									0						
134									0						
135	9	100%	CL		Dark greenish-gray		Clay with silt and very fine sand	Dry and fissle along the entire length, very stiff to hard, minor mudstone fragments 1-2 mm	0				NTC13USB04135136	ND	ND
136									0						
137									0						
138									0						
139									0						
140									0						
141									0						
142									0						
143									0						
144									0						

Notes:

[1] Feet are measured from above the interval line (i.e., the 105 ft depth is at the top of the cell labeled 105).

[2] PID readings listed are from scanning of the soil cores, other readings, such as background or worker breathing zones, are not listed.

[3] Color-Tec results are total CVOCs in part per million per volume (ppmv)

[4] Laboratory results are total CVOCs in parts per billion (ppb) or micrograms per liter (µg/L).

bgs - below ground surface
CVOC - chlorinated volatile organic compound
PID - photoionization detector

Tetra Tech NUS, Inc.

PROJECT NAME:	NTC Orlando - Operable Unit 4	**BORING No.:**	SB05
PROJECT NUMBER:	112G00131	**DATE:**	6/29/06
DRILLING COMPANY:	Prosonic	**GEOLOGIST:**	Gary Braganza
DRILLING METHOD:	Sonic	**CONVERTED TO WELL:**	Yes: X No:
DRILLER:	Fred Kraus	**WELL ID:**	OLD-13-69D

Depth (ft bgs)[1]	RUN		LITHOLOGY							GW			Soil		
	No.	% Recovery	USCS		Color	Moisture	Primary Description	Secondary Description	PID[2]	Sample ID	Color-Tec[3]	Laboratory[4]	Sample ID	Color-Tec[3]	Laboratory[4]
55	1	70%	SM		Gray to dark-gray	Moist	Sand fine to silty	Well sorted, unconsolidated, minor quartz grains	0						
56									0						
57									0						
58									0						
59									0						
60									0						
61									0						
62									0						
63									0						
64									0						
65	2	30%	CL		Dark greenish-gray		Clay with minor silt and fine sand	Well consolidated, medium plasticity, stiff	18.3	NTC13GSB05065075	ND	ND			
66									0						
67									0				NTC13USB05067068	ND	ND
68			-NA-		Lost Interval										
69															
70															
71															
72															
73															
74															
75	3	100%	CL		Dark greenish-gray	Moist	Clay with minor silt and fine sand	Well consolidated, medium plasticity, stiff	0	NTC13GSB05075085	ND	ND			
76									0				NTC13USB05076077	ND	ND
77			SC		Grayish-green		Clayey sand	Moderately consolidated, turning unconsolidated with depth, slightly plastic, soft	0						
78									0						
79									0						
80									0						
81									0						
82									0						
83									0						
84									0						
85	4	100%	GW		Light greenish-gray	Wet	Gravel in fine sand-silty matrix	Few fines, unconsolidated, increasing shell fragments and clay content with depth	0						
86									0						
87									0						
88									0						
89									0						
90			SP		Dark greenish-gray	Moist	Sand fine to silty	Soft, unconsolidated, few shell fragments	0						
91									0						
92									0						
93									0						
94									0						
95	5	100%							0						
96									0						
97									0						
98									0						
99									0						
100			GC		Light greenish-gray	Damp	Gravel with sand clay mix	Well consolidated, stiff	0						
101									0						
102									0						
103			SW			Wet	Other	Coquina hash in sand matrix, fine to medium grain	0						
104			GC			Damp	Gravel with sand clay mix	Well consolidated, stiff	0						

Tetra Tech NUS, Inc.

PROJECT NAME:	NTC Orlando - Operable Unit 4	**BORING No.:**	SB05
PROJECT NUMBER:	112G00131	**DATE:**	6/29/06
DRILLING COMPANY:	Prosonic	**GEOLOGIST:**	Gary Braganza
DRILLING METHOD:	Sonic	**CONVERTED TO WELL:**	Yes: X No:
DRILLER:	Fred Kraus	**WELL ID:**	OLD-13-69D

Depth (ft bgs)[1]	RUN		LITHOLOGY							GW			Soil		
	No.	% Recovery	USCS		Color	Moisture	Primary Description	Secondary Description	PID[2]	Sample ID	Color-Tec[3]	Laboratory[4]	Sample ID	Color-Tec[3]	Laboratory[4]
105	6	100%	SP		Grayish-green	Moist	Sand with silt and clay	Soft, moderately consolidated	0	NTC13GSB05105115	ND	1.4			
106									0						
107									0						
108									0						
109									0						
110			GW		Gray		Gravelly sand	Increasing clay and silt with depth,mudstone fragments 1-2 cm diameter,stiff,well consolidated	0						
111									0						
112									0						
113									0						
114									0						
115	7	100%	SP		Light greenish-gray	Dry	Sand - poorly graded	Fine grained,silty with minor clay,stiff,well consolidated	0	NTC13GSB05115125	ND	ND			
116									0						
117									0						
118			GW		Light grayish green darker with depth	Wet	Gravelly sand with fine grained silt and minor clay	Increasing clay content and degree of consolidation with depth,moderately consolidated,mudstone fragments 1-2 cm diameter,medium to coarse grain sand lens @ 121' approx. 2" thickness (moist sand) with abundant black grains	0						
119									0						
120									0						
121									0						
122									0						
123									0						
124									0						
125	8	100%							0				NTC13USB05125126	ND	ND
126									0						
127			CL		Dark greenish-gray	Dry	Clay with minor silt and fine sand	Dry and fissle, very stiff, well consolidated	0						
128									0						
129									0				NTC13USB05129130	ND	ND
130									0						
131									0						
132									0						
133									0						
134									0						

Notes:
[1] Feet are measured from above the interval line (i.e., the 105 ft depth is at the top of the cell labeled 105).
[2] PID readings listed are from scanning of the soil cores, other readings, such as background or worker breathing zones, are not listed.
[3] Color-Tec results are total CVOCs in part per million per volume (ppmv)
[4] Laboratory results are total CVOCs in parts per billion (ppb) or micrograms per liter (µg/L).

bgs - below ground surface
CVOC - chlorinated volatile organic compound
NA - indicates sample not analyzed
PID - photoionization detector

Tetra Tech NUS, Inc.

PROJECT NAME:	NTC Orlando - Operable Unit 4	**BORING No.:**	SB06
PROJECT NUMBER:	112G00131	**DATE:**	7/1/06
DRILLING COMPANY:	Prosonic	**GEOLOGIST:**	Gary Braganza
DRILLING METHOD:	Sonic	**CONVERTED TO WELL:**	Yes: X No:
DRILLER:	Fred Kraus	**WELL ID:**	OLD-13-70D

Depth (ft bgs)[1]	RUN		LITHOLOGY							GW			Soil		
	No.	% Recovery	USCS		Color	Moisture	Primary Description	Secondary Description	PID[2]	Sample ID	Color-Tec[3]	Laboratory[4]	Sample ID	Color-Tec[3]	Laboratory[4]
55	1	100%	SM		Grayish-brown turning darker gray with depth	Moist	Sand fine to silty with increasing clay content with depth	Increasing clay content from 60'-65', consolidation increasing with depth to moderately consolidated	0						
56									0						
57									0						
58									0						
59									0						
60									0						
61									0						
62									0						
63									0						
64									0						
65	2	50%	SC		Grayish-green		Clayey sand with fine sand and silt increasing clay content with depth	Soft, well consolidated, moderate plasticity	0	NTC13GSB06065075	ND	ND			
66									0						
67									0						
68									0						
69									0						
70									0						
71									0						
72									0						
73									0						
74			CL		Dark green	Dry	Clay with minor silt and fine sand	Stiff, well consolidated	0				NTC13USB06074075	ND	ND
75	3	100%							0						
76									0						
77									0						
78									0						
79									0				NTC13USB06079080	ND	ND
80			SC		Dark greenish-gray	Moist	Clayey sand fine to medium grained increasing clay content with depth	Soft, moderately consolidated, slightly plastic	0						
81									0						
82									0						
83									0						
84									0						
85	4	100%							0						
86									0						
87							Clayey sand fine to medium grained	Numerous shell fragments (bi-valve) 2-3 cm diameter	0						
88									0						
89			SP				Sand with minor silt and clay decreasing with depth	Few shell fragments, soft, poorly consolidated	0						
90									0						
91									0						
92									0						
93									0						
94									0						
95	5	100%							0	NTC13GSB06095105	ND	ND			
96									0						
97									0						
98									0						
99			GW		Dark greenish-gray turning light gray brown wth depth	Wet	Gravelly sand with minor clay	Shell and mudstone fragments, numerous quartz grains, moderately consolidated	0						
100									0						
101									0						
102									0						
103									0						
104									0						

Tetra Tech NUS, Inc.

PROJECT NAME:	NTC Orlando - Operable Unit 4	**BORING No.:**	SB06
PROJECT NUMBER:	112G00131	**DATE:**	7/1/06
DRILLING COMPANY:	Prosonic	**GEOLOGIST:**	Gary Braganza
DRILLING METHOD:	Sonic	**CONVERTED TO WELL:**	Yes: X No:
DRILLER:	Fred Kraus	**WELL ID:**	OLD-13-70D

Depth (ft bgs)[1]	RUN		LITHOLOGY							GW			Soil		
	No.	% Recovery	USCS		Color	Moisture	Primary Description	Secondary Description	PID[2]	Sample ID	Color-Tec[3]	Laboratory[4]	Sample ID	Color-Tec[3]	Laboratory[4]
105	6	100%	SW		Greenish-gray turning gray with depth	Moist	Sand with silt and minor gravel and clay	Poorly consolidated, soft, few shell fragments	0						
106									0						
107									0				NTC13USB06107108	eotech Or	
108									0						
109									0						
110			GP		Gray	Wet	Gravel-sand mix	Numerous quartz and black phosphate grains, abundant shell fragments, coquina hash zone (wet) from 11.5' - 112', soft, unconsolidated	0				NTC13USB06110111	ND	ND
111									0						
112			SC		Light greenish-gray	Moist	Sand fine to silty	Stiff, moderately consolidated	0						
113									0						
114									0	NTC13GSB06115125	ND	ND			
115	7	100%							0						
116									0						
117									0						
118									0				NTC13USB06119120	eotech Or	
119									0						
120									0						
121									0						
122									0						
123									0						
124			SP		Gray	Wet	Sand medium to fine grained	Unconsolidated, abundant black phosphate grains, soft	0						
125	8	100%	GW		Greenish-gray		Gravelly sand with fine grained silt and minor clay	Moderately consolidated, mudstone fragments 1-2 cm diameter	0				NTC13USB06125126	eotech Or	
126									0						
127									0						
128			CL		Dark greenish-gray	Dry	Clay with fine sand and silt	Dry and fissle, well consolidated, stiff	0						
129									0						
130									0				NTC13USB06130131	ND	ND
131									0						
132									0						
133									0						
134									0						

Notes:

[1] Feet are measured from above the interval line (i.e., the 105 ft depth is at the top of the cell labeled 105).

[2] PID readings listed are from scanning of the soil cores, other readings, such as background or worker breathing zones, are not listed.

[3] Color-Tec results are total CVOCs in part per million per volume (ppmv)

[4] Laboratory results are total CVOCs in parts per billion (ppb) or micrograms per liter (µg/L).

bgs - below ground surface
CVOC - chlorinated volatile organic compound
PID - photoionization detector

Tetra Tech NUS, Inc.

PROJECT NAME:	NTC Orlando - Operable Unit 4	**BORING No.:**	SB07
PROJECT NUMBER:	112G00131	**DATE:**	7/2/06
DRILLING COMPANY:	Prosonic	**GEOLOGIST:**	Gary Braganza
DRILLING METHOD:	Sonic	**CONVERTED TO WELL:**	Yes: X No:
DRILLER:	Fred Kraus	**WELL ID:**	OLD-13-68D

Depth (ft bgs)[1]	RUN		LITHOLOGY							GW			Soil		
	No.	% Recovery	USCS		Color	Moisture	Primary Description	Secondary Description	PID[2]	Sample ID	Color-Tec[3]	Laboratory[4]	Sample ID	Color-Tec[3]	Laboratory[4]
55			SM		Gray brown	Wet	Sand with silt and clay	Poorly consolidated	0						
56									0				NTC13USB07056057	ND	ND
57									0						
58									0						
59	1	100%			Dark greenish-gray	Dry	Clay with minor silt	Dry and fissle, well consolidated, stiff to very stiff	0						
60									0						
61			CL						0				NTC13USB07061062	ND	ND
62									0						
63									0						
64						Damp	Clay with minor silt and fine sand	Abundant shell fragments, stiff, well consolidated	0						
65									0						
66									0						
67									0						
68									0						
69									0						
70	2	70%			Light greenish-gray				0	NTC13GSB07065075	ND	ND			
71									0						
72			GW						0						
73									0						
74									0						
75									0						
76						Saturated	Coquina hash increasing clay with depth	Some large bivalve shell fragments, unconsolidated	0						
77									0						
78									0						
79									0						
80	3	100%	CL			Dry	Clay with fine sand and silt	Increasing sand with depth, fissle, well consolidated, stiff, low plasticity, minor shell fragments	0						
81									0						
82									0						
83									0						
84							Sand medium to fine grained	Few shell fragments, unconsolidated	0				NTC13USB07084085	ND	ND
85									0						
86									0						
87			SC			Damp			0						
88							Sand fine to silty with increasing clay content with depth	Abundant shell fragments, some 2-3 cm diameter, well consolidated	0						
89									0						
90	4	100%			Dark greenish-gray				0						
91									0						
92									0						
93			SM			Moist	SILT with very fine sand	Poorly consolidated	0						
94									0						

Tetra Tech NUS, Inc.

PROJECT NAME:	NTC Orlando - Operable Unit 4	**BORING No.:**	SB07
PROJECT NUMBER:	112G00131	**DATE:**	7/2/06
DRILLING COMPANY:	Prosonic	**GEOLOGIST:**	Gary Braganza
DRILLING METHOD:	Sonic	**CONVERTED TO WELL:**	Yes: X No:
DRILLER:	Fred Kraus	**WELL ID:**	OLD-13-68D

Depth (ft bgs)[1]	RUN		LITHOLOGY							GW			Soil		
	No.	% Recovery	USCS		Color	Moisture	Primary Description	Secondary Description	PID[2]	Sample ID	Color-Tec[3]	Laboratory[4]	Sample ID	Color-Tec[3]	Laboratory[4]
95	5	100%	SC		Greenish grey	Damp	Sand with silt and clay	Increasing clay with depth, well consolidated, stiff, abundent phosphate grains - angular to sub angular	0	NTC13GSB07095105	ND	ND			
96									0						
97									0						
98									0						
99									0						
100									0						
101									0						
102									0						
103									0						
104									0						
105	6	100%							0						
106									0						
107									0						
108									0						
109									0						
110									0						
111									0						
112					Light greenish grey	Moist	Clay with fine sand and silt	Increasing clay content with depth, well consolidated, stiff, abundent quartz and phospate grains	0						
113									0						
114									0						
115	7	100%							0	NTC13GSB07115125	ND	ND			
116									0						
117									0						
118									0						
119			SP		Grey	Wet	Sand - well graded	Sand, unconsolidated, numerous quartz and phosphate grains, few shell fragments	0						
120									0						
121									0						
122			SC		Light grey green	Damp	Clay with silt and very fine sand	Fine sand and silt in clay matrix, well consolidated, stiff, fissle at 123 ft, abundent black phosphate and quartz grains - angular to sub - angular	0						
123									0						
124									0						
125	8	100%							0						
126									0						
127									0						
128			CL		Dark green	Dry	Clay with fine sand and silt	Fissled, well consolidated, very stiff, minor quartz grains	0				NTC13USB07128129	ND	ND
129									0						
130									0						
131									0						
132									0						
133									0						
134									0						

Notes:
[1] Feet are measured from above the interval line (i.e., the 105 ft depth is at the top of the cell labeled 105).
[2] PID readings listed are from scanning of the soil cores, other readings, such as background or worker breathing zones, are not listed.
[3] Color-Tec results are total CVOCs in part per million per volume (ppmv)
[4] Laboratory results are total CVOCs in parts per billion (ppb) or micrograms per liter (µg/L).

bgs - below ground surface
CVOC - chlorinated volatile organic compound
PID - photoionization detector

APPENDIX B

WELL COMPLETION LOGS AND SURVEY DATA

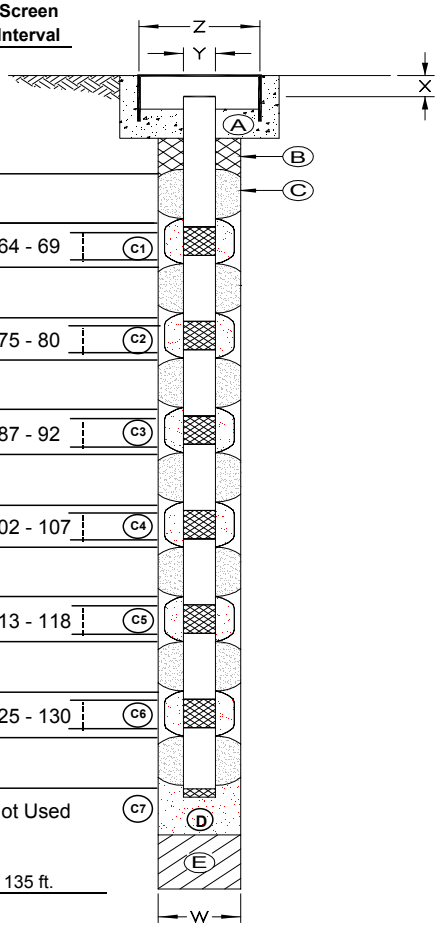
Tetra Tech NUS, Inc.

Project Name:	NTC Orlando	Well No.:	OLD-13-65D
Boring Number:	SB03	Date:	6/28/2006
Drilling Company:	Prosonic	Geologist:	Gary Braganza
Drilling Rig:	Sonic	Driller:	Fred Kraus

Well Centralizer Depths:

13.3	23.3	33.3	44.3
53.5	63.5	69.5	74.8
80.5	86.5	92.5	101.5
107.5	112.8	118.5	124.5
129.5			

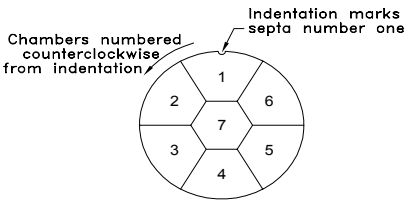
Seal Interval	Sand Pack Interval	Screen Interval	
60 - 62			
	62 - 70	64 - 69	C1
71 - 73			
	73 - 81	75 - 80	C2
83 - 85			
	85 - 93	87 - 92	C3
98 - 100			
	100 - 108	102 - 107	C4
109 - 111			
	111 - 119	113 - 118	C5
121			
	123 - 135	125 - 130	C6
No Seal			
		Not Used	C7



Materials Data

A	Surface Seal:	Concrete
B	Annular Seal:	Cement/Bentonite Grout
C	Annular Seal:	Bentonite Chips
D	Type Of Backfill:	30/65 Silica Sand
E	Bottom Seal:	No Seal
W	Borehole Diameter:	6-in
X	Type Of Riser:	Flush Mount
Y	Tubing Diameter:	1 7/8 in.
Z	Protective Covering Diameter:	8 in.
	Screen Material:	Stainless Steel Mesh
	Casing Material:	CMT - Polyethylene
	Channel Diameter:	.375 in.

Total Well Depth: 135 ft.

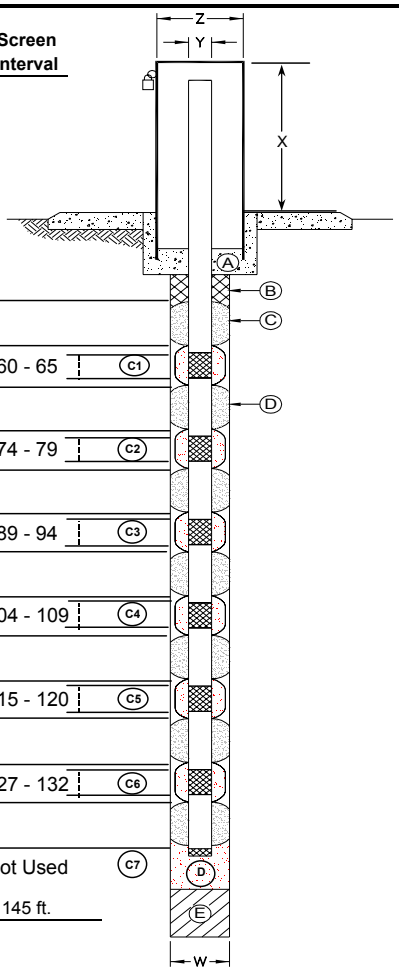


Notes:
Central chamber (7) not used.
30/65 sand placed from 135 ft to 123 ft.

Tetra Tech NUS, Inc.

Project Name:	NTC Orlando	Well No.:	OLD-13-66D
Boring Number:	SB04	Date:	6/30/2006
Drilling Company:	Prosonic	Geologist:	Gary Braganza
Drilling Rig:	Sonic	Driller:	Fred Kraus

Seal Interval	Sand Pack Interval	Screen Interval	
56 - 58			
	58 - 68	60 - 65	C1
70 - 72			
	72 - 80	74 - 79	C2
85 - 87			
	87 - 95	89 - 94	C3
95 - 102			
	102 - 110	104 - 109	C4
111 - 113			
	113 - 121	115 - 120	C5
123 - 125			
	125 - 145	127 - 132	C6
Not Used			
		Not Used	C7



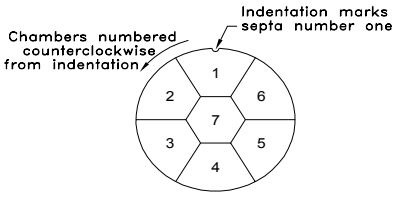
Well Centralizer Depths:

9.5	19.5	29.5	39.5
49.5	59.5	63.5	73.5
79.5	88.5	94.5	103.5
109.5	114.5	120.5	126.5
132.5			

Materials Data

A	Surface Seal:	Concrete
B	Annular Seal:	Cement/Bentonite Grout
C	Annular Seal:	Bentonite Chips
D	Type Of Backfill:	30/65 Silica Sand
E	Bottom Seal:	No Seal
W	Borehole Diameter:	6-in
X	Type Of Riser:	3.0 ft. Metal Casing with Hinged Cover
Y	Tubing Diameter:	1 7/8 in.
Z	Protective Covering Diameter:	8 in.
	Screen Material:	Stainless Steel Mesh
	Casing Material:	CMT - Polyethylene
	Channel Daimeter:	.375 in.

Total Well Depth: 145 ft.

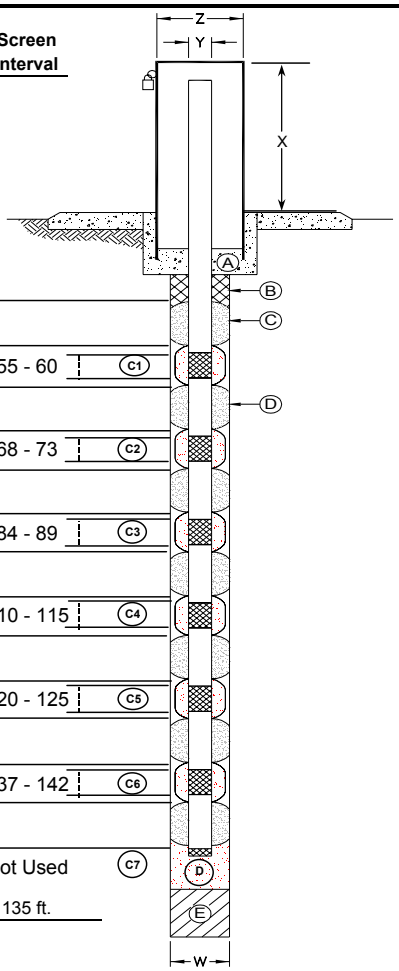


Notes:
Central chamber (7) not used.
30/65 sand used to bring bottom of boring (approximately 145 ft bgs) to 2 ft above chamber 6 screen (125 ft bgs)

Tetra Tech NUS, Inc.

Project Name:	NTC Orlando	Well No.:	OLD-13-67D
Boring Number:	SB02	Date:	7/14/2006
Drilling Company:	Prosonic	Geologist:	Gary Braganza
Drilling Rig:	Sonic	Driller:	Fred Kraus

Seal Interval	Sand Pack Interval	Screen Interval	
43 - 53			
	53 - 61	55 - 60	C1
61 - 66			
	66 - 74	68 - 73	C2
74 - 82			
	82 - 90	84 - 89	C3
90 - 108			
	108 - 116	110 - 115	C4
116 - 122			
	122 - 126	120 - 125	C5
126 - 135			
	135 - 143	137 - 142	C6
Not Used			
		Not Used	C7



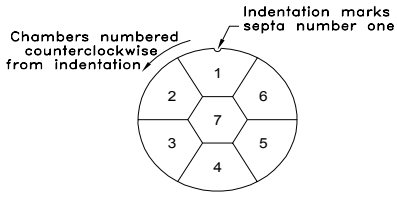
Well Centralizer Depths:

54.5	60.5	67.5	73.5
83.5	89.5	109.5	115.5
119.5	125.5	136.5	142.5

Materials Data

A	Surface Seal:	Concrete
B	Annular Seal:	Cement/Bentonite Grout
C	Annular Seal:	Bentonite Chips
D	Type Of Backfill:	30/65 Silica Sand
E	Bottom Seal:	No Seal
W	Borehole Diameter:	6-in
X	Type Of Riser:	3.3 ft. Metal Casing with Hinged Cover
Y	Tubing Diameter:	1 7/8 in.
Z	Protective Covering Diameter:	8 in.
	Screen Material:	Stainless Steel Mesh
	Casing Material:	CMT - Polyethylene
	Channel Daimeter:	.375 in.

Total Well Depth: 135 ft.



Notes:
Central chamber (7) not used.
30-65 sand used to bring bottom of boring up to 135 ft.
30/65 sand placed from 135 ft to 123 ft.

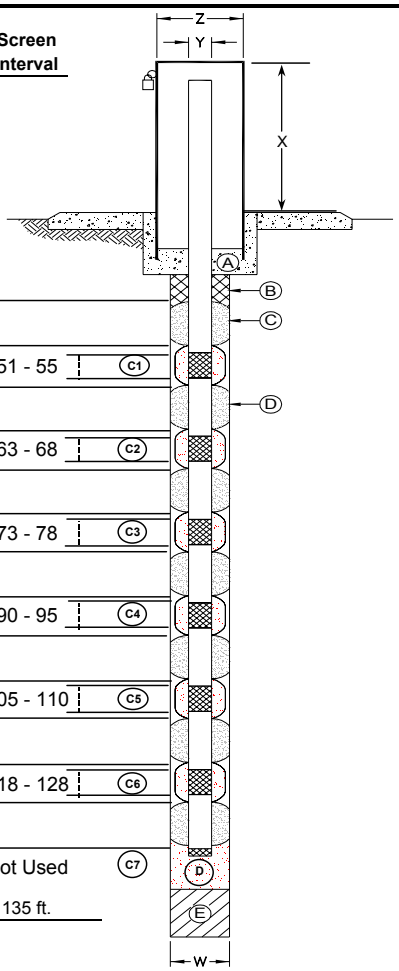
Tetra Tech NUS, Inc.

Project Name:	NTC Orlando	Well No.:	OLD-13-68D
Boring Number:	SB07	Date:	7/10/2006
Drilling Company:	Prosonic	Geologist:	Gary Braganza
Drilling Rig:	Sonic	Driller:	Fred Kraus

Well Centralizer Depths:

10.5	20.5	30.5	40.5
50.5	56.5	63.5	68.5
72.5	78.5	89.5	95.5
104.5	110.5	117.5	128.5

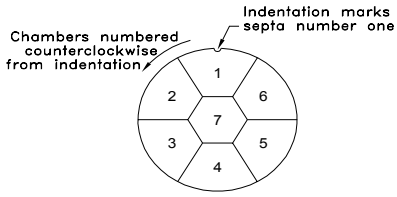
Seal Interval	Sand Pack Interval	Screen Interval	
39 - 49			
	49 - 56	51 - 55	C1
57 - 61			
	61 - 69	63 - 68	C2
69 - 71			
	71 - 79	73 - 78	C3
79 - 92			
	92 - 96	90 - 95	C4
96 - 103			
	103 - 111	105 - 110	C5
111 - 116			
	116 - 129	118 - 128	C6
Not Used			
		Not Used	C7



Materials Data

A	Surface Seal:	Concrete
B	Annular Seal:	Cement/Bentonite Grout
C	Annular Seal:	Bentonite Chips
D	Type Of Backfill:	30/65 Silica Sand
E	Bottom Seal:	No Seal
W	Borehole Diameter:	6-in
X	Type Of Riser:	3.3 ft. Metal Casing with Hinged Cover
Y	Tubing Diameter:	1 7/8 in.
Z	Protective Covering Diameter:	8 in.
	Screen Material:	Stainless Steel Mesh
	Casing Material:	CMT - Polyethylene
	Channel Daimeter:	.375 in.

Total Well Depth: 135 ft.

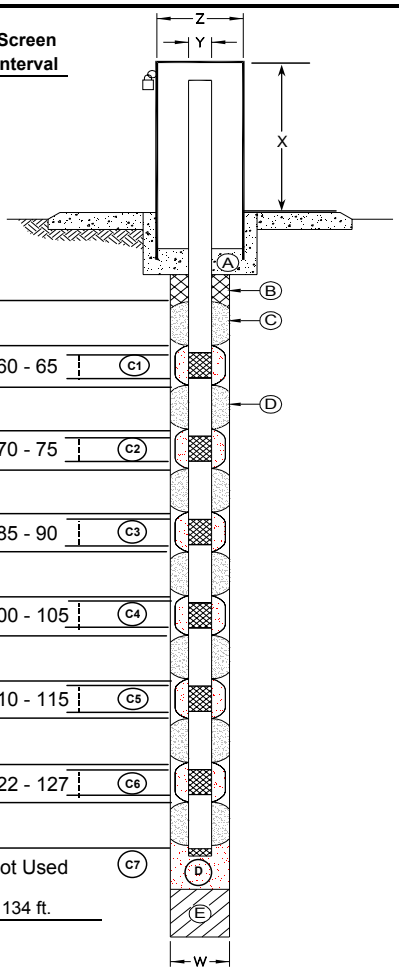


Notes:
Central chamber (7) not used.
30/65 sand used; 131 to 135 ft bgs.
Bentonite chips used 129 to 131 ft bgs. Will set at
129 ft, C6 sand pack (30/65) is from 116 to 129 ft bgs.

Tetra Tech NUS, Inc.

Project Name:	NTC Orlando	Well No.:	OLD-13-69D
Boring Number:	SB05	Date:	7/12/2006
Drilling Company:	Prosonic	Geologist:	Gary Braganza
Drilling Rig:	Sonic	Driller:	Fred Kraus

Seal Interval	Sand Pack Interval	Screen Interval	
48 - 58			
	58 - 66	60 - 65	C1
66 - 68			
	68 - 76	70 - 75	C2
76 - 83			
	83 - 91	85 - 90	C3
91 - 98			
	98 - 106	100 - 105	C4
106 - 108			
	108 - 116	110 - 115	C5
116 - 120			
	120 - 128	122 - 127	C6
Not Used			
		Not Used	C7



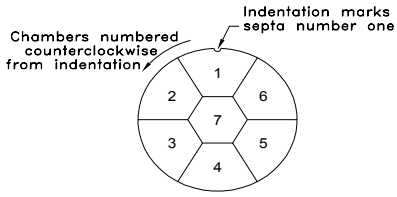
Well Centralizer Depths:

9.5	19.5	29.5	39.5
49.5	59.5	65.5	69.5
75.5	84.5	90.5	99.5
105.5	109.5	115.5	121.5
127.5			

Materials Data

A	Surface Seal:	Concrete
B	Annular Seal:	Cement/Bentonite Grout
C	Annular Seal:	Bentonite Chips
D	Type Of Backfill:	30/65 Silica Sand
E	Bottom Seal:	No Seal
W	Borehole Diameter:	6-in
X	Type Of Riser:	3.5 ft. Metal Casing with Hinged Cover
Y	Tubing Diameter:	1 7/8 in.
Z	Protective Covering Diameter:	8 in.
	Screen Material:	Stainless Steel Mesh
	Casing Material:	CMT - Polyethylene
	Channel Daimeter:	.375 in.

Total Well Depth: 134 ft.

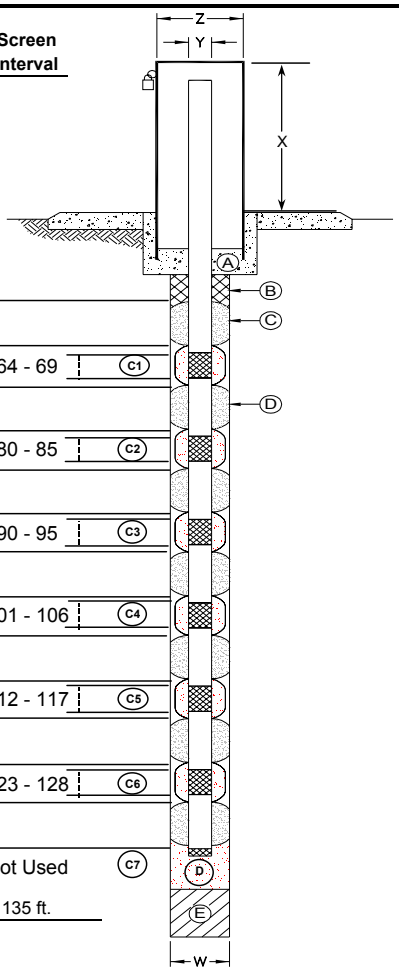


Notes:
Central chamber (7) not used.
30/65 sand used 134 to 131 ft bgs, bentonite chips used for bottom sea; 131 tp 128 ft bgs.
C6 sand pack (30/65) placed 120 to 128 ft bgs.

Tetra Tech NUS, Inc.

Project Name:	NTC Orlando	Well No.:	OLD-13-70D
Boring Number:	SB06	Date:	7/13/2006
Drilling Company:	Prosonic	Geologist:	Gary Braganza
Drilling Rig:	Sonic	Driller:	Fred Kraus

Seal Interval	Sand Pack Interval	Screen Interval	
57 - 67			
	67 - 70	64 - 69	C1
70 - 78			
	78 - 86	80 - 85	C2
86 - 88			
	88 - 96	90 - 95	C3
96 - 99			
	99 - 107	101 - 106	C4
107 - 110			
	110 - 118	112 - 117	C5
118 - 121			
	121 - 129	123 - 128	C6
Not Used			
		Not Used	C7



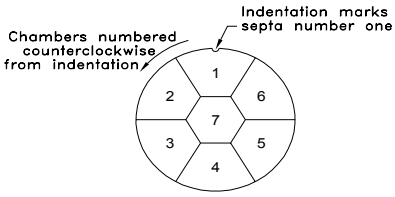
Well Centralizer Depths:

63.5	69.5	79.5	85.5
89.5	95.5	100.5	106.5
111.5	117.5	122.5	127.5

Total Well Depth: 135 ft.

Materials Data

A	Surface Seal:	Concrete
B	Annular Seal:	Cement/Bentonite Grout
C	Annular Seal:	Bentonite Chips
D	Type Of Backfill:	30/65 Silica Sand
E	Bottom Seal:	No Seal
W	Borehole Diameter:	6-in
X	Type Of Riser:	3.3 ft. Metal Casing with Hinged Cover
Y	Tubing Diameter:	1 7/8 in.
Z	Protective Covering Diameter:	8 in.
	Screen Material:	Stainless Steel Mesh
	Casing Material:	CMT - Polyethylene
	Channel Daimeter:	.375 in.



Notes:
Central chamber (7) not used.

ORLANDO NAVAL TRAINING CENTER
SITE OU-4
MONITORING WELLS

Project No. 327012.OM.26.09.03
Field Surveys August 15, 2006

Note: Horizontal Datum is NAD (North American Datum) 83 SPC Fl. E. US Survey Ft.

Vertical Datum is NGVD (National Geodetic Vertical Datum) 1929.

			--------Elevation---------		
Description	**North Coord.**	**East Coord.**	**TOC**	**Conc.**	**Ground**
					(*)Svy. Pt.
Survey Control Points:					
7 (PK & Washer)	1536901.035	545162.333	------	------	(*)110.69
21 (PK & Washer)	1536774.363	545140.423	------	------	(*)111.22
Monitor Wells:					
8020 (Well 66D)	1536840.42	545010.28	114.175	111.14	111.1
8041 (Well 67D)	1536859.93	545187.45	114.45	111.17	111.1
8070 (Well 68D)	1536922.85	545132.91	113.485	110.23	110.1
8030 (Well 69D)	1536939.30	545020.84	111.615	108.39	108.1
8060 (Well 70D)	1536936.57	544940.70	111.85	108.87	108.5

Horizontal survey data (above) for well 67D erroneous, GPS data (below) substituted

8041 (Well 67D)	1536689.326	545093.905
- (Boring SB01)	1536712.751	544930.971

ORLANDO NAVAL TRAINING CENTER
SITE OU-4
MONITOR WELL AND VADOSE SOIL BORINGS

Project No. 327012.OM.26.09.03
Field Surveys September 18,2006

Note: Horizontal Datum is NAD (North American Datum) 83 SPC Fl. E. US Survey Ft.
Vertical Datum is NGVD (National Geodetic Vertical Datum) 1929.

Description	**North Coord.**	**East Coord.**	**-------Elevation------ TOC**	**Ground (*)Svy. Pt. (**)F/M Rim**
Survey Control Points:				
7 (PK & Washer)	1536901.035	545162.333	------	**(*)**110.69
21 (PK & Washer)	1536774.363	545140.423	------	**(*)**111.22
Monitor Well:				
8050 **Well 65D)**	1536832.53	545163.12	111.114	**(**)**111.21
Soil Borings:				
2001 **(SB-001)**	1536835.43	544929.12	------	110.6
2002 **(SB-002)**	1536836.18	544982.96	------	111.1
2003 **(SB-003)**	1536839.71	545032.67	------	110.8
2004 **(SB-004)**	1536808.05	544959.06	------	110.7
2005 **(SB-005)**	1536810.73	545007.90	------	110.9
2006 **(SB-006)**	1536781.69	544933.46	------	110.3
2007 **(SB-007)**	1536784.06	544983.35	------	111.0
2008 **(SB-008)**	1536786.98	545035.25	------	110.7

APPENDIX C

MONITORING WELL DEVELOPMENT RECORDS AND GROUNDWATER SAMPLING LOGS

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Site: NTC Orlando
Well: MW-65D-C1
Date Installed:
Date Developed: 7/10/06
Dev. Method: low flow
Pump Type: Peristaltic

Depth to Bottom (ft.): 68.85
Static Water Level Before (ft.): 12.50
Static Water Level After (ft.): 14.32
Screen Length (ft.): 5 ft
Specific Capacity: 40ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: 400131
Site Geologist: GB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~) ml	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
17:00	N/A	9800	N/A	27.30	7.34	1.256	5	clear, no odor
17:05	↓	11,050	↓	27.30	7.34	1.256	3	↓
17:10	↓	12,300	↓	27.31	7.34	1.256	2	↓
						1.256		

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando
Well: MW-65D-C-2
Date Installed: _____
Date Developed: 7/10/06
Dev. Method: low flow
Pump Type: Peristaltic

Depth to Bottom (ft.): 84.52
Static Water Level Before (ft.): 12.56
Static Water Level After (ft.): 10.32
Screen Length (ft.): 5 ft
Specific Capacity: 40 ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: 00131
Site Geologist: EB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~ ml)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
16:00	N/A	11,050	N/A	27.82	7.11	1.432	20	no odor, clear.
16:05	↓	12,300	↓	27.80	7.10	1.432	22	
16:10	↓	13,550	↓	27.80	7.11	1.432	20	
16:15	↓	14,700	↓	27.79	7.11	1.432	18	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando
Well: MW-65-C-3
Date Installed: _____
Date Developed: 7/10/06
Dev. Method: low flow
Pump Type: Peristaltic

Depth to Bottom (ft.): 96.50
Static Water Level Before (ft.): [illegible]
Static Water Level After (ft.): _____
Screen Length (ft.): 6 ft
Specific Capacity: 40 ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: 00131
Site Geologist: CB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~ ml)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
14:55	N/A	5000	N/A	27.52	6.31	1.432	12	no odor, clear
15:00	↓	6250	↓	27.51	6.31	1.430	10	
15:05	↓	7400	↓	27.49	6.30	1.430	10	
15:10	↓	8650	↓	27.48	6.30	1.430	8	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando
Well: MW-65-C4
Date Installed: _____
Date Developed: 7/10/06
Dev. Method: low flow
Pump Type: Peristaltic

Depth to Bottom (ft.): 111.65
Static Water Level Before (ft.): 17.69
Static Water Level After (ft.): 26.32
Screen Length (ft.): 5 ft
Specific Capacity: 40 ml/ft
Casing ID (in.): 0.375

Project Name: 60131-04-4
Project Number: 60131
Site Geologist: EB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~ ml)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
14:15	N/A	6050	N/A	27.32	6.84	0.943	10	clear, no odor
14:20	↓	7200	↓	27.35	6.82	0.941	8	↓
14:25	↓	8450	↓	27.35	6.87	0.940	6	↓
14:30	↓	9700	↓	27.36	6.82	0.941	4	↓

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC ORLANDO
Well: MW-65D-C5
Date Installed: _____
Date Developed: 7/10/06
Dev. Method: low flow
Pump Type: Peristaltic

Depth to Bottom (ft.): 122.60
Static Water Level Before (ft.): 18.22
Static Water Level After (ft.): 27.20
Screen Length (ft.): ~~10~~ 5 ft.
Specific Capacity: 40 ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: _____
Site Geologist: RB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.) ml	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
13:25		2400 ml	N/A	26.45	7.21	0.631	30	no odor
13:30		3650 ml		26.52	7.21	0.638	19	
13:35		4800		26.52	7.21	0.637	12	
13:40		6050		26.51	7.21	0.637	6	
13:45		7200		26.50	7.20	0.636	8	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Site: NTC Orlando
Well: MW-65D-6
Date Installed:
Date Developed: 7/10/06
Dev. Method: peristaltic low flow
Pump Type: peristaltic

Depth to Bottom (ft.): 134.7
Static Water Level Before (ft.): 19.90
Static Water Level After (ft.): 25.62
Screen Length (ft.): 5 ft
Specific Capacity: 40ml/ft
Casing ID (in.): 0.375

Project Name: DU 4
Project Number: G00131
Site Geologist: Gary Bugay
Drilling Co.: prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~) ml	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
12:50	N/A	7000ml	N/A	26.32	6.41	0.832	20	clear, no odor
12:55	↓	8000ml	↓	26.33	6.40	0.831	18	
13:00	↓	9000ml	↓	26.33	6.40	0.831	16	
13:05	↓	10000ml	↓	26.34	6.39	0.830	10	
13:10	↓	11000ml	↓	26.34	6.38	0.831	8	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando
Well: MW-66D C-1
Date Installed: _____
Date Developed: 7/11/06
Dev. Method: low flow
Pump Type: peristaltic

Depth to Bottom (ft.): _____
Static Water Level Before (ft.): _____
Static Water Level After (ft.): _____
Screen Length (ft.): 5 ft
Specific Capacity: 40 mL
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: 00131
Site Geologist: GB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units ____)	Turbidity (NTU)	Remarks (odor, color, etc.)
9:30	N/A	7500	N/A	27.1	5.12	0.280	3	clear, no odor
9:35		8750		26.5	6.77	0.247	0	
9:40		10,000		26.5	5.20	0.250	0	
9:45		11,250		26.8	5.22	0.250	0	
9:50		12,500		26.5	5.18	0.250	0	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando
Well: MW-66D C-2
Date Installed: _____
Date Developed: 7/11/06
Dev. Method: _____
Pump Type: peristaltic

Depth to Bottom (ft.): _____
Static Water Level Before (ft.): _____
Static Water Level After (ft.): _____
Screen Length (ft.): 5 ft
Specific Capacity: _____
Casing ID (in.): _____

Project Name: OU-4
Project Number: 02131
Site Geologist: GB
Drilling Co.: Prosonic.

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units ____)	Turbidity (NTU)	Remarks (odor, color, etc.)
10:30	N/A	3750	N/A	26.7	7.48	0.621	153	
10:35		5000		26.6	7.49	0.651	61	
10:40		6250		26.5	6.30	0.670	38	
10:45		7500		26.4	5.51	0.676	26	
10:50		8750		26.4	5.57	0.678	19	
10:55		10,000		26.4	5.57	0.678	15	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando
Well: MW-66D-C-3
Date Installed: _____
Date Developed: 7/11/06
Dev. Method: 7/11/06
Pump Type: Peristaltic

Depth to Bottom (ft.): _____
Static Water Level Before (ft.): _____
Static Water Level After (ft.): _____
Screen Length (ft.): 5 ft
Specific Capacity: 40 ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: 00131
Site Geologist: GB.
Drilling Co.: Prosonic.

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
12:30	N/A	15000	N/A	30.2	5.82	1.31	6	
12:35	↓	16250	↓	26.6	6.51	0.670	5	
12:40		17500		26.7	6.49	0.671	5	
12:45		18750		26.7	6.50	0.670	3	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando
Well: MW-66D-C-4
Date Installed: _____
Date Developed: 7/11
Dev. Method: low flow
Pump Type: peristaltic

Depth to Bottom (ft.): _____
Static Water Level Before (ft.): _____
Static Water Level After (ft.): _____
Screen Length (ft.): 5 ft
Specific Capacity: 40 ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: 00131
Site Geologist: GB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~) ml	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
15:00	N/A	12,500	N/A	29.0	5.82	0.717	59	error on pH calibration
15:05	↓	13750	↓	28.9	6.21	0.722	29	
15:10	↓	15,000	↓	28.5	6.62	0.723	20	
15:15	↓	16,250	↓	28.3	6.85	0.723	17	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: _____
Well: MW-66D ~~40~~ 56
Date Installed: _____
Date Developed: 7/29
Dev. Method: _____
Pump Type: _____

Depth to Bottom (ft.): _____
Static Water Level Before (ft.): 16.26
Static Water Level After (ft.): _____
Screen Length (ft.): _____
Specific Capacity: _____
Casing ID (in.): _____

Project Name: _____
Project Number: _____
Site Geologist: _____
Drilling Co.: _____

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
9:50								
11:20				25.4	8.19	0.821	29.7	
11:25				25.4	8.14	0.882	30.2	
11:30				25.5	8.52	0.884	39.9	
11:35				25.4	8.52	0.882	46.4	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Site: NTC Orlando
Well: MW-66 D ~~C-6~~
Date Installed:
Date Developed: 7/29
Dev. Method:
Pump Type: peristaltic

Depth to Bottom (ft.):
Static Water Level Before (ft.): 16.00
Static Water Level After (ft.):
Screen Length (ft.): 5 ft
Specific Capacity: 40 ml/ft
Casing ID (in.):

Project Name: NTC Orlando OU-4
Project Number: 00131
Site Geologist: GB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
9:50								
11:20				26.3	7.36	1.55	50.2	
11:25				26.1	7.32	1.56	75.3	
11:30				26.1	7.35	1.58	24.2	
11:35				25.9	7.37	1.60	13.3	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando
Well: MW-67D-C-1
Date Installed: _____
Date Developed: 7/27/06
Dev. Method: _____
Pump Type: _____

Depth to Bottom (ft.): _____
Static Water Level Before (ft.): _____
Static Water Level After (ft.): _____
Screen Length (ft.): _____
Specific Capacity: 40 gal/ft.
Casing ID (in.): _____

Project Name: OU-4
Project Number: _____
Site Geologist: BT
Drilling Co.: Pressure.

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
14:30								
15:30				26.6	7.48	0.79	34.3	
15:35				26.7	7.47	0.77	39.7	
15:50				26.6	7.47	0.77	142.0	
15:55				26.4	7.47	0.79	152.0	
16:00				26.4	7.47	0.77	208.0	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC ORLANDO
Well: MW-69D-C-2
Date Installed: _____
Date Developed: _____
Dev. Method: _____
Pump Type: _____

Depth to Bottom (ft.): _____
Static Water Level Before (ft.): _____
Static Water Level After (ft.): _____
Screen Length (ft.): 5 ft
Specific Capacity: 40 ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: G00131
Site Geologist: GB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
14:30	— begin purging				~~7.64~~	~~0.50~~		
15:30				27.1	7.64	0.50	19.1	
15:35				27.1	7.61	0.50	16.4	
15:40				26.9	7.62	0.50	15.0	
15:45				26.9	7.6	0.49	15.4	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando
Well: MW69D-C-3
Date Installed: _____
Date Developed: 7/27/06
Dev. Method: low flow
Pump Type: peristaltic

Depth to Bottom (ft.): _____
Static Water Level Before (ft.): _____
Static Water Level After (ft.): _____
Screen Length (ft.): 5 ft
Specific Capacity: 710 ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: G00131
Site Geologist: GB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
14:10	begin purging chamber							
16:00				27.00	8.15	0.52	>999	
16:05				26.99	8.15	0.51	>999	
16:10				26.99	8.15	0.51	>999	
16:15				26.99	8.15	0.51	>999	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando
Well: MW-67D-C-4
Date Installed: _____
Date Developed: 7/22/06
Dev. Method: low flow
Pump Type: peristaltic

Depth to Bottom (ft.): _____
Static Water Level Before (ft.): _____
Static Water Level After (ft.): _____
Screen Length (ft.): 5 ft
Specific Capacity: 40ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: G00131
Site Geologist: GB
Drilling Co.: Prosonic.

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
12:50	begin purging							
13:55				26.00	8.25	0.60	36.6	
14:00				26.30	8.42	0.64	56.2	
14:05				26.30	8.50	0.63	53.3	
14:10				26.30	8.55	0.64	49.1	
14:15				26.30	8.59	0.61	55.1	
14:20				26.30	8.58	0.61	53.2	
14:30				26.30	8.56	0.61	56.2	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando
Well: MW-67D C-5
Date Installed: _____
Date Developed: 7/27/06
Dev. Method: low flow
Pump Type: peristaltic

Depth to Bottom (ft.): _____
Static Water Level Before (ft.): _____
Static Water Level After (ft.): _____
Screen Length (ft.): 5 ft
Specific Capacity: 40 ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: G02131
Site Geologist: RTB
Drilling Co.: Prosonic.

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
12:50								
14:10				26.8	7.43	0.71	29.3	
14:15				27.3	7.52	0.74	35.5	
14:20				27.2	7.53	0.74	32.2	
14:30				27.3	7.53	0.74	32.5	

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MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando
Well: MW 67D- C-6
Date Installed: _____
Date Developed: 7/27/06
Dev. Method: low flow
Pump Type: peristaltic

Depth to Bottom (ft.): _____
Static Water Level Before (ft.): _____
Static Water Level After (ft.): _____
Screen Length (ft.): 5 ft
Specific Capacity: 40ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: 6001 31
Site Geologist: GB
Drilling Co.: Prosonic.

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
12:50	begin purging				~~7.44~~	~~0.37~~		
13:55				26.8	7.41	0.37	43.8	
14:00				26.6	7.42	0.37	54.9	
14:05				26.7	7.43	0.37	55.00	
14:10				26.7	7.44	0.37	56.2	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Site: NTC Orlando
Well: MW-68D-G1
Date Installed:
Date Developed:
Dev. Method: low flow
Pump Type: peristaltic

Depth to Bottom (ft.): 61.00
Static Water Level Before (ft.): 13.02
Static Water Level After (ft.): 14.21
Screen Length (ft.): 5 ft
Specific Capacity: 40 ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: 02131
Site Geologist: GB
Drilling Co.: Prosonic.

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~) ml	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
17:30	N/A	12500	N/A	27.4	5.32	1.240	42	no odor, slight turbidity
17:35	↓	13750	↓	27.2	5.32	1.250	30	pH calibration error.
17:40	↓	15000	↓	27.1	5.32	1.250	30	
17:45	↓	16250	↓	27.1	5.32	1.250	31	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Site: NTC Orlando
Well: MW-68D C-2
Date Installed:
Date Developed: 7/13/06
Dev. Method: low flow
Pump Type: peristaltic

Depth to Bottom (ft.): 66.20
Static Water Level Before (ft.): 13.25
Static Water Level After (ft.): 14.52
Screen Length (ft.): 5 ft
Specific Capacity: 40ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: 00131
Site Geologist: GK
Drilling Co.: Prosonic.

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~) ml	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
16:30	N/A	12,500	N/A	27.5	5.52	0.690	32	no odor, clear
16:35	↓	13,750	↓	27.3	5.54	0.693	9	pH calibration error
16:40	↓	15,000	↓	27.2	5.56	0.693	0	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of ___

Site: NTC Orlando
Well: MW-68D C-3
Date Installed: ___
Date Developed: 7/13/06
Dev. Method: low flow
Pump Type: peristaltic

Depth to Bottom (ft.): 82.84
Static Water Level Before (ft.): 18.00
Static Water Level After (ft.): 20.34
Screen Length (ft.): 5 ft
Specific Capacity: 40 ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: 00131
Site Geologist: GB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~ ml)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units ____)	Turbidity (NTU)	Remarks (odor, color, etc.)
15:25	N/A	13750	N/A	27.0	4.32	0.92	70	turbid, no odor.
15:30	↓	15,000	↓	27.1	5.89	0.92	46	pH calibration error.
15:35	↓	16,250	↓	27.1	5.89	0.92	40	
15:40	↓	17,500	↓	27.2	5.90	0.91	43	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Site: NTC Orlando
Well: MW-68D-C-4
Date Installed:
Date Developed: 7/13/06
Dev. Method: low flow
Pump Type: peristaltic

Depth to Bottom (ft.): 99.90
Static Water Level Before (ft.): 18.59
Static Water Level After (ft.): 19.62
Screen Length (ft.): 5 ft
Specific Capacity: 40 ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: 00131
Site Geologist: GB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~) ml	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
14:10	N/A	13750	N/A	27.7	6.71	0.591	5	no odor, clear, error in pH cal
14:15	↓	15,000	↓	27.6	6.71	0.591	2	
14:20	↓	16,250	↓	27.8	6.70	0.591	1	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando
Well: MW-68D C-5
Date Installed: _____
Date Developed: 7/13
Dev. Method: low flow
Pump Type: peristaltic

Depth to Bottom (ft.): 114.8
Static Water Level Before (ft.): 18.76
Static Water Level After (ft.): _____
Screen Length (ft.): 5 ft
Specific Capacity: 40 ml/ft.
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: 00131
Site Geologist: GB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~ ml)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
13:05	N/A	18,750	N/A	28.3	6.92	0.424	18	clear, no odor
13:10	↓	20,000	↓	27.7	6.95	0.390	36	pH calibration error
13:15	↓	21,250	↓	27.2	6.95	0.392	1	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando
Well: MW-68D C-6
Date Installed: _____
Date Developed: 7/13
Dev. Method: low flow
Pump Type: peristaltic

Depth to Bottom (ft.): 133.4
Static Water Level Before (ft.): 19.85
Static Water Level After (ft.): 19.70
Screen Length (ft.): _____
Specific Capacity: 40 ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: 00131
Site Geologist: GB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~) ml	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
10:10	N/A	13,750	N/A	26.8	7.30	1.12	0	clear, no odor.
10:15	↓	15,000	↓	26.6	7.31	1.12	0	
10:20	↓	16,250	↓	26.5	7.31	1.12.	0	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Site: NTC Orlando
Well: MW-69D C-1
Date Installed:
Date Developed: 7/14/06
Dev. Method: low flow
Pump Type: peristaltic

Depth to Bottom (ft.): 68.0
Static Water Level Before (ft.): 9.14
Static Water Level After (ft.):
Screen Length (ft.): 5 ft.
Specific Capacity: 40ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number:
Site Geologist: RB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~) ml	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
13:25	N/A		N/A	30.0	6.89	.309	10	
13:30	↓		↓	30.1	6.90	0.309	6	
13:35				30.2	6.95	0.310	6	
13:40				30.2	6.93	0.310	4	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando
Well: MW-69D C-2
Date Installed: _____
Date Developed: 7/30/06
Dev. Method: _____
Pump Type: peristaltic

Depth to Bottom (ft.): 78.20
Static Water Level Before (ft.): 9.98
Static Water Level After (ft.): _____
Screen Length (ft.): 5 ft
Specific Capacity: 40 ml/ft
Casing ID (in.): _____

Project Name: 04-4
Project Number: 00131
Site Geologist: [illegible]
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
12:00 — begin purging 250 ml/min.								
				25.7	7.42	0.514	65.3	
				25.7	7.43	0.518	59.6	
				25.7	7.44	0.519	46.6	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando
Well: MW-69D-C3
Date Installed: _____
Date Developed: 7/30/06
Dev. Method: _____
Pump Type: Peristaltic

Depth to Bottom (ft.): _____
Static Water Level Before (ft.): _____
Static Water Level After (ft.): _____
Screen Length (ft.): 5 ft
Specific Capacity: 40 ml/ft
Casing ID (in.): 0.37

Project Name: OU-4
Project Number: 000131
Site Geologist: CJB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
12:00	— begin pumping 250 ml/min							
13:05				26.1	6.53	0.380	54.5	
				25.9	6.42	0.379	61.1	
				25.9	6.42	0.380	34.6	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando
Well: MW-69D-C-4
Date Installed: _____
Date Developed: 7/14
Dev. Method: low flow
Pump Type: peristaltic

Depth to Bottom (ft.): 108
Static Water Level Before (ft.): ~~14.26~~ 14.47
Static Water Level After (ft.): _____
Screen Length (ft.): 5 ft
Specific Capacity: 40 ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: _____
Site Geologist: GB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
12:40	N/A	4000 ml	N/A	29.4	4.46	0.92	17	Error on pH reading
12:45		5000 ml		29.4	4.47	0.92	15	
12:50		6000 ml		29.5	4.52	0.91	13	
12:55		7000 ml		29.6	4.61	0.91	10	
13:00		8000 ml		29.6	4.72	0.91	8	
13:05		9000 ml		29.7	4.83	0.90	7	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando.
Well: MW69D-C-5
Date Installed: _____
Date Developed: 7/14/06
Dev. Method: low flow
Pump Type: peristaltic pump

Depth to Bottom (ft.): 118.0
Static Water Level Before (ft.): 14.25
Static Water Level After (ft.): _____
Screen Length (ft.): 5 ft
Specific Capacity: 40 ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: 00131
Site Geologist: GB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
10:20		4000 ml	N/A	30.2	8.3	0.557	93	
10:25		5000 ml		30.2	8.6	0.557	19	
10:30		6000 ml		30.1	8.8	0.556	14	
10:35		7000 ml		30.1	8.8	0.556	10	
10:40		8000 ml		30.2	8.6	0.556	10	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Site: NTC ORLANDO ~~OU-4~~
Well: MW-69D-C-6
Date Installed: ~~7/14/06~~
Date Developed: 7/14/06
Dev. Method: low flow
Pump Type: Peristaltic.

Depth to Bottom (ft.): 129.95
Static Water Level Before (ft.): 14.63
Static Water Level After (ft.):
Screen Length (ft.): 5 ft.
Specific Capacity: 40 ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number:
Site Geologist: Gary Bragger
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~) ml	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
9:30	NA	4000	N/A	27.2	6.25	0.291	48	clear, no odor
9:35	N/A	6000	N/A	27.0	6.25	0.291	13	
9:40	N/A	8000	N/A	27.1	6.25	0.291	17	
9:45	N/A	10000	N/A	27.1	6.27	0.290	10	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NTC Orlando
Well: MW-70D-C-2
Date Installed: _____
Date Developed: _____
Dev. Method: _____
Pump Type: _____

Depth to Bottom (ft.): _____
Static Water Level Before (ft.): _____
Static Water Level After (ft.): _____
Screen Length (ft.): _____
Specific Capacity: _____
Casing ID (in.): _____

Project Name: _____
Project Number: _____
Site Geologist: _____
Drilling Co.: _____

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
11:10	– start	purging						
12:10				27.3	6.97	0.79	232	
12:15				27.6	6.86	0.78	228	
12:20				27.9	6.80	0.75	260	
12:25				27.3	6.77	0.75	89.1	
12:30				27.8	6.76	0.75	83.7	
12:35				27.9	6.76	0.75	81.7	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of ___

Site: NTC Orlando
Well: MW-700-C-3
Date Installed: ___
Date Developed: 7/27/06
Dev. Method: low flow
Pump Type: peristaltic

Depth to Bottom (ft.): ___
Static Water Level Before (ft.): ___
Static Water Level After (ft.): ___
Screen Length (ft.): 5 ft
Specific Capacity: 40ml/ft
Casing ID (in.): 0.375

Project Name: OU-4
Project Number: G00131
Site Geologist: BB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units ___)	Turbidity (NTU)	Remarks (odor, color, etc.)
10:15	– start	purge						
11:20				26.6	7.33	0.76	86.3	
11:25				26.7	7.26	0.75	79.2	
11:30				26.7	7.22	0.75	55.5	
11:35				26.7	7.21	0.75	52.2	
11:40				26.7	7.21	0.75	49.9	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: _____ Depth to Bottom (ft.): _____ Project Name: _____
Well: MW-70D C-4 Static Water Level Before (ft.): _____ Project Number: _____
Date Installed: _____ Static Water Level After (ft.): _____ Site Geologist: _____
Date Developed: _____ Screen Length (ft.): _____ Drilling Co.: _____
Dev. Method: _____ Specific Capacity: _____
Pump Type: _____ Casing ID (in.): _____

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
9:40 - begin		purging	N/					
10:40				25.30	8.14	1.30	61	
11:00				25.30	8.11	1.30	32	
11:05				25.30	8.12	1.30	31.6	
11:10				25.30	8.12	1.30	38.1	
~~11:15~~								

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: _____ Depth to Bottom (ft.): _____ Project Name: _____
Well: MW-70D-C-5 Static Water Level Before (ft.): _____ Project Number: _____
Date Installed: _____ Static Water Level After (ft.): _____ Site Geologist: _____
Date Developed: _____ Screen Length (ft.): _____ Drilling Co.: _____
Dev. Method: _____ Specific Capacity: _____
Pump Type: _____ Casing ID (in.): _____

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.) DO
9:10	— start	purge	— N/A					
10:15				26.9	8.03	1.34	>999	3.61
10:20				27.4	8.03	1.30	>999	6.02
10:30				27.5	7.99	1.33	859	0.56
10:35	— WC							
10:40				28.3	7.99	1.30	798	
11:00				27.8	7.99	1.30	777	
11:05				21.8	7.98	1.30	685	
12:00				29.0	8.63	1.08	266	
12:05				29.0	8.62	1.07	258	2.3
12:10				29.1	8.62	1.07	258	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of _____

Site: NC Orlando
Well: MW-TOD-C-6
Date Installed: _____
Date Developed: 7/27
Dev. Method: _____
Pump Type: _____

Depth to Bottom (ft.): 131.00
Static Water Level Before (ft.): 13.96
Static Water Level After (ft.): _____
Screen Length (ft.): 5ft
Specific Capacity: 40ml/ft
Casing ID (in.): _____

Project Name: OU-4
Project Number: G0D131
Site Geologist: GB
Drilling Co.: Prosonic

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units _____)	Turbidity (NTU)	Remarks (odor, color, etc.)
8:55	start	purge.	250ml/min					
10:00			N/A	25.7	7.75	0.59	60	
10:05				25.7	7.75	0.58	37.6	
10:10				25.7	7.75	0.58	16.00	
10:15				25.8	7.75	0.58	16.00	

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NTC Orlando OU-4
Project No.:

[] Domestic Well Data
[✓] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: NTC13G66D274
Sample Location: MW-66-C-2 (1)
Sampled By: GPB
C.O.C. No.:
Type of Sample:
[✓] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (^{0}C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other
Date: 10/24/06								
Time: 14:25								
Method: low flow	clear	7.57	1.31	24.2	0.3	0.24	-1.44	

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 10/24/06								
Method: low flow	3,500	7.57	1.31	24.0	0.4	0.26	1.43	14:00
Monitor Reading (ppm): 0	4000	7.57	1.30	24.1	0.4	0.24	-1.43	14:05
Well Casing Diameter & Material	4,500	7.57	1.31	24.2	0.3	0.24	-1.43	14:10
Type: CMT	5,000	7.57	1.30	24.1	0.3	0.24	-1.43	14:15
Total Well Depth (TD): 79 ft	5,500	7.57	1.31	24.2	0.3	0.24	-1.44	14:20
Static Water Level (WL): 22.4								
One Casing Volume(gal/L):								
Start Purge (hrs): 13:25								
End Purge (hrs): 14:20								
Total Purge Time (min): 55								
Total Vol. Purged (gal/L): 5.5L								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	HCl	3-40 ml vials	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.: NTC1BFD102406

Signature(s): Gary Bragg Jr.

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NTC Orlando OU-4
Project No.:

[] Domestic Well Data
[] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: NTC13566D276
Sample Location: MW-66D C-2 (2)
Sampled By: GB
C.O.C. No.:
Type of Sample:
[] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	~~Salinity (%)~~ ORP	~~Other~~ mV	
Date: 10/24/06									
Time: 13:20									
Method: low flow	clear	7.60	1.34	24.2	0.5	0.40	-114	100 ml/min	

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	~~Salinity~~ ORP	~~Other~~ Time
Date: 10/24/06								
Method: low flow	3,000	7.60	1.34	24.2	0	0.43	-146	13:00
Monitor Reading (ppm): 0	3500	7.60	1.35	23.9	0.5	0.41	-145	13:05
Well Casing Diameter & Material	4000	7.60	1.34	24.1	0.5	0.40	-145	13:10
Type: CMT C-2	4500	7.60	1.34	24.2	0.5	0.40	-114	13:15
Total Well Depth (TD): 79 ft								
Static Water Level (WL): 28.2								
One Casing Volume(gal/L):								
Start Purge (hrs): 12:30								
End Purge (hrs): 13:15								
Total Purge Time (min): 55								
Total Vol. Purged (gal/L): 4.5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	HCl	3-40 ml vials	✓

OBSERVATIONS / NOTES:

collect sample from 76.5 ft.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NTC Orlando - OU 4
Project No.: CTO 002

[✓] Domestic Well Data
[✓] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: NTC13G66D279
Sample Location: MW-66D-C-2 (3)
Sampled By: GB.
C.O.C. No.:
Type of Sample:
[] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other
Date: 10/24/06								
Time: 12:25								
Method: low flow	clear	7.60	1.50	23.0	0.2	1.02	-143	12:20

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other Time
Date: 10/24/06								
Method: low flow	3500	7.63	1.51	23.0	0.2	1.14	-162	12:00
Monitor Reading (ppm): 0	4,000	7.61	1.50	23.0	0	1.21	-150	12:05
Well Casing Diameter & Material	4,500	7.60	1.50	23.0	0.1	1.02	-145	12:10
Type: CMT	5000	7.60	1.50	23.0	0.2	1.04	-144	12:15
Total Well Depth (TD): 79 ft	5,500	7.60	1.50	23.0	0.2	1.02	-143	12:20
Static Water Level (WL): 15.55								
One Casing Volume(gal/L):								
Start Purge (hrs): 11:25								
End Purge (hrs): 12:20								
Total Purge Time (min): 50								
Total Vol. Purged (gal/L): 5,500								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	HCl	3-40 ml vials	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Gary Bragg

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NTC Orlando
Project No.: G00131

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

Sample ID No.: NTC13G66D01
Sample Location: MW-66-C1
Sampled By: GB
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	~~Salinity~~ (%) ORP	Other Time
Date: 8/2/06								
Time: 8:55								
Method: low flow/peristaltic	clear	7.36	0.60	26.5	36.2	0.01	-111	8:50

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	~~Salinity~~ ORP	~~Other~~ Time
Date: 8/2/06								
Method: low flow/peristaltic	2,500	7.29	0.54	26.4	120	0.63	-114	8:30
Monitor Reading (ppm): —	3000	7.27	0.53	26.4	66.9	0.21	-115	8:35
Well Casing Diameter & Material	3,500	7.35	0.56	26.4	48.6	0.07	-120	8:40
Type: CMT 68.00	4000	7.35	0.58	26.4	42.3	0.10	-109	8:45
Total Well Depth (TD): ~~84.15~~	4,500	7.36	0.60	26.5	36.2	0.01	-111	8:50
Static Water Level (WL): 11.01								
One Casing Volume(gal/L):								
Start Purge (hrs): 8:05								
End Purge (hrs): 8:50								
Total Purge Time (min): 45								
Total Vol. Purged (gal/L): 4.5L								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs		3-40 ml vials	✓
NO_2, NO_3, OPO_4, SO_4, TOC			
Fe + Mn			
Gases			

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Gary Bragança

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NTC Orlando
Project No.: G00131

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

Sample ID No.: NTC13G66D201
Sample Location: MW-66D C-2
Sampled By: GB
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	~~Salinity (%)~~ ORP	Other
Date: 8/2/06								
Time: 10:50								
Method: peristaltic/low flow	clear	8.21	0.950	27.2	8.1	0.0	-125	

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	~~Salinity~~ ORP	Other
Date: 8/2/06								
Method: low flow/peristaltic	2000	8.19	0.980	27.2	55.5	0.0	-128	10:25
Monitor Reading (ppm): —	2500	8.22	0.960	27.1	19.0	0.0	-126	10:30
Well Casing Diameter & Material	3000	8.21	0.950	27.2	15.1	0.0	-126	10:35
Type: CMT	3500	8.21	0.950	27.2	8.0	0.0	-126	10:40
Total Well Depth (TD): 82.22	4000	8.21	0.950	27.2	8.1	0.0	-125	10:45
Static Water Level (WL): 15.46								
One Casing Volume(gal/L):								
Start Purge (hrs): 10:05								
End Purge (hrs): 10:45								
Total Purge Time (min): 40								
Total Vol. Purged (~~gal~~/L): 4000								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	9-40 ml vials	✓

OBSERVATIONS / NOTES:

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

Signature(s): Gary Burgess

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NTC ORLANDO
Project No.: 600131

[✓] Domestic Well Data
[] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: NTC13G66D401
Sample Location: MW-66D-C4
Sampled By: GB
C.O.C. No.:
Type of Sample:
[✓] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%) ORP.	Other
Date: 8/2/06								
Time: 9:55								
Method: peristaltic/low flow	clear	8.30	1.56	26.6	28.0	0.0	-140	

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	~~Salinity~~ ORP	~~Other~~ Time
Date: 8/2/06								
Method: peristaltic/low flow	2000L	8.22	1.49	26.5	186	0.05	-125	9:25
Monitor Reading (ppm): —	2500	8.34	1.51	26.5	47.6	0.00	-136	9:30
Well Casing Diameter & Material	3000	8.40	1.53	26.5	40.2	0.0	-143	9:35
Type: CMT	3500	8.29	1.55	26.6	29.5	0.0	-140	9:40
Total Well Depth (TD): 112.0	4000	8.30	1.56	26.6	27.8	0.0	-140	9:45
Static Water Level (WL): 15.95	4500	8.30	1.56	26.6	28.0	0.0	-140	9:50
One Casing Volume(gal/L):								
Start Purge (hrs): 9:05								
End Purge (hrs): 9:50								
Total Purge Time (min): 45								
Total Vol. Purged (gal/L): 4.5L								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	HCl	3-40 ml.	✓
SO_4, NO_2, NO_3, Cl, TOC,		1-500 ml.	✓
Fe + Mn			✓
Gases			✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.: NTC13FD08020602 ~~NTC13G66D~~

Signature(s): Gary Bragan

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NTC Orlando
Project No.: G00131

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

Sample ID No.: NTC13G66D601
Sample Location: MW-66D-C6
Sampled By: GB
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%) ORP	Other
Date: 8/2/06								
Time: 11:10								
Method: peristaltic/low flow	clear	7.46	0.27	26.8	0.0	0.09	-186	

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity ORP	Other
Date: 8/2/06								
Method: low flow/peristaltic	~~3500~~	7.44	0.27	26.6	0.8	0.26	-183	10:50
Monitor Reading (ppm): —	4000 ml	7.46	0.27	26.7	0.7	0.09	-186	10:55
Well Casing Diameter & Material	4500	7.46	0.27	26.8	0.6	0.10	-186	11:00
Type: CMT	5000	7.46	0.27	26.8	0.0	0.09	-186	11:05
Total Well Depth (TD): 134.94								
Static Water Level (WL): 16.11								
One Casing Volume(gal/L):								
Start Purge (hrs): 10:15								
End Purge (hrs): 11:05								
Total Purge Time (min): 50								
Total Vol. Purged (gal/L): 5 L								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	3-40 ml	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NTC Orlando
Project No.:

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

Sample ID No.: NTC13G69D501
Sample Location: MW69D-5
Sampled By: GB
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	~~Other~~
Date: 8/1/31								
Time: 10:30								
Method: peristaltic	clear	7.66	0.686	27.0	0.0	1.25	-166	

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	~~Salinity~~ ORP	~~Other~~ Time
Date: 8/1/31								
Method: peristaltic/low flow	400ml	7.66	0.687	27.0	0.0	1.39	-154	10:05
Monitor Reading (ppm): ~~0~~	1500ml	7.65	0.685	26.9	0.0	1.23	-161	10:10
Well Casing Diameter & Material	500ml	7.65	0.686	26.9	0.0	1.22	-163	10:15
Type: CMT	550ml	7.66	0.686	27.0	0.0	1.25	-166	10:20
Total Well Depth (TD): 117.90								
Static Water Level (WL): 13.90								
One Casing Volume(gal/L):								
Start Purge (hrs): 9:25								
End Purge (hrs): 10:20								
Total Purge Time (min): 55								
Total Vol. Purged (gal/L): 5.5L								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
~~3~~/OG	HCl	3-40ml vials	✓
Mn+Fe			
~~Gases~~			
~~Anion~~			
DO:3			

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.: NTC13FD080 10601

Signature(s): Gary Bugg

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NTC ORLANDO
Project No.: 00131

[] Domestic Well Data
[] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: NTC13G67D401
Sample Location: MW-67D-C4
Sampled By: GB
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 7/31/06								
Time: 11:40	(Visual)	(S.U.)	(mS/cm)	(°C)	(NTU)	(mg/l)	(%) ORP	
Method: peristaltic	clear	8.40	0.634	26.7	9.5	0.16	-45	

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	~~Salinity~~ ORP	~~Other~~ Time
Date: 7/31/06								
Method: peristaltic/low flow	3500 ml	8.53	0.664	26.8	8.7	0.54	24	11:15
Monitor Reading (ppm): —	4000 ml	8.46	0.676	26.8	8.6	0.21	-8	11:20
Well Casing Diameter & Material	4500	8.38	0.635	26.8	9.0	0.18	-27	11:25
Type: CMT 0.375	5000 ml	8.40	0.635	26.8	9.3	0.17	-34	11:30
Total Well Depth (TD): 118.85	5,500	8.40	0.634	26.7	9.5	0.16	-45	11:35
Static Water Level (WL): 15.80								
One Casing Volume(gal/L):								
Start Purge (hrs): 10:40								
End Purge (hrs): 11:35								
Total Purge Time (min): 55								
Total Vol. Purged (gal/L) 5.5 ml								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	HCl	3-40 ml vials	✓

OBSERVATIONS / NOTES:

Tubing volume = 7 ml/ft

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Gary Bragg

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: ntc orlando
Project No.:

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

Sample ID No.: ntc13G68D301
Sample Location: 68D3
Sampled By: SV
C.O.C. No.: SV
Type of Sample:
[] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (^{0}C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other
Date: 7-31-06								
Time: 1510								
Method: SOP	Clear	7.26	1.12	28.1	.8	1.86	-	

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 7 31 06								
Method: PP	500	7.26	1.08	28.2	946	1.56	—	
Monitor Reading (ppm):	750	7.30	1.12	28.1	5.9	3.87	—	
Well Casing Diameter & Material	1000	7.27	1.12	28.1	.9	1.87	—	
Type: cmt	1250	7.28	1.13	28.0	.7	1.86	-	
Total Well Depth (TD): 80.18	1500	7.28	1.12	28.1	.8	1.86	-	
Static Water Level (WL): 13.99								
One Casing Volume(gal/L): 4.70								
Start Purge (hrs): 14.30								
End Purge (hrs): 14.45								
Total Purge Time (min): 15								
Total Vol. Purged (gal/L): 1500								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	HCL	3/40	—

OBSERVATIONS / NOTES:

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	SV

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: ntc Orlando
Project No.:

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

Sample ID No.: NTC13G68D501
Sample Location: 68D5
Sampled By: SV
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7 31 06	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1615	(Visual)	(S.U.)	(mS/cm)	(^{0}C)	(NTU)	(mg/l)	(%)	
Method: SM	Clear	7.50	.40	27.7	4.8	1.21	–	

PURGE DATA:

Date: 7 31 06	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Method: BP	750	7.46	.41	27.5	15.6	1.40	–	
Monitor Reading (ppm): –	1000	7.49	.40	27.6	14.6	1.21	–	
Well Casing Diameter & Material	1250	7.49	.40	27.7	14.5	1.28	–	
Type: Cmt	1500	7.50	.40	27.7	12.7	1.24	–	
Total Well Depth (TD): 112.15	1750	7.50	.40	27.7	6.1	1.23	–	
Static Water Level (WL): 15.62	2000	7.50	.40	27.7	4.8	1.21	–	
One Casing Volume(gal/L): 6.75								
Start Purge (hrs): 1530								
End Purge (hrs): 1550								
Total Purge Time (min): 20								
Total Vol. Purged (gal/L): 2000								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	HCL	3/40	✓
Natural Attn			✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): SV

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NTC Orlando
Project No.: 00131

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

Sample ID No.: NTC13G68D601
Sample Location: MW-68D-C6
Sampled By: GB
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%) ORP	~~Other~~
Date: 7/31/06								
Time: 14:35								
Method:	Clear	8.33	1.43	26.0	50.	0.28	-133	

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	~~Salinity~~ ORP	~~Other~~ Time
Date: 7/31/06								
Method: peristaltic/low flow	2000ml	7.97	1.43	26.4	67.3	1.01	-107	14:10
Monitor Reading (ppm):	2500 ml	8.29	1.42	26.1	68.3	0.60	-125	14:15
Well Casing Diameter & Material	3000ml	8.31	1.42	26.0	68.2	0.20	-130	14:20
Type: CMT 0.375	3500	8.31	1.42	26.0	62.4	0.24	-131	14:25
Total Well Depth (TD):	4000ml	8.33	1.43	26.0	50.0	0.28	-133	14:30
Static Water Level (WL): 16.63								
One Casing Volume(gal/L):								
Start Purge (hrs): 13:50								
End Purge (hrs): 14:30								
Total Purge Time (min): 50								
Total Vol. Purged (gal/L): 4 L								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	HCl	3-40ml	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Gary B

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NTC Orlando
Project No.: 00131

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

Sample ID No.: NTC13G-69D301
Sample Location: MW-69D-3
Sampled By: GB
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	~~Salinity (%)~~ ORP	Other
Date: 8/1/31								
Time: 10:25								
Method: peristaltic	clear	8.21	0.730	25.6	43.2	0.00	-137	

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	~~Salinity~~ ORP	Other
Date: 8/1/31								
Method: peristaltic / low flow	4000 ml	8.52	0.714	25.6	60.5	0.14	-132	10:05
Monitor Reading (ppm):	4500 ml	8.19	0.728	25.6	39.2	0.00	-130	10:10
Well Casing Diameter & Material	5000 ml	8.20	0.730	25.6	42.2	0.01	-133	10:15
Type: CMT 0.375	5500 ml	8.21	0.730	26.6	43.2	0.00	-137	10:20
Total Well Depth (TD): 93.60								
Static Water Level (WL): 13.60								
One Casing Volume(gal/L):								
Start Purge (hrs): 9:25								
End Purge (hrs): 10:20								
Total Purge Time (min): 55								
Total Vol. Purged (gal/L): 5.5L								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	HCl	3-40 ml vials	✓
Fe + Mn			✓
DO=3			
Gases.			✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Gary Burgess

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NTC Orlando.
Project No.: 00131

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

Sample ID No.: NTC13G69D601
Sample Location: MW-69D-C6
Sampled By: GB
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	~~Salinity~~ (%) ORP	~~Other~~
Date: 8/1/06								
Time: 12:05								
Method: peristaltic	clear	8.00	0.428	26.6	152	0.48	-160	

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	~~Salinity~~ ORP	Other
Date: 8/1/06								
Method: peristaltic / low flow	2,500	7.97	0.428	26.7	147.0	0.71	-149	11:45
Monitor Reading (ppm): N/A	3000	7.98	0.438	26.6	140	0.60	-152	11:50
Well Casing Diameter & Material	3500	8.00	0.428	26.7	124	0.56	-154	11:55
Type: 0.375 CMT	4000	8.00	0.428	26.6	152	0.48	-160	12:00
Total Well Depth (TD): 129.90								
Static Water Level (WL): 14.12								
One Casing Volume(gal/L):								
Start Purge (hrs): 10:20								
End Purge (hrs): 12:00								
Total Purge Time (min): 40								
Total Vol. Purged (gal/L): 4.0								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	HCl	3-40 ml	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Gary Bragg

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: htc orlando
Project No.: 0100

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

Sample ID No.: HTC136 70D401
Sample Location: 70D4
Sampled By: SV
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other
Date: 7-31-06								
Time: 13:45								
Method: SM	Clear	7.30	1.48	28.6	4.5	.74	.1	

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 7-31-06								
Method: PP	750	7.62	1.38	28.6	105	5.66	.1	
Monitor Reading (ppm): —	1000	7.47	1.42	28.8	101	1.26	.1	
Well Casing Diameter & Material	1250	7.30	1.44	28.7	19.7	.62	.1	
Type: Cmt	1500	7.28	1.45	28.7	12.5	.63	.1	
Total Well Depth (TD): 109.12	1750	7.30	1.48	28.6	4.5	.71	.1	
Static Water Level (WL): 12.58	2000	7.30	.148	28.6	4.6	.73	.1	
One Casing Volume(gal/L): 7.90	2250	7.30	.148	28.6	4.5	.74	.1	
Start Purge (hrs): 1300								
End Purge (hrs): 1323								
Total Purge Time (min): 25								
Total Vol. Purged (gal/L): 2.25L								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	HCl	3-40 ml	✓
Fe + Mn			✓
NO_2 NO_3, OPO_4, TOC, SO_4 Cl			✓
Gases			✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): SV

CH2M HILL
WELL SAMPLING FIELD SHEET

PROJECT# 327012.OM.26.09.03

WELL NUMBER: OU3-13 58D SITE: CTO-031/OU4 DATE: 7/25/06

(leave blank if on previous page)

FIELD CREW: I. Lynch

			CASING DIA		GAL/FT OF CASING	
DEPTH TO WATER	(FT):	14.50				
WELL DEPTH (FT):	-	110.50	2 IN.	←	0.1632	←
WATER COLUMN (FT):	=	96.00	4 IN.		0.6528	
GAL/FT OF CASING	x	.163	6 IN.		1.4688	
CASING VOLUME (GAL)	=	15.64	8 IN.		2.611	
NO. OF VOLUMES min.(3)	x		10 IN.		4.0797	
PURGE VOLUME (GAL)	=		12 IN.		5.8748	

METHOD OF PURGING (circle one)

PUMP: SUB. CENT. (PERIST.)
PUMP ON (time): ~~1055~~ 1105
FLOW RATE (gpm) : .157
VOL. PURGED (gals): .130

OTHER: 500 ml/min AOC/ 600ml/min

BAILER : TEFLON, SS ,OTHER:
BAILER VOL. (gal) .25 / .33
REQUIRED PULLS:
VOL. PURGED (gals):
OTHER:

FIELD MEASUREMENTS

FIELD PARAMETERS	1st	2nd	3rd	4th	5th	6th	WITHIN10% Y / N
VOL. (gal)	1.0	4.7 ~~5.6~~	11.7	14.35			
pH (s.units)	7.32	7.44	7.38	7.33			
SpCond (mmhos/cm)	2404	2052	1916	1910			
TEMP.(C)	24.8	24.77	25.26	25.50			
ORP (mV)	-122	-114.7	-88.6	-88.6			
DO (mg/L)	1.10	.39	.81	.35			
Turbidity (NTU)	1.80	7.40	1.35	1.63			
	11.11	1135	1220	1300			
Depth to Water	15.00	15.05	14.95	14.96			

SAMPLE PARAMETERS (GRAB OR COMPOSITE): VOC only.

FILTERED METALS COLLECTED:NO .

OBSERVATIONS

COLOR: CLEAR , AMBER , TAN , Lt. BROWN , GREY , MILKY WHITE , OTHER:

ODOR: NONE , LOW , MEDIUM , HIGH , VERY STRONG , H2S , FUEL LIKE , CHEMICAL ?, UNKNOWN

TURBIDITY: NONE , LOW , MEDIUM , HIGH , VERY TURBID. HEAVY SILTS

COMMENTS: Sample ID: 03113 58D R206

OTHER: PLEASE USE BACK OF SHT.FOR SKETCHING MAPS ,WELL LOCATION NOTES ECT. SEE BACK OF SHT Y / N.

Q.C. SAMPLE TYPE: FIELD DUPLICATE , EQUIPMENT BLANK , OTHER:

Q.C. PARAMETERS:

SAMPLE DATE/ TIME: 7/25/06 1300

64

CH2M HILL
WELL SAMPLING FIELD SHEET

PROJECT#___327012.OM.26.09.03

WELL NUMBER: OLD-B-64D	**SITE: CTO-031/OU4**		**DATE:** 7.25.06
FIELD CREW: I. Lynch			(leave blank if on previous page)

		CASING DIA.		GAL/FT OF CASING	
DEPTH TO WATER (FT):	5.73				
WELL DEPTH (FT): -	110.00	2 IN.	←	0.1632	←
WATER COLUMN (FT): =	104.27	4 IN.		0.6528	
GAL/FT OF CASING x	0.1632	6 IN.		1.4688	
CASING VOLUME (GAL) =	17.01	8 IN.		2.611	
NO. OF VOLUMES ~~min (2)~~ x	1.05	10 IN.		4.0797	
PURGE VOLUME (GAL) =	18	12 IN.		5.8748	

METHOD OF PURGING (circle one)

PUMP: SUB. CENT. (PERIST.)	**OTHER:** TFE TUBING	**BAILER** : TEFLON, SS ,OTHER:
PUMP ON (time): ~~0849~~ 0900		BAILER VOL.. (gal) .25 / .33
FLOW RATE (gpm) : 0.157		REQUIRED PULLS:
VOL. PURGED (gals): 18	600 ml/pm	VOL. PURGED (gals):
		OTHER:

FIELD PARAMETERS	FIELD MEASUREMENTS 1st	2nd	3rd	4th	5th	WITHIN10% Y / N 6th
VOL. (gal)	8	6	12	18		
pH (s.units)	7.91	7.62	7.60	7.55		
SpCond (mmhos/cm)	552	577	580	580		
TEMP.(C)	24.6	24.5	24.6	24.9		
ORP (mV)	-52.2	-86.2	-85.6	-55.4		
DO (mg/L)	0.55	0.13	0.14	0.14		
Turbidity (NTU)	18.1	5.96	4.63	4.18		
Depth to Water	6.32	6.38	6.43	6.43		
TIME	0905	0938	1016	1055		

SAMPLE PARAMETERS (GRAB OR COMPOSITE) : VOC only,

FILTERED METALS COLLECTED:NO ,

OBSERVATIONS

COLOR: CLEAR , AMBER , TAN , Lt. BROWN , GREY , MILKY WHITE , OTHER:

ODOR: NONE , LOW , MEDIUM , HIGH , VERY STRONG , H2S , FUEL LIKE , CHEMICAL ?, UNKNOWN

TURBIDITY: NONE , LOW , MEDIUM , HIGH , VERY TURBID. HEAVY SILTS

COMMENTS: Sample ID: 03113640Q206

OTHER: PLEASE USE BACK OF SHT.FOR SKETCHING MAPS ,WELL LOCATION NOTES ECT. SEE BACK OF SHT Y / N.

Q.C. SAMPLE TYPE: FIELD DUPLICATE , EQUIPMENT BLANK , OTHER :

Q.C. PARAMETERS:

SAMPLE DATE/ TIME: 7-25-06 / 1100

631

CH2M HILL
WELL SAMPLING FIELD SHEET

PROJECT# 327012.OM.26.09.03

WELL NUMBER: OLD-13-631	SITE: CTO-031/OU4		DATE: 7.25.06
FIELD CREW: I. Lynch			(leave blank if on previous page)

		CASING DIA.		GAL/FT OF CASING	
DEPTH TO WATER (FT):	9.38				
WELL DEPTH (FT): -	106.00	2 IN.	←	0.1632	←
WATER COLUMN (FT): =	96.62	4 IN.		0.6528	
GAL/FT OF CASING x	0.1632	6 IN.		1.4688	
CASING VOLUME (GAL) =	15.76	8 IN.		2.611	
NO. OF VOLUMES ~~(3)~~ x	1.04	10 IN.		4.0797	
PURGE VOLUME (GAL) =	16.5	12 IN.		5.8748	

1/2 min

METHOD OF PURGING (circle one)

PUMP: SUB. CENT. (PERIST.)	OTHER:	BAILER : TEFLON, SS ,OTHER:
PUMP ON (time): 1130	TFE TUBING	BAILER VOL. (gal) .25 / .33
FLOW RATE (gpm) : 0.13		REQUIRED PULLS:
VOL. PURGED (gals):	500 ml/pm	VOL. PURGED (gals):
		OTHER:

FIELD PARAMETERS	FIELD MEASUREMENTS 1st	2nd	3rd	4th	5th	WITHIN10% Y / N 6th
VOL. (gal)	.52	5.5	11.0	16.5		
pH (s.units)	8.18	7.92	7.72	7.69		
SpCond (mmhos/cm)	1562	1273	1251	1257		
TEMP.(C)	25.1	25.1	25.3	25.3		
ORP (mV)	-159	-167.5	-139.3	-136		
DO (mg/L)	0.38	0.15	0.14	0.12		
Turbidity (NTU)	67.3	3.78	0.41	0.57		
Depth to Water	11.91	11.94	11.94	11.90		
TIME	1134	1212	1254	1356		
		1212	1254	1356		

SAMPLE PARAMETERS (GRAB OR COMPOSITE): VOC only.

FILTERED METALS COLLECTED:NO .

OBSERVATIONS

COLOR: CLEAR , AMBER , TAN , Lt. BROWN , GREY , MILKY WHITE , OTHER:

ODOR: NONE , LOW , MEDIUM , HIGH , VERY STRONG , H2S , FUEL LIKE , CHEMICAL ?, UNKNOWN

TURBIDITY: NONE , LOW , MEDIUM , HIGH , VERY TURBID. HEAVY SILTS

COMMENTS: Sample ID: 031131631Q2.06 , 031131631MS , 031131631MSD

OTHER: PLEASE USE BACK OF SHT.FOR SKETCHING MAPS ,WELL LOCATION NOTES ECT. SEE BACK OF SHT Y / N.

Q.C. SAMPLE TYPE: FIELD DUPLICATE , EQUIPMENT BLANK , OTHER : MS / MSD

Q.C. PARAMETERS:

SAMPLE DATE/ TIME: 7.25.06 / 1340

R. [illegible]

631

CH2M HILL
WELL SAMPLING FIELD SHEET

PROJECT# 327012.OM.26.09.03

WELL NUMBER: OU4-13-61D	SITE: CTO-031/OU4		DATE: 7/25/06
FIELD CREW: I. Lynch			(leave blank if on previous page)

		CASING DIA.		GAL/FT OF CASING	
DEPTH TO WATER (FT):	15.05				
WELL DEPTH (FT): -	111.55 ~~109.~~	2 IN.	←	0.1632	←
WATER COLUMN (FT): =	96.5	4 IN.		0.6528	
GAL/FT OF CASING x	~~15.7~~ .163	6 IN.		1.4688	
CASING VOLUME (GAL) =	15.72	8 IN.		2.611	
NO. OF VOLUMES min.(3) x		10 IN.		4.0797	
PURGE VOLUME (GAL) =		12 IN.		5.8748	

METHOD OF PURGING (circle one)

PUMP: SUB. CENT. (PERIST.)	OTHER:	BAILER : TEFLON, SS ,OTHER:
PUMP ON (time): 0849		BAILER VOL.. (gal) .25 / .33
FLOW RATE (gpm) : .085	325ml/min	REQUIRED PULLS:
VOL. PURGED (gals): .065	250ml/min 0906	VOL. PURGED (gals):
.052	200 ml/min 0918	OTHER:

FIELD PARAMETERS	FIELD MEASUREMENTS 1st	2nd (1.44) (2.22)	3rd	4th	5th	6th	WITHIN10% Y / N
VOL. (gal)	1.10	4.66	9.60	12.14			
pH (s.units)	9.16	7.90	7.75	7.72			
SpCond (mmhos/cm)	1985	2128	2117	2108			
TEMP.(C)	25.65	26.24	26.76	27.23			
ORP (mV)	-211.3	-199.8	-206.6	-211.9			
DO (mg/L)	.27	.18	.17	.17			
Turbidity (NTU)	72.6	4.86	.43	1.45			
TIME	0902	10.05	1140	1229			
Depth to Water	19.30	18.85	18.80	18.85			

SAMPLE PARAMETERS (GRAB OR COMPOSITE): VOC only.

FILTERED METALS COLLECTED:NO ,

OBSERVATIONS

COLOR: CLEAR , AMBER , TAN , Lt. BROWN , GREY , MILKY WHITE , OTHER:

ODOR: NONE , LOW , MEDIUM , HIGH , VERY STRONG , H2S , FUEL LIKE , CHEMICAL ?, UNKNOWN

TURBIDITY: NONE , LOW , MEDIUM , HIGH , VERY TURBID. HEAVY SILTS

COMMENTS: Sample ID: 0918 - Slowed pump down due to drawdown - .052 gpm
@ 0906 Pump turned down to slow drawdown - 1.44 new flow rate - .065 gpm

OTHER: PLEASE USE BACK OF SHT.FOR SKETCHING MAPS ,WELL LOCATION NOTES ECT. SEE BACK OF SHT Y / N.

Q.C. SAMPLE TYPE: FIELD DUPLICATE , EQUIPMENT BLANK , OTHER :

Q.C. PARAMETERS:

SAMPLE DATE/ TIME: 7/25/06 1230p Sample ID: 0311361D0206.

J Canixte / I Lynch

CH2M HILL
WELL SAMPLING FIELD SHEET

PROJECT# 327012.OM.26.09.03

WELL NUMBER: OU4-13-60D | SITE: CTO-031/OU4 | DATE: 7/25/06

FIELD CREW: I. Lynch (leave blank if on previous page)

			CASING DIA.		GAL/FT OF CASING	
DEPTH TO WATER (FT):		15.64				
WELL DEPTH (FT):	-	112.62	2 IN.	←	0.1632	←
WATER COLUMN (FT):	=	96.98	4 IN.		0.6528	
GAL/FT OF CASING	x	.163	6 IN.		1.4688	
CASING VOLUME (GAL)	=	15.80	8 IN.		2.611	
NO. OF VOLUMES min.(3)	x		10 IN.		4.0797	
PURGE VOLUME (GAL)	=		12 IN.		5.8748	

HB 2/1/87 - 1/89

METHOD OF PURGING (circle one)

PUMP: SUB. CENT. (PERIST.)
PUMP ON (time): 1328
FLOW RATE (gpm): .131
VOL. PURGED (gals):

OTHER: 500 ml/MIN

BAILER: TEFLON, SS, OTHER:
BAILER VOL. (gal) .25 / .33
REQUIRED PULLS:
VOL. PURGED (gals):
OTHER:

FIELD PARAMETERS	FIELD MEASUREMENTS 1st	2nd	3rd	4th	5th	WITHIN10% Y/N 6th
VOL. (gal)	.92	5.63	11.65			
pH (s.units)	7.24	7.19	7.18	7.08		
SpCond (mmhos/cm)	3557	3168	3113	3101		
TEMP.(C)	25.59	25.49	25.49	25.64		
ORP (mV)	-108.3	-82.2	-75.9	-65.0		
DO (mg/L)	.70	.34	.33	.36		
Turbidity (NTU)	8.62	.58	.54	.25		
Time	1335	1411	1453	1535		
Depth to Water	16.04	16.08	16.06	15.99		

SAMPLE PARAMETERS (GRAB OR COMPOSITE): VOC only.

FILTERED METALS COLLECTED:NO.

OBSERVATIONS

COLOR: CLEAR, AMBER, TAN, Lt. BROWN, GREY, MILKY WHITE, OTHER:

ODOR: NONE, LOW, MEDIUM, HIGH, VERY STRONG, H2S, FUEL LIKE, CHEMICAL ?, UNKNOWN

TURBIDITY: NONE, LOW, MEDIUM, HIGH, VERY TURBID. HEAVY SILTS

COMMENTS: Sample ID: 031136OD Q206

OTHER: PLEASE USE BACK OF SHT.FOR SKETCHING MAPS, WELL LOCATION NOTES ECT. SEE BACK OF SHT Y / N.

Q.C. SAMPLE TYPE: FIELD DUPLICATE, EQUIPMENT BLANK, OTHER:

Q.C. PARAMETERS:

SAMPLE DATE/ TIME: 7/25/06 1540 FD-031136~~05~~ 07 Q206

I. Lynch / J. Calixte

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NTC Orlando
Project No.:

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

Sample ID No.: NTC135-59D-01
Sample Location: 59D
Sampled By: SV
C.O.C. No.:
Type of Sample:
[✓] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (^{0}C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other
Date: 7-25-06								
Time: ~~0500~~ 0530								
Method: EM	Clear	7.39	1.88	26.9	4.5	.16	.0	~~ORP~~ DTW

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 7-24-06								
Method: PP	2.5L	7.39	2.15	26.7	26.3	0.0	.1	~~12.65~~
Monitor Reading (ppm): 0	3.0L	7.29	2.03	26.9	12.6	0.0	.1	12.65
Well Casing Diameter & Material	3.5L	7.39	1.90	27.0	4.6	.04	.1	12.66
Type: 2" PVC	4.0L	7.39	1.88	26.9	4.8	.17	.1	12.66
Total Well Depth (TD): 11.49	4.5L	7.39	1.88	26.8	4.6	.16	.1	12.67
Static Water Level (WL): 12.34	5.0L	7.39	1.88	26.9	4.5	.16	.1	12.66
One Casing Volume(gal/L):								
Start Purge (hrs): 0500								
End Purge (hrs): 0520								
Total Purge Time (min): 20								
Total Vol. Purged (gal/L): 5.0L								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	3-40ml vials	✓

OBSERVATIONS / NOTES:

Well purged + sampled by TTNUS.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): SV

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NTC Orlando
Project No.:

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

Sample ID No.: NG13G6SD4 01
Sample Location: GSD
Sampled By: SV
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other
Date: 7-31-06								
Time: 1115								
Method: SM	CLEAR	7.50	.44	22.5	8.0	1.14	0	

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 7-31-06								
Method: PP	750	7.50	.44	22.1	15.0	1.17	0.0	
Monitor Reading (ppm): ✓	1000	7.49	.44	22.3	9.6	1.12	"	
Well Casing Diameter & Material	1250	7.50	.44	22.4	9.6	1.14	"	
Type: PVC cmt	1500	7.50	.44	22.4	8.8	1.16	"	
Total Well Depth (TD): 107.21	1750	7.50	.44	22.5	8.2	1.15	"	
Static Water Level (WL): 12.66	2000	7.50	.44	22.5	8.1	1.14	"	
One Casing Volume(gal/L): 750ml	2250	7.50	.44	22.5	8.0	1.14	"	
Start Purge (hrs): 1030								
End Purge (hrs): 1053								
Total Purge Time (min): 23								
Total Vol. Purged (gal/L): 2250								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	HCL	3 40ml	✓
FE MN	HNO3	1 500ml	✓
NO2O NO2 OPO4 SO4 CHL	None	"	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): SV

APPENDIX D

HYDROGEOLOGIC INFORMATION

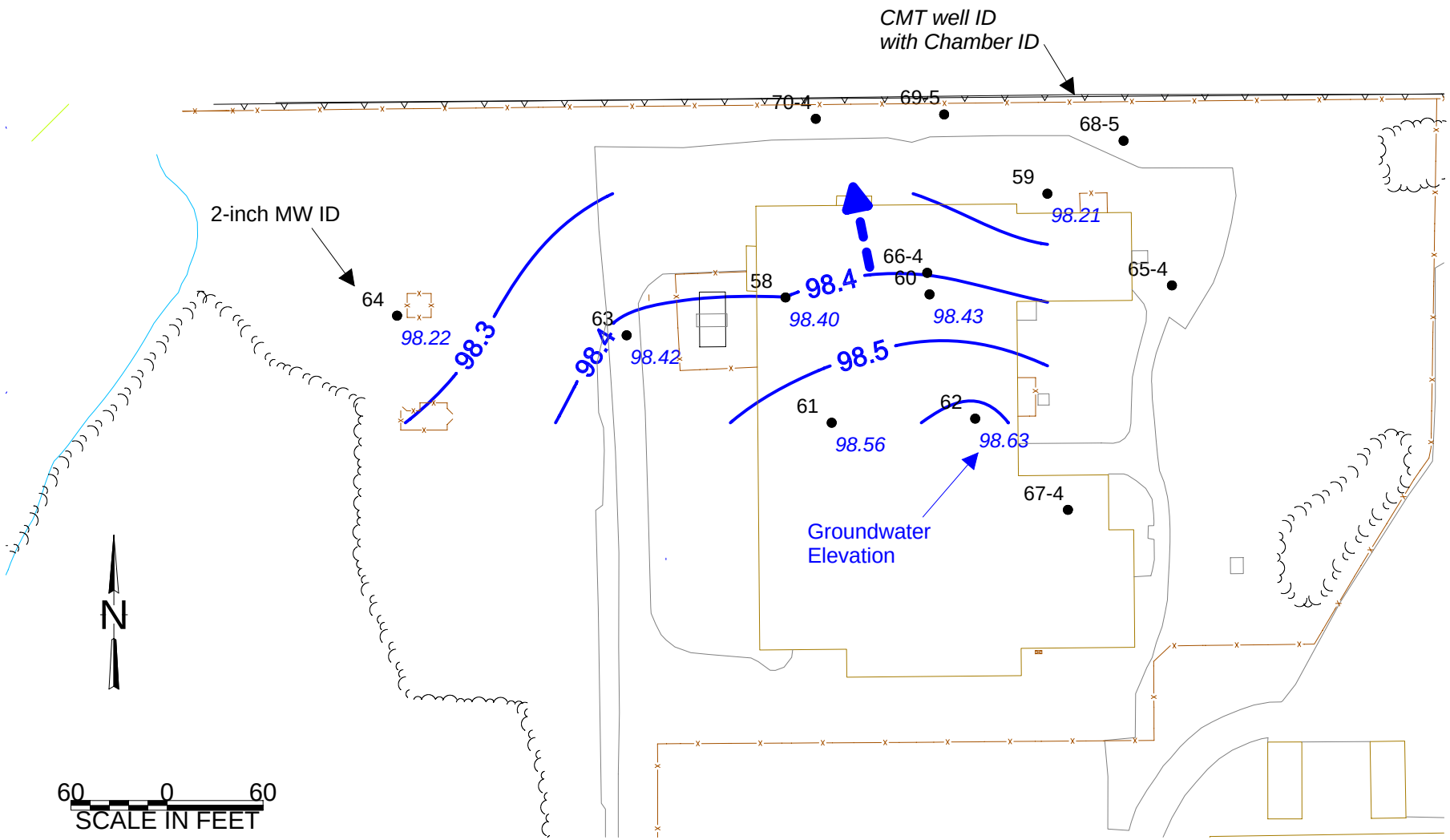


Figure D-1
Potentiometric Surface Map
Hawthorn Water Bearing Zone
May 5, 2005
OU 4, NTC Orlando, Florida

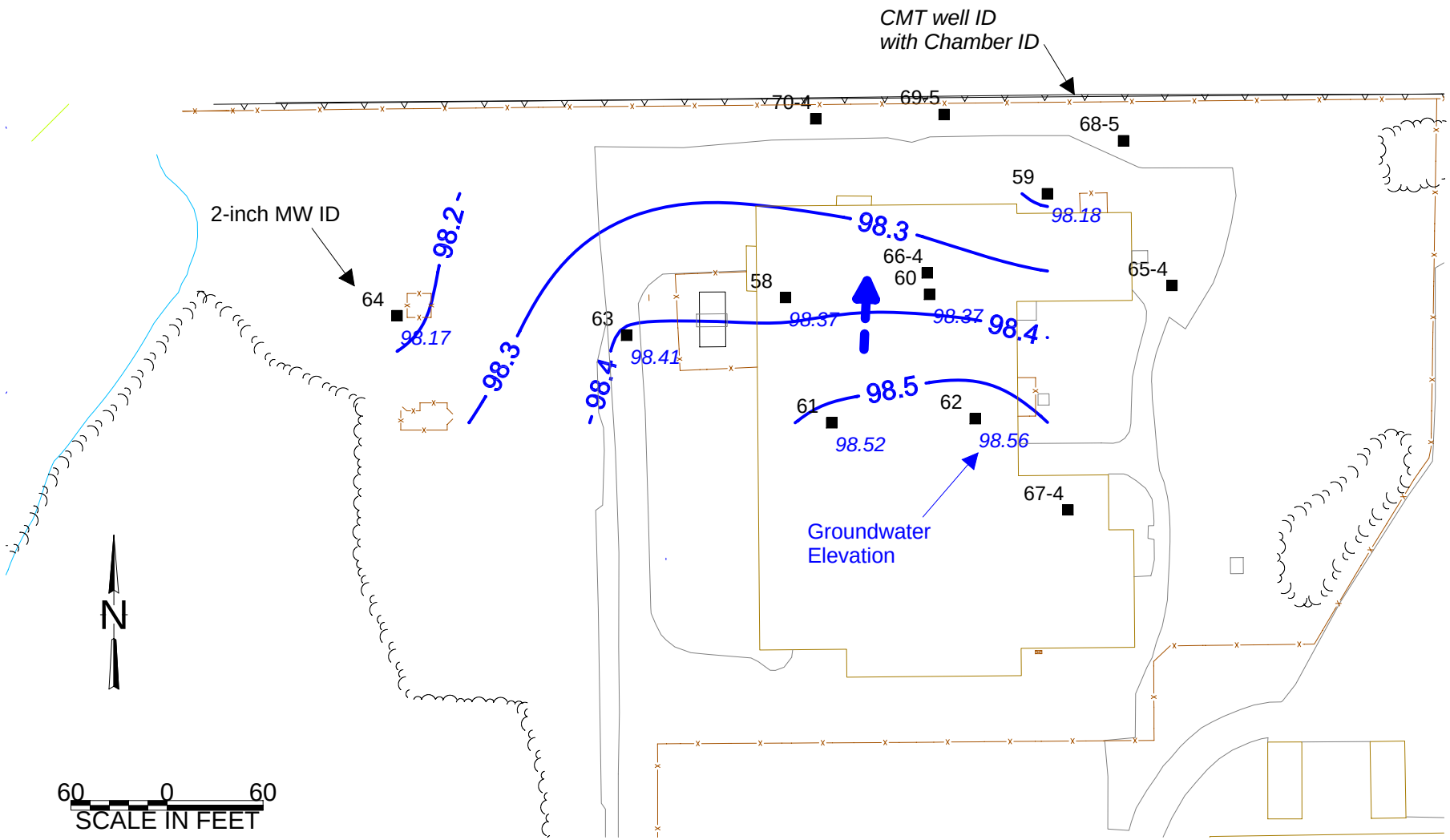


Figure D-2
Potentiometric Surface Map
Hawthorn Water Bearing Zone
June 1, 2005
OU 4, NTC Orlando, Florida

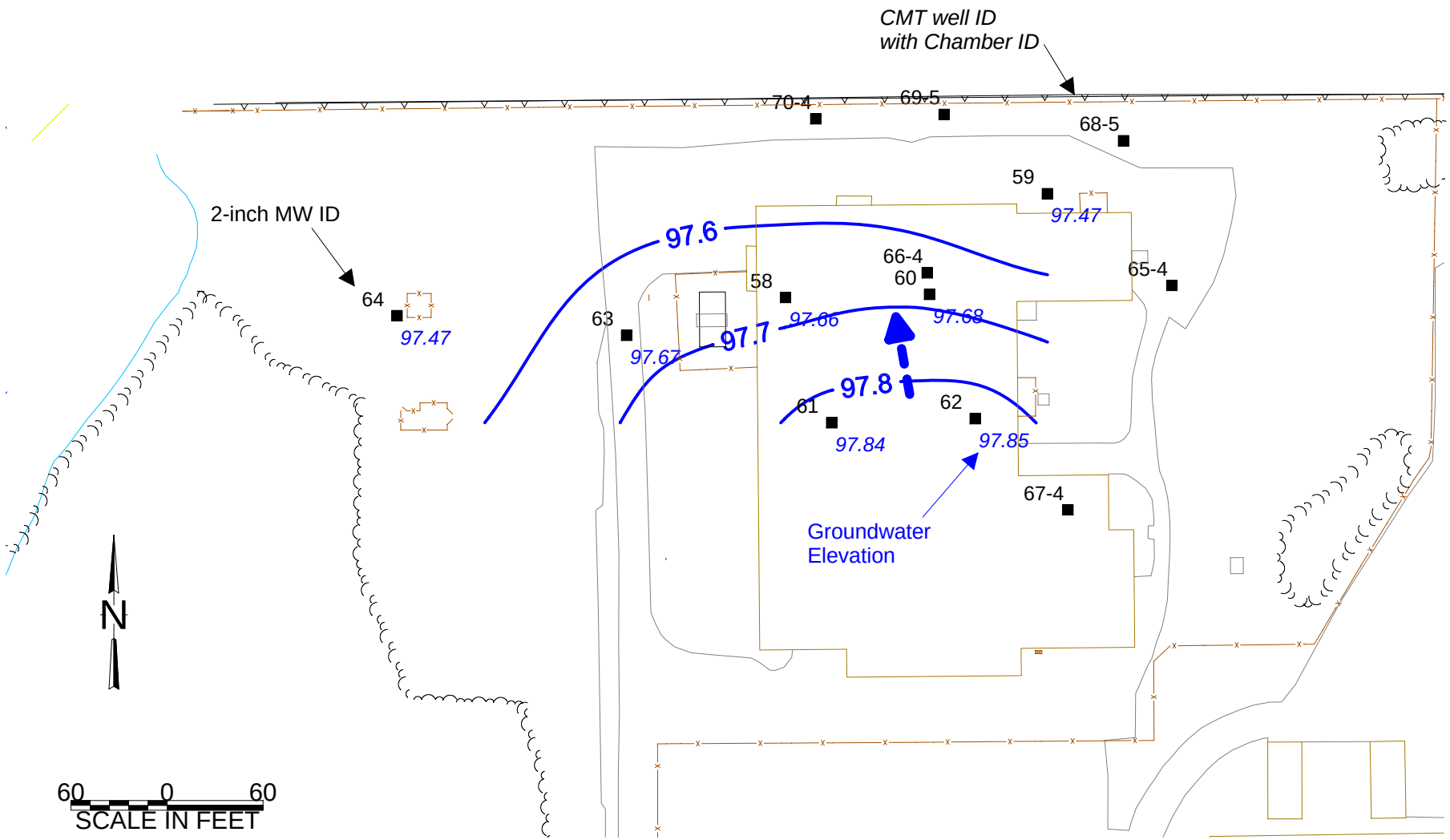


Figure D-3
Potentiometric Surface Map
Hawthorn Water Bearing Zone
April 1, 2006
OU 4, NTC Orlando, Florida

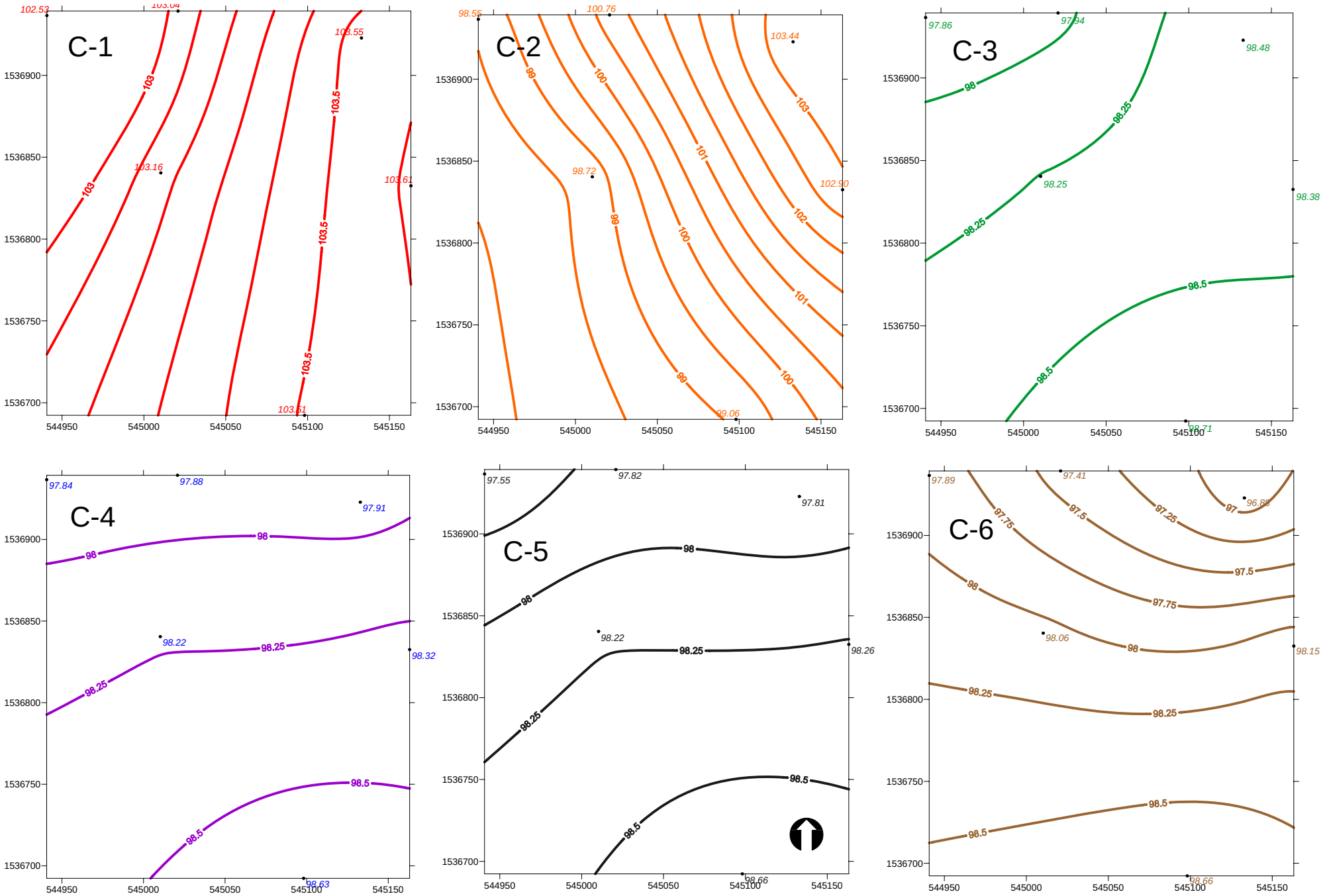


FIGURE D-4
COMPARISON OF POTENTIOMETRIC SURFACES
CMT MULTI-LEVEL WELLS (only)
July - August 2006

FIGURE D-5
GROUNDWATER ELEVATIONS - 2 INCH HAWTHORN WELLS
OU 4, NTC ORLANDO

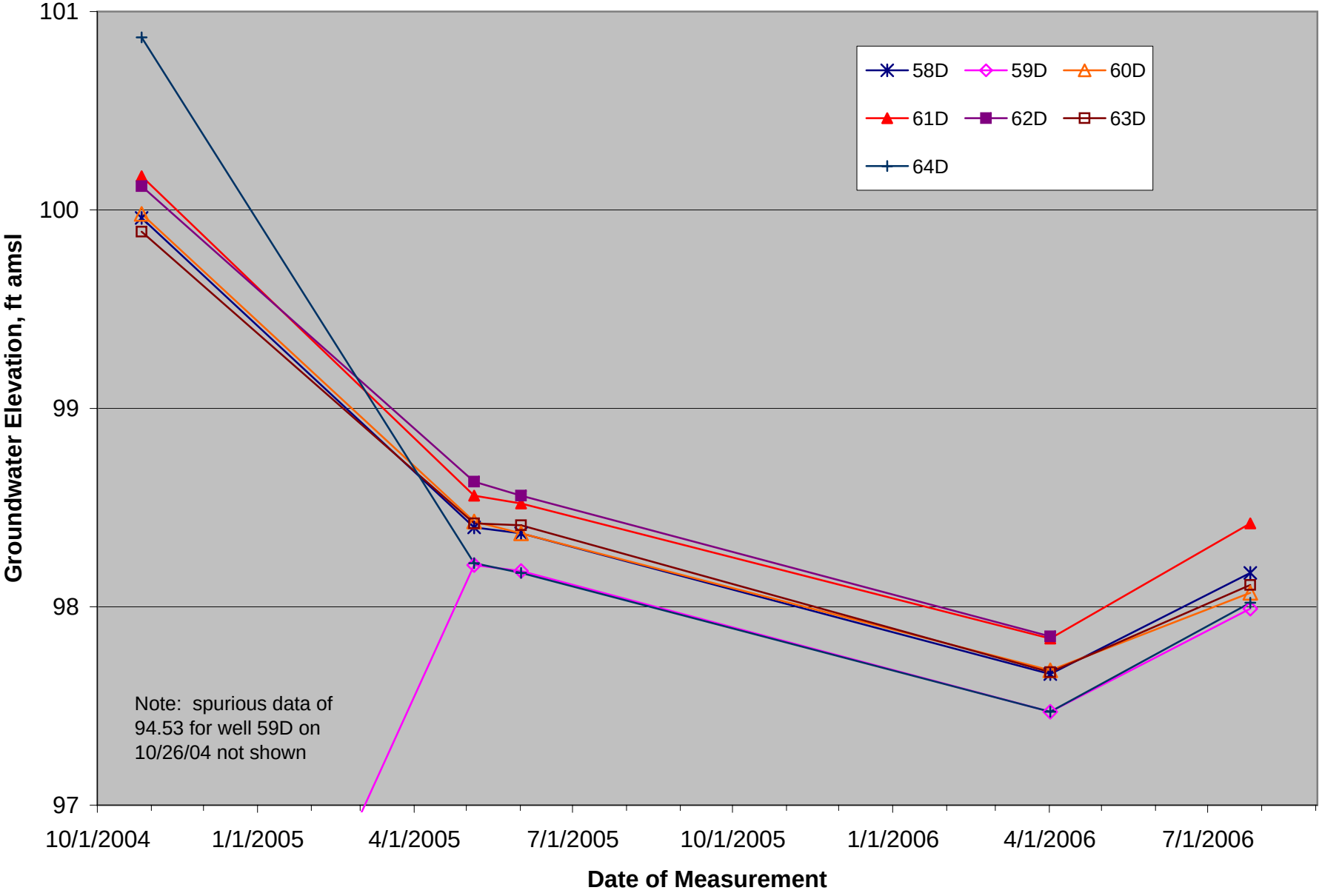
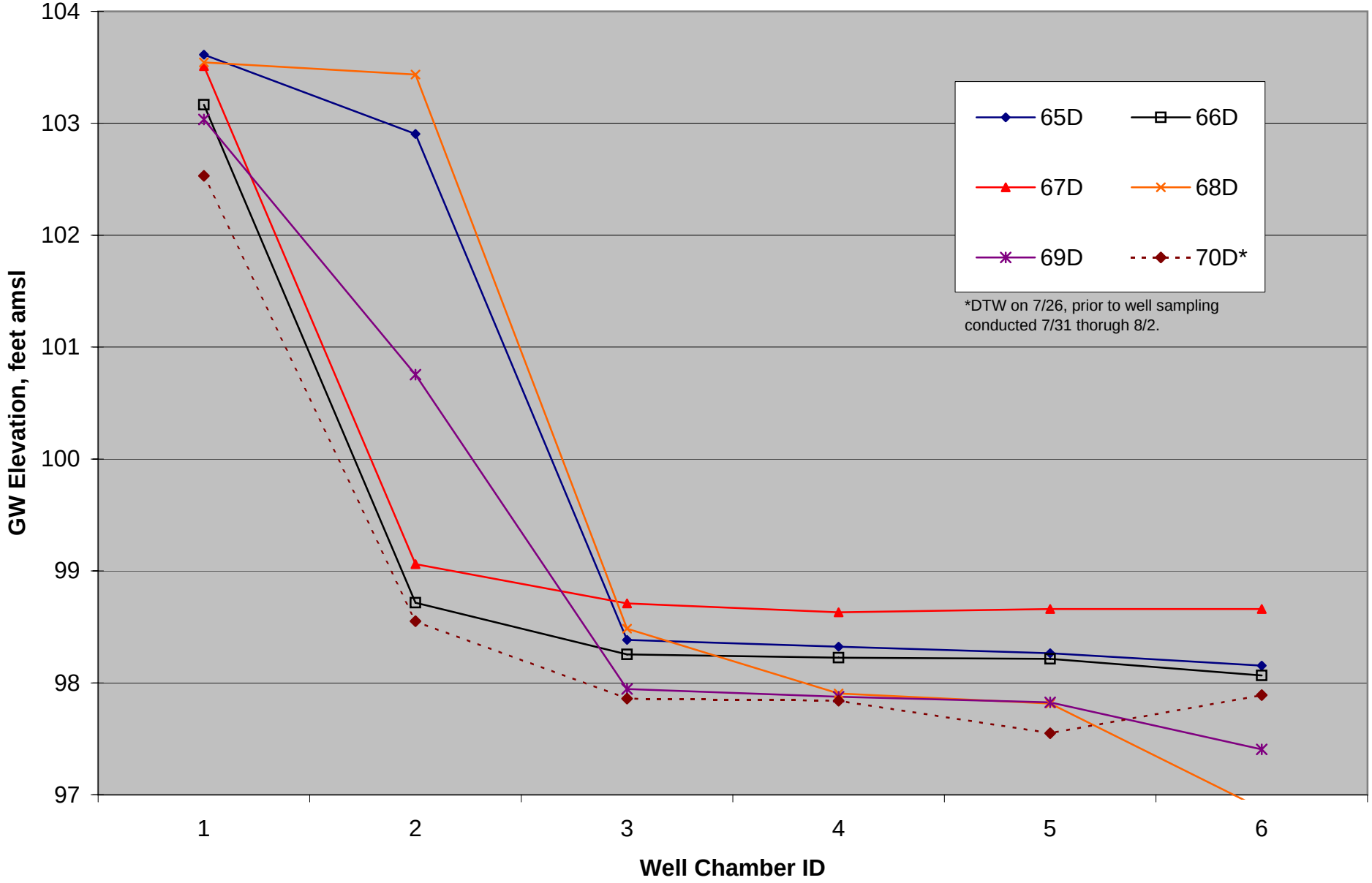


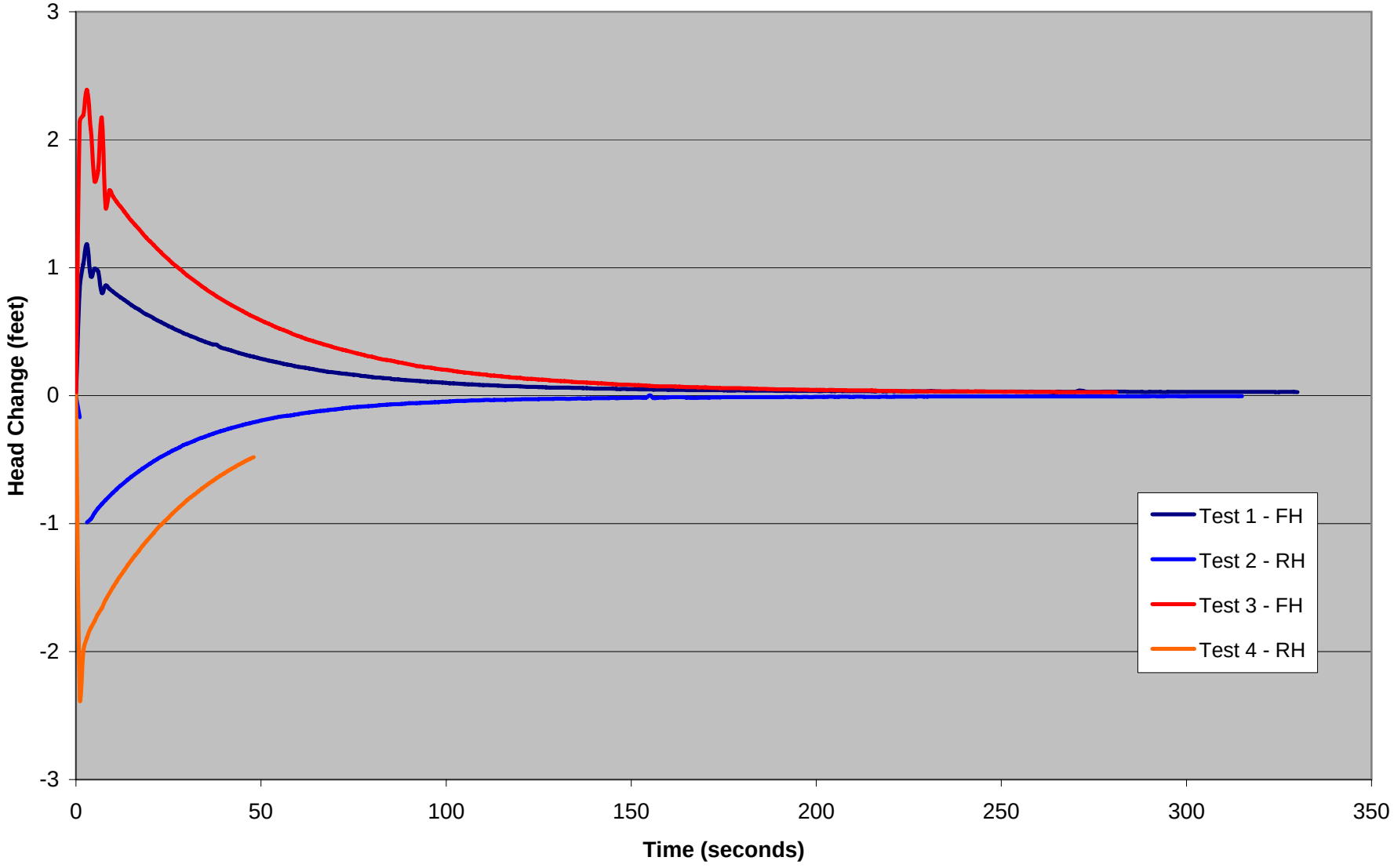
FIGURE D-6
GROUNDWATER ELEVATION PROFILE - CMT WELLS (AUGUST 2, 2006)
OU 4, NTC ORLANDO



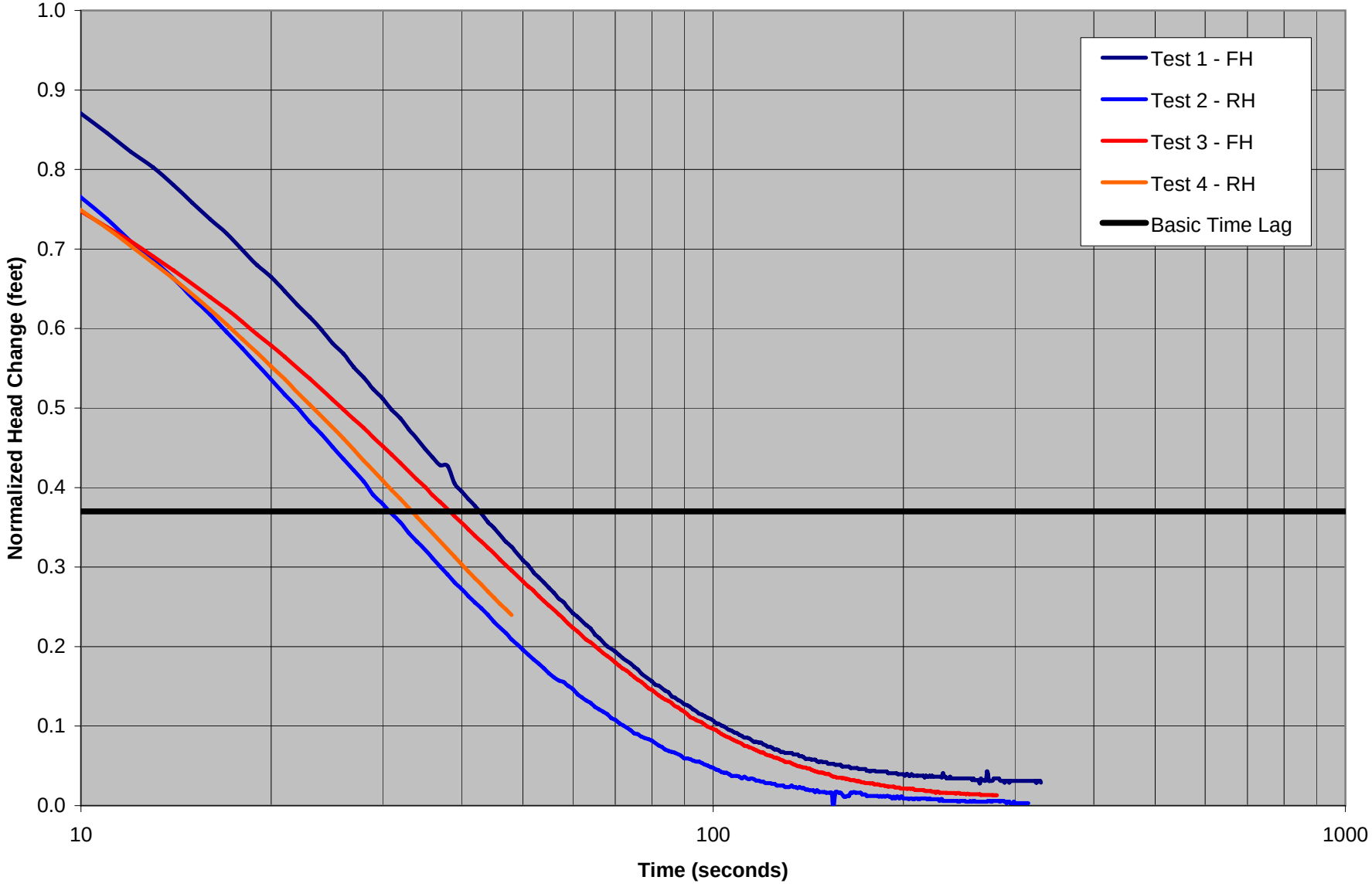
APPENDIX E

SLUG TEST ANALYSES

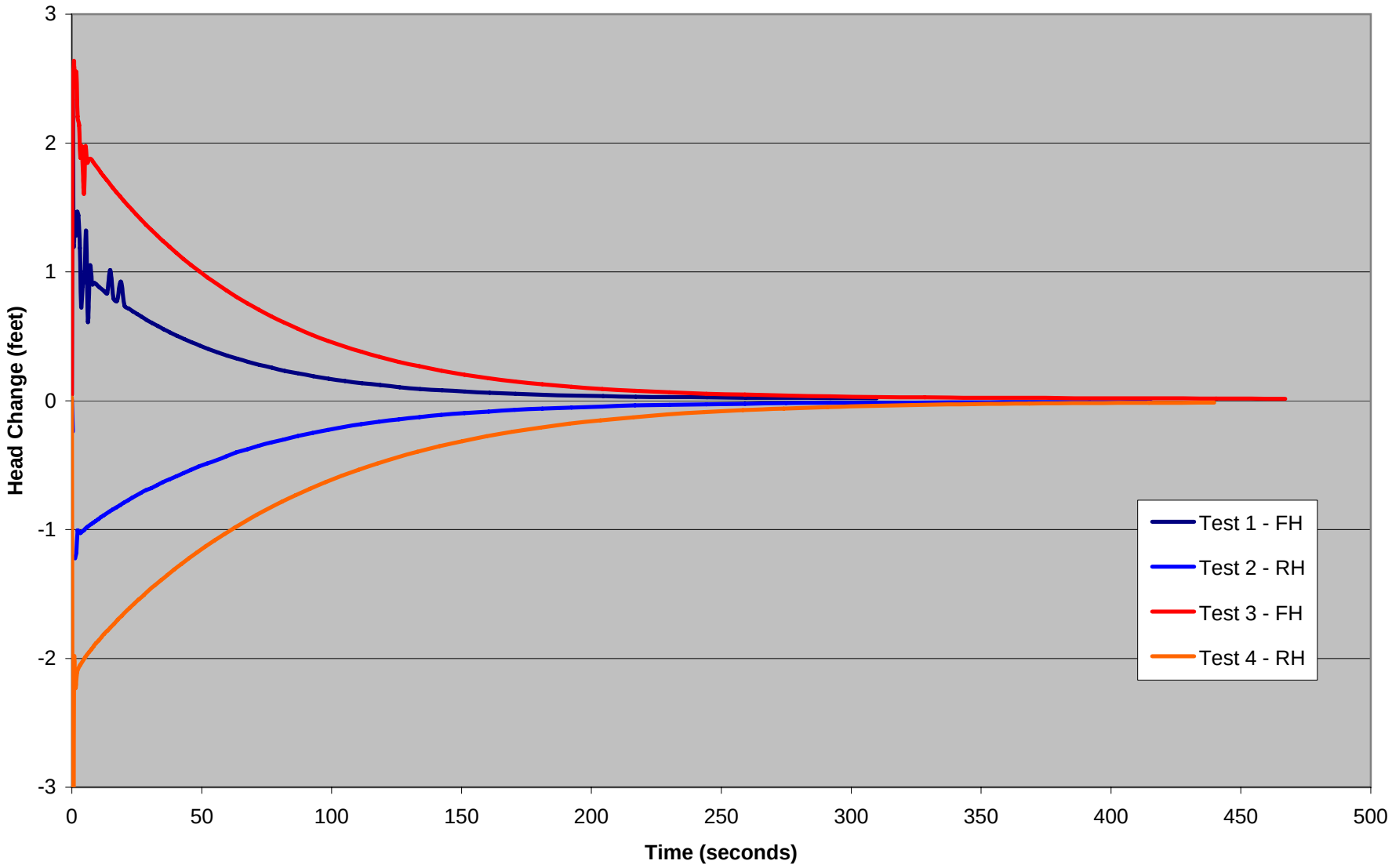
SLUG TEST WELL RESPONSE
MW58D



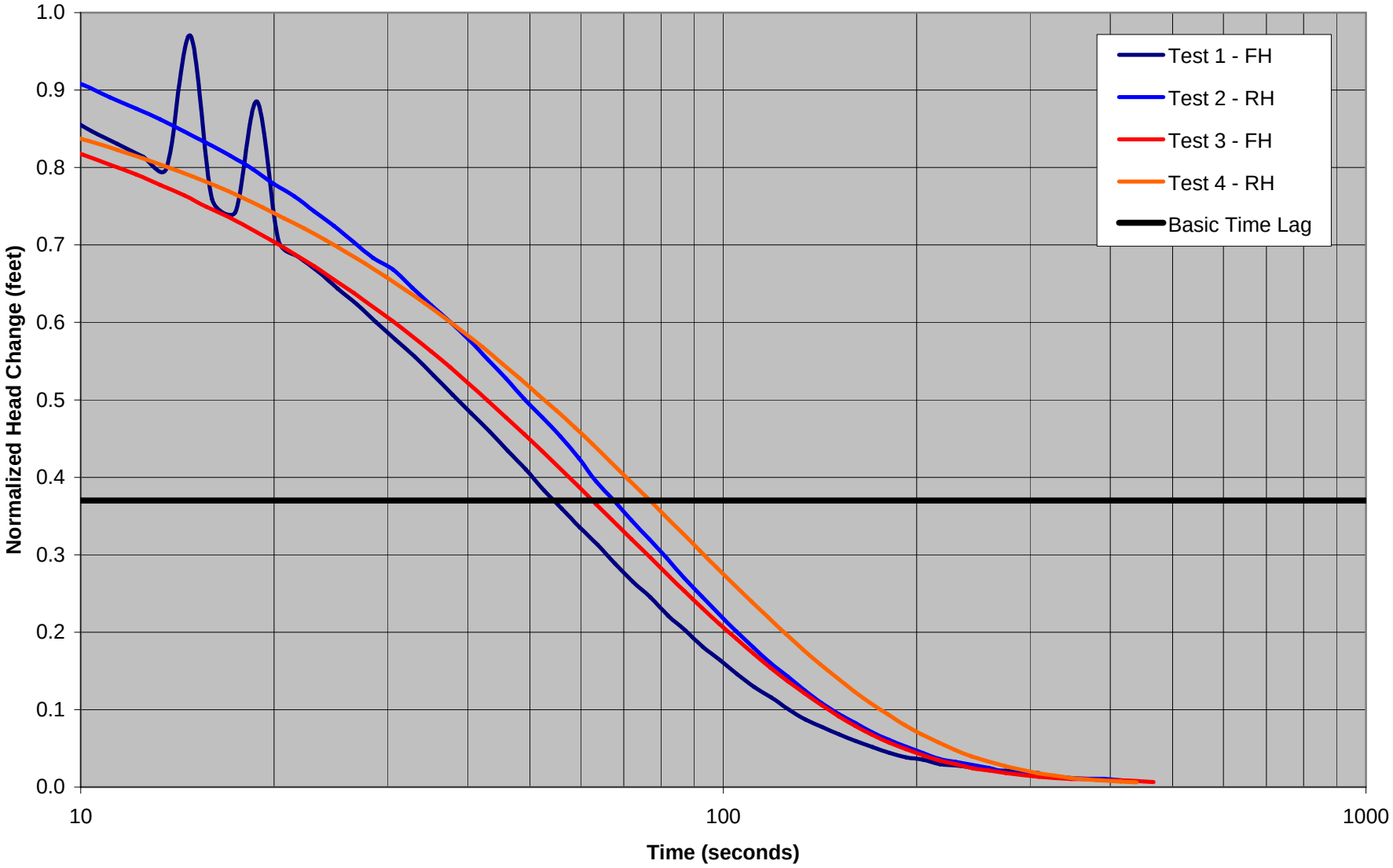
SLUG TEST WELL MW58D
NORMALIZED HEAD RESPONSE



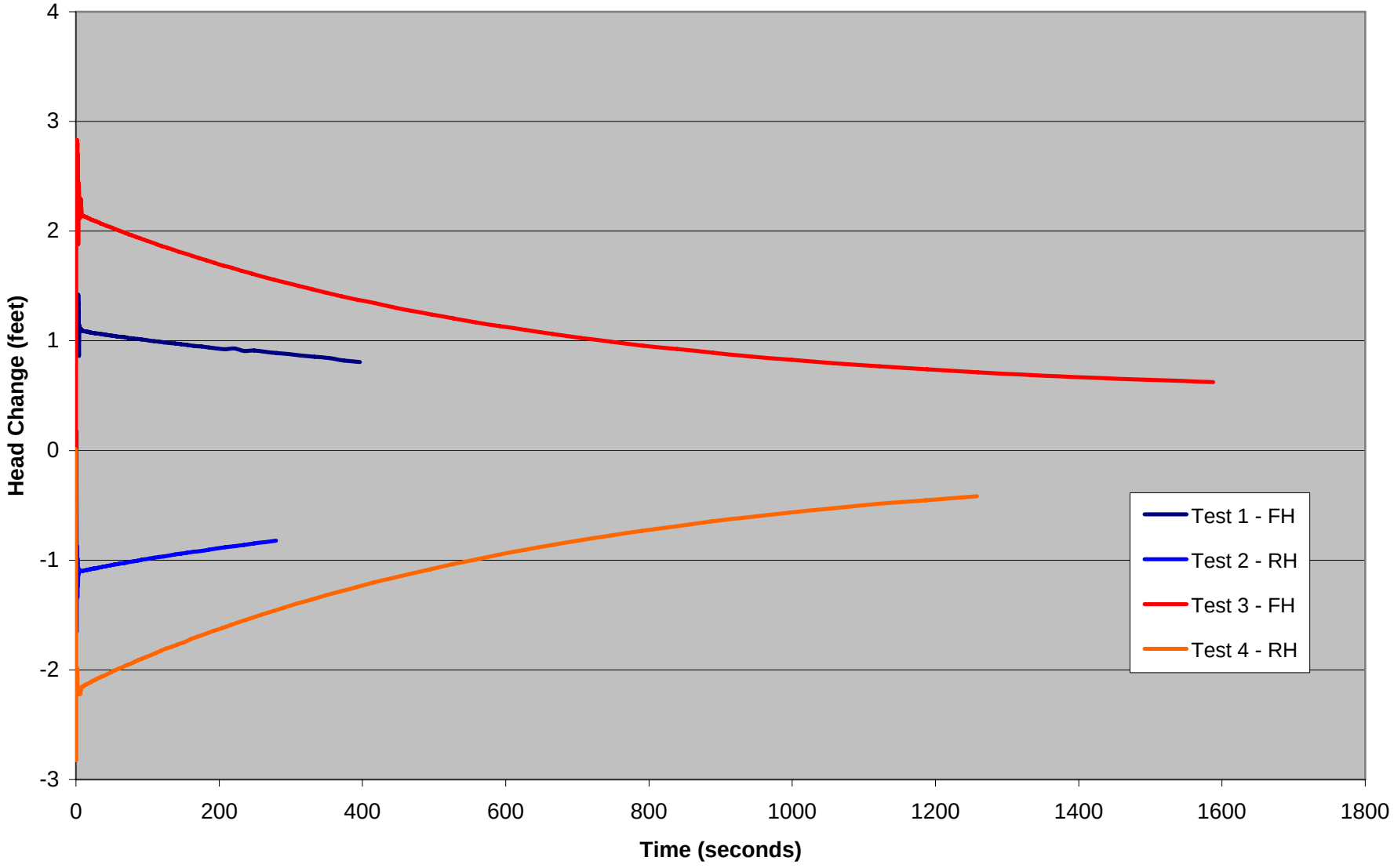
SLUG TEST WELL RESPONSE
MW59D



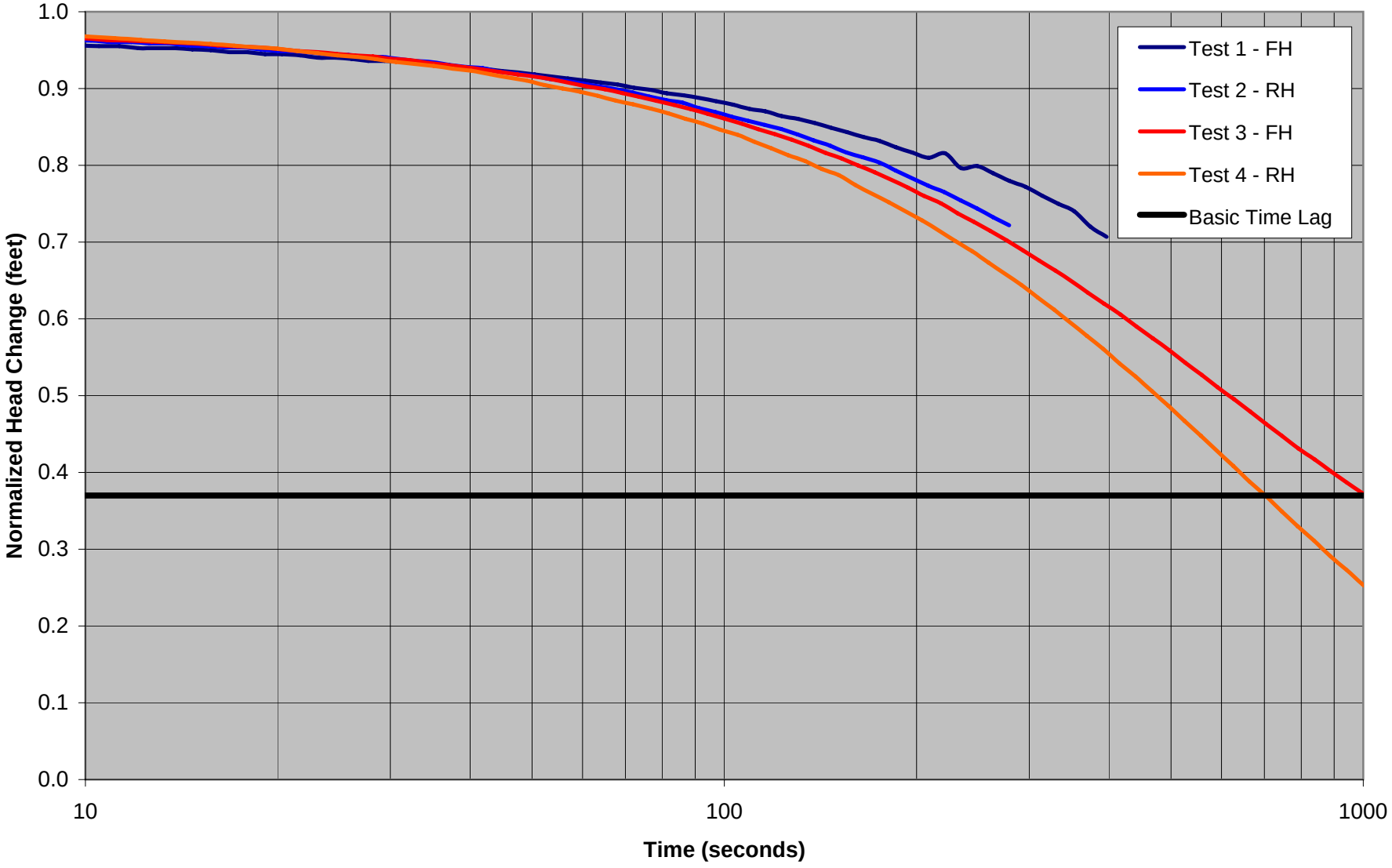
SLUG TEST WELL MW59D
NORMALIZED HEAD RESPONSE



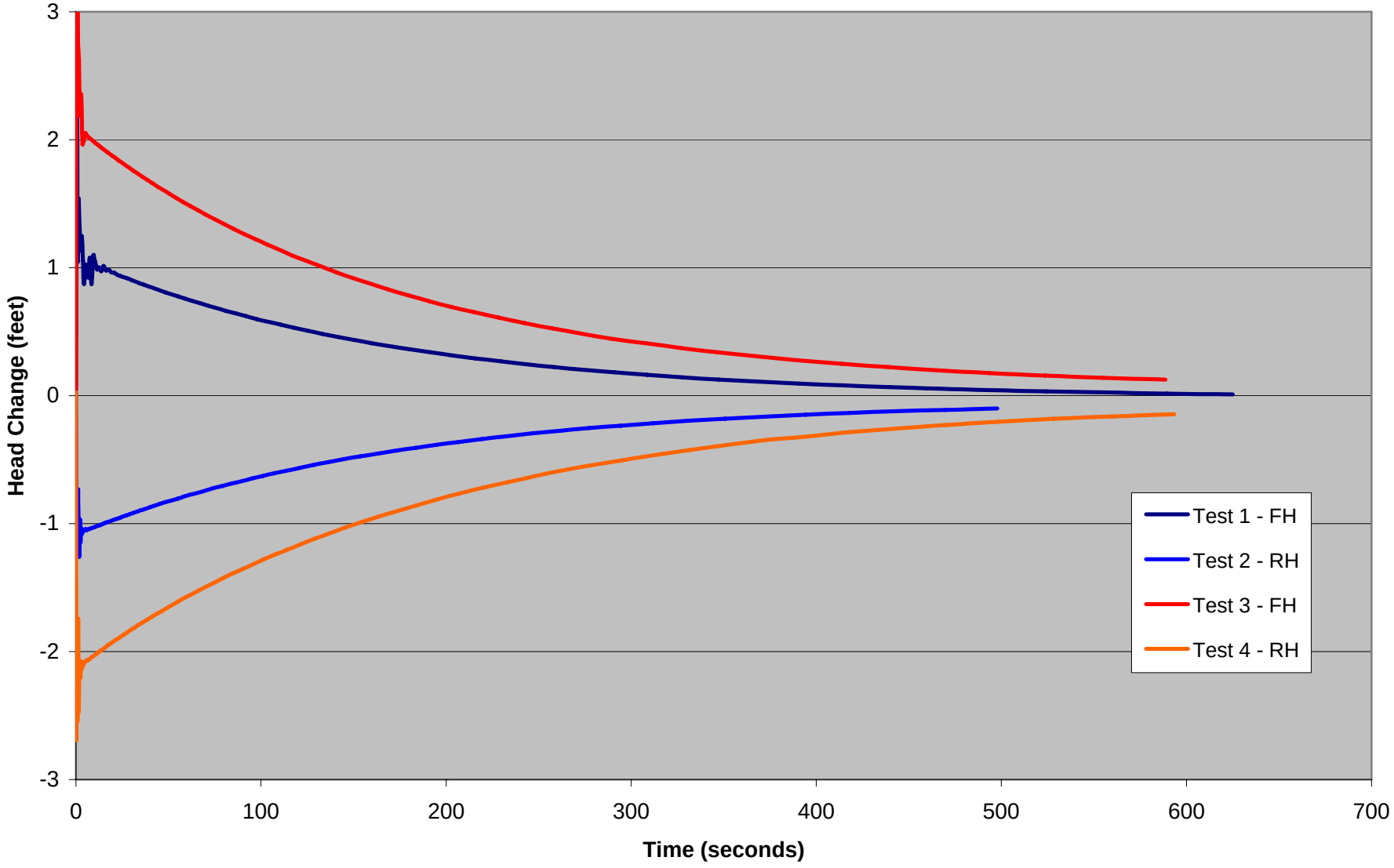
SLUG TEST WELL RESPONSE
MW61D



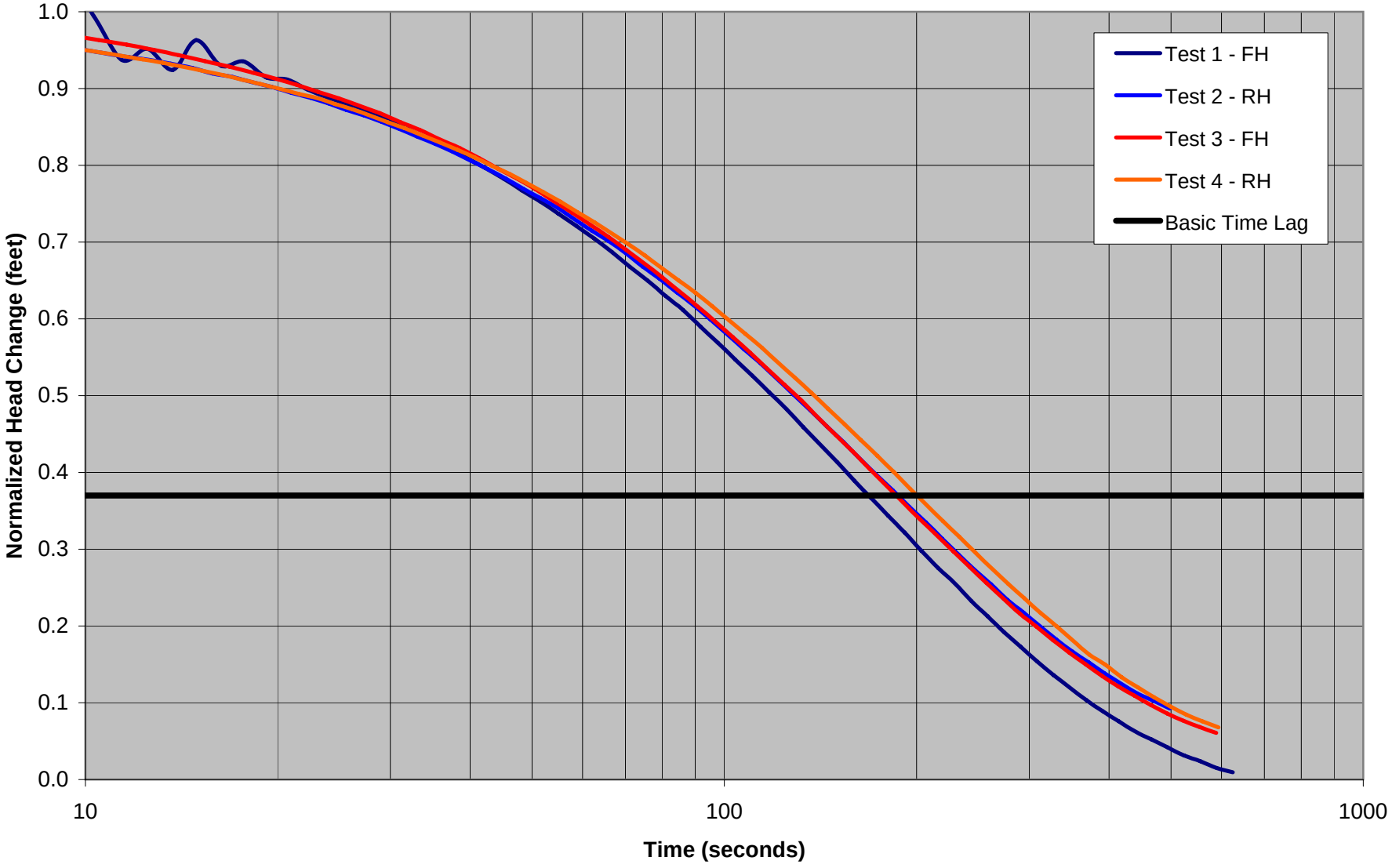
SLUG TEST WELL MW61D
NORMALIZED HEAD RESPONSE

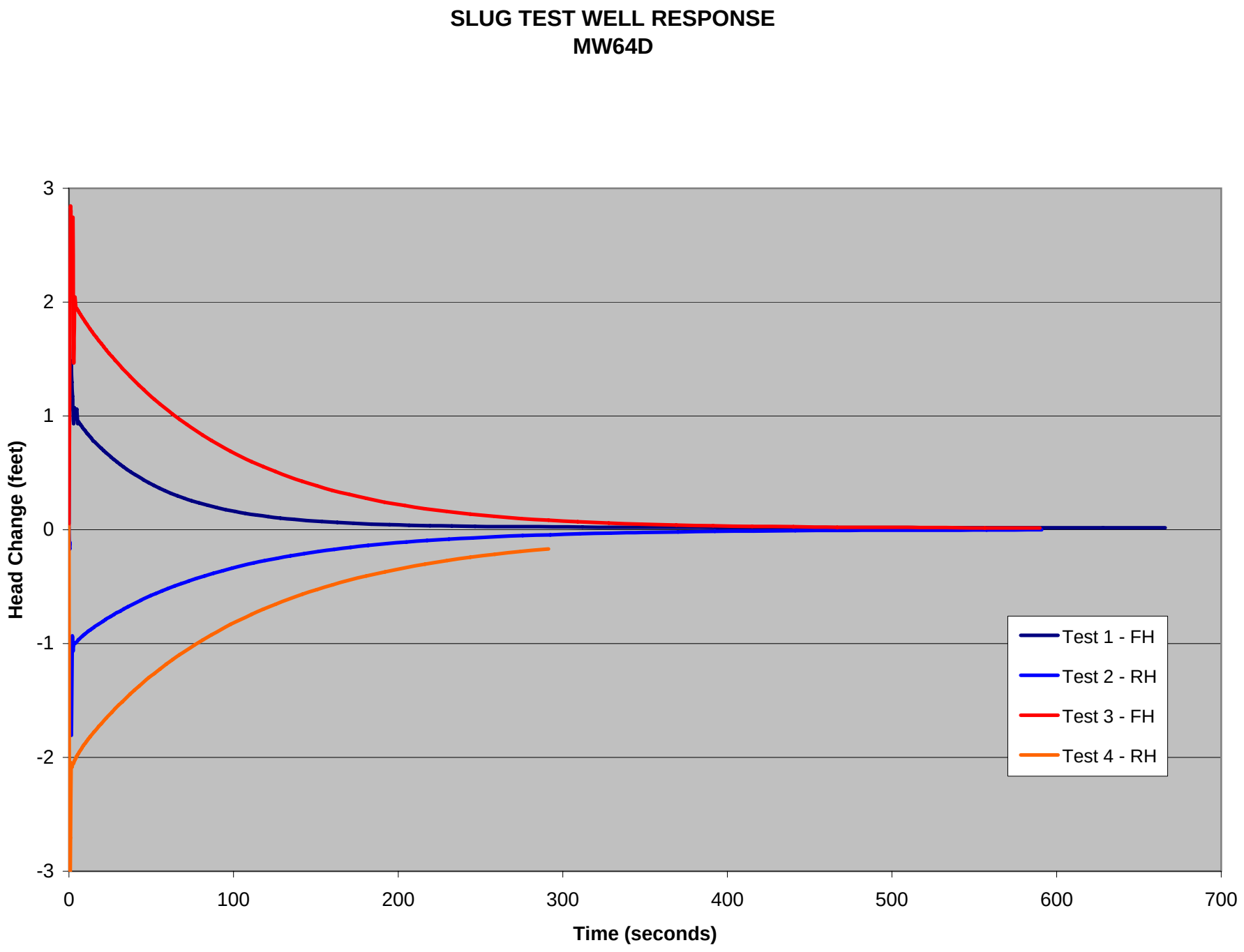


SLUG TEST WELL RESPONSE
MW63D

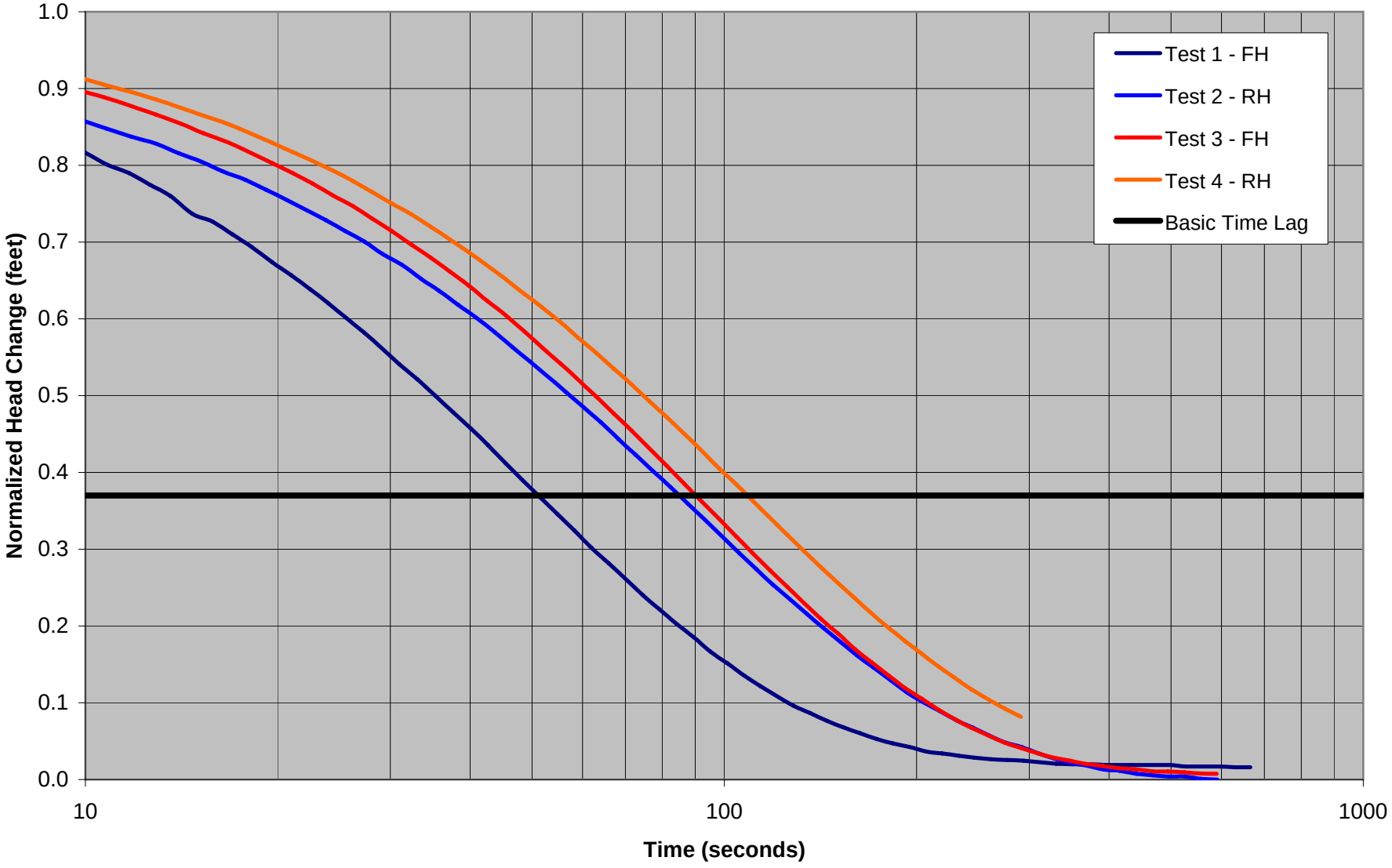


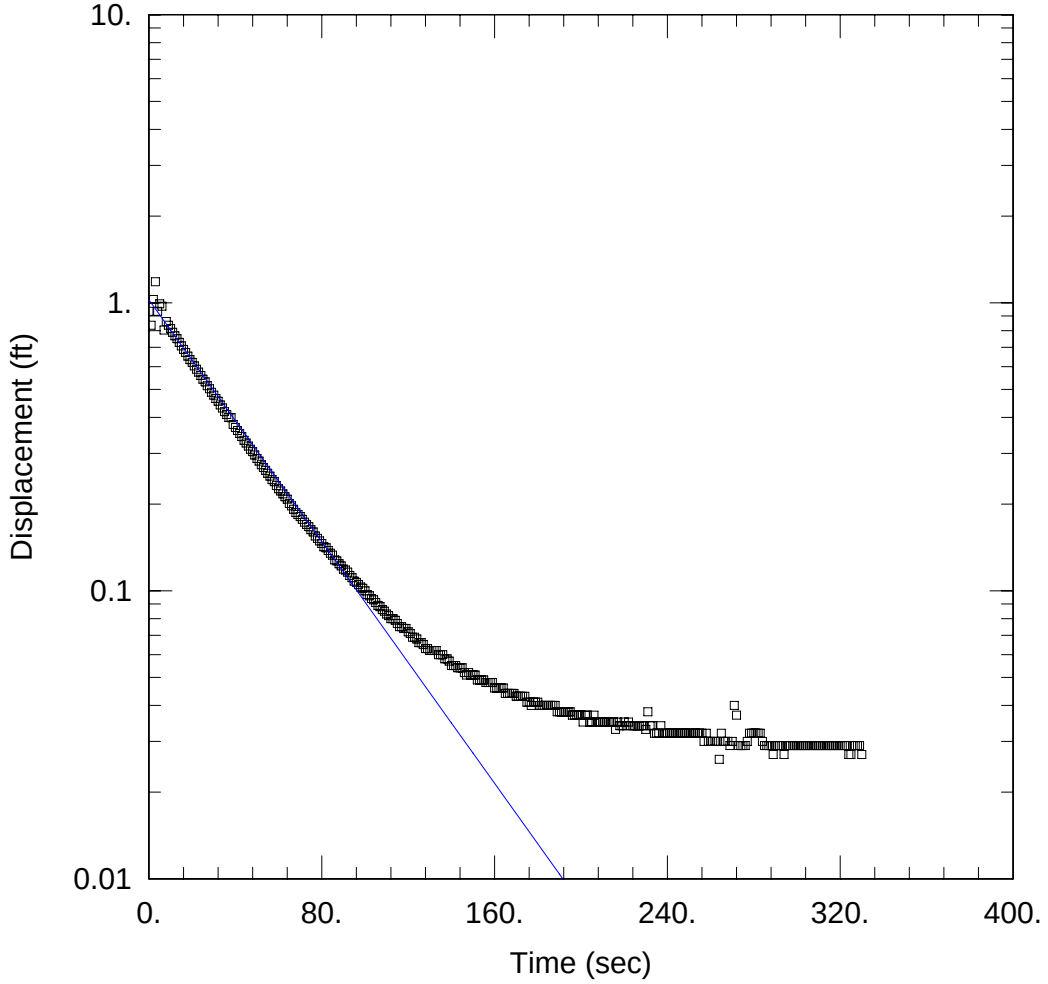
SLUG TEST WELL MW63D
NORMALIZED HEAD RESPONSE




SLUG TEST WELL RESPONSE
MW64D
Head Change (feet)
3
2
1
0
-1
-2
-3
0
100
200
300
400
500
600
700
Time (seconds)
Test 1 - FH
Test 2 - RH
Test 3 - FH
Test 4 - RH

SLUG TEST WELL MW64D
NORMALIZED HEAD RESPONSE





MW-58D, TEST 1

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\58DR1BR.AQT
Date: 05/21/07 Time: 17:09:49

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-58D
Test Date: July 2006

AQUIFER DATA

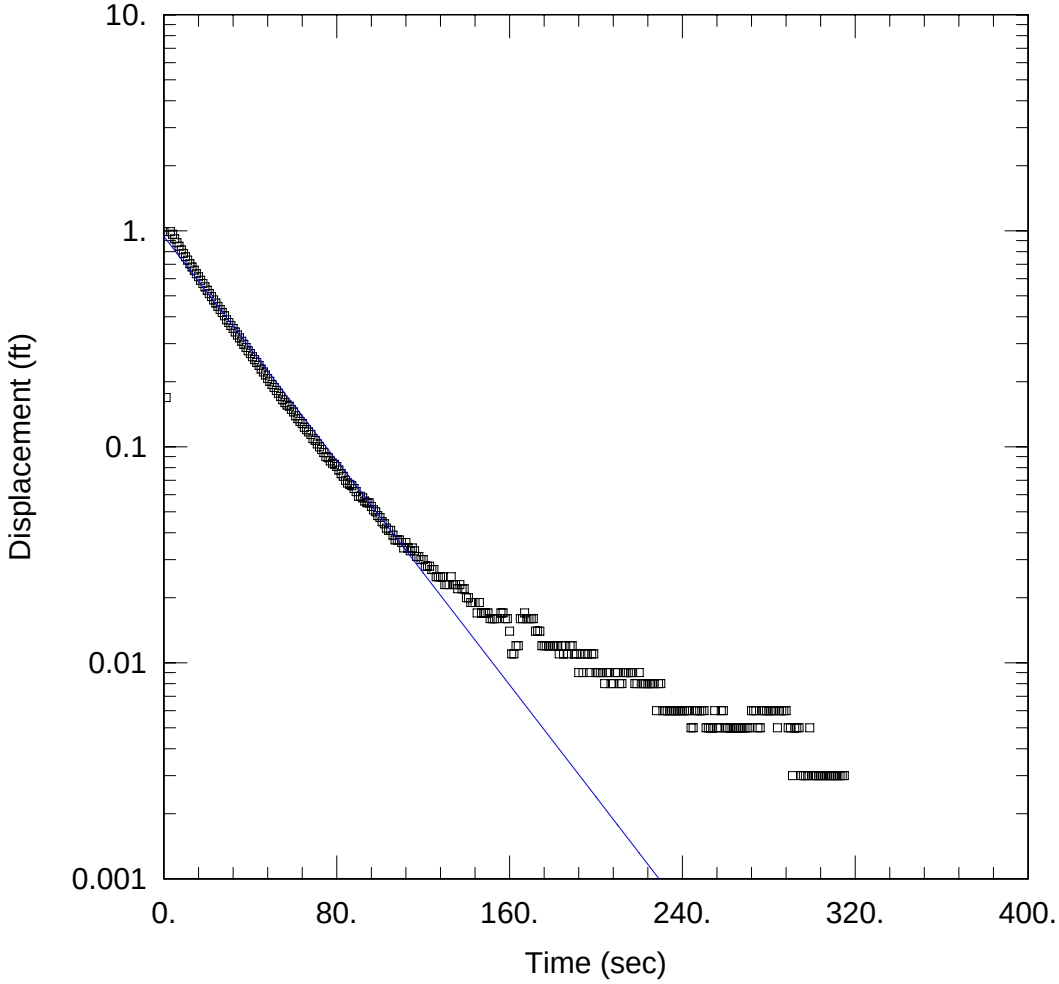
Saturated Thickness: 28. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 0.934 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 94. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 10.9 ft/day
y0 = 1.023 ft



MW-58D, TEST 2

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\58DR2BR.AQT
Date: 05/21/07 Time: 17:10:02

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-58D
Test Date: July 2006

AQUIFER DATA

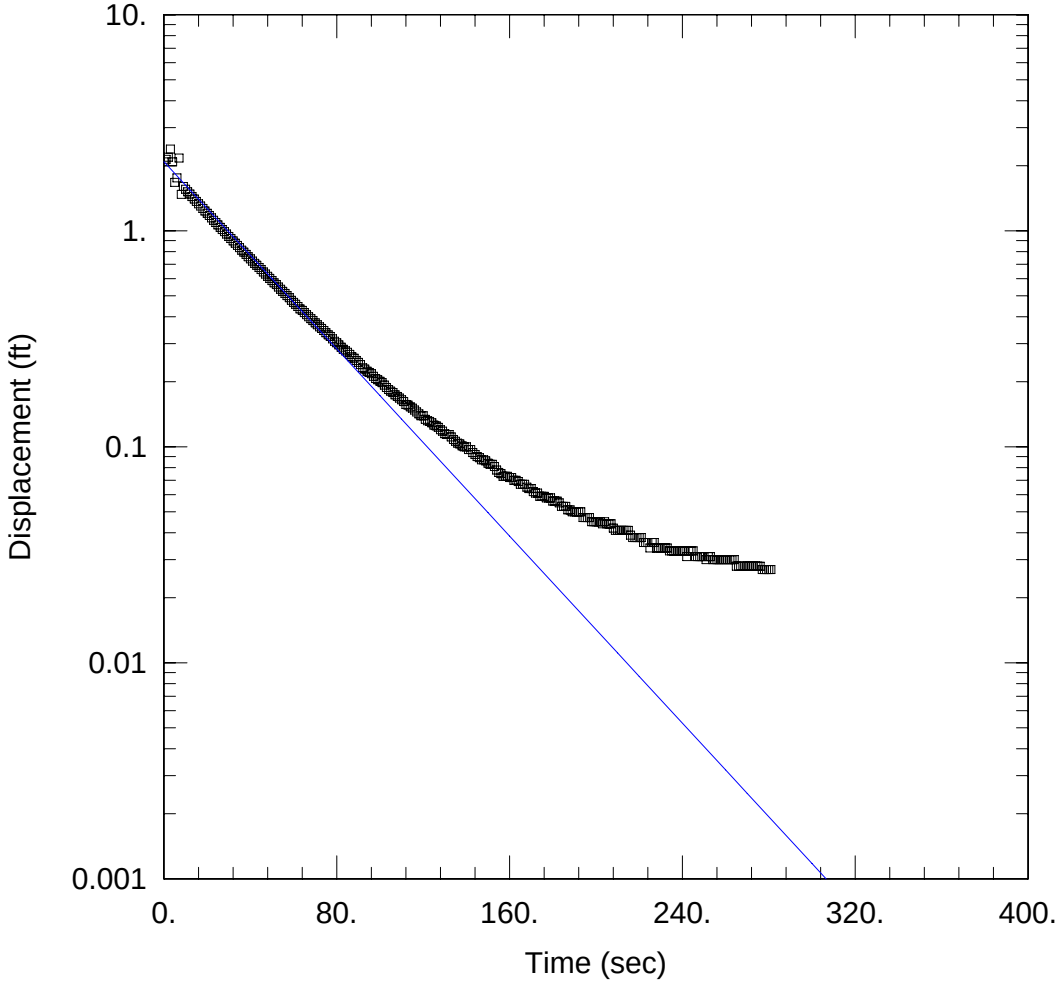
Saturated Thickness: 28. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 0.991 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 94. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 13.48 ft/day
y0 = 0.9394 ft



MW-58D, TEST 3

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\58DR3BR.AQT
Date: 05/21/07 Time: 17:10:17

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-58D
Test Date: July 2006

AQUIFER DATA

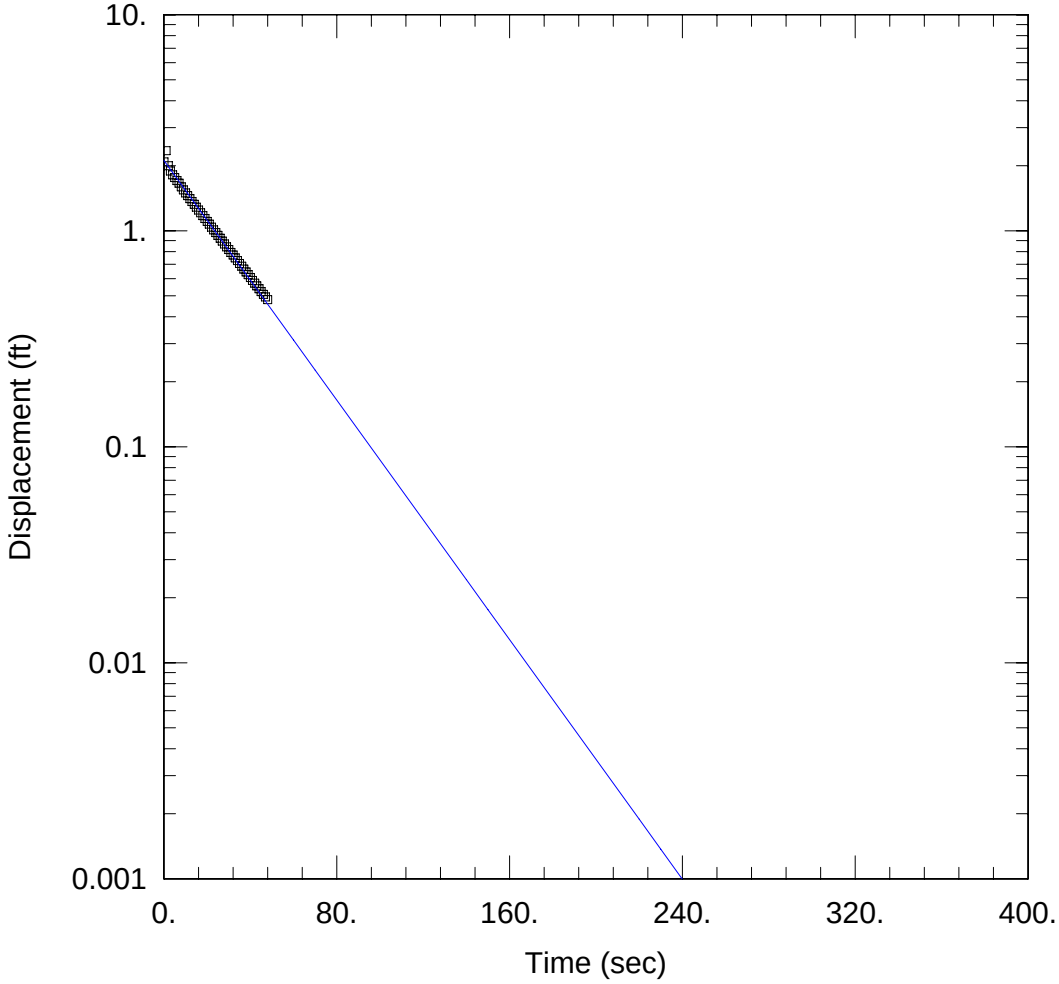
Saturated Thickness: 28. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 2.084 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 94. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 11.25 ft/day
y0 = 2.086 ft



MW-58D, TEST 4

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\58DR4BR.AQT
Date: 05/21/07 Time: 17:10:30

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-58D
Test Date: July 2006

AQUIFER DATA

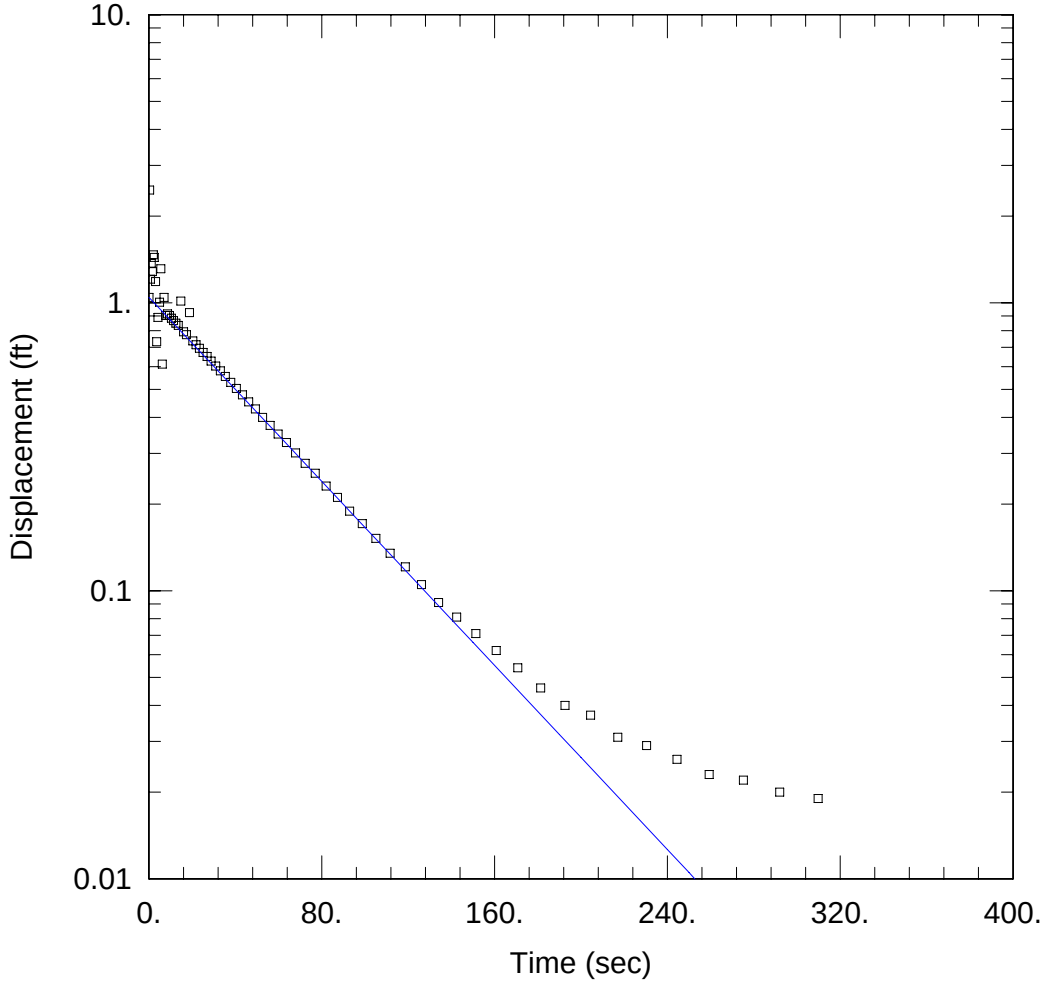
Saturated Thickness: 28. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 2.084 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 94. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 14.4 ft/day
y0 = 2.114 ft



MW-59D, TEST 1

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\59DR1BR.AQT
Date: 05/21/07 Time: 17:32:12

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-59D
Test Date: July 2006

AQUIFER DATA

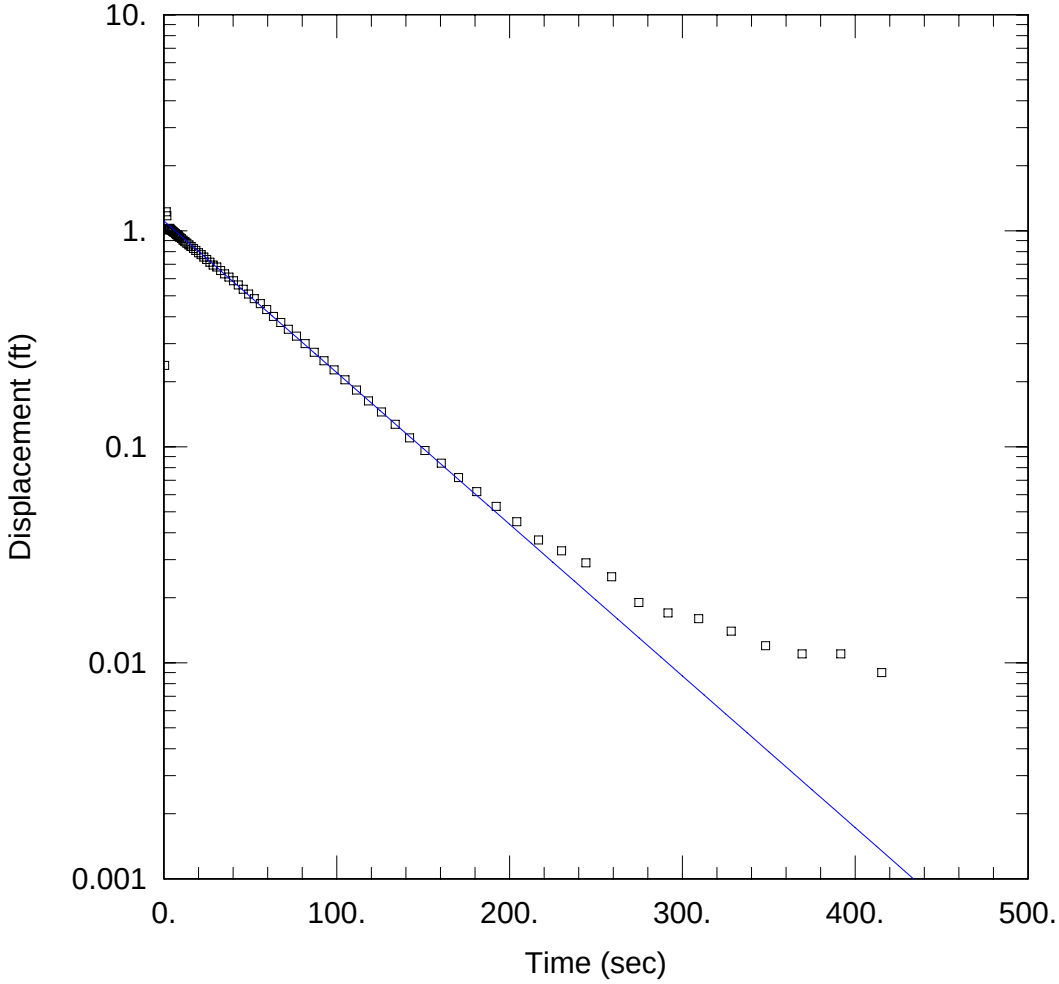
Saturated Thickness: 46. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 1.044 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 98. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 8.343 ft/day
y0 = 1.044 ft



MW-59D, TEST 2

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\59DR2BR.AQT
Date: 05/21/07 Time: 17:31:56

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-59D
Test Date: July 2006

AQUIFER DATA

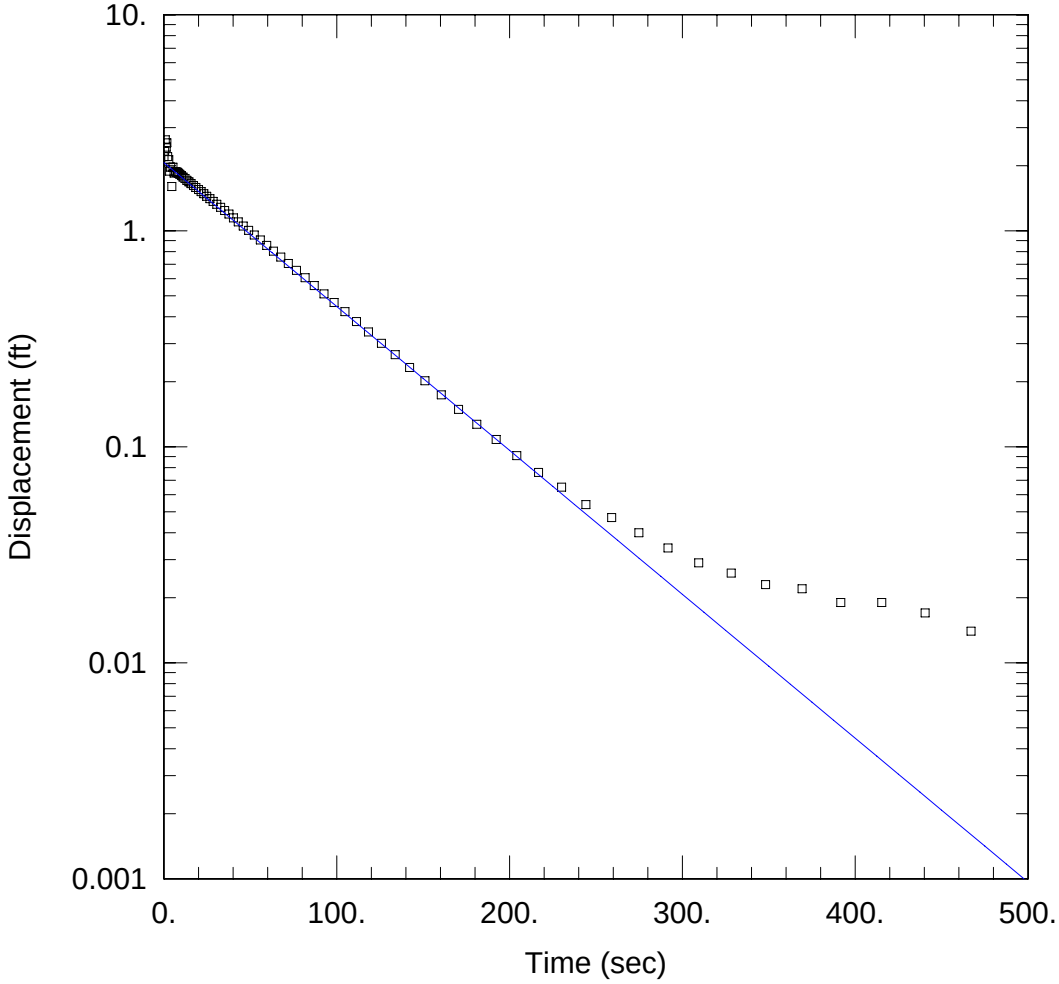
Saturated Thickness: 46. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 1.016 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 98. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 7.334 ft/day
y0 = 1.11 ft



MW-59D, TEST 3

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\59DR3BR.AQT
Date: 05/21/07 Time: 17:31:21

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-59D
Test Date: July 2006

AQUIFER DATA

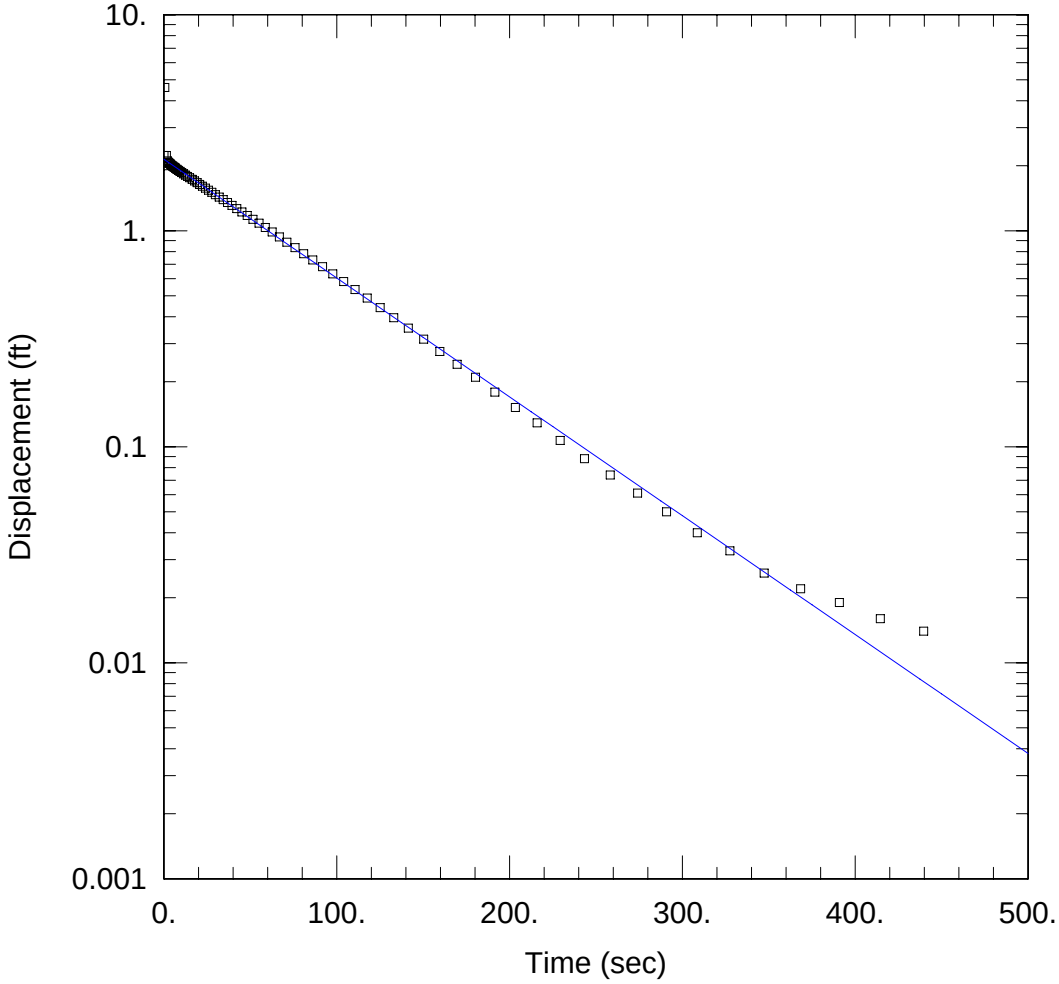
Saturated Thickness: 46. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 2.205 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 98. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 6.957 ft/day
y0 = 2.067 ft



MW-59D, TEST 4

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\59DR4BR.AQT
Date: 05/21/07 Time: 17:32:30

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-59D
Test Date: July 2006

AQUIFER DATA

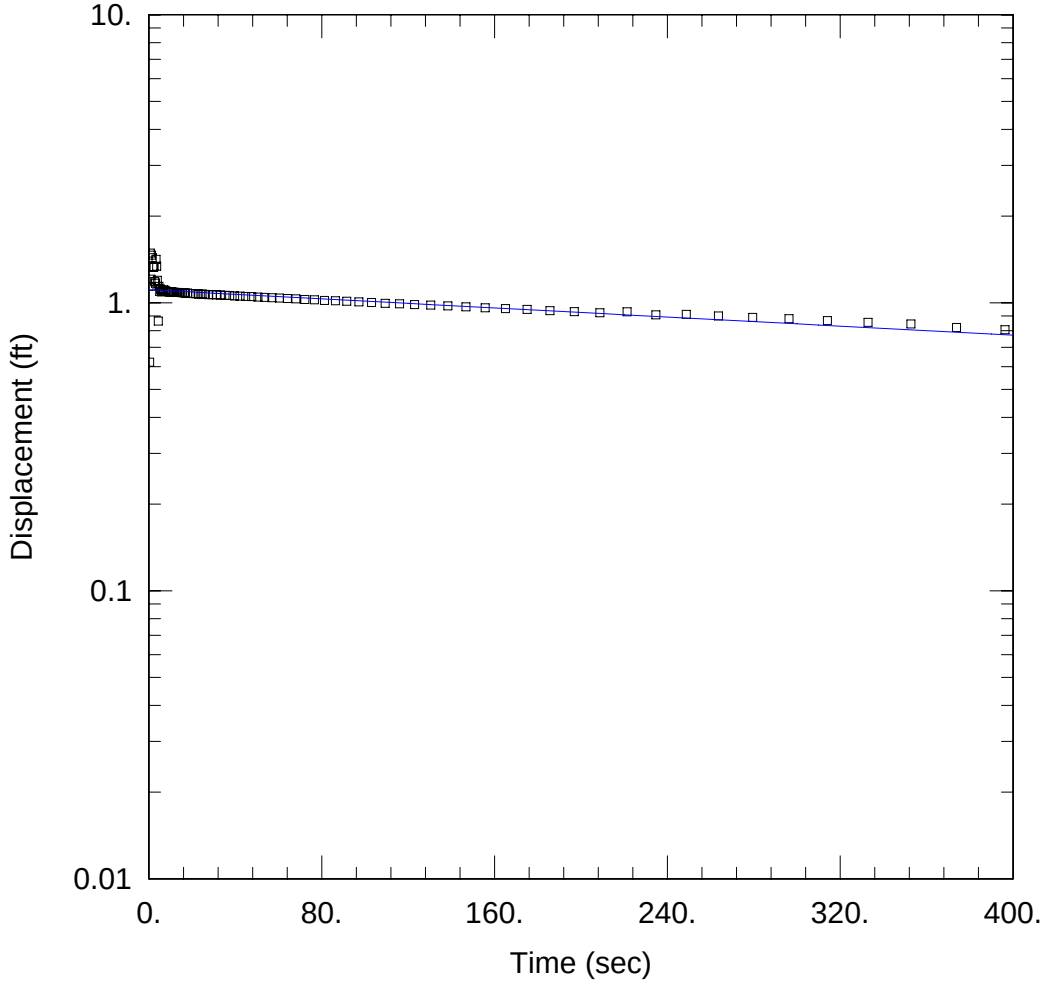
Saturated Thickness: 46. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 2.23 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 98. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 5.745 ft/day
y0 = 2.143 ft



MW-61D, TEST 1

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\61DR1BR.AQT
Date: 05/21/07 Time: 17:53:27

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-61D
Test Date: July 2006

AQUIFER DATA

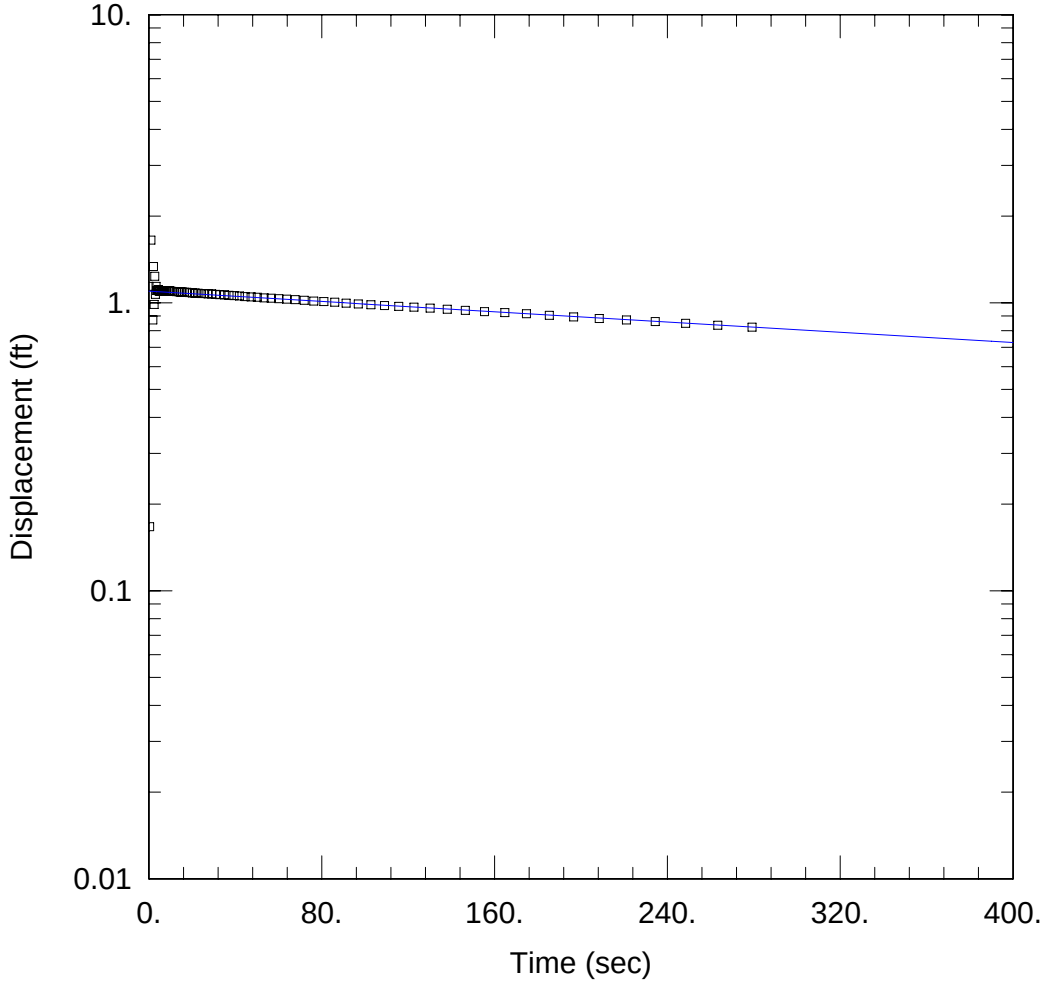
Saturated Thickness: 37. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 1.14 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 91. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.4086 ft/day
y0 = 1.11 ft



MW-61D, TEST 2

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\61DR2BR.AQT
Date: 05/21/07 Time: 17:53:42

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-61D
Test Date: July 2006

AQUIFER DATA

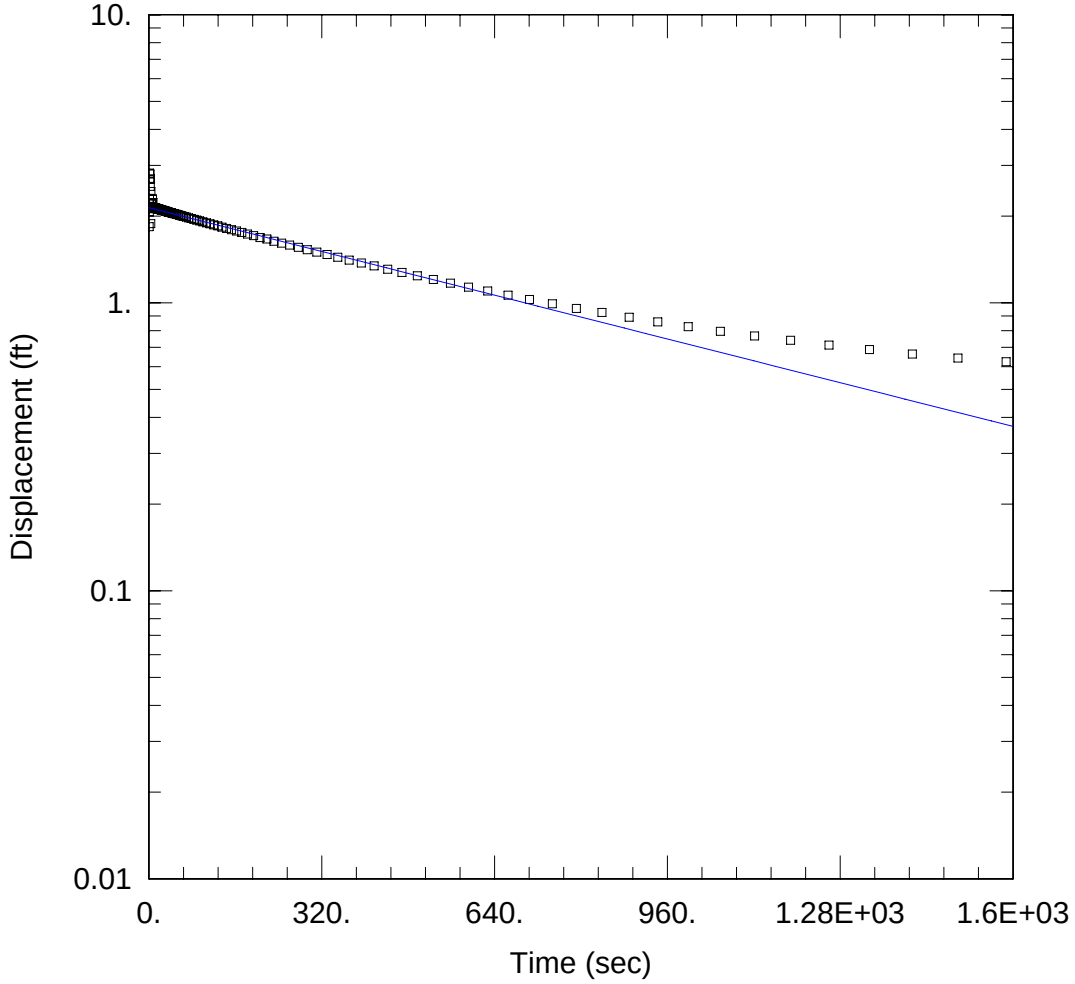
Saturated Thickness: 37. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 1.14 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 91. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.4611 ft/day
y0 = 1.097 ft



MW-61D, TEST 3

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\61DR3BR.AQT
Date: 05/21/07 Time: 17:53:59

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-61D
Test Date: July 2006

AQUIFER DATA

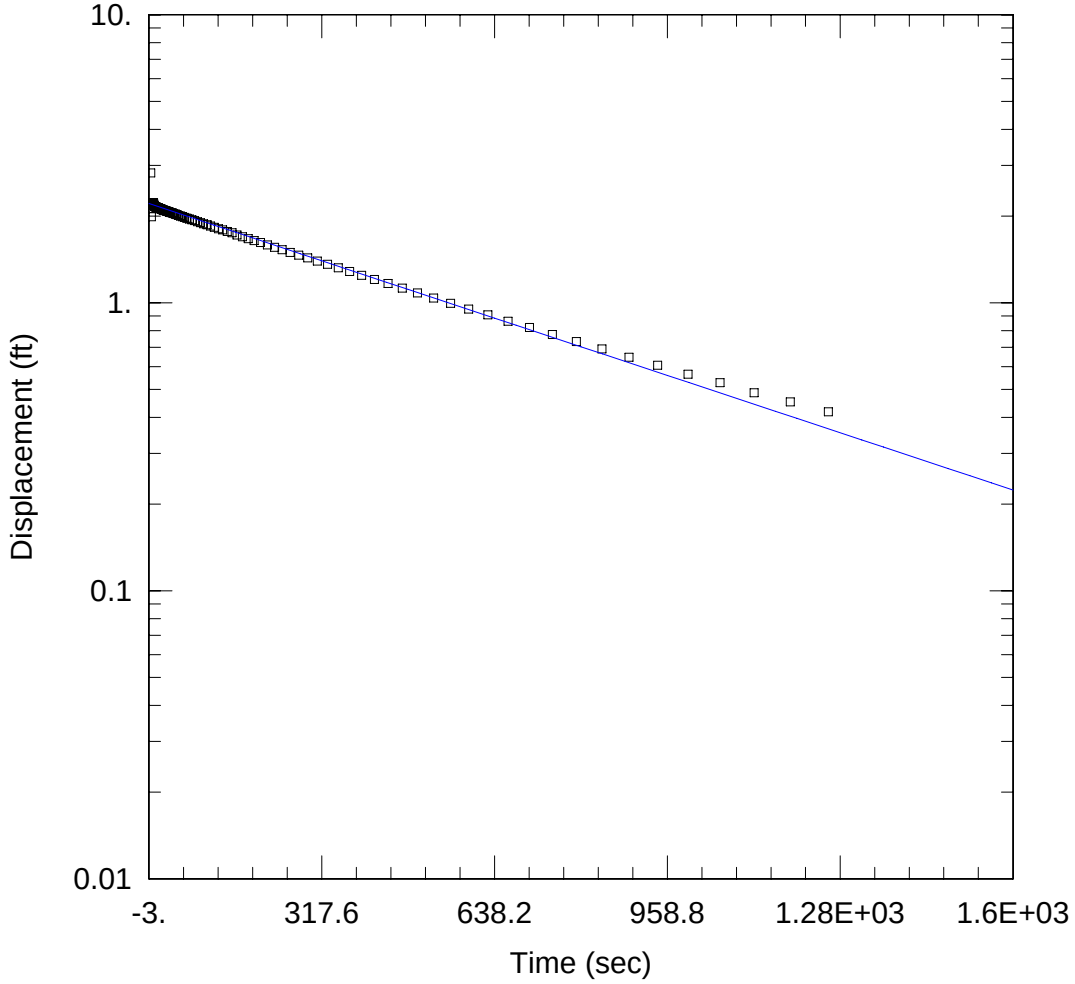
Saturated Thickness: 37. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 2.218 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 91. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.4912 ft/day
y0 = 2.138 ft



MW-61D, TEST 4

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\61DR4BR.AQT
Date: 05/21/07 Time: 17:52:40

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-61D
Test Date: July 2006

AQUIFER DATA

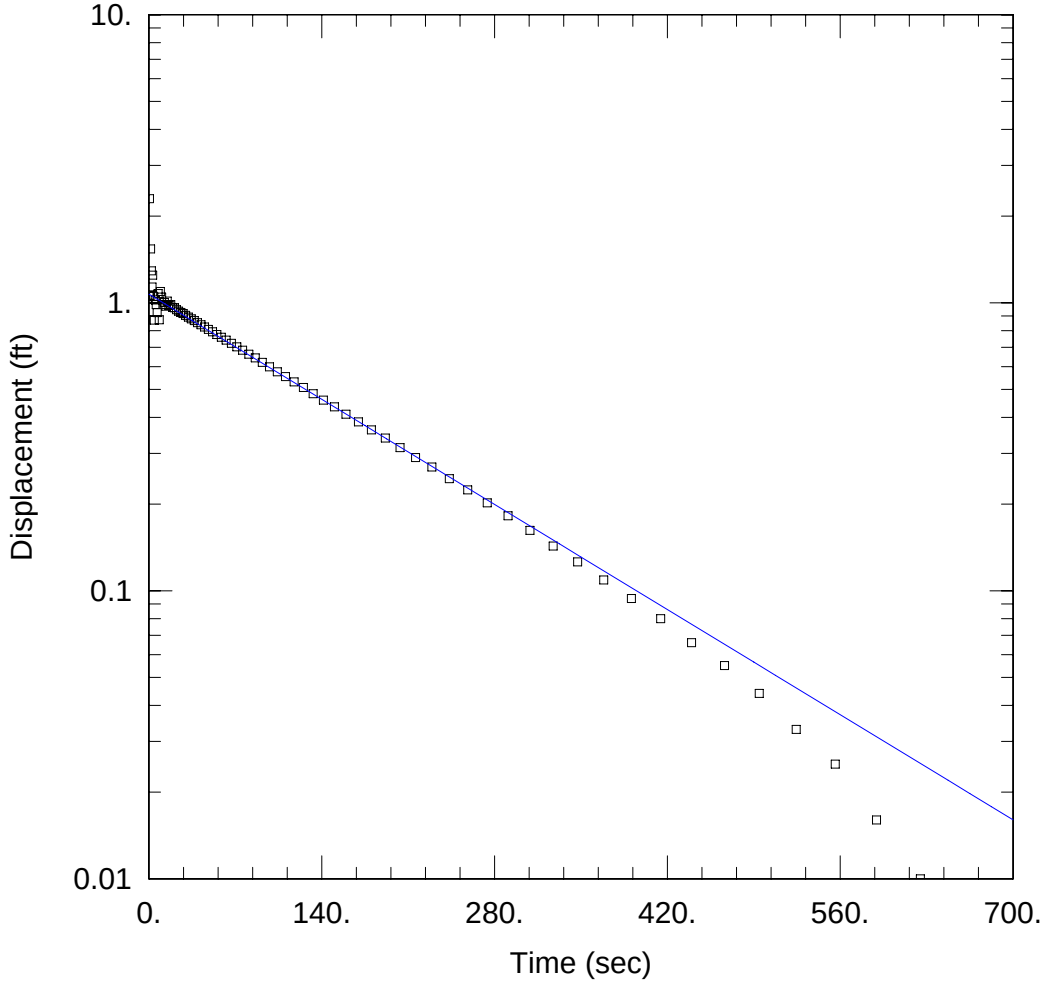
Saturated Thickness: 37. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 2.222 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 91. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.6423 ft/day
y0 = 2.201 ft



MW-63D, TEST 1

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\63DR1BR.AQT
Date: 05/22/07 Time: 10:26:19

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-63D
Test Date: July 2006

AQUIFER DATA

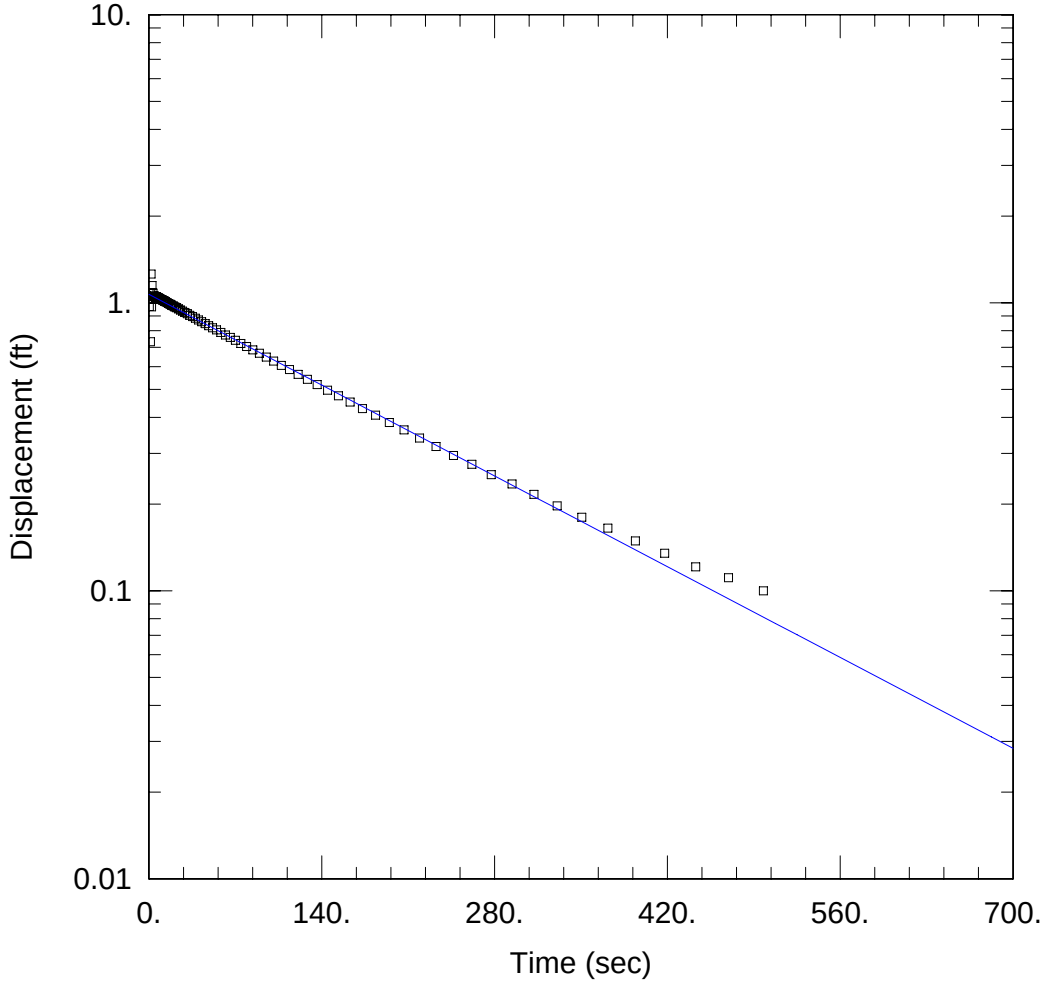
Saturated Thickness: 40. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 1.053 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 97. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 2.719 ft/day
y0 = 1.07 ft



MW-63D, TEST 2

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\63DR2BR.AQT
Date: 05/22/07 Time: 10:25:23

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-63D
Test Date: July 2006

AQUIFER DATA

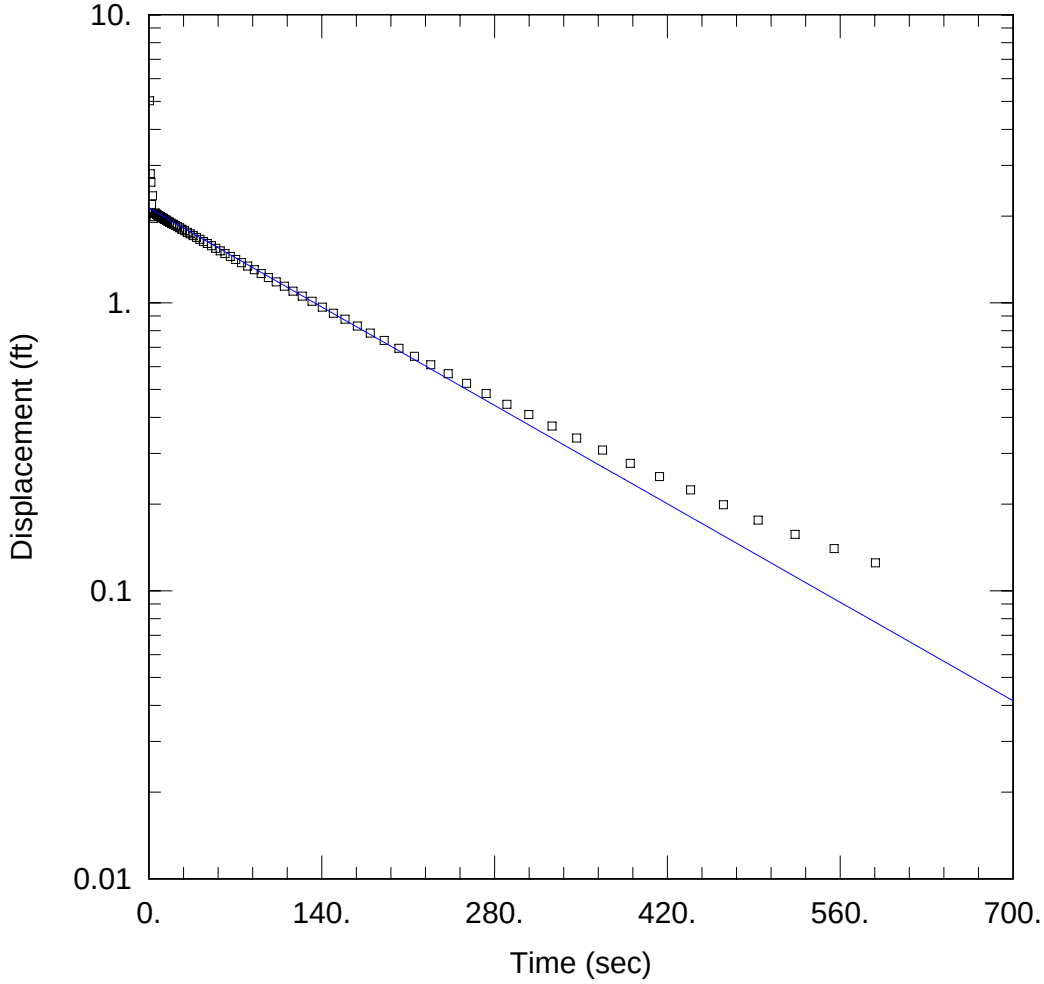
Saturated Thickness: 40. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 1.081 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 97. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 2.348 ft/day
y0 = 1.069 ft



MW-63D, TEST 3

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\63DR3BR.AQT
Date: 05/22/07 Time: 10:24:45

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-63D
Test Date: July 2006

AQUIFER DATA

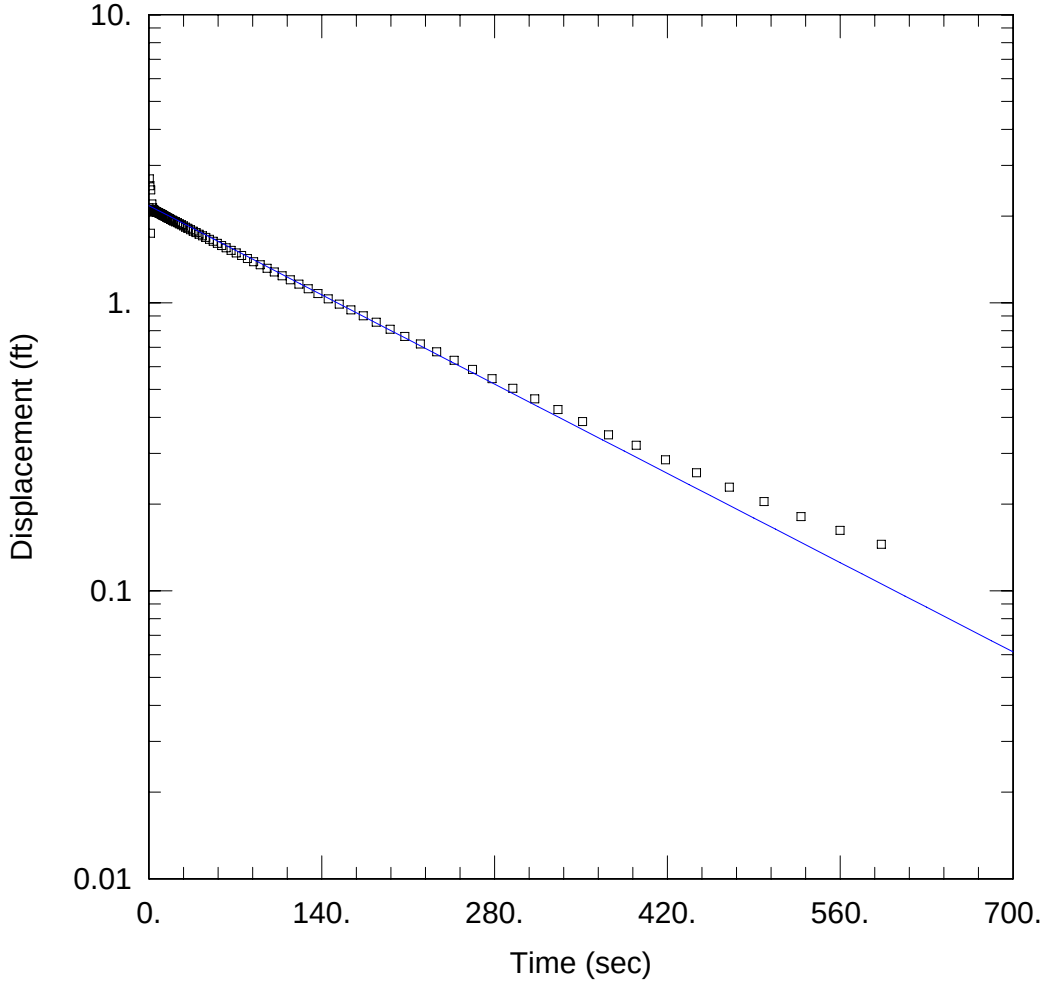
Saturated Thickness: 40. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 2.051 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 97. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 2.547 ft/day
y0 = 2.125 ft



MW-63D, TEST 4

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\63DR4BR.AQT
Date: 05/22/07 Time: 10:26:38

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-63D
Test Date: July 2006

AQUIFER DATA

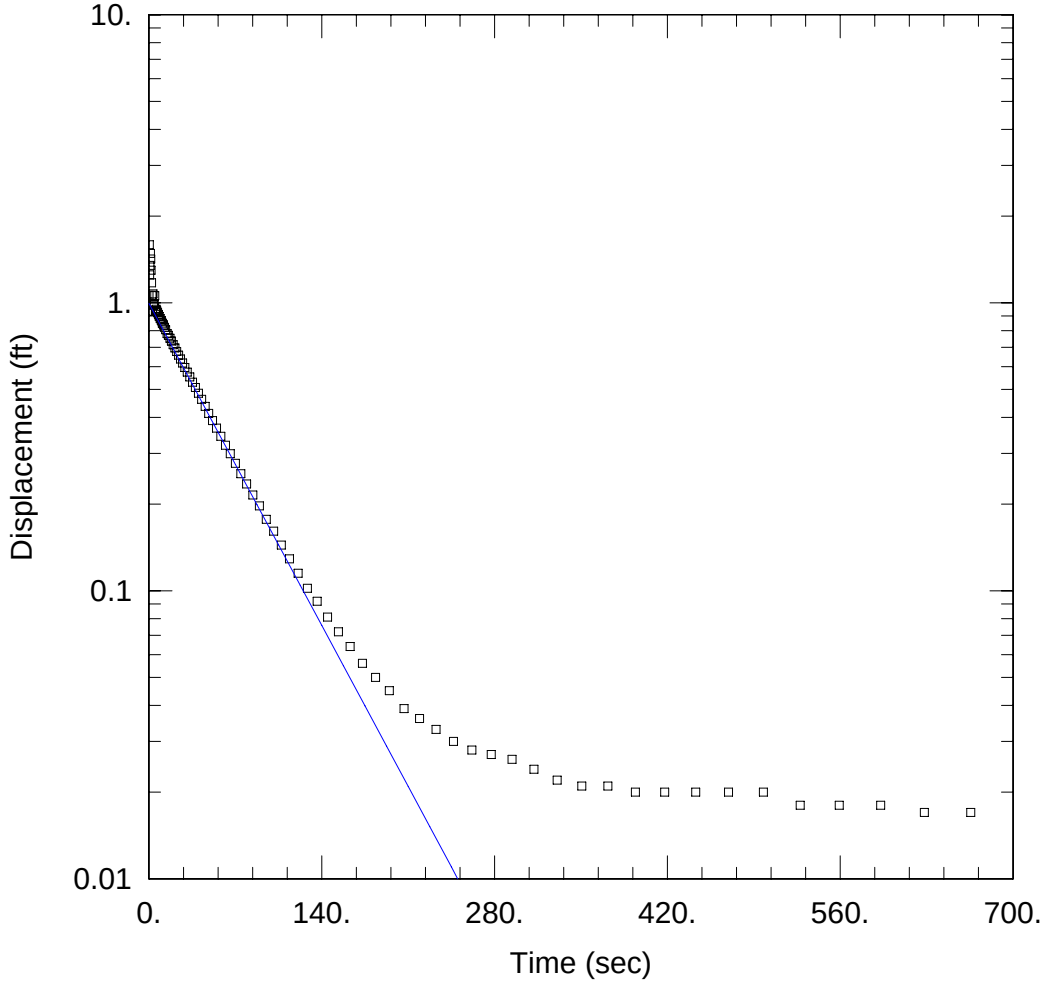
Saturated Thickness: 40. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 2.137 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 97. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 2.309 ft/day
y0 = 2.173 ft



MW-64D, TEST 1

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\64DR1BR.AQT
Date: 05/22/07 Time: 10:55:55

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-64D
Test Date: July 2006

AQUIFER DATA

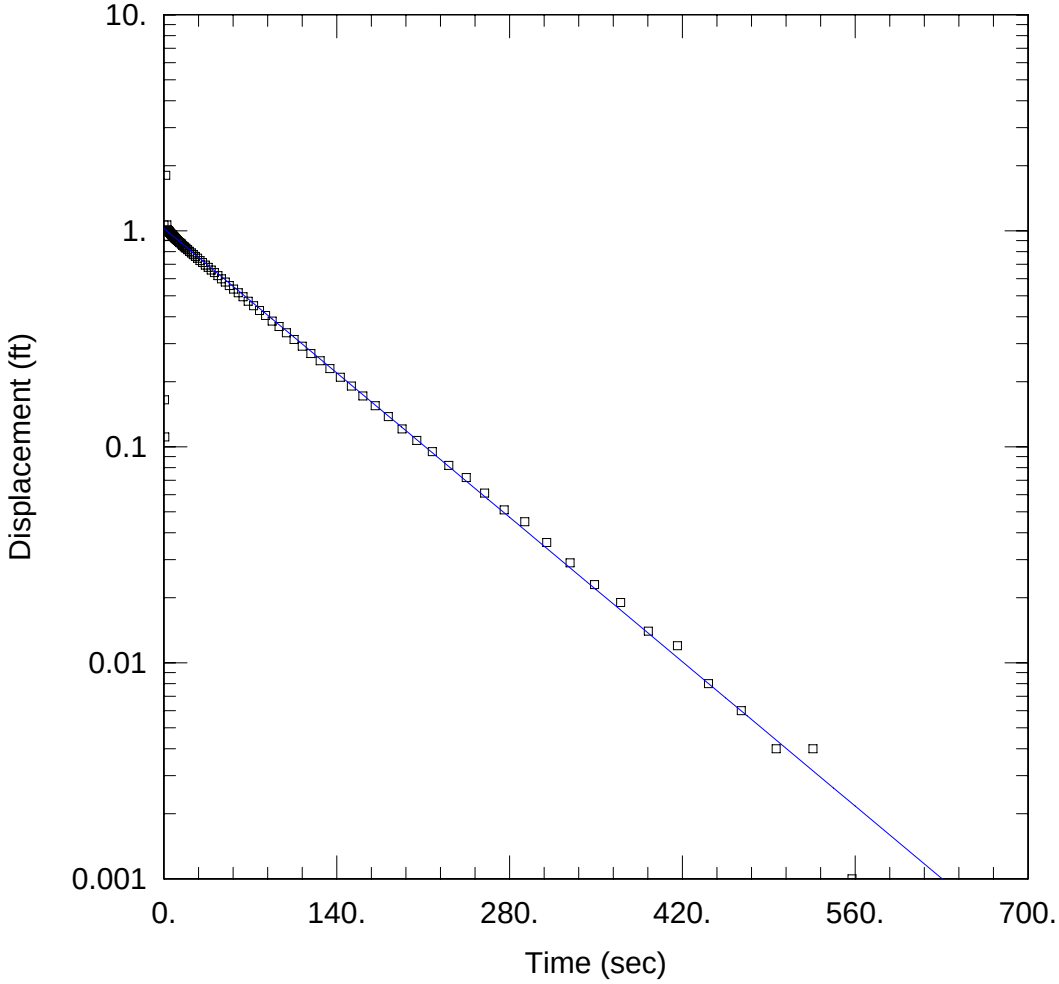
Saturated Thickness: 47. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 1.061 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 104. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 8.399 ft/day
y0 = 0.9937 ft



MW-64D, TEST 2

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\64DR2BR.AQT
Date: 05/22/07 Time: 10:55:36

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-64D
Test Date: July 2006

AQUIFER DATA

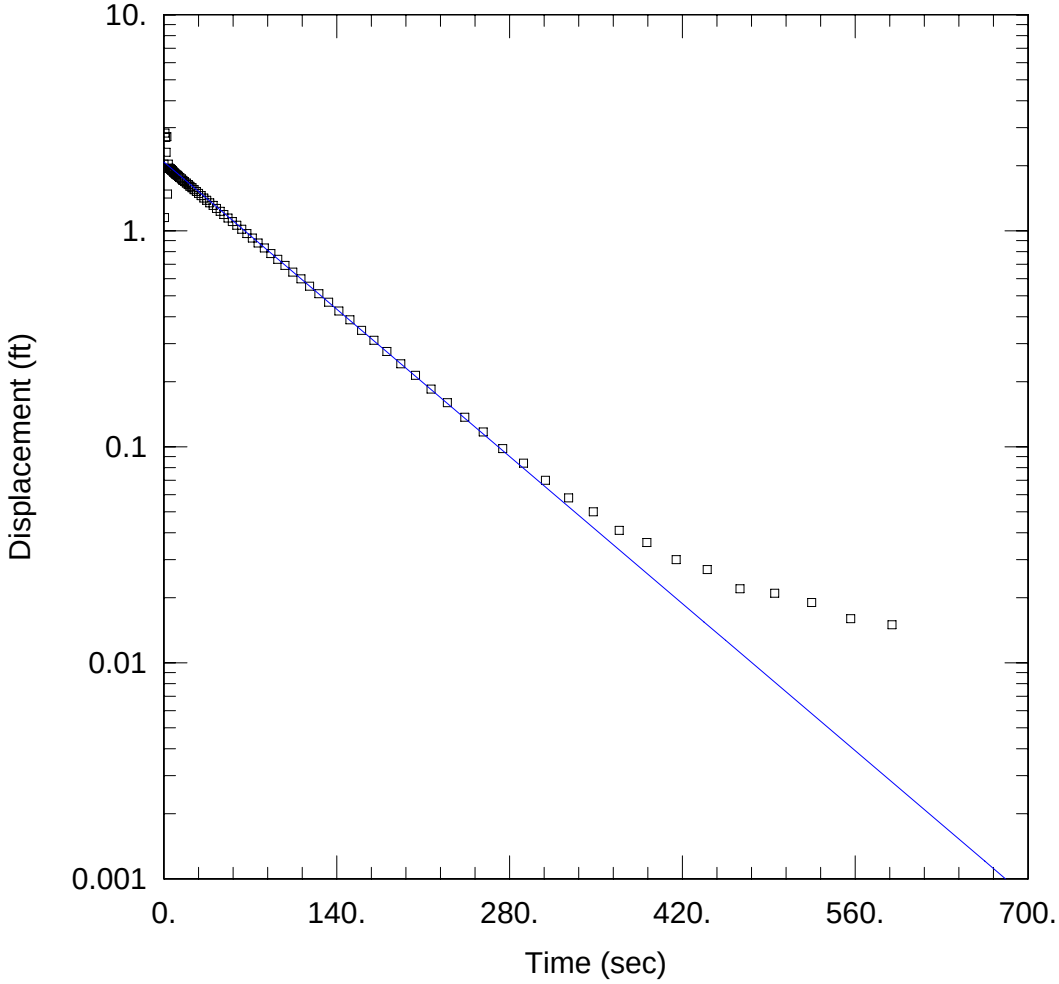
Saturated Thickness: 47. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 1.064 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 104. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 5.023 ft/day
y0 = 1.024 ft



MW-64D, TEST 3

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\64DR3BR.AQT
Date: 05/22/07 Time: 10:55:20

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-64D
Test Date: July 2006

AQUIFER DATA

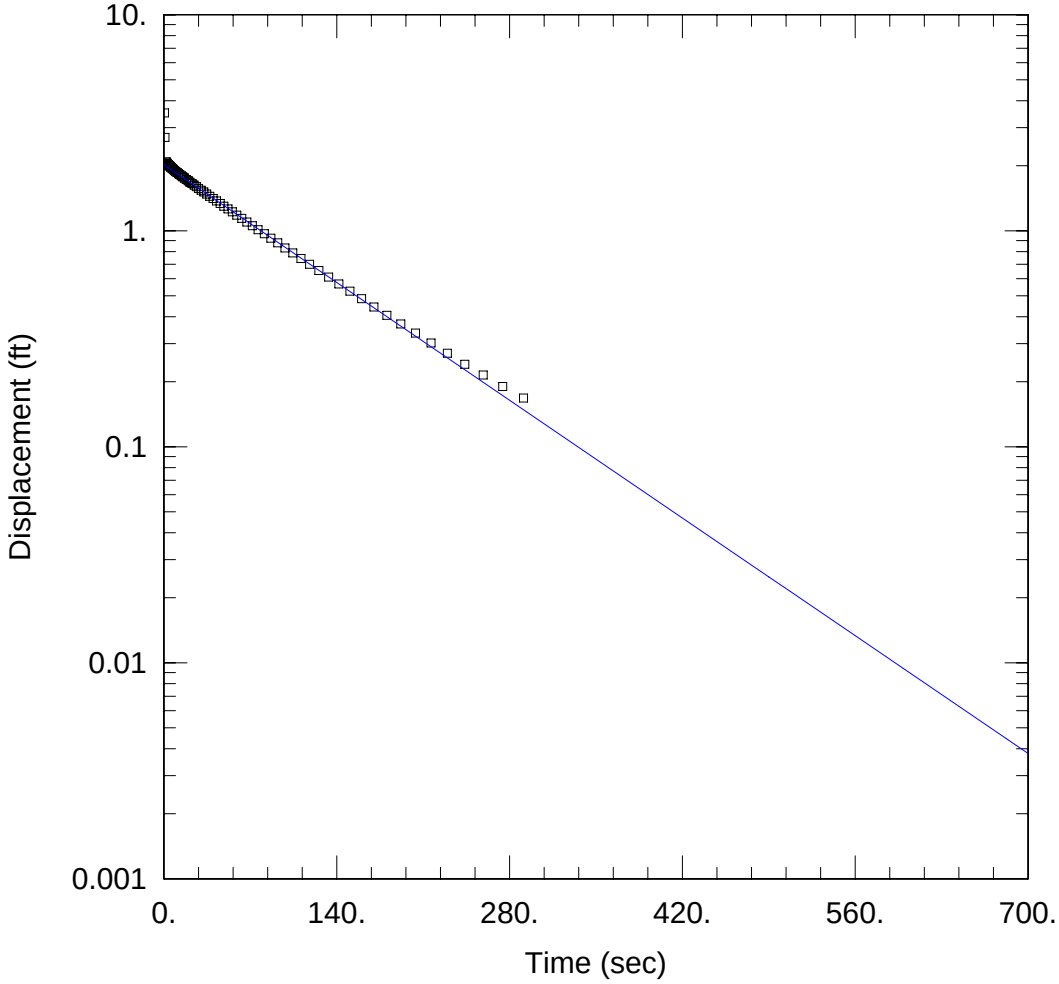
Saturated Thickness: 47. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 2.036 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 104. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 5.12 ft/day
y0 = 2.081 ft



MW-64D, TEST 4

Data Set: S:\COMMON\ORLANDO\OU4~1\HAWTHO~1\2006HA~1\GROUND~1\SLUGTE~1\64DR4BR.AQT
Date: 05/22/07 Time: 10:54:51

PROJECT INFORMATION

Company: Tetra Tech NUS
Client: NTC Orlando, FL
Test Location: OU 4
Test Well: MW-64D
Test Date: July 2006

AQUIFER DATA

Saturated Thickness: 47. ft
Anisotropy Ratio (Kz/Kr): 0.5

WELL DATA

Initial Displacement: 2.053 ft
Casing Radius: 0.0833 ft
Screen Length: 10. ft
Water Column Height: 104. ft
Wellbore Radius: 0.25 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 4.096 ft/day
y0 = 2.02 ft

APPENDIX F

LABORATORY ANALTYICAL DATA TABLES

TABLE F-1

VADOSE SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring Location SAMPLE Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. SAMPLES	NO. HITS	MIN	MAX	SCTL LEACH	SCTL IND	SCTL RES	13SB001 NTC13U00112 1 2 07/26/06	13SB001 NTC13U00167 6 7 07/26/06	13SB002 NTC13U00212 1 2 07/26/06	13SB002 NTC13U00267 6 7 07/26/06	13SB003 NTC13U00312 1 2 07/26/06	13SB003 NTC13U00367 6 7 07/26/06
VOLATILE ORGANICS (ug/kg)														
1,1,1-TRICHLOROETHANE	71-55-6	28	0			1900	3900000	730000	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
1,1,2,2-TETRACHLOROETHANE	79-34-5	28	0			1	1200	700	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
1,1,2-TRICHLOROETHANE	79-00-5	28	0			30	2000	1400	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
1,1-DICHLOROETHANE	75-34-3	28	0			400	2100000	390000	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
1,1-DICHLOROETHENE	75-35-4	28	0			60	510000	95000	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
1,2-DICHLOROETHANE	107-06-2	28	0			10	700	500	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
1,2-DICHLOROPROPANE	78-87-5	28	0			30	900	600	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
2-BUTANONE	78-93-3	28	0			17000	1.1E+08	16000000	7.9 U	7.8 U	7.8 U	8.1 U	8 U	6.9 U
2-HEXANONE	591-78-6	28	0			1400	130000	24000	7.9 U	7.8 U	7.8 U	8.1 U	8 U	6.9 U
4-METHYL-2-PENTANONE	108-10-1	28	0			2600	44000000	4300000	7.9 U	7.8 U	7.8 U	8.1 U	8 U	6.9 U
ACETONE	67-64-1	28	2	21.3	23.6	25000	68000000	11000000	20 U	20 U	20 U	20 U	20 U	17 U
BENZENE	71-43-2	28	0			7	1700	1200	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
BROMODICHLOROMETHANE	75-27-4	28	0			4	2200	1500	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
BROMOFORM	75-25-2	28	0			30	93000	48000	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
BROMOMETHANE	74-83-9	28	0			50	16000	3100	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
CARBON DISULFIDE	75-15-0	28	0			5600	1500000	270000	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
CARBON TETRACHLORIDE	56-23-5	28	0			40	700	500	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
CHLOROBENZENE	108-90-7	28	0			1300	650000	120000	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
CHLORODIBROMOMETHANE	124-48-1	28	0			3	2300	1500	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
CHLOROETHANE	75-00-3	28	0			60	5400	3900	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.1 U
CHLOROFORM	67-66-3	28	0			400	600	400	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
CHLOROMETHANE	74-87-3	28	0			10	5700	4000	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
CIS-1,2-DICHLOROETHENE	156-59-2	28	0			400	180000	33000	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
CIS-1,3-DICHLOROPROPENE	10061-01-5	28	0			--	--	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
ETHYLBENZENE	100-41-4	28	0			600	9200000	1500000	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
METHYLENE CHLORIDE	75-09-2	28	0			20	26000	17000	4 U	3.9 U	3.9 U	4 U	4 U	3.5 U
STYRENE	100-42-5	28	0			3600	23000000	3600000	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
TETRACHLOROETHENE	127-18-4	28	28	4.6	55900	30	18000	8800	**831 [L]**	**145 [L]**	**2070 [L]**	**670 [L]**	**55900 [R,I,L]**	**5010 [L]**
TOLUENE	108-88-3	28	1	157	157	500	60000000	7500000	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
TOTAL XYLENES	1330-20-7	28	0			200	700000	130000	4 U	3.9 U	3.9 U	4 U	4 U	3.5 U
TRANS-1,2-DICHLOROETHENE	156-60-5	28	0			700	290000	53000	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
TRANS-1,3-DICHLOROPROPENE	10061-02-6	28	0			--	--	--	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
TRICHLOROETHENE	79-01-6	28	12	1.6	7.5	30	9300	6400	3 J	2.2 J	3 J	5	7.5	5.1
VINYL CHLORIDE	75-01-4	28	0			7	800	200	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.4 U
MISCELLANEOUS PARAMETERS														
PERCENT SOLIDS (%)	TTNUS291	28	28	78	96.7	--	--	--	95.3	84.4	95	87.6	95.3	87.9

TABLE F-1

VADOSE SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring Location SAMPLE Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. SAMPLES	NO. HITS	MIN	MAX	SCTL LEACH	SCTL IND	SCTL RES	13SB004 NTC13U00412 1 2 07/26/06	13SB004 NTC13U00467 6 7 07/26/06	13SB005 NTC13U00512 1 2 07/26/06	13SB005 NTC13U00567 6 7 07/26/06	13SB006 NTC13U00612 1 2 07/26/06	13SB006 NTC13U00612-AVG 1 2 07/26/06
VOLATILE ORGANICS (ug/kg)														
1,1,1-TRICHLOROETHANE	71-55-6	28	0			1900	3900000	730000	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
1,1,2,2-TETRACHLOROETHANE	79-34-5	28	0			1	1200	700	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
1,1,2-TRICHLOROETHANE	79-00-5	28	0			30	2000	1400	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
1,1-DICHLOROETHANE	75-34-3	28	0			400	2100000	390000	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
1,1-DICHLOROETHENE	75-35-4	28	0			60	510000	95000	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
1,2-DICHLOROETHANE	107-06-2	28	0			10	700	500	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
1,2-DICHLOROPROPANE	78-87-5	28	0			30	900	600	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
2-BUTANONE	78-93-3	28	0			17000	1.1E+08	16000000	420 U	8.4 U	8.1 U	7 U	7.8 U	7.75 U
2-HEXANONE	591-78-6	28	0			1400	130000	24000	420 U	8.4 U	8.1 U	7 U	7.8 U	7.75 U
4-METHYL-2-PENTANONE	108-10-1	28	0			2600	44000000	4300000	420 U	8.4 U	8.1 U	7 U	7.8 U	7.75 U
ACETONE	67-64-1	28	2	21.3	23.6	25000	68000000	11000000	1000 U	21 U	20 U	18 U	20 U	19.5 U
BENZENE	71-43-2	28	0			7	1700	1200	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
BROMODICHLOROMETHANE	75-27-4	28	0			4	2200	1500	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
BROMOFORM	75-25-2	28	0			30	93000	48000	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
BROMOMETHANE	74-83-9	28	0			50	16000	3100	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
CARBON DISULFIDE	75-15-0	28	0			5600	1500000	270000	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
CARBON TETRACHLORIDE	56-23-5	28	0			40	700	500	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
CHLOROBENZENE	108-90-7	28	0			1300	650000	120000	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
CHLORODIBROMOMETHANE	124-48-1	28	0			3	2300	1500	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
CHLOROETHANE	75-00-3	28	0			60	5400	3900	130 U	2.5 U	2.4 U	2.1 U	2.3 U	2.3 U
CHLOROFORM	67-66-3	28	0			400	600	400	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
CHLOROMETHANE	74-87-3	28	0			10	5700	4000	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
CIS-1,2-DICHLOROETHENE	156-59-2	28	0			400	180000	33000	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
CIS-1,3-DICHLOROPROPENE	10061-01-5	28	0			--	--	--	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
ETHYLBENZENE	100-41-4	28	0			600	9200000	1500000	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
METHYLENE CHLORIDE	75-09-2	28	0			20	26000	17000	210 U	4.2 U	4.1 U	3.5 U	3.9 U	3.85 U
STYRENE	100-42-5	28	0			3600	23000000	3600000	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
TETRACHLOROETHENE	127-18-4	28	28	4.6	55900	30	18000	8800	**2050 [L]**	25	**1390 [L]**	**195 J [L]**	**50.3 J [L]**	**36 J [L]**
TOLUENE	108-88-3	28	1	157	157	500	60000000	7500000	157 J	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
TOTAL XYLENES	1330-20-7	28	0			200	700000	130000	210 U	4.2 U	4.1 U	3.5 U	3.9 U	3.85 U
TRANS-1,2-DICHLOROETHENE	156-60-5	28	0			700	290000	53000	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
TRANS-1,3-DICHLOROPROPENE	10061-02-6	28	0			--	--	--	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
TRICHLOROETHENE	79-01-6	28	12	1.6	7.5	30	9300	6400	84 U	1.7 U	2.2 J	2 J	1.6 U	1.55 U
VINYL CHLORIDE	75-01-4	28	0			7	800	200	84 U	1.7 U	1.6 U	1.4 U	1.6 U	1.55 U
MISCELLANEOUS PARAMETERS														
PERCENT SOLIDS (%)	TTNUS291	28	28	78	96.7	--	--	--	95.4	78	94.3	86.5	95.4	95.2

TABLE F-1

VADOSE SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring Location SAMPLE Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. SAMPLES	NO. HITS	MIN	MAX	SCTL LEACH	SCTL IND	SCTL RES	13SB006 NTC13U00612-D 1 2 07/26/06	13SB006 NTC13U00667 6 7 07/26/06	13SB006 NTC13U00667-AVG 6 7 07/26/06	13SB006 NTC13U00667-D 6 7 07/26/06	13SB007 NTC13U00712 1 2 07/26/06
VOLATILE ORGANICS (ug/kg)													
1,1,1-TRICHLOROETHANE	71-55-6	28	0			1900	3900000	730000	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
1,1,2,2-TETRACHLOROETHANE	79-34-5	28	0			1	1200	700	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
1,1,2-TRICHLOROETHANE	79-00-5	28	0			30	2000	1400	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
1,1-DICHLOROETHANE	75-34-3	28	0			400	2100000	390000	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
1,1-DICHLOROETHENE	75-35-4	28	0			60	510000	95000	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
1,2-DICHLOROETHANE	107-06-2	28	0			10	700	500	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
1,2-DICHLOROPROPANE	78-87-5	28	0			30	900	600	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
2-BUTANONE	78-93-3	28	0			17000	1.1E+08	16000000	7.7 U	7.1 U	7.15 U	7.2 U	7.5 U
2-HEXANONE	591-78-6	28	0			1400	130000	24000	7.7 U	7.1 U	7.15 U	7.2 U	7.5 U
4-METHYL-2-PENTANONE	108-10-1	28	0			2600	44000000	4300000	7.7 U	7.1 U	7.15 U	7.2 U	7.5 U
ACETONE	67-64-1	28	2	21.3	23.6	25000	68000000	11000000	19 U	18 U	18 U	18 U	19 U
BENZENE	71-43-2	28	0			7	1700	1200	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
BROMODICHLOROMETHANE	75-27-4	28	0			4	2200	1500	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
BROMOFORM	75-25-2	28	0			30	93000	48000	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
BROMOMETHANE	74-83-9	28	0			50	16000	3100	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
CARBON DISULFIDE	75-15-0	28	0			5600	1500000	270000	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
CARBON TETRACHLORIDE	56-23-5	28	0			40	700	500	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
CHLOROBENZENE	108-90-7	28	0			1300	650000	120000	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
CHLORODIBROMOMETHANE	124-48-1	28	0			3	2300	1500	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
CHLOROETHANE	75-00-3	28	0			60	5400	3900	2.3 U	2.1 U	2.15 U	2.2 U	2.2 U
CHLOROFORM	67-66-3	28	0			400	600	400	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
CHLOROMETHANE	74-87-3	28	0			10	5700	4000	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
CIS-1,2-DICHLOROETHENE	156-59-2	28	0			400	180000	33000	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
CIS-1,3-DICHLOROPROPENE	10061-01-5	28	0			--	--	--	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
ETHYLBENZENE	100-41-4	28	0			600	9200000	1500000	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
METHYLENE CHLORIDE	75-09-2	28	0			20	26000	17000	3.8 U	3.8 U	3.7 U	3.6 U	3.7 U
STYRENE	100-42-5	28	0			3600	23000000	3600000	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
TETRACHLOROETHENE	127-18-4	28	28	4.6	55900	30	18000	8800	21.7 J	4.6 J	8.25 J	11.9 J	**86 [L]**
TOLUENE	108-88-3	28	1	157	157	500	60000000	7500000	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
TOTAL XYLENES	1330-20-7	28	0			200	700000	130000	3.8 U	3.6 U	3.6 U	3.6 U	3.7 U
TRANS-1,2-DICHLOROETHENE	156-60-5	28	0			700	290000	53000	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
TRANS-1,3-DICHLOROPROPENE	10061-02-6	28	0			--	--	--	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
TRICHLOROETHENE	79-01-6	28	12	1.6	7.5	30	9300	6400	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
VINYL CHLORIDE	75-01-4	28	0			7	800	200	1.5 U	1.4 U	1.4 U	1.4 U	1.5 U
MISCELLANEOUS PARAMETERS													
PERCENT SOLIDS (%)	TTNUS291	28	28	78	96.7	--	--	--	95	87.1	87.05	87	95.4

TABLE F-1

VADOSE SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring Location SAMPLE Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. SAMPLES	NO. HITS	MIN	MAX	SCTL LEACH	SCTL IND	SCTL RES	13SB007 NTC13U00767 6 7 07/26/06	13SB008 NTC13U00812 1 2 07/26/06	13SB008 NTC13U00867 6 7 07/26/06	13SB009 NTC13U00912 1 2 10/24/06	13SB009 NTC13U00934 3 4 10/24/06	13SB009 NTC13U00967 6 7 10/24/06
VOLATILE ORGANICS (ug/kg)														
1,1,1-TRICHLOROETHANE	71-55-6	28	0			1900	3900000	730000	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
1,1,2,2-TETRACHLOROETHANE	79-34-5	28	0			1	1200	700	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
1,1,2-TRICHLOROETHANE	79-00-5	28	0			30	2000	1400	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
1,1-DICHLOROETHANE	75-34-3	28	0			400	2100000	390000	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
1,1-DICHLOROETHENE	75-35-4	28	0			60	510000	95000	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
1,2-DICHLOROETHANE	107-06-2	28	0			10	700	500	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
1,2-DICHLOROPROPANE	78-87-5	28	0			30	900	600	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
2-BUTANONE	78-93-3	28	0			17000	1.1E+08	16000000	7.3 U	7.7 U	7.7 U	8.3 UJ	7.9 UJ	7.5 UJ
2-HEXANONE	591-78-6	28	0			1400	130000	24000	7.3 U	7.7 U	7.7 U	8.3 UJ	7.9 UJ	7.5 UJ
4-METHYL-2-PENTANONE	108-10-1	28	0			2600	44000000	4300000	7.3 U	7.7 U	7.7 U	8.3 UJ	7.9 UJ	7.5 UJ
ACETONE	67-64-1	28	2	21.3	23.6	25000	68000000	11000000	18 U	19 U	19 U	21 UJ	20 UJ	23.6 J
BENZENE	71-43-2	28	0			7	1700	1200	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
BROMODICHLOROMETHANE	75-27-4	28	0			4	2200	1500	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
BROMOFORM	75-25-2	28	0			30	93000	48000	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
BROMOMETHANE	74-83-9	28	0			50	16000	3100	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
CARBON DISULFIDE	75-15-0	28	0			5600	1500000	270000	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
CARBON TETRACHLORIDE	56-23-5	28	0			40	700	500	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
CHLOROBENZENE	108-90-7	28	0			1300	650000	120000	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
CHLORODIBROMOMETHANE	124-48-1	28	0			3	2300	1500	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
CHLOROETHANE	75-00-3	28	0			60	5400	3900	2.2 U	2.3 U	2.3 U	2.5 UJ	2.4 UJ	2.3 UJ
CHLOROFORM	67-66-3	28	0			400	600	400	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
CHLOROMETHANE	74-87-3	28	0			10	5700	4000	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
CIS-1,2-DICHLOROETHENE	156-59-2	28	0			400	180000	33000	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
CIS-1,3-DICHLOROPROPENE	10061-01-5	28	0			--	--	--	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
ETHYLBENZENE	100-41-4	28	0			600	9200000	1500000	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
METHYLENE CHLORIDE	75-09-2	28	0			20	26000	17000	3.7 U	3.8 U	3.9 U	4.1 UJ	3.9 UJ	4.1 U
STYRENE	100-42-5	28	0			3600	23000000	3600000	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
TETRACHLOROETHENE	127-18-4	28	28	4.6	55900	30	18000	8800	22.1	**40 [L]**	18.7	**4120 J [L]**	**2900 J [L]**	**316 J [L]**
TOLUENE	108-88-3	28	1	157	157	500	60000000	7500000	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
TOTAL XYLENES	1330-20-7	28	0			200	700000	130000	3.7 U	3.8 U	3.9 U	4.1 UJ	3.9 UJ	3.8 UJ
TRANS-1,2-DICHLOROETHENE	156-60-5	28	0			700	290000	53000	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
TRANS-1,3-DICHLOROPROPENE	10061-02-6	28	0			--	--	--	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
TRICHLOROETHENE	79-01-6	28	12	1.6	7.5	30	9300	6400	1.5 U	1.5 U	1.5 U	4.2 J	1.6 J	1.5 UJ
VINYL CHLORIDE	75-01-4	28	0			7	800	200	1.5 U	1.5 U	1.5 U	1.7 UJ	1.6 UJ	1.5 UJ
MISCELLANEOUS PARAMETERS														
PERCENT SOLIDS (%)	TTNUS291	28	28	78	96.7	--	--	--	86.1	94.9	88.2	94.4	94.7	92.4

TABLE F-1

VADOSE SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring Location SAMPLE Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. SAMPLES	NO. HITS	MIN	MAX	SCTL LEACH	SCTL IND	SCTL RES	13SB010 NTC13U01012 1 2 10/24/06	13SB010 NTC13U01034 3 4 10/24/06	13SB010 NTC13U01067 6 7 10/24/06	13SB011 NTC13U01112 1 2 10/24/06	13SB011 NTC13U01134 3 4 10/24/06	13SB011 NTC13U01167 6 7 10/24/06
VOLATILE ORGANICS (ug/kg)														
1,1,1-TRICHLOROETHANE	71-55-6	28	0			1900	3900000	730000	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
1,1,2,2-TETRACHLOROETHANE	79-34-5	28	0			1	1200	700	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
1,1,2-TRICHLOROETHANE	79-00-5	28	0			30	2000	1400	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
1,1-DICHLOROETHANE	75-34-3	28	0			400	2100000	390000	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
1,1-DICHLOROETHENE	75-35-4	28	0			60	510000	95000	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
1,2-DICHLOROETHANE	107-06-2	28	0			10	700	500	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
1,2-DICHLOROPROPANE	78-87-5	28	0			30	900	600	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
2-BUTANONE	78-93-3	28	0			17000	1.1E+08	16000000	8.1 UJ	420 UJ	7.6 UJ	6.1 UJ	340 UJ	430 UJ
2-HEXANONE	591-78-6	28	0			1400	130000	24000	8.1 UJ	420 UJ	7.6 UJ	6.1 UJ	340 UJ	430 UJ
4-METHYL-2-PENTANONE	108-10-1	28	0			2600	44000000	4300000	8.1 UJ	420 UJ	7.6 UJ	6.1 UJ	340 UJ	430 UJ
ACETONE	67-64-1	28	2	21.3	23.6	25000	68000000	11000000	21.3 J	1000 UJ	19 UJ	15 UJ	860 UJ	1100 UJ
BENZENE	71-43-2	28	0			7	1700	1200	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
BROMODICHLOROMETHANE	75-27-4	28	0			4	2200	1500	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
BROMOFORM	75-25-2	28	0			30	93000	48000	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
BROMOMETHANE	74-83-9	28	0			50	16000	3100	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
CARBON DISULFIDE	75-15-0	28	0			5600	1500000	270000	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
CARBON TETRACHLORIDE	56-23-5	28	0			40	700	500	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
CHLOROBENZENE	108-90-7	28	0			1300	650000	120000	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
CHLORODIBROMOMETHANE	124-48-1	28	0			3	2300	1500	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
CHLOROETHANE	75-00-3	28	0			60	5400	3900	2.4 UJ	130 UJ	2.3 UJ	1.8 UJ	100 UJ	130 UJ
CHLOROFORM	67-66-3	28	0			400	600	400	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
CHLOROMETHANE	74-87-3	28	0			10	5700	4000	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
CIS-1,2-DICHLOROETHENE	156-59-2	28	0			400	180000	33000	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
CIS-1,3-DICHLOROPROPENE	10061-01-5	28	0			--	--	--	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
ETHYLBENZENE	100-41-4	28	0			600	9200000	1500000	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
METHYLENE CHLORIDE	75-09-2	28	0			20	26000	17000	4 UJ	210 UJ	3.8 UJ	3.1 U	176 U	220 UJ
STYRENE	100-42-5	28	0			3600	23000000	3600000	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
TETRACHLOROETHENE	127-18-4	28	28	4.6	55900	30	18000	8800	**1840 J [L]**	**1160 J [L]**	**52.9 J [L]**	**629 J [L]**	**3490 J [L]**	**13200 J [R,L]**
TOLUENE	108-88-3	28	1	157	157	500	60000000	7500000	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
TOTAL XYLENES	1330-20-7	28	0			200	700000	130000	4 UJ	210 UJ	3.8 UJ	3.1 UJ	170 UJ	220 UJ
TRANS-1,2-DICHLOROETHENE	156-60-5	28	0			700	290000	53000	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
TRANS-1,3-DICHLOROPROPENE	10061-02-6	28	0			--	--	--	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
TRICHLOROETHENE	79-01-6	28	12	1.6	7.5	30	9300	6400	5.2 J	84 UJ	1.5 UJ	2.1 J	69 UJ	87 UJ
VINYL CHLORIDE	75-01-4	28	0			7	800	200	1.6 UJ	84 UJ	1.5 UJ	1.2 UJ	69 UJ	87 UJ
MISCELLANEOUS PARAMETERS														
PERCENT SOLIDS (%)	TTNUS291	28	28	78	96.7	--	--	--	95.7	95.1	90.8	96.7	93.7	91.9

TABLE F-1

VADOSE SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring Location SAMPLE Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. SAMPLES	NO. HITS	MIN	MAX	SCTL LEACH	SCTL IND	SCTL RES	13SB012 NTC13U01212 1 2 10/24/06	13SB012 NTC13U01234 3 4 10/24/06	13SB012 NTC13U01267 6 7 10/24/06
VOLATILE ORGANICS (ug/kg)											
1,1,1-TRICHLOROETHANE	71-55-6	28	0			1900	3900000	730000	70 UJ	75 UJ	1.2 UJ
1,1,2,2-TETRACHLOROETHANE	79-34-5	28	0			1	1200	700	70 UJ	75 UJ	1.2 UJ
1,1,2-TRICHLOROETHANE	79-00-5	28	0			30	2000	1400	70 UJ	75 UJ	1.2 UJ
1,1-DICHLOROETHANE	75-34-3	28	0			400	2100000	390000	70 UJ	75 UJ	1.2 UJ
1,1-DICHLOROETHENE	75-35-4	28	0			60	510000	95000	70 UJ	75 UJ	1.2 UJ
1,2-DICHLOROETHANE	107-06-2	28	0			10	700	500	70 UJ	75 UJ	1.2 UJ
1,2-DICHLOROPROPANE	78-87-5	28	0			30	900	600	70 UJ	75 UJ	1.2 UJ
2-BUTANONE	78-93-3	28	0			17000	1.1E+08	16000000	350 UJ	380 UJ	6.1 UJ
2-HEXANONE	591-78-6	28	0			1400	130000	24000	350 UJ	380 UJ	6.1 UJ
4-METHYL-2-PENTANONE	108-10-1	28	0			2600	44000000	4300000	350 UJ	380 UJ	6.1 UJ
ACETONE	67-64-1	28	2	21.3	23.6	25000	68000000	11000000	870 UJ	940 UJ	15 UJ
BENZENE	71-43-2	28	0			7	1700	1200	70 UJ	75 UJ	1.2 UJ
BROMODICHLOROMETHANE	75-27-4	28	0			4	2200	1500	70 UJ	75 UJ	1.2 UJ
BROMOFORM	75-25-2	28	0			30	93000	48000	70 UJ	75 UJ	1.2 UJ
BROMOMETHANE	74-83-9	28	0			50	16000	3100	70 UJ	75 UJ	1.2 UJ
CARBON DISULFIDE	75-15-0	28	0			5600	1500000	270000	70 UJ	75 UJ	1.2 UJ
CARBON TETRACHLORIDE	56-23-5	28	0			40	700	500	70 UJ	75 UJ	1.2 UJ
CHLOROBENZENE	108-90-7	28	0			1300	650000	120000	70 UJ	75 UJ	1.2 UJ
CHLORODIBROMOMETHANE	124-48-1	28	0			3	2300	1500	70 UJ	75 UJ	1.2 UJ
CHLOROETHANE	75-00-3	28	0			60	5400	3900	100 UJ	110 UJ	1.8 UJ
CHLOROFORM	67-66-3	28	0			400	600	400	70 UJ	75 UJ	1.2 UJ
CHLOROMETHANE	74-87-3	28	0			10	5700	4000	70 UJ	75 UJ	1.2 UJ
CIS-1,2-DICHLOROETHENE	156-59-2	28	0			400	180000	33000	70 UJ	75 UJ	1.2 UJ
CIS-1,3-DICHLOROPROPENE	10061-01-5	28	0			--	--	--	70 UJ	75 UJ	1.2 UJ
ETHYLBENZENE	100-41-4	28	0			600	9200000	1500000	70 UJ	75 UJ	1.2 UJ
METHYLENE CHLORIDE	75-09-2	28	0			20	26000	17000	170 UJ	190 UJ	3.1 UJ
STYRENE	100-42-5	28	0			3600	23000000	3600000	70 UJ	75 UJ	1.2 UJ
TETRACHLOROETHENE	127-18-4	28	28	4.6	55900	30	18000	8800	**1720 J [L]**	**2180 J [L]**	**78.2 J [L]**
TOLUENE	108-88-3	28	1	157	157	500	60000000	7500000	70 UJ	75 UJ	1.2 UJ
TOTAL XYLENES	1330-20-7	28	0			200	700000	130000	170 UJ	190 UJ	3.1 UJ
TRANS-1,2-DICHLOROETHENE	156-60-5	28	0			700	290000	53000	70 UJ	75 UJ	1.2 UJ
TRANS-1,3-DICHLOROPROPENE	10061-02-6	28	0			--	--	--	70 UJ	75 UJ	1.2 UJ
TRICHLOROETHENE	79-01-6	28	12	1.6	7.5	30	9300	6400	70 UJ	75 UJ	1.2 UJ
VINYL CHLORIDE	75-01-4	28	0			7	800	200	70 UJ	75 UJ	1.2 UJ
MISCELLANEOUS PARAMETERS											
PERCENT SOLIDS (%)	TTNUS291	28	28	78	96.7	--	--	--	95.6	92.8	91

Notes:

[I] - concentration exceeds industrial SCTL
IND - industrial
J - estimated value
[L] - concentration exceeds leaching to groundwater SCTL
[R] - concentration exceeds residential SCTL
RES - residential

SCTL - Soil Cleanup Target Level
U - less than laboratory method detection limits
µg/kg - micrograms per kilogram
[1] Bold indicates concentration in at least one sample equal to or greater than SCTL.
Only chemicals detected in at least one sample are shown.
Shaded cells indicate results equal to or greater than SCTL.

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number Sample Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/kg)	MAX. CONC. (µg/kg)	FLORIDA LEACHABILITY SCTL (µg/kg)	FLORIDA INDUSTRIAL SCTL (µg/kg)	FLORIDA RESIDENTIAL SCTL (µg/kg)	13SB01 NTC13USB01065066 65 66 06/15/06	13SB01 NTC13USB01078079 78 79 06/15/06	13SB01 NTC13USB01089090 89 90 06/15/06
VOLATILE ORGANICS (µg/kg)											
1,1,1-Trichloroethane	71-55-6	26	0			1900	3900000	730000	1.6 U	1.7 U	
1,1,2,2-Tetrachloroethane	79-34-5	26	0			1	1200	700	1.6 U	1.7 U	
1,1,2-Trichloroethane	79-00-5	26	0			30	2000	1400	1.6 U	1.7 U	
1,1-Dichloroethane	75-34-3	26	0			400	2100000	390000	1.6 U	1.7 U	
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	510000	95000	1.6 U	1.7 U	
1,2-Dichloroethane	107-06-2	26	0			10	700	500	1.6 U	1.7 U	
1,2-Dichloropropane	78-87-5	26	0			30	900	600	1.6 U	1.7 U	
2-Butanone	78-93-3	26	0			17000	110000000	16000000	8.1 U	8.5 U	
2-Hexanone	591-78-6	26	0			1400	130000	24000	8.1 U	8.5 U	
4-Methyl-2-pentanone	108-10-1	26	0			2600	44000000	4300000	8.1 U	8.5 U	
Acetone	67-64-1	26	9	18	62.4	25000	68000000	11000000	20 U	21 U	
Benzene	71-43-2	26	0			7	1700	1200	1.6 U	1.7 U	
Bromodichloromethane	75-27-4	26	0			4	2200	1500	1.6 U	1.7 U	
Bromoform	75-25-2	26	0			30	93000	48000	1.6 U	1.7 U	
Bromomethane	74-83-9	26	0			50	16000	3100	1.6 U	1.7 U	
Carbon disulfide	75-15-0	26	26	3.3	39.1	5600	1500000	270000	8.8	10.1	
Carbon tetrachloride	56-23-5	26	0			40	700	500	1.6 U	1.7 U	
Chlorobenzene	108-90-7	26	0			1300	650000	120000	1.6 U	1.7 U	
Chlorodibromomethane	124-48-1	26	0			3	2300	1500	1.6 U	1.7 U	
Chloroethane	75-00-3	26	0			60	5400	3900	2.4 U	2.6 U	
Chloroform	67-66-3	26	1	3.1	3.1	400	600	400	1.6 U	1.7 U	
Chloromethane	74-87-3	26	0			10	5700	4000	1.6 U	1.7 U	
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	180000	33000	1.6 U	1.7 U	
cis-1,3-Dichloropropene	10061-01-5	26	0			--	--	--	1.6 U	1.7 U	
Ethylbenzene	100-41-4	26	0			600	9200000	1500000	1.6 U	1.7 U	
Methylene chloride	75-09-2	26	0			20	26000	17000	4 U	4.3 U	
Styrene	100-42-5	26	0			3600	23000000	3600000	1.6 U	1.7 U	
Tetrachloroethene	127-18-4	26	4	121	2150	30	18000	8800	1.6 U	1.7 U	
Toluene	108-88-3	26	0			500	60000000	7500000	1.6 U	1.7 U	
Total xylenes	1330-20-7	26	0			200	700000	130000	4 U	4.3 U	
trans-1,2-Dichloroethene	156-60-5	26	0			700	290000	53000	1.6 U	1.7 U	
trans-1,3-Dichloropropene	10061-02-6	26	0			--	--	--	1.6 U	1.7 U	
Trichloroethene	79-01-6	26	4	2.5	373	30	9300	6400	1.6 U	1.7 U	
Vinyl chloride	75-01-4	26	0			7	800	200	1.6 U	1.7 U	

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/kg)**	**MAX. CONC. (µg/kg)**	**FLORIDA LEACHABILITY SCTL (µg/kg)**	**FLORIDA INDUSTRIAL SCTL (µg/kg)**	**FLORIDA RESIDENTIAL SCTL (µg/kg)**	**13SB01** **NTC13USB01065066** **65** **66** **06/15/06**	**13SB01** **NTC13USB01078079** **78** **79** **06/15/06**	**13SB01** **NTC13USB01089090** **89** **90** **06/15/06**
MISCELLANEOUS PARAMETERS											
Bulk density (g/ml)	TTNUS028	16	16	0.41	1.3	--	--	--	0.97	1.3	1.2
Percent solids (%)	TTNUS291	22	22	55	84	--	--	--	76	74	84
Permeability (cm/se)	TTNUS009	2	2	0.000147	0.00712	--	--	--			
Specific gravity (s.u.)	TTNUS050	16	16	0.7	1.8	--	--	--	1.4	1.8	1.5
Total organic carbon (mg/kg)	TTNUS003	16	16	941	5390	--	--	--	2780	3940	1820
GRAIN SIZE (%)											
Sieve No. 004	TTNUS316	16	16	91	100	--	--	--	100	100	94
Sieve No. 010	TTNUS317	16	16	83	100	--	--	--	100	99	83
Sieve No. 018	TTNUS318	16	16	73	100	--	--	--	99	97	73
Sieve No. 040	TTNUS320	16	16	15	89	--	--	--	89	38	46
Sieve No. 060	TTNUS321	16	16	2.5	81.6	--	--	--	75	5.2	17
Sieve No. 120	TTNUS323	16	16	0	72.2	--	--	--	14	0	2.3
Sieve No. 200	TTNUS325	16	16	0	1.8	--	--	--	1.8	0	0.2
Sieve No. 230	TTNUS326	16	16	0	0.5	--	--	--	0.1	0	0

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number Sample Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/kg)	MAX. CONC. (µg/kg)	FLORIDA LEACHABILITY SCTL (µg/kg)	FLORIDA INDUSTRIAL SCTL (µg/kg)	FLORIDA RESIDENTIAL SCTL (µg/kg)	13SB01 NTC13USB01099100 99 100 06/15/06	13SB01 NTC13USB01129130 129 130 06/15/06	13SB01 NTC13USB01138139 138 139 06/15/06
VOLATILE ORGANICS (µg/kg)											
1,1,1-Trichloroethane	71-55-6	26	0			1900	3900000	730000	1.4 U		2.6 U
1,1,2,2-Tetrachloroethane	79-34-5	26	0			1	1200	700	1.4 U		2.6 U
1,1,2-Trichloroethane	79-00-5	26	0			30	2000	1400	1.4 U		2.6 U
1,1-Dichloroethane	75-34-3	26	0			400	2100000	390000	1.4 U		2.6 U
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	510000	95000	1.4 U		2.6 U
1,2-Dichloroethane	107-06-2	26	0			10	700	500	1.4 U		2.6 U
1,2-Dichloropropane	78-87-5	26	0			30	900	600	1.4 U		2.6 U
2-Butanone	78-93-3	26	0			17000	110000000	16000000	6.9 U		13 U
2-Hexanone	591-78-6	26	0			1400	130000	24000	6.9 U		13 U
4-Methyl-2-pentanone	108-10-1	26	0			2600	44000000	4300000	6.9 U		13 U
Acetone	67-64-1	26	9	18	62.4	25000	68000000	11000000	17 U		33 U
Benzene	71-43-2	26	0			7	1700	1200	1.4 U		2.6 U
Bromodichloromethane	75-27-4	26	0			4	2200	1500	1.4 U		2.6 U
Bromoform	75-25-2	26	0			30	93000	48000	1.4 U		2.6 U
Bromomethane	74-83-9	26	0			50	16000	3100	1.4 U		2.6 U
Carbon disulfide	75-15-0	26	26	3.3	39.1	5600	1500000	270000	5.8		5.5 J
Carbon tetrachloride	56-23-5	26	0			40	700	500	1.4 U		2.6 U
Chlorobenzene	108-90-7	26	0			1300	650000	120000	1.4 U		2.6 U
Chlorodibromomethane	124-48-1	26	0			3	2300	1500	1.4 U		2.6 U
Chloroethane	75-00-3	26	0			60	5400	3900	2.1 U		3.9 U
Chloroform	67-66-3	26	1	3.1	3.1	400	600	400	1.4 U		2.6 U
Chloromethane	74-87-3	26	0			10	5700	4000	1.4 U		2.6 U
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	180000	33000	1.4 U		2.6 U
cis-1,3-Dichloropropene	10061-01-5	26	0			--	--	--	1.4 U		2.6 U
Ethylbenzene	100-41-4	26	0			600	9200000	1500000	1.4 U		2.6 U
Methylene chloride	75-09-2	26	0			20	26000	17000	3.5 U		6.5 U
Styrene	100-42-5	26	0			3600	23000000	3600000	1.4 U		2.6 U
Tetrachloroethene	127-18-4	26	4	121	2150	30	18000	8800	1.4 U		2.6 U
Toluene	108-88-3	26	0			500	60000000	7500000	1.4 U		2.6 U
Total xylenes	1330-20-7	26	0			200	700000	130000	3.5 U		6.5 U
trans-1,2-Dichloroethene	156-60-5	26	0			700	290000	53000	1.4 U		2.6 U
trans-1,3-Dichloropropene	10061-02-6	26	0			--	--	--	1.4 U		2.6 U
Trichloroethene	79-01-6	26	4	2.5	373	30	9300	6400	1.4 U		2.6 U
Vinyl chloride	75-01-4	26	0			7	800	200	1.4 U		2.6 U

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/kg)**	**MAX. CONC. (µg/kg)**	**FLORIDA LEACHABILITY SCTL (µg/kg)**	**FLORIDA INDUSTRIAL SCTL (µg/kg)**	**FLORIDA RESIDENTIAL SCTL (µg/kg)**	**13SB01** **NTC13USB01099100** **99** **100** **06/15/06**	**13SB01** **NTC13USB01129130** **129** **130** **06/15/06**	**13SB01** **NTC13USB01138139** **138** **139** **06/15/06**
MISCELLANEOUS PARAMETERS											
Bulk density (g/ml)	TTNUS028	16	16	0.41	1.3	--	--	--	1.2	1.2	0.57
Percent solids (%)	TTNUS291	22	22	55	84	--	--	--	82	81	79
Permeability (cm/se)	TTNUS009	2	2	0.000147	0.00712	--	--	--			
Specific gravity (s.u.)	TTNUS050	16	16	0.7	1.8	--	--	--	1.5	1.8	0.99
Total organic carbon (mg/kg)	TTNUS003	16	16	941	5390	--	--	--	1850	1070	2550
GRAIN SIZE (%)											
Sieve No. 004	TTNUS316	16	16	91	100	--	--	--	100	100	100
Sieve No. 010	TTNUS317	16	16	83	100	--	--	--	99	99.7	100
Sieve No. 018	TTNUS318	16	16	73	100	--	--	--	98	97.9	88.4
Sieve No. 040	TTNUS320	16	16	15	89	--	--	--	88	43	46
Sieve No. 060	TTNUS321	16	16	2.5	81.6	--	--	--	54	9.3	23.4
Sieve No. 120	TTNUS323	16	16	0	72.2	--	--	--	1.4	1.3	5.2
Sieve No. 200	TTNUS325	16	16	0	1.8	--	--	--	0	0	1.1
Sieve No. 230	TTNUS326	16	16	0	0.5	--	--	--	0	0	0.5

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number Sample Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/kg)	MAX. CONC. (µg/kg)	FLORIDA LEACHABILITY SCTL (µg/kg)	FLORIDA INDUSTRIAL SCTL (µg/kg)	FLORIDA RESIDENTIAL SCTL (µg/kg)	13SB02 NTC13USB02057058 57 58 06/16/06	13SB02 NTC13USB02061063 61 63 07/14/06	13SB02 NTC13USB02066067 66 67 06/16/06
VOLATILE ORGANICS (µg/kg)											
1,1,1-Trichloroethane	71-55-6	26	0			1900	3900000	730000	1.3 U		1.3 U
1,1,2,2-Tetrachloroethane	79-34-5	26	0			1	1200	700	1.3 U		1.3 U
1,1,2-Trichloroethane	79-00-5	26	0			30	2000	1400	1.3 U		1.3 U
1,1-Dichloroethane	75-34-3	26	0			400	2100000	390000	1.3 U		1.3 U
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	510000	95000	1.3 U		1.3 U
1,2-Dichloroethane	107-06-2	26	0			10	700	500	1.3 U		1.3 U
1,2-Dichloropropane	78-87-5	26	0			30	900	600	1.3 U		1.3 U
2-Butanone	78-93-3	26	0			17000	110000000	16000000	6.4 U		6.3 U
2-Hexanone	591-78-6	26	0			1400	130000	24000	6.4 U		6.3 U
4-Methyl-2-pentanone	108-10-1	26	0			2600	44000000	4300000	6.4 U		6.3 U
Acetone	67-64-1	26	9	18	62.4	25000	68000000	11000000	18 J		16 U
Benzene	71-43-2	26	0			7	1700	1200	1.3 U		1.3 U
Bromodichloromethane	75-27-4	26	0			4	2200	1500	1.3 U		1.3 U
Bromoform	75-25-2	26	0			30	93000	48000	1.3 U		1.3 U
Bromomethane	74-83-9	26	0			50	16000	3100	1.3 U		1.3 U
Carbon disulfide	75-15-0	26	26	3.3	39.1	5600	1500000	270000	11.3		5.4
Carbon tetrachloride	56-23-5	26	0			40	700	500	1.3 U		1.3 U
Chlorobenzene	108-90-7	26	0			1300	650000	120000	1.3 U		1.3 U
Chlorodibromomethane	124-48-1	26	0			3	2300	1500	1.3 U		1.3 U
Chloroethane	75-00-3	26	0			60	5400	3900	1.9 U		1.9 U
Chloroform	67-66-3	26	1	3.1	3.1	400	600	400	1.3 U		1.3 U
Chloromethane	74-87-3	26	0			10	5700	4000	1.3 U		1.3 U
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	180000	33000	1.3 U		1.3 U
cis-1,3-Dichloropropene	10061-01-5	26	0			--	--	--	1.3 U		1.3 U
Ethylbenzene	100-41-4	26	0			600	9200000	1500000	1.3 U		1.3 U
Methylene chloride	75-09-2	26	0			20	26000	17000	3.2 U		3.2 U
Styrene	100-42-5	26	0			3600	23000000	3600000	1.3 U		1.3 U
Tetrachloroethene	127-18-4	26	4	121	2150	30	18000	8800	1.3 U		1.3 U
Toluene	108-88-3	26	0			500	60000000	7500000	1.3 U		1.3 U
Total xylenes	1330-20-7	26	0			200	700000	130000	3.2 U		3.2 U
trans-1,2-Dichloroethene	156-60-5	26	0			700	290000	53000	1.3 U		1.3 U
trans-1,3-Dichloropropene	10061-02-6	26	0			--	--	--	1.3 U		1.3 U
Trichloroethene	79-01-6	26	4	2.5	373	30	9300	6400	1.3 U		1.3 U
Vinyl chloride	75-01-4	26	0			7	800	200	1.3 U		1.3 U

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/kg)**	**MAX. CONC. (µg/kg)**	**FLORIDA LEACHABILITY SCTL (µg/kg)**	**FLORIDA INDUSTRIAL SCTL (µg/kg)**	**FLORIDA RESIDENTIAL SCTL (µg/kg)**	**13SB02** **NTC13USB02057058** **57** **58** **06/16/06**	**13SB02** **NTC13USB02061063** **61** **63** **07/14/06**	**13SB02** **NTC13USB02066067** **66** **67** **06/16/06**
MISCELLANEOUS PARAMETERS											
Bulk density (g/ml)	TTNUS028	16	16	0.41	1.3	--	--	--			
Percent solids (%)	TTNUS291	22	22	55	84	--	--	--			
Permeability (cm/se)	TTNUS009	2	2	0.000147	0.00712	--	--	--		0.000147	
Specific gravity (s.u.)	TTNUS050	16	16	0.7	1.8	--	--	--			
Total organic carbon (mg/kg)	TTNUS003	16	16	941	5390	--	--	--			
GRAIN SIZE (%)											
Sieve No. 004	TTNUS316	16	16	91	100	--	--	--			
Sieve No. 010	TTNUS317	16	16	83	100	--	--	--			
Sieve No. 018	TTNUS318	16	16	73	100	--	--	--			
Sieve No. 040	TTNUS320	16	16	15	89	--	--	--			
Sieve No. 060	TTNUS321	16	16	2.5	81.6	--	--	--			
Sieve No. 120	TTNUS323	16	16	0	72.2	--	--	--			
Sieve No. 200	TTNUS325	16	16	0	1.8	--	--	--			
Sieve No. 230	TTNUS326	16	16	0	0.5	--	--	--			

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number Sample Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/kg)	MAX. CONC. (µg/kg)	FLORIDA LEACHABILITY SCTL (µg/kg)	FLORIDA INDUSTRIAL SCTL (µg/kg)	FLORIDA RESIDENTIAL SCTL (µg/kg)	13SB02 NTC13USB02107108 107 108 06/17/06	13SB02 NTC13USB02107108-AVG 107 108 06/17/06	13SB02 NTC13USB02107108-D 107 108 06/17/06
VOLATILE ORGANICS (µg/kg)											
1,1,1-Trichloroethane	71-55-6	26	0			1900	3900000	730000	1.2 U	1.2 U	1.2 U
1,1,2,2-Tetrachloroethane	79-34-5	26	0			1	1200	700	1.2 U	1.2 U	1.2 U
1,1,2-Trichloroethane	79-00-5	26	0			30	2000	1400	1.2 U	1.2 U	1.2 U
1,1-Dichloroethane	75-34-3	26	0			400	2100000	390000	1.2 U	1.2 U	1.2 U
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	510000	95000	1.2 U	1.2 U	1.2 U
1,2-Dichloroethane	107-06-2	26	0			10	700	500	1.2 U	1.2 U	1.2 U
1,2-Dichloropropane	78-87-5	26	0			30	900	600	1.2 U	1.2 U	1.2 U
2-Butanone	78-93-3	26	0			17000	110000000	16000000	5.9 U	5.9 U	5.9 U
2-Hexanone	591-78-6	26	0			1400	130000	24000	5.9 U	5.9 U	5.9 U
4-Methyl-2-pentanone	108-10-1	26	0			2600	44000000	4300000	5.9 U	5.9 U	5.9 U
Acetone	67-64-1	26	9	18	62.4	25000	68000000	11000000	15 U	15 U	15 U
Benzene	71-43-2	26	0			7	1700	1200	1.2 U	1.2 U	1.2 U
Bromodichloromethane	75-27-4	26	0			4	2200	1500	1.2 U	1.2 U	1.2 U
Bromoform	75-25-2	26	0			30	93000	48000	1.2 U	1.2 U	1.2 U
Bromomethane	74-83-9	26	0			50	16000	3100	1.2 U	1.2 U	1.2 U
Carbon disulfide	75-15-0	26	26	3.3	39.1	5600	1500000	270000	3.5 J	5.45 J	7.4 J
Carbon tetrachloride	56-23-5	26	0			40	700	500	1.2 U	1.2 U	1.2 U
Chlorobenzene	108-90-7	26	0			1300	650000	120000	1.2 U	1.2 U	1.2 U
Chlorodibromomethane	124-48-1	26	0			3	2300	1500	1.2 U	1.2 U	1.2 U
Chloroethane	75-00-3	26	0			60	5400	3900	1.8 U	1.8 U	1.8 U
Chloroform	67-66-3	26	1	3.1	3.1	400	600	400	1.2 U	1.2 U	1.2 U
Chloromethane	74-87-3	26	0			10	5700	4000	1.2 U	1.2 U	1.2 U
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	180000	33000	1.2 U	1.2 U	1.2 U
cis-1,3-Dichloropropene	10061-01-5	26	0			--	--	--	1.2 U	1.2 U	1.2 U
Ethylbenzene	100-41-4	26	0			600	9200000	1500000	1.2 U	1.2 U	1.2 U
Methylene chloride	75-09-2	26	0			20	26000	17000	3 U	2.95 U	2.9 U
Styrene	100-42-5	26	0			3600	23000000	3600000	1.2 U	1.2 U	1.2 U
Tetrachloroethene	127-18-4	26	4	121	2150	30	18000	8800	1.2 U	1.2 U	1.2 U
Toluene	108-88-3	26	0			500	60000000	7500000	1.2 U	1.2 U	1.2 U
Total xylenes	1330-20-7	26	0			200	700000	130000	3 U	2.95 U	2.9 U
trans-1,2-Dichloroethene	156-60-5	26	0			700	290000	53000	1.2 U	1.2 U	1.2 U
trans-1,3-Dichloropropene	10061-02-6	26	0			--	--	--	1.2 U	1.2 U	1.2 U
Trichloroethene	79-01-6	26	4	2.5	373	30	9300	6400	1.2 U	1.2 U	1.2 U
Vinyl chloride	75-01-4	26	0			7	800	200	1.2 U	1.2 U	1.2 U

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/kg)**	**MAX. CONC. (µg/kg)**	**FLORIDA LEACHABILITY SCTL (µg/kg)**	**FLORIDA INDUSTRIAL SCTL (µg/kg)**	**FLORIDA RESIDENTIAL SCTL (µg/kg)**	**13SB02** **NTC13USB02107108** **107** **108** **06/17/06**	**13SB02** **NTC13USB02107108-AVG** **107** **108** **06/17/06**	**13SB02** **NTC13USB02107108-D** **107** **108** **06/17/06**
MISCELLANEOUS PARAMETERS											
Bulk density (g/ml)	TTNUS028	16	16	0.41	1.3	--	--	--			
Percent solids (%)	TTNUS291	22	22	55	84	--	--	--			
Permeability (cm/se)	TTNUS009	2	2	0.000147	0.00712	--	--	--			
Specific gravity (s.u.)	TTNUS050	16	16	0.7	1.8	--	--	--			
Total organic carbon (mg/kg)	TTNUS003	16	16	941	5390	--	--	--			
GRAIN SIZE (%)											
Sieve No. 004	TTNUS316	16	16	91	100	--	--	--			
Sieve No. 010	TTNUS317	16	16	83	100	--	--	--			
Sieve No. 018	TTNUS318	16	16	73	100	--	--	--			
Sieve No. 040	TTNUS320	16	16	15	89	--	--	--			
Sieve No. 060	TTNUS321	16	16	2.5	81.6	--	--	--			
Sieve No. 120	TTNUS323	16	16	0	72.2	--	--	--			
Sieve No. 200	TTNUS325	16	16	0	1.8	--	--	--			
Sieve No. 230	TTNUS326	16	16	0	0.5	--	--	--			

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number Sample Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/kg)	MAX. CONC. (µg/kg)	FLORIDA LEACHABILITY SCTL (µg/kg)	FLORIDA INDUSTRIAL SCTL (µg/kg)	FLORIDA RESIDENTIAL SCTL (µg/kg)	13SB02 NTC13USB02143144 143 144 06/17/06	13SB02 NTC13USB02143145 143 145 07/15/06	13SB03 NTC13USB03069070 69 70 06/17/06
VOLATILE ORGANICS (µg/kg)											
1,1,1-Trichloroethane	71-55-6	26	0			1900	3900000	730000	1.3 U		2.1 U
1,1,2,2-Tetrachloroethane	79-34-5	26	0			1	1200	700	1.3 U		2.1 U
1,1,2-Trichloroethane	79-00-5	26	0			30	2000	1400	1.3 U		2.1 U
1,1-Dichloroethane	75-34-3	26	0			400	2100000	390000	1.3 U		2.1 U
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	510000	95000	1.3 U		2.1 U
1,2-Dichloroethane	107-06-2	26	0			10	700	500	1.3 U		2.1 U
1,2-Dichloropropane	78-87-5	26	0			30	900	600	1.3 U		2.1 U
2-Butanone	78-93-3	26	0			17000	110000000	16000000	6.6 U		11 U
2-Hexanone	591-78-6	26	0			1400	130000	24000	6.6 U		11 U
4-Methyl-2-pentanone	108-10-1	26	0			2600	44000000	4300000	6.6 U		11 U
Acetone	67-64-1	26	9	18	62.4	25000	68000000	11000000	17 U		40 J
Benzene	71-43-2	26	0			7	1700	1200	1.3 U		2.1 U
Bromodichloromethane	75-27-4	26	0			4	2200	1500	1.3 U		2.1 U
Bromoform	75-25-2	26	0			30	93000	48000	1.3 U		2.1 U
Bromomethane	74-83-9	26	0			50	16000	3100	1.3 U		2.1 U
Carbon disulfide	75-15-0	26	26	3.3	39.1	5600	1500000	270000	15.9		39.1
Carbon tetrachloride	56-23-5	26	0			40	700	500	1.3 U		2.1 U
Chlorobenzene	108-90-7	26	0			1300	650000	120000	1.3 U		2.1 U
Chlorodibromomethane	124-48-1	26	0			3	2300	1500	1.3 U		2.1 U
Chloroethane	75-00-3	26	0			60	5400	3900	2 U		3.2 U
Chloroform	67-66-3	26	1	3.1	3.1	400	600	400	1.3 U		2.1 U
Chloromethane	74-87-3	26	0			10	5700	4000	1.3 U		2.1 U
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	180000	33000	1.3 U		2.1 U
cis-1,3-Dichloropropene	10061-01-5	26	0			--	--	--	1.3 U		2.1 U
Ethylbenzene	100-41-4	26	0			600	9200000	1500000	1.3 U		2.1 U
Methylene chloride	75-09-2	26	0			20	26000	17000	3.3 U		5.4 U
Styrene	100-42-5	26	0			3600	23000000	3600000	1.3 U		2.1 U
Tetrachloroethene	127-18-4	26	4	121	2150	30	18000	8800	1.3 U		2.1 U
Toluene	108-88-3	26	0			500	60000000	7500000	1.3 U		2.1 U
Total xylenes	1330-20-7	26	0			200	700000	130000	3.3 U		5.4 U
trans-1,2-Dichloroethene	156-60-5	26	0			700	290000	53000	1.3 U		2.1 U
trans-1,3-Dichloropropene	10061-02-6	26	0			--	--	--	1.3 U		2.1 U
Trichloroethene	79-01-6	26	4	2.5	373	30	9300	6400	1.3 U		2.1 U
Vinyl chloride	75-01-4	26	0			7	800	200	1.3 U		2.1 U

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/kg)**	**MAX. CONC. (µg/kg)**	**FLORIDA LEACHABILITY SCTL (µg/kg)**	**FLORIDA INDUSTRIAL SCTL (µg/kg)**	**FLORIDA RESIDENTIAL SCTL (µg/kg)**	**13SB02** **NTC13USB02143144** **143** **144** **06/17/06**	**13SB02** **NTC13USB02143145** **143** **145** **07/15/06**	**13SB03** **NTC13USB03069070** **69** **70** **06/17/06**
MISCELLANEOUS PARAMETERS											
Bulk density (g/ml)	TTNUS028	16	16	0.41	1.3	--	--	--			0.53
Percent solids (%)	TTNUS291	22	22	55	84	--	--	--			59
Permeability (cm/se)	TTNUS009	2	2	0.000147	0.00712	--	--	--		0.00712	
Specific gravity (s.u.)	TTNUS050	16	16	0.7	1.8	--	--	--			1.4
Total organic carbon (mg/kg)	TTNUS003	16	16	941	5390	--	--	--			5280
GRAIN SIZE (%)											
Sieve No. 004	TTNUS316	16	16	91	100	--	--	--			100
Sieve No. 010	TTNUS317	16	16	83	100	--	--	--			100
Sieve No. 018	TTNUS318	16	16	73	100	--	--	--			100
Sieve No. 040	TTNUS320	16	16	15	89	--	--	--			87
Sieve No. 060	TTNUS321	16	16	2.5	81.6	--	--	--			81.6
Sieve No. 120	TTNUS323	16	16	0	72.2	--	--	--			72.2
Sieve No. 200	TTNUS325	16	16	0	1.8	--	--	--			0.1
Sieve No. 230	TTNUS326	16	16	0	0.5	--	--	--			0

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number Sample Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/kg)	MAX. CONC. (µg/kg)	FLORIDA LEACHABILITY SCTL (µg/kg)	FLORIDA INDUSTRIAL SCTL (µg/kg)	FLORIDA RESIDENTIAL SCTL (µg/kg)	13SB03 NTC13USB03074075 74 75 06/17/06	13SB03 NTC13USB03103104 103 104 06/18/06	13SB03 NTC13USB03112113 112 113 06/18/06
VOLATILE ORGANICS (µg/kg)											
1,1,1-Trichloroethane	71-55-6	26	0			1900	3900000	730000	1.2 U	1.4 U	1.6 U
1,1,2,2-Tetrachloroethane	79-34-5	26	0			1	1200	700	1.2 U	1.4 U	1.6 U
1,1,2-Trichloroethane	79-00-5	26	0			30	2000	1400	1.2 U	1.4 U	1.6 U
1,1-Dichloroethane	75-34-3	26	0			400	2100000	390000	1.2 U	1.4 U	1.6 U
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	510000	95000	1.2 U	1.4 U	1.6 U
1,2-Dichloroethane	107-06-2	26	0			10	700	500	1.2 U	1.4 U	1.6 U
1,2-Dichloropropane	78-87-5	26	0			30	900	600	1.2 U	1.4 U	1.6 U
2-Butanone	78-93-3	26	0			17000	110000000	16000000	6.1 U	7.2 U	8.2 U
2-Hexanone	591-78-6	26	0			1400	130000	24000	6.1 U	7.2 U	8.2 U
4-Methyl-2-pentanone	108-10-1	26	0			2600	44000000	4300000	6.1 U	7.2 U	8.2 U
Acetone	67-64-1	26	9	18	62.4	25000	68000000	11000000	21.6 J	18 U	21 U
Benzene	71-43-2	26	0			7	1700	1200	1.2 U	1.4 U	1.6 U
Bromodichloromethane	75-27-4	26	0			4	2200	1500	1.2 U	1.4 U	1.6 U
Bromoform	75-25-2	26	0			30	93000	48000	1.2 U	1.4 U	1.6 U
Bromomethane	74-83-9	26	0			50	16000	3100	1.2 U	1.4 U	1.6 U
Carbon disulfide	75-15-0	26	26	3.3	39.1	5600	1500000	270000	8.9	14.5	9.7
Carbon tetrachloride	56-23-5	26	0			40	700	500	1.2 U	1.4 U	1.6 U
Chlorobenzene	108-90-7	26	0			1300	650000	120000	1.2 U	1.4 U	1.6 U
Chlorodibromomethane	124-48-1	26	0			3	2300	1500	1.2 U	1.4 U	1.6 U
Chloroethane	75-00-3	26	0			60	5400	3900	1.8 U	2.2 U	2.5 U
Chloroform	67-66-3	26	1	3.1	3.1	400	600	400	1.2 U	1.4 U	1.6 U
Chloromethane	74-87-3	26	0			10	5700	4000	1.2 U	1.4 U	1.6 U
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	180000	33000	1.2 U	1.4 U	1.6 U
cis-1,3-Dichloropropene	10061-01-5	26	0			--	--	--	1.2 U	1.4 U	1.6 U
Ethylbenzene	100-41-4	26	0			600	9200000	1500000	1.2 U	1.4 U	1.6 U
Methylene chloride	75-09-2	26	0			20	26000	17000	3.1 U	3.6 U	4.1 U
Styrene	100-42-5	26	0			3600	23000000	3600000	1.2 U	1.4 U	1.6 U
Tetrachloroethene	127-18-4	26	4	121	2150	30	18000	8800	1.2 U	1.4 U	1.6 U
Toluene	108-88-3	26	0			500	60000000	7500000	1.2 U	1.4 U	1.6 U
Total xylenes	1330-20-7	26	0			200	700000	130000	3.1 U	3.6 U	4.1 U
trans-1,2-Dichloroethene	156-60-5	26	0			700	290000	53000	1.2 U	1.4 U	1.6 U
trans-1,3-Dichloropropene	10061-02-6	26	0			--	--	--	1.2 U	1.4 U	1.6 U
Trichloroethene	79-01-6	26	4	2.5	373	30	9300	6400	1.2 U	1.4 U	1.6 U
Vinyl chloride	75-01-4	26	0			7	800	200	1.2 U	1.4 U	1.6 U

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/kg)**	**MAX. CONC. (µg/kg)**	**FLORIDA LEACHABILITY SCTL (µg/kg)**	**FLORIDA INDUSTRIAL SCTL (µg/kg)**	**FLORIDA RESIDENTIAL SCTL (µg/kg)**	**13SB03** **NTC13USB03074075** **74** **75** **06/17/06**	**13SB03** **NTC13USB03103104** **103** **104** **06/18/06**	**13SB03** **NTC13USB03112113** **112** **113** **06/18/06**
MISCELLANEOUS PARAMETERS											
Bulk density (g/ml)	TTNUS028	16	16	0.41	1.3	--	--	--		0.92	0.71
Percent solids (%)	TTNUS291	22	22	55	84	--	--	--		84	78
Permeability (cm/se)	TTNUS009	2	2	0.000147	0.00712	--	--	--			
Specific gravity (s.u.)	TTNUS050	16	16	0.7	1.8	--	--	--		1.4	1.5
Total organic carbon (mg/kg)	TTNUS003	16	16	941	5390	--	--	--		1970	1340
GRAIN SIZE (%)											
Sieve No. 004	TTNUS316	16	16	91	100	--	--	--		99.4	100
Sieve No. 010	TTNUS317	16	16	83	100	--	--	--		97.8	99.8
Sieve No. 018	TTNUS318	16	16	73	100	--	--	--		92.5	98.8
Sieve No. 040	TTNUS320	16	16	15	89	--	--	--		65.5	77.6
Sieve No. 060	TTNUS321	16	16	2.5	81.6	--	--	--		27.2	23
Sieve No. 120	TTNUS323	16	16	0	72.2	--	--	--		2.2	0.7
Sieve No. 200	TTNUS325	16	16	0	1.8	--	--	--		0.6	0.1
Sieve No. 230	TTNUS326	16	16	0	0.5	--	--	--		0.1	0

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number Sample Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/kg)	MAX. CONC. (µg/kg)	FLORIDA LEACHABILITY SCTL (µg/kg)	FLORIDA INDUSTRIAL SCTL (µg/kg)	FLORIDA RESIDENTIAL SCTL (µg/kg)	13SB03 NTC13USB03124125 124 125 06/18/06	13SB03 NTC13USB03130131 130 131 06/18/06	13SB04 NTC13USB04065066 65 66 06/19/06
VOLATILE ORGANICS (µg/kg)											
1,1,1-Trichloroethane	71-55-6	26	0			1900	3900000	730000			1.3 U
1,1,2,2-Tetrachloroethane	79-34-5	26	0			1	1200	700			1.3 U
1,1,2-Trichloroethane	79-00-5	26	0			30	2000	1400			1.3 U
1,1-Dichloroethane	75-34-3	26	0			400	2100000	390000			1.3 U
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	510000	95000			1.3 U
1,2-Dichloroethane	107-06-2	26	0			10	700	500			1.3 U
1,2-Dichloropropane	78-87-5	26	0			30	900	600			1.3 U
2-Butanone	78-93-3	26	0			17000	110000000	16000000			6.3 U
2-Hexanone	591-78-6	26	0			1400	130000	24000			6.3 U
4-Methyl-2-pentanone	108-10-1	26	0			2600	44000000	4300000			6.3 U
Acetone	67-64-1	26	9	18	62.4	25000	68000000	11000000			27 J
Benzene	71-43-2	26	0			7	1700	1200			1.3 U
Bromodichloromethane	75-27-4	26	0			4	2200	1500			1.3 U
Bromoform	75-25-2	26	0			30	93000	48000			1.3 U
Bromomethane	74-83-9	26	0			50	16000	3100			1.3 U
Carbon disulfide	75-15-0	26	26	3.3	39.1	5600	1500000	270000			10.5
Carbon tetrachloride	56-23-5	26	0			40	700	500			1.3 U
Chlorobenzene	108-90-7	26	0			1300	650000	120000			1.3 U
Chlorodibromomethane	124-48-1	26	0			3	2300	1500			1.3 U
Chloroethane	75-00-3	26	0			60	5400	3900			1.9 U
Chloroform	67-66-3	26	1	3.1	3.1	400	600	400			1.3 U
Chloromethane	74-87-3	26	0			10	5700	4000			1.3 U
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	180000	33000			1.3 U
cis-1,3-Dichloropropene	10061-01-5	26	0			--	--	--			1.3 U
Ethylbenzene	100-41-4	26	0			600	9200000	1500000			1.3 U
Methylene chloride	75-09-2	26	0			20	26000	17000			3.2 U
Styrene	100-42-5	26	0			3600	23000000	3600000			1.3 U
Tetrachloroethene	127-18-4	26	4	121	2150	30	18000	8800			**2120**
Toluene	108-88-3	26	0			500	60000000	7500000			1.3 U
Total xylenes	1330-20-7	26	0			200	700000	130000			3.2 U
trans-1,2-Dichloroethene	156-60-5	26	0			700	290000	53000			1.3 U
trans-1,3-Dichloropropene	10061-02-6	26	0			--	--	--			1.3 U
Trichloroethene	79-01-6	26	4	2.5	373	30	9300	6400			**83.3**
Vinyl chloride	75-01-4	26	0			7	800	200			1.3 U

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/kg)**	**MAX. CONC. (µg/kg)**	**FLORIDA LEACHABILITY SCTL (µg/kg)**	**FLORIDA INDUSTRIAL SCTL (µg/kg)**	**FLORIDA RESIDENTIAL SCTL (µg/kg)**	**13SB03** **NTC13USB03124125** **124** **125** **06/18/06**	**13SB03** **NTC13USB03130131** **130** **131** **06/18/06**	**13SB04** **NTC13USB04065066** **65** **66** **06/19/06**
MISCELLANEOUS PARAMETERS											
Bulk density (g/ml)	TTNUS028	16	16	0.41	1.3	--	--	--	1.2	0.82	
Percent solids (%)	TTNUS291	22	22	55	84	--	--	--	83	79	
Permeability (cm/se)	TTNUS009	2	2	0.000147	0.00712	--	--	--			
Specific gravity (s.u.)	TTNUS050	16	16	0.7	1.8	--	--	--	1.8	1.3	
Total organic carbon (mg/kg)	TTNUS003	16	16	941	5390	--	--	--	957	2290	
GRAIN SIZE (%)											
Sieve No. 004	TTNUS316	16	16	91	100	--	--	--	99.5	99.7	
Sieve No. 010	TTNUS317	16	16	83	100	--	--	--	98.5	99.5	
Sieve No. 018	TTNUS318	16	16	73	100	--	--	--	95.5	95.6	
Sieve No. 040	TTNUS320	16	16	15	89	--	--	--	31.3	45.9	
Sieve No. 060	TTNUS321	16	16	2.5	81.6	--	--	--	9.8	28.2	
Sieve No. 120	TTNUS323	16	16	0	72.2	--	--	--	1.2	4.5	
Sieve No. 200	TTNUS325	16	16	0	1.8	--	--	--	0	0.8	
Sieve No. 230	TTNUS326	16	16	0	0.5	--	--	--	0	0.2	

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number Sample Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/kg)	MAX. CONC. (µg/kg)	FLORIDA LEACHABILITY SCTL (µg/kg)	FLORIDA INDUSTRIAL SCTL (µg/kg)	FLORIDA RESIDENTIAL SCTL (µg/kg)	13SB04 NTC13USB04068069 68 69 06/19/06	13SB04 NTC13USB04075076 75 76 06/19/06	13SB04 NTC13USB04100101 100 101 06/20/06
VOLATILE ORGANICS (µg/kg)											
1,1,1-Trichloroethane	71-55-6	26	0			1900	3900000	730000	1.3 U	1.4 U	1.2 U
1,1,2,2-Tetrachloroethane	79-34-5	26	0			1	1200	700	1.3 U	1.4 U	1.2 U
1,1,2-Trichloroethane	79-00-5	26	0			30	2000	1400	1.3 U	1.4 U	1.2 U
1,1-Dichloroethane	75-34-3	26	0			400	2100000	390000	1.3 U	1.4 U	1.2 U
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	510000	95000	1.3 U	1.4 U	1.2 U
1,2-Dichloroethane	107-06-2	26	0			10	700	500	1.3 U	1.4 U	1.2 U
1,2-Dichloropropane	78-87-5	26	0			30	900	600	1.3 U	1.4 U	1.2 U
2-Butanone	78-93-3	26	0			17000	110000000	16000000	6.6 U	7 U	6 U
2-Hexanone	591-78-6	26	0			1400	130000	24000	6.6 U	7 U	6 U
4-Methyl-2-pentanone	108-10-1	26	0			2600	44000000	4300000	6.6 U	7 U	6 U
Acetone	67-64-1	26	9	18	62.4	25000	68000000	11000000	28.4 J	33.4 J	15 U
Benzene	71-43-2	26	0			7	1700	1200	1.3 U	1.4 U	1.2 U
Bromodichloromethane	75-27-4	26	0			4	2200	1500	1.3 U	1.4 U	1.2 U
Bromoform	75-25-2	26	0			30	93000	48000	1.3 U	1.4 U	1.2 U
Bromomethane	74-83-9	26	0			50	16000	3100	1.3 U	1.4 U	1.2 U
Carbon disulfide	75-15-0	26	26	3.3	39.1	5600	1500000	270000	14.7	11.8	4.4
Carbon tetrachloride	56-23-5	26	0			40	700	500	1.3 U	1.4 U	1.2 U
Chlorobenzene	108-90-7	26	0			1300	650000	120000	1.3 U	1.4 U	1.2 U
Chlorodibromomethane	124-48-1	26	0			3	2300	1500	1.3 U	1.4 U	1.2 U
Chloroethane	75-00-3	26	0			60	5400	3900	2 U	2.1 U	1.8 U
Chloroform	67-66-3	26	1	3.1	3.1	400	600	400	1.3 U	3.1 J	1.2 U
Chloromethane	74-87-3	26	0			10	5700	4000	1.3 U	1.4 U	1.2 U
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	180000	33000	1.3 U	1.4 U	1.2 U
cis-1,3-Dichloropropene	10061-01-5	26	0			--	--	--	1.3 U	1.4 U	1.2 U
Ethylbenzene	100-41-4	26	0			600	9200000	1500000	1.3 U	1.4 U	1.2 U
Methylene chloride	75-09-2	26	0			20	26000	17000	3.3 U	3.5 U	3 U
Styrene	100-42-5	26	0			3600	23000000	3600000	1.3 U	1.4 U	1.2 U
Tetrachloroethene	127-18-4	26	4	121	2150	30	18000	8800	**121**	**722**	**1.2 U**
Toluene	108-88-3	26	0			500	60000000	7500000	1.3 U	1.4 U	1.2 U
Total xylenes	1330-20-7	26	0			200	700000	130000	3.3 U	3.5 U	3 U
trans-1,2-Dichloroethene	156-60-5	26	0			700	290000	53000	1.3 U	1.4 U	1.2 U
trans-1,3-Dichloropropene	10061-02-6	26	0			--	--	--	1.3 U	1.4 U	1.2 U
Trichloroethene	79-01-6	26	4	2.5	373	30	9300	6400	2.5 J	**66.6**	1.2 U
Vinyl chloride	75-01-4	26	0			7	800	200	1.3 U	1.4 U	1.2 U

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/kg)**	**MAX. CONC. (µg/kg)**	**FLORIDA LEACHABILITY SCTL (µg/kg)**	**FLORIDA INDUSTRIAL SCTL (µg/kg)**	**FLORIDA RESIDENTIAL SCTL (µg/kg)**	**13SB04** **NTC13USB04068069** **68** **69** **06/19/06**	**13SB04** **NTC13USB04075076** **75** **76** **06/19/06**	**13SB04** **NTC13USB04100101** **100** **101** **06/20/06**
MISCELLANEOUS PARAMETERS											
Bulk density (g/ml)	TTNUS028	16	16	0.41	1.3	--	--	--			
Percent solids (%)	TTNUS291	22	22	55	84	--	--	--			
Permeability (cm/se)	TTNUS009	2	2	0.000147	0.00712	--	--	--			
Specific gravity (s.u.)	TTNUS050	16	16	0.7	1.8	--	--	--			
Total organic carbon (mg/kg)	TTNUS003	16	16	941	5390	--	--	--			
GRAIN SIZE (%)											
Sieve No. 004	TTNUS316	16	16	91	100	--	--	--			
Sieve No. 010	TTNUS317	16	16	83	100	--	--	--			
Sieve No. 018	TTNUS318	16	16	73	100	--	--	--			
Sieve No. 040	TTNUS320	16	16	15	89	--	--	--			
Sieve No. 060	TTNUS321	16	16	2.5	81.6	--	--	--			
Sieve No. 120	TTNUS323	16	16	0	72.2	--	--	--			
Sieve No. 200	TTNUS325	16	16	0	1.8	--	--	--			
Sieve No. 230	TTNUS326	16	16	0	0.5	--	--	--			

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number Sample Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/kg)	MAX. CONC. (µg/kg)	FLORIDA LEACHABILITY SCTL (µg/kg)	FLORIDA INDUSTRIAL SCTL (µg/kg)	FLORIDA RESIDENTIAL SCTL (µg/kg)	13SB04 NTC13USB04109110 109 110 06/20/06	13SB04 NTC13USB04109110-AVG 109 110 06/20/06	13SB04 NTC13USB04109110-D 109 110 06/20/06
VOLATILE ORGANICS (µg/kg)											
1,1,1-Trichloroethane	71-55-6	26	0			1900	3900000	730000	1.2 U	1.15 U	1.1 U
1,1,2,2-Tetrachloroethane	79-34-5	26	0			1	1200	700	1.2 U	1.15 U	1.1 U
1,1,2-Trichloroethane	79-00-5	26	0			30	2000	1400	1.2 U	1.15 U	1.1 U
1,1-Dichloroethane	75-34-3	26	0			400	2100000	390000	1.2 U	1.15 U	1.1 U
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	510000	95000	1.9 J	1.225 J	1.1 U
1,2-Dichloroethane	107-06-2	26	0			10	700	500	1.2 U	1.15 U	1.1 U
1,2-Dichloropropane	78-87-5	26	0			30	900	600	1.2 U	1.15 U	1.1 U
2-Butanone	78-93-3	26	0			17000	110000000	16000000	6.1 U	5.85 U	5.6 U
2-Hexanone	591-78-6	26	0			1400	130000	24000	6.1 U	5.85 U	5.6 U
4-Methyl-2-pentanone	108-10-1	26	0			2600	44000000	4300000	6.1 U	5.85 U	5.6 U
Acetone	67-64-1	26	9	18	62.4	25000	68000000	11000000	15 U	14.5 U	14 U
Benzene	71-43-2	26	0			7	1700	1200	1.2 U	1.15 U	1.1 U
Bromodichloromethane	75-27-4	26	0			4	2200	1500	1.2 U	1.15 U	1.1 U
Bromoform	75-25-2	26	0			30	93000	48000	1.2 U	1.15 U	1.1 U
Bromomethane	74-83-9	26	0			50	16000	3100	1.2 U	1.15 U	1.1 U
Carbon disulfide	75-15-0	26	26	3.3	39.1	5600	1500000	270000	6	5.65	5.3
Carbon tetrachloride	56-23-5	26	0			40	700	500	1.2 U	1.15 U	1.1 U
Chlorobenzene	108-90-7	26	0			1300	650000	120000	1.2 U	1.15 U	1.1 U
Chlorodibromomethane	124-48-1	26	0			3	2300	1500	1.2 U	1.15 U	1.1 U
Chloroethane	75-00-3	26	0			60	5400	3900	1.8 U	1.75 U	1.7 U
Chloroform	67-66-3	26	1	3.1	3.1	400	600	400	1.2 U	1.15 U	1.1 U
Chloromethane	74-87-3	26	0			10	5700	4000	1.2 U	1.15 U	1.1 U
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	180000	33000	66.6	57.3	48
cis-1,3-Dichloropropene	10061-01-5	26	0			--	--	--	1.2 U	1.15 U	1.1 U
Ethylbenzene	100-41-4	26	0			600	9200000	1500000	1.2 U	1.15 U	1.1 U
Methylene chloride	75-09-2	26	0			20	26000	17000	3 U	2.9 U	2.8 U
Styrene	100-42-5	26	0			3600	23000000	3600000	1.2 U	1.15 U	1.1 U
Tetrachloroethene	127-18-4	26	4	121	2150	30	18000	8800	**2150 J**	**1615 J**	**1080 J**
Toluene	108-88-3	26	0			500	60000000	7500000	1.2 U	1.15 U	1.1 U
Total xylenes	1330-20-7	26	0			200	700000	130000	3 U	2.9 U	2.8 U
trans-1,2-Dichloroethene	156-60-5	26	0			700	290000	53000	1.2 U	1.15 U	1.1 U
trans-1,3-Dichloropropene	10061-02-6	26	0			--	--	--	1.2 U	1.15 U	1.1 U
Trichloroethene	79-01-6	26	4	2.5	373	30	9300	6400	**373**	**308**	**243**
Vinyl chloride	75-01-4	26	0			7	800	200	1.2 U	1.15 U	1.1 U

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/kg)**	**MAX. CONC. (µg/kg)**	**FLORIDA LEACHABILITY SCTL (µg/kg)**	**FLORIDA INDUSTRIAL SCTL (µg/kg)**	**FLORIDA RESIDENTIAL SCTL (µg/kg)**	**13SB04** **NTC13USB04109110** **109** **110** **06/20/06**	**13SB04** **NTC13USB04109110-AVG** **109** **110** **06/20/06**	**13SB04** **NTC13USB04109110-D** **109** **110** **06/20/06**
MISCELLANEOUS PARAMETERS											
Bulk density (g/ml)	TTNUS028	16	16	0.41	1.3	--	--	--			
Percent solids (%)	TTNUS291	22	22	55	84	--	--	--			
Permeability (cm/se)	TTNUS009	2	2	0.000147	0.00712	--	--	--			
Specific gravity (s.u.)	TTNUS050	16	16	0.7	1.8	--	--	--			
Total organic carbon (mg/kg)	TTNUS003	16	16	941	5390	--	--	--			
GRAIN SIZE (%)											
Sieve No. 004	TTNUS316	16	16	91	100	--	--	--			
Sieve No. 010	TTNUS317	16	16	83	100	--	--	--			
Sieve No. 018	TTNUS318	16	16	73	100	--	--	--			
Sieve No. 040	TTNUS320	16	16	15	89	--	--	--			
Sieve No. 060	TTNUS321	16	16	2.5	81.6	--	--	--			
Sieve No. 120	TTNUS323	16	16	0	72.2	--	--	--			
Sieve No. 200	TTNUS325	16	16	0	1.8	--	--	--			
Sieve No. 230	TTNUS326	16	16	0	0.5	--	--	--			

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/kg)**	**MAX. CONC. (µg/kg)**	**FLORIDA LEACHABILITY SCTL (µg/kg)**	**FLORIDA INDUSTRIAL SCTL (µg/kg)**	**FLORIDA RESIDENTIAL SCTL (µg/kg)**	**13SB04** **NTC13USB04135136** **135** **136** **06/20/06**	**13SB06** **NTC13USB06074075** **74** **75** **07/01/06**	**13SB06** **NTC13USB06079080** **79** **80** **07/01/06**
VOLATILE ORGANICS (µg/kg)											
1,1,1-Trichloroethane	71-55-6	26	0			1900	3900000	730000	1.4 U	1.6 U	1.6 U
1,1,2,2-Tetrachloroethane	79-34-5	26	0			1	1200	700	1.4 U	1.6 U	1.6 U
1,1,2-Trichloroethane	79-00-5	26	0			30	2000	1400	1.4 U	1.6 U	1.6 U
1,1-Dichloroethane	75-34-3	26	0			400	2100000	390000	1.4 U	1.6 U	1.6 U
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	510000	95000	1.4 U	1.6 U	1.6 U
1,2-Dichloroethane	107-06-2	26	0			10	700	500	1.4 U	1.6 U	1.6 U
1,2-Dichloropropane	78-87-5	26	0			30	900	600	1.4 U	1.6 U	1.6 U
2-Butanone	78-93-3	26	0			17000	110000000	16000000	6.8 U	7.9 U	8.1 U
2-Hexanone	591-78-6	26	0			1400	130000	24000	6.8 U	7.9 U	8.1 U
4-Methyl-2-pentanone	108-10-1	26	0			2600	44000000	4300000	6.8 U	7.9 U	8.1 U
Acetone	67-64-1	26	9	18	62.4	25000	68000000	11000000	17 U	26.7 J	32.5 J
Benzene	71-43-2	26	0			7	1700	1200	1.4 U	1.6 U	1.6 U
Bromodichloromethane	75-27-4	26	0			4	2200	1500	1.4 U	1.6 U	1.6 U
Bromoform	75-25-2	26	0			30	93000	48000	1.4 U	1.6 U	1.6 U
Bromomethane	74-83-9	26	0			50	16000	3100	1.4 U	1.6 U	1.6 U
Carbon disulfide	75-15-0	26	26	3.3	39.1	5600	1500000	270000	5.3	9.8	6
Carbon tetrachloride	56-23-5	26	0			40	700	500	1.4 U	1.6 U	1.6 U
Chlorobenzene	108-90-7	26	0			1300	650000	120000	1.4 U	1.6 U	1.6 U
Chlorodibromomethane	124-48-1	26	0			3	2300	1500	1.4 U	1.6 U	1.6 U
Chloroethane	75-00-3	26	0			60	5400	3900	2 U	2.4 U	2.4 U
Chloroform	67-66-3	26	1	3.1	3.1	400	600	400	1.4 U	1.6 U	1.6 U
Chloromethane	74-87-3	26	0			10	5700	4000	1.4 U	1.6 U	1.6 U
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	180000	33000	1.4 U	1.6 U	1.6 U
cis-1,3-Dichloropropene	10061-01-5	26	0			--	--	--	1.4 U	1.6 U	1.6 U
Ethylbenzene	100-41-4	26	0			600	9200000	1500000	1.4 U	1.6 U	1.6 U
Methylene chloride	75-09-2	26	0			20	26000	17000	3.4 U	4 U	4.1 U
Styrene	100-42-5	26	0			3600	23000000	3600000	1.4 U	1.6 U	1.6 U
Tetrachloroethene	127-18-4	26	4	121	2150	30	18000	8800	1.4 U	1.6 U	1.6 U
Toluene	108-88-3	26	0			500	60000000	7500000	1.4 U	1.6 U	1.6 U
Total xylenes	1330-20-7	26	0			200	700000	130000	3.4 U	4 U	4.1 U
trans-1,2-Dichloroethene	156-60-5	26	0			700	290000	53000	1.4 U	1.6 U	1.6 U
trans-1,3-Dichloropropene	10061-02-6	26	0			--	--	--	1.4 U	1.6 U	1.6 U
Trichloroethene	79-01-6	26	4	2.5	373	30	9300	6400	1.4 U	1.6 U	1.6 U
Vinyl chloride	75-01-4	26	0			7	800	200	1.4 U	1.6 U	1.6 U

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/kg)**	**MAX. CONC. (µg/kg)**	**FLORIDA LEACHABILITY SCTL (µg/kg)**	**FLORIDA INDUSTRIAL SCTL (µg/kg)**	**FLORIDA RESIDENTIAL SCTL (µg/kg)**	**13SB04** **NTC13USB04135136** **135** **136** **06/20/06**	**13SB06** **NTC13USB06074075** **74** **75** **07/01/06**	**13SB06** **NTC13USB06079080** **79** **80** **07/01/06**
MISCELLANEOUS PARAMETERS											
Bulk density (g/ml)	TTNUS028	16	16	0.41	1.3	--	--	--			0.73
Percent solids (%)	TTNUS291	22	22	55	84	--	--	--		73	77
Permeability (cm/se)	TTNUS009	2	2	0.000147	0.00712	--	--	--			
Specific gravity (s.u.)	TTNUS050	16	16	0.7	1.8	--	--	--			1.1
Total organic carbon (mg/kg)	TTNUS003	16	16	941	5390	--	--	--			3690
GRAIN SIZE (%)											
Sieve No. 004	TTNUS316	16	16	91	100	--	--	--			100
Sieve No. 010	TTNUS317	16	16	83	100	--	--	--			98
Sieve No. 018	TTNUS318	16	16	73	100	--	--	--			85
Sieve No. 040	TTNUS320	16	16	15	89	--	--	--			53
Sieve No. 060	TTNUS321	16	16	2.5	81.6	--	--	--			22
Sieve No. 120	TTNUS323	16	16	0	72.2	--	--	--			12
Sieve No. 200	TTNUS325	16	16	0	1.8	--	--	--			0
Sieve No. 230	TTNUS326	16	16	0	0.5	--	--	--			0

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number Sample Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/kg)	MAX. CONC. (µg/kg)	FLORIDA LEACHABILITY SCTL (µg/kg)	FLORIDA INDUSTRIAL SCTL (µg/kg)	FLORIDA RESIDENTIAL SCTL (µg/kg)	13SB06 NTC13USB06107108 107 108 07/01/06	13SB06 NTC13USB06110111 110 111 07/01/06	13SB06 NTC13USB06119120 119 120 07/01/06
VOLATILE ORGANICS (µg/kg)											
1,1,1-Trichloroethane	71-55-6	26	0			1900	3900000	730000		1.4 U	
1,1,2,2-Tetrachloroethane	79-34-5	26	0			1	1200	700		1.4 U	
1,1,2-Trichloroethane	79-00-5	26	0			30	2000	1400		1.4 U	
1,1-Dichloroethane	75-34-3	26	0			400	2100000	390000		1.4 U	
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	510000	95000		1.4 U	
1,2-Dichloroethane	107-06-2	26	0			10	700	500		1.4 U	
1,2-Dichloropropane	78-87-5	26	0			30	900	600		1.4 U	
2-Butanone	78-93-3	26	0			17000	110000000	16000000		7.2 U	
2-Hexanone	591-78-6	26	0			1400	130000	24000		7.2 U	
4-Methyl-2-pentanone	108-10-1	26	0			2600	44000000	4300000		7.2 U	
Acetone	67-64-1	26	9	18	62.4	25000	68000000	11000000		18 U	
Benzene	71-43-2	26	0			7	1700	1200		1.4 U	
Bromodichloromethane	75-27-4	26	0			4	2200	1500		1.4 U	
Bromoform	75-25-2	26	0			30	93000	48000		1.4 U	
Bromomethane	74-83-9	26	0			50	16000	3100		1.4 U	
Carbon disulfide	75-15-0	26	26	3.3	39.1	5600	1500000	270000		3.3 J	
Carbon tetrachloride	56-23-5	26	0			40	700	500		1.4 U	
Chlorobenzene	108-90-7	26	0			1300	650000	120000		1.4 U	
Chlorodibromomethane	124-48-1	26	0			3	2300	1500		1.4 U	
Chloroethane	75-00-3	26	0			60	5400	3900		2.2 U	
Chloroform	67-66-3	26	1	3.1	3.1	400	600	400		1.4 U	
Chloromethane	74-87-3	26	0			10	5700	4000		1.4 U	
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	180000	33000		1.4 U	
cis-1,3-Dichloropropene	10061-01-5	26	0			--	--	--		1.4 U	
Ethylbenzene	100-41-4	26	0			600	9200000	1500000		1.4 U	
Methylene chloride	75-09-2	26	0			20	26000	17000		3.6 U	
Styrene	100-42-5	26	0			3600	23000000	3600000		1.4 U	
Tetrachloroethene	127-18-4	26	4	121	2150	30	18000	8800		1.4 U	
Toluene	108-88-3	26	0			500	60000000	7500000		1.4 U	
Total xylenes	1330-20-7	26	0			200	700000	130000		3.6 U	
trans-1,2-Dichloroethene	156-60-5	26	0			700	290000	53000		1.4 U	
trans-1,3-Dichloropropene	10061-02-6	26	0			--	--	--		1.4 U	
Trichloroethene	79-01-6	26	4	2.5	373	30	9300	6400		1.4 U	
Vinyl chloride	75-01-4	26	0			7	800	200		1.4 U	

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/kg)**	**MAX. CONC. (µg/kg)**	**FLORIDA LEACHABILITY SCTL (µg/kg)**	**FLORIDA INDUSTRIAL SCTL (µg/kg)**	**FLORIDA RESIDENTIAL SCTL (µg/kg)**	**13SB06** **NTC13USB06107108** **107** **108** **07/01/06**	**13SB06** **NTC13USB06110111** **110** **111** **07/01/06**	**13SB06** **NTC13USB06119120** **119** **120** **07/01/06**
MISCELLANEOUS PARAMETERS											
Bulk density (g/ml)	TTNUS028	16	16	0.41	1.3	--	--	--	0.8		0.64
Percent solids (%)	TTNUS291	22	22	55	84	--	--	--	82	84	82
Permeability (cm/se)	TTNUS009	2	2	0.000147	0.00712	--	--	--			
Specific gravity (s.u.)	TTNUS050	16	16	0.7	1.8	--	--	--	1.1		0.99
Total organic carbon (mg/kg)	TTNUS003	16	16	941	5390	--	--	--	1920		941
GRAIN SIZE (%)											
Sieve No. 004	TTNUS316	16	16	91	100	--	--	--	100		100
Sieve No. 010	TTNUS317	16	16	83	100	--	--	--	98		100
Sieve No. 018	TTNUS318	16	16	73	100	--	--	--	90		98
Sieve No. 040	TTNUS320	16	16	15	89	--	--	--	68		15
Sieve No. 060	TTNUS321	16	16	2.5	81.6	--	--	--	48		2.5
Sieve No. 120	TTNUS323	16	16	0	72.2	--	--	--	2.2		0.1
Sieve No. 200	TTNUS325	16	16	0	1.8	--	--	--	0.2		0
Sieve No. 230	TTNUS326	16	16	0	0.5	--	--	--	0		0

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number Sample Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/kg)	MAX. CONC. (µg/kg)	FLORIDA LEACHABILITY SCTL (µg/kg)	FLORIDA INDUSTRIAL SCTL (µg/kg)	FLORIDA RESIDENTIAL SCTL (µg/kg)	13SB06 NTC13USB06125126 125 126 07/01/06	13SB06 NTC13USB06130131 130 131 07/01/06	13SB07 NTC13USB07056057 56 57 07/02/06
VOLATILE ORGANICS (µg/kg)											
1,1,1-Trichloroethane	71-55-6	26	0			1900	3900000	730000		2.1 U	3 U
1,1,2,2-Tetrachloroethane	79-34-5	26	0			1	1200	700		2.1 U	3 U
1,1,2-Trichloroethane	79-00-5	26	0			30	2000	1400		2.1 U	3 U
1,1-Dichloroethane	75-34-3	26	0			400	2100000	390000		2.1 U	3 U
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	510000	95000		2.1 U	3 U
1,2-Dichloroethane	107-06-2	26	0			10	700	500		2.1 U	3 U
1,2-Dichloropropane	78-87-5	26	0			30	900	600		2.1 U	3 U
2-Butanone	78-93-3	26	0			17000	110000000	16000000		10 U	15 U
2-Hexanone	591-78-6	26	0			1400	130000	24000		10 U	15 U
4-Methyl-2-pentanone	108-10-1	26	0			2600	44000000	4300000		10 U	15 U
Acetone	67-64-1	26	9	18	62.4	25000	68000000	11000000		26 U	62.4 J
Benzene	71-43-2	26	0			7	1700	1200		2.1 U	3 U
Bromodichloromethane	75-27-4	26	0			4	2200	1500		2.1 U	3 U
Bromoform	75-25-2	26	0			30	93000	48000		2.1 U	3 U
Bromomethane	74-83-9	26	0			50	16000	3100		2.1 U	3 U
Carbon disulfide	75-15-0	26	26	3.3	39.1	5600	1500000	270000		14.1	27.4
Carbon tetrachloride	56-23-5	26	0			40	700	500		2.1 U	3 U
Chlorobenzene	108-90-7	26	0			1300	650000	120000		2.1 U	3 U
Chlorodibromomethane	124-48-1	26	0			3	2300	1500		2.1 U	3 U
Chloroethane	75-00-3	26	0			60	5400	3900		3.1 U	4.4 U
Chloroform	67-66-3	26	1	3.1	3.1	400	600	400		2.1 U	3 U
Chloromethane	74-87-3	26	0			10	5700	4000		2.1 U	3 U
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	180000	33000		2.1 U	3 U
cis-1,3-Dichloropropene	10061-01-5	26	0			--	--	--		2.1 U	3 U
Ethylbenzene	100-41-4	26	0			600	9200000	1500000		2.1 U	3 U
Methylene chloride	75-09-2	26	0			20	26000	17000		5.2 U	7.4 U
Styrene	100-42-5	26	0			3600	23000000	3600000		2.1 U	3 U
Tetrachloroethene	127-18-4	26	4	121	2150	30	18000	8800		2.1 U	3 U
Toluene	108-88-3	26	0			500	60000000	7500000		2.1 U	3 U
Total xylenes	1330-20-7	26	0			200	700000	130000		5.2 U	7.4 U
trans-1,2-Dichloroethene	156-60-5	26	0			700	290000	53000		2.1 U	3 U
trans-1,3-Dichloropropene	10061-02-6	26	0			--	--	--		2.1 U	3 U
Trichloroethene	79-01-6	26	4	2.5	373	30	9300	6400		2.1 U	3 U
Vinyl chloride	75-01-4	26	0			7	800	200		2.1 U	3 U

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/kg)**	**MAX. CONC. (µg/kg)**	**FLORIDA LEACHABILITY SCTL (µg/kg)**	**FLORIDA INDUSTRIAL SCTL (µg/kg)**	**FLORIDA RESIDENTIAL SCTL (µg/kg)**	**13SB06** **NTC13USB06125126** **125** **126** **07/01/06**	**13SB06** **NTC13USB06130131** **130** **131** **07/01/06**	**13SB07** **NTC13USB07056057** **56** **57** **07/02/06**
MISCELLANEOUS PARAMETERS											
Bulk density (g/ml)	TTNUS028	16	16	0.41	1.3	--	--	--	1	0.41	
Percent solids (%)	TTNUS291	22	22	55	84	--	--	--	80	71	55
Permeability (cm/se)	TTNUS009	2	2	0.000147	0.00712	--	--	--			
Specific gravity (s.u.)	TTNUS050	16	16	0.7	1.8	--	--	--	1.2	0.7	
Total organic carbon (mg/kg)	TTNUS003	16	16	941	5390	--	--	--	1620	5390	
GRAIN SIZE (%)											
Sieve No. 004	TTNUS316	16	16	91	100	--	--	--	91	100	
Sieve No. 010	TTNUS317	16	16	83	100	--	--	--	86	99	
Sieve No. 018	TTNUS318	16	16	73	100	--	--	--	75	92	
Sieve No. 040	TTNUS320	16	16	15	89	--	--	--	33	67	
Sieve No. 060	TTNUS321	16	16	2.5	81.6	--	--	--	10	28	
Sieve No. 120	TTNUS323	16	16	0	72.2	--	--	--	1	2.5	
Sieve No. 200	TTNUS325	16	16	0	1.8	--	--	--	0.2	0.2	
Sieve No. 230	TTNUS326	16	16	0	0.5	--	--	--	0.1	0	

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number Sample Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/kg)	MAX. CONC. (µg/kg)	FLORIDA LEACHABILITY SCTL (µg/kg)	FLORIDA INDUSTRIAL SCTL (µg/kg)	FLORIDA RESIDENTIAL SCTL (µg/kg)	13SB07 NTC13USB07061062 61 62 07/02/06	13SB07 NTC13USB07084085 84 85 07/02/06	13SB07 NTC13USB07084085-AVG 84 85 07/02/06
VOLATILE ORGANICS (µg/kg)											
1,1,1-Trichloroethane	71-55-6	26	0			1900	3900000	730000	1.8 U	1.7 U	1.65 U
1,1,2,2-Tetrachloroethane	79-34-5	26	0			1	1200	700	1.8 U	1.7 U	1.65 U
1,1,2-Trichloroethane	79-00-5	26	0			30	2000	1400	1.8 U	1.7 U	1.65 U
1,1-Dichloroethane	75-34-3	26	0			400	2100000	390000	1.8 U	1.7 U	1.65 U
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	510000	95000	1.8 U	1.7 U	1.65 U
1,2-Dichloroethane	107-06-2	26	0			10	700	500	1.8 U	1.7 U	1.65 U
1,2-Dichloropropane	78-87-5	26	0			30	900	600	1.8 U	1.7 U	1.65 U
2-Butanone	78-93-3	26	0			17000	110000000	16000000	9.2 U	8.7 U	8.35 U
2-Hexanone	591-78-6	26	0			1400	130000	24000	9.2 U	8.7 U	8.35 U
4-Methyl-2-pentanone	108-10-1	26	0			2600	44000000	4300000	9.2 U	8.7 U	8.35 U
Acetone	67-64-1	26	9	18	62.4	25000	68000000	11000000	23 U	22 U	21 U
Benzene	71-43-2	26	0			7	1700	1200	1.8 U	1.7 U	1.65 U
Bromodichloromethane	75-27-4	26	0			4	2200	1500	1.8 U	1.7 U	1.65 U
Bromoform	75-25-2	26	0			30	93000	48000	1.8 U	1.7 U	1.65 U
Bromomethane	74-83-9	26	0			50	16000	3100	1.8 U	1.7 U	1.65 U
Carbon disulfide	75-15-0	26	26	3.3	39.1	5600	1500000	270000	14.2	7.1	9.3
Carbon tetrachloride	56-23-5	26	0			40	700	500	1.8 U	1.7 U	1.65 U
Chlorobenzene	108-90-7	26	0			1300	650000	120000	1.8 U	1.7 U	1.65 U
Chlorodibromomethane	124-48-1	26	0			3	2300	1500	1.8 U	1.7 U	1.65 U
Chloroethane	75-00-3	26	0			60	5400	3900	2.8 U	2.6 U	2.5 U
Chloroform	67-66-3	26	1	3.1	3.1	400	600	400	1.8 U	1.7 U	1.65 U
Chloromethane	74-87-3	26	0			10	5700	4000	1.8 U	1.7 U	1.65 U
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	180000	33000	1.8 U	1.7 U	1.65 U
cis-1,3-Dichloropropene	10061-01-5	26	0			--	--	--	1.8 U	1.7 U	1.65 U
Ethylbenzene	100-41-4	26	0			600	9200000	1500000	1.8 U	1.7 U	1.65 U
Methylene chloride	75-09-2	26	0			20	26000	17000	4.6 U	4.4 U	4.2 U
Styrene	100-42-5	26	0			3600	23000000	3600000	1.8 U	1.7 U	1.65 U
Tetrachloroethene	127-18-4	26	4	121	2150	30	18000	8800	1.8 U	1.7 U	1.65 U
Toluene	108-88-3	26	0			500	60000000	7500000	1.8 U	1.7 U	1.65 U
Total xylenes	1330-20-7	26	0			200	700000	130000	4.6 U	4.4 U	4.2 U
trans-1,2-Dichloroethene	156-60-5	26	0			700	290000	53000	1.8 U	1.7 U	1.65 U
trans-1,3-Dichloropropene	10061-02-6	26	0			--	--	--	1.8 U	1.7 U	1.65 U
Trichloroethene	79-01-6	26	4	2.5	373	30	9300	6400	1.8 U	1.7 U	1.65 U
Vinyl chloride	75-01-4	26	0			7	800	200	1.8 U	1.7 U	1.65 U

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Bottom of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/kg)**	**MAX. CONC. (µg/kg)**	**FLORIDA LEACHABILITY SCTL (µg/kg)**	**FLORIDA INDUSTRIAL SCTL (µg/kg)**	**FLORIDA RESIDENTIAL SCTL (µg/kg)**	**13SB07** **NTC13USB07061062** **61** **62** **07/02/06**	**13SB07** **NTC13USB07084085** **84** **85** **07/02/06**	**13SB07** **NTC13USB07084085-AVG** **84** **85** **07/02/06**
MISCELLANEOUS PARAMETERS											
Bulk density (g/ml)	TTNUS028	16	16	0.41	1.3	--	--	--			
Percent solids (%)	TTNUS291	22	22	55	84	--	--	--	74	77	79
Permeability (cm/se)	TTNUS009	2	2	0.000147	0.00712	--	--	--			
Specific gravity (s.u.)	TTNUS050	16	16	0.7	1.8	--	--	--			
Total organic carbon (mg/kg)	TTNUS003	16	16	941	5390	--	--	--			
GRAIN SIZE (%)											
Sieve No. 004	TTNUS316	16	16	91	100	--	--	--			
Sieve No. 010	TTNUS317	16	16	83	100	--	--	--			
Sieve No. 018	TTNUS318	16	16	73	100	--	--	--			
Sieve No. 040	TTNUS320	16	16	15	89	--	--	--			
Sieve No. 060	TTNUS321	16	16	2.5	81.6	--	--	--			
Sieve No. 120	TTNUS323	16	16	0	72.2	--	--	--			
Sieve No. 200	TTNUS325	16	16	0	1.8	--	--	--			
Sieve No. 230	TTNUS326	16	16	0	0.5	--	--	--			

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number Sample Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/kg)	MAX. CONC. (µg/kg)	FLORIDA LEACHABILITY SCTL (µg/kg)	FLORIDA INDUSTRIAL SCTL (µg/kg)	FLORIDA RESIDENTIAL SCTL (µg/kg)	13SB07 NTC13USB07084085-D 84 85 07/02/06	13SB07 NTC13USB07128129 128 129 07/02/06
VOLATILE ORGANICS (µg/kg)										
1,1,1-Trichloroethane	71-55-6	26	0			1900	3900000	730000	1.6 U	1.9 U
1,1,2,2-Tetrachloroethane	79-34-5	26	0			1	1200	700	1.6 U	1.9 U
1,1,2-Trichloroethane	79-00-5	26	0			30	2000	1400	1.6 U	1.9 U
1,1-Dichloroethane	75-34-3	26	0			400	2100000	390000	1.6 U	1.9 U
1,1-Dichloroethene	75-35-4	26	1	1.9	1.9	60	510000	95000	1.6 U	1.9 U
1,2-Dichloroethane	107-06-2	26	0			10	700	500	1.6 U	1.9 U
1,2-Dichloropropane	78-87-5	26	0			30	900	600	1.6 U	1.9 U
2-Butanone	78-93-3	26	0			17000	110000000	16000000	8 U	9.3 U
2-Hexanone	591-78-6	26	0			1400	130000	24000	8 U	9.3 U
4-Methyl-2-pentanone	108-10-1	26	0			2600	44000000	4300000	8 U	9.3 U
Acetone	67-64-1	26	9	18	62.4	25000	68000000	11000000	20 U	23 U
Benzene	71-43-2	26	0			7	1700	1200	1.6 U	1.9 U
Bromodichloromethane	75-27-4	26	0			4	2200	1500	1.6 U	1.9 U
Bromoform	75-25-2	26	0			30	93000	48000	1.6 U	1.9 U
Bromomethane	74-83-9	26	0			50	16000	3100	1.6 U	1.9 U
Carbon disulfide	75-15-0	26	26	3.3	39.1	5600	1500000	270000	11.5	11.1
Carbon tetrachloride	56-23-5	26	0			40	700	500	1.6 U	1.9 U
Chlorobenzene	108-90-7	26	0			1300	650000	120000	1.6 U	1.9 U
Chlorodibromomethane	124-48-1	26	0			3	2300	1500	1.6 U	1.9 U
Chloroethane	75-00-3	26	0			60	5400	3900	2.4 U	2.8 U
Chloroform	67-66-3	26	1	3.1	3.1	400	600	400	1.6 U	1.9 U
Chloromethane	74-87-3	26	0			10	5700	4000	1.6 U	1.9 U
cis-1,2-Dichloroethene	156-59-2	26	1	48	66.6	400	180000	33000	1.6 U	1.9 U
cis-1,3-Dichloropropene	10061-01-5	26	0			--	--	--	1.6 U	1.9 U
Ethylbenzene	100-41-4	26	0			600	9200000	1500000	1.6 U	1.9 U
Methylene chloride	75-09-2	26	0			20	26000	17000	4 U	4.6 U
Styrene	100-42-5	26	0			3600	23000000	3600000	1.6 U	1.9 U
Tetrachloroethene	127-18-4	26	4	121	2150	30	18000	8800	1.6 U	1.9 U
Toluene	108-88-3	26	0			500	60000000	7500000	1.6 U	1.9 U
Total xylenes	1330-20-7	26	0			200	700000	130000	4 U	4.6 U
trans-1,2-Dichloroethene	156-60-5	26	0			700	290000	53000	1.6 U	1.9 U
trans-1,3-Dichloropropene	10061-02-6	26	0			--	--	--	1.6 U	1.9 U
Trichloroethene	79-01-6	26	4	2.5	373	30	9300	6400	1.6 U	1.9 U
Vinyl chloride	75-01-4	26	0			7	800	200	1.6 U	1.9 U

TABLE F-2

DEEP SOIL BORING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Soil Boring Number Sample Number Depth to Top of Sample, ft bgs Depth to Bottom of Sample, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/kg)	MAX. CONC. (µg/kg)	FLORIDA LEACHABILITY SCTL (µg/kg)	FLORIDA INDUSTRIAL SCTL (µg/kg)	FLORIDA RESIDENTIAL SCTL (µg/kg)	13SB07 NTC13USB07084085-D 84 85 07/02/06	13SB07 NTC13USB07128129 128 129 07/02/06
MISCELLANEOUS PARAMETERS										
Bulk density (g/ml)	TTNUS028	16	16	0.41	1.3	--	--	--		
Percent solids (%)	TTNUS291	22	22	55	84	--	--	--	81	71
Permeability (cm/se)	TTNUS009	2	2	0.000147	0.00712	--	--	--		
Specific gravity (s.u.)	TTNUS050	16	16	0.7	1.8	--	--	--		
Total organic carbon (mg/kg)	TTNUS003	16	16	941	5390	--	--	--		
GRAIN SIZE (%)										
Sieve No. 004	TTNUS316	16	16	91	100	--	--	--		
Sieve No. 010	TTNUS317	16	16	83	100	--	--	--		
Sieve No. 018	TTNUS318	16	16	73	100	--	--	--		
Sieve No. 040	TTNUS320	16	16	15	89	--	--	--		
Sieve No. 060	TTNUS321	16	16	2.5	81.6	--	--	--		
Sieve No. 120	TTNUS323	16	16	0	72.2	--	--	--		
Sieve No. 200	TTNUS325	16	16	0	1.8	--	--	--		
Sieve No. 230	TTNUS326	16	16	0	0.5	--	--	--		

Notes:
bgs - below ground surface
cm/sec - centimeter per second
ft - feet
J" indicated estimate result.
mg/kg - milligrams per kilogram
SCTL - Soil Cleanup Target Level
S.U. - Standard Unit
U" less than laboratory method detection limit
µg/kg - micrograms per kilogram
Shaded cell indicates result equal to or greater then GCTL.

TABLE F-3

GROUNDWATER PROFILE SAMPLING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Botton of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. HITS**	**MIN**	**MAX**	**GCTL**	**13SB01** **NTC13GSB01085095** **85** **95** **06/15/06**	**13SB01** **NTC13GSB01115125** **115** **125** **06/15/06**	**13SB01** **NTC13GSB01115125-AVG** **115** **125** **06/15/06**
VOLATILE ORGANICS (UG/L)									
1,1,1-TRICHLOROETHANE	71-55-6	26	0			200	0.5 U	0.5 U	0.50 U
1,1,2,2-TETRACHLOROETHANE	79-34-5	26	0			0.2	0.4 U	0.4 U	0.40 U
1,1,2-TRICHLOROETHANE	79-00-5	26	0			5	0.5 U	0.5 U	0.50 U
1,1-DICHLOROETHANE	75-34-3	26	0			70	0.5 U	0.5 U	0.50 U
1,1-DICHLOROETHENE	75-35-4	26	0			7	0.5 U	0.5 U	0.50 U
1,2-DICHLOROETHANE	107-06-2	26	0			3	0.5 U	0.5 U	0.50 U
1,2-DICHLOROPROPANE	78-87-5	26	0			5	0.5 U	0.5 U	0.50 U
2-BUTANONE	78-93-3	26	1	5.5	5.5	4200	2.5 U	2.5 U	2.5 U
2-HEXANONE	591-78-6	26	0			280	2.5 U	2.5 U	2.5 U
4-METHYL-2-PENTANONE	108-10-1	26	0			560	2.5 U	2.5 U	2.5 U
ACETONE	67-64-1	26	5	5.2	33.3	6300	5 U	5 U	5 U
BENZENE	71-43-2	26	0			1	0.5 U	0.5 U	0.50 U
BROMODICHLOROMETHANE	75-27-4	26	13	0.77	13.7	**0.6**	0.5 U	0.5 U	0.50 U
BROMOFORM	75-25-2	26	0			4.4	0.5 U	0.5 U	0.50 U
BROMOMETHANE	74-83-9	26	0			9.8	1 U	1 U	1 U
CARBON DISULFIDE	75-15-0	26	2	1.3	1.5	700	1 U	1 U	1 U
CARBON TETRACHLORIDE	56-23-5	26	0			3	0.5 U	0.5 U	0.50 U
CHLOROBENZENE	108-90-7	26	0			100	0.5 U	0.5 U	0.50 U
CHLORODIBROMOMETHANE	124-48-1	26	6	1.3	4.9	**0.4**	0.4 U	0.4 U	0.40 U
CHLOROETHANE	75-00-3	26	0			12	1 U	1 U	1 U
CHLOROFORM	67-66-3	26	24	0.93	38.9	70	4.8	4.8 J	3.6 J
CHLOROMETHANE	74-87-3	26	0			2.7	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	156-59-2	26	3	1.4	367	**70**	0.5 U	0.5 U	0.50 U
CIS-1,3-DICHLOROPROPENE	10061-01-5	26	0			--	0.3 U	0.3 U	0.30 U
ETHYLBENZENE	100-41-4	26	0			30	0.5 U	0.5 U	0.50 U
METHYLENE CHLORIDE	75-09-2	26	0			5	1 U	1 U	1 U
STYRENE	100-42-5	26	0			100	0.5 U	0.5 U	0.50 U
TETRACHLOROETHENE	127-18-4	26	7	5.7	29900	**3**	0.5 U	0.5 U	0.50 U
TOLUENE	108-88-3	26	1	1.7	1.7	40	0.5 U	0.5 U	0.50 U
TOTAL XYLENES	1330-20-7	26	0			20	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	156-60-5	26	0			100	0.5 U	0.5 U	0.50 U
TRANS-1,3-DICHLOROPROPENE	10061-02-6	26	0			--	0.3 U	0.3 U	0.30 U
TRICHLOROETHENE	79-01-6	26	6	2.2	1890	**3**	0.5 U	0.5 U	0.50 U
VINYL CHLORIDE	75-01-4	26	0			1	0.5 U	0.5 U	0.50 U

TABLE F-3

GROUNDWATER PROFILE SAMPLING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Botton of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. HITS**	**MIN**	**MAX**	**GCTL**	**13SB01** **NTC13GSB01115125-D** **115** **125** **06/15/06**	**13SB02** **NTC13GSB02065075** **65** **75** **06/16/06**	**13SB02** **NTC13GSB02095105** **95** **105** **06/17/06**	**13SB02** **NTC13GSB02115125** **115** **125** **06/17/06**
VOLATILE ORGANICS (UG/L)										
1,1,1-TRICHLOROETHANE	71-55-6	26	0			200	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	79-34-5	26	0			0.2	0.4 U	0.4 U	0.4 U	0.4 U
1,1,2-TRICHLOROETHANE	79-00-5	26	0			5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	75-34-3	26	0			70	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	75-35-4	26	0			7	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	107-06-2	26	0			3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROPROPANE	78-87-5	26	0			5	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	78-93-3	26	1	5.5	5.5	4200	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	591-78-6	26	0			280	2.5 U	2.5 U	2.5 U	2.5 U
4-METHYL-2-PENTANONE	108-10-1	26	0			560	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	67-64-1	26	5	5.2	33.3	6300	5 U	5 U	5 U	5 U
BENZENE	71-43-2	26	0			1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	75-27-4	26	13	0.77	13.7	**0.6**	0.5 U	1.1	0.5 U	0.93 J
BROMOFORM	75-25-2	26	0			4.4	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	74-83-9	26	0			9.8	1 U	1 U	1 U	1 U
CARBON DISULFIDE	75-15-0	26	2	1.3	1.5	700	1 U	1 U	1 U	1 U
CARBON TETRACHLORIDE	56-23-5	26	0			3	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	108-90-7	26	0			100	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	124-48-1	26	6	1.3	4.9	**0.4**	0.4 U	0.4 U	0.4 U	0.4 U
CHLOROETHANE	75-00-3	26	0			12	1 U	1 U	1 U	1 U
CHLOROFORM	67-66-3	26	24	0.93	38.9	70	2.4 J	3.7	3.4	11.5
CHLOROMETHANE	74-87-3	26	0			2.7	1 U	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	156-59-2	26	3	1.4	367	**70**	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	10061-01-5	26	0			--	0.3 U	0.3 U	0.3 U	0.3 U
ETHYLBENZENE	100-41-4	26	0			30	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	75-09-2	26	0			5	1 U	1 U	1 U	1 U
STYRENE	100-42-5	26	0			100	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	127-18-4	26	7	5.7	29900	**3**	0.5 U	0.5 U	0.5 U	0.5 U
TOLUENE	108-88-3	26	1	1.7	1.7	40	0.5 U	0.5 U	0.5 U	0.5 U
TOTAL XYLENES	1330-20-7	26	0			20	1 U	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	156-60-5	26	0			100	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	10061-02-6	26	0			--	0.3 U	0.3 U	0.3 U	0.3 U
TRICHLOROETHENE	79-01-6	26	6	2.2	1890	**3**	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	75-01-4	26	0			1	0.5 U	0.5 U	0.5 U	0.5 U

TABLE F-3

GROUNDWATER PROFILE SAMPLING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Botton of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. HITS**	**MIN**	**MAX**	**GCTL**	**13SB02** **NTC13GSB02125135** **125** **135** **06/17/06**	**13SB03** **NTC13GSB03085095** **85** **95** **06/17/06**	**13SB03** **NTC13GSB03115125** **115** **125** **06/18/06**	**13SB03** **NTC13GSB03125135** **125** **135** **06/18/06**
VOLATILE ORGANICS (UG/L)										
1,1,1-TRICHLOROETHANE	71-55-6	26	0			200	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	79-34-5	26	0			0.2	0.4 U	0.4 U	0.4 U	0.4 U
1,1,2-TRICHLOROETHANE	79-00-5	26	0			5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	75-34-3	26	0			70	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	75-35-4	26	0			7	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	107-06-2	26	0			3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROPROPANE	78-87-5	26	0			5	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	78-93-3	26	1	5.5	5.5	4200	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	591-78-6	26	0			280	2.5 U	2.5 U	2.5 U	2.5 U
4-METHYL-2-PENTANONE	108-10-1	26	0			560	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	67-64-1	26	5	5.2	33.3	6300	5 U	5 U	5 U	5 U
BENZENE	71-43-2	26	0			1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	75-27-4	26	13	0.77	13.7	**0.6**	6.3	3.4	0.85 J	0.5 U
BROMOFORM	75-25-2	26	0			4.4	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	74-83-9	26	0			9.8	1 U	1 U	1 U	1 U
CARBON DISULFIDE	75-15-0	26	2	1.3	1.5	700	1 U	1 U	1 U	1 U
CARBON TETRACHLORIDE	56-23-5	26	0			3	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	108-90-7	26	0			100	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	124-48-1	26	6	1.3	4.9	**0.4**	2.2	1.3	0.4 U	0.4 U
CHLOROETHANE	75-00-3	26	0			12	1 U	1 U	1 U	1 U
CHLOROFORM	67-66-3	26	24	0.93	38.9	70	20.3	13.1	13.6	18.3
CHLOROMETHANE	74-87-3	26	0			2.7	1 U	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	156-59-2	26	3	1.4	367	**70**	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	10061-01-5	26	0			--	0.3 U	0.3 U	0.3 U	0.3 U
ETHYLBENZENE	100-41-4	26	0			30	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	75-09-2	26	0			5	1 U	1 U	1 U	1 U
STYRENE	100-42-5	26	0			100	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	127-18-4	26	7	5.7	29900	**3**	0.5 U	0.5 U	0.5 U	0.5 U
TOLUENE	108-88-3	26	1	1.7	1.7	40	0.5 U	0.5 U	0.5 U	0.5 U
TOTAL XYLENES	1330-20-7	26	0			20	1 U	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	156-60-5	26	0			100	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	10061-02-6	26	0			--	0.3 U	0.3 U	0.3 U	0.3 U
TRICHLOROETHENE	79-01-6	26	6	2.2	1890	**3**	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	75-01-4	26	0			1	0.5 U	0.5 U	0.5 U	0.5 U

TABLE F-3

GROUNDWATER PROFILE SAMPLING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Botton of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. HITS**	**MIN**	**MAX**	**GCTL**	**13SB04** **NTC13GSB04065075** **65** **75** **06/19/06**	**13SB04** **NTC13GSB04075075** **75** **75** **06/19/06**	**13SB04** **NTC13GSB04085095** **85** **95** **06/20/06**	**13SB04** **NTC13GSB04095105** **95** **105** **06/20/06**
VOLATILE ORGANICS (UG/L)										
1,1,1-TRICHLOROETHANE	71-55-6	26	0			200	100 U	5 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	79-34-5	26	0			0.2	80 U	4 U	0.4 U	0.4 U
1,1,2-TRICHLOROETHANE	79-00-5	26	0			5	100 U	5 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	75-34-3	26	0			70	100 U	5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	75-35-4	26	0			7	100 U	5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	107-06-2	26	0			3	100 U	5 U	0.5 U	0.5 U
1,2-DICHLOROPROPANE	78-87-5	26	0			5	100 U	5 U	0.5 U	0.5 U
2-BUTANONE	78-93-3	26	1	5.5	5.5	4200	500 U	25 U	2.5 U	2.5 U
2-HEXANONE	591-78-6	26	0			280	500 U	25 U	2.5 U	2.5 U
4-METHYL-2-PENTANONE	108-10-1	26	0			560	500 U	25 U	2.5 U	2.5 U
ACETONE	67-64-1	26	5	5.2	33.3	6300	1000 U	50 U	5.2 J	5 U
BENZENE	71-43-2	26	0			1	100 U	5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	75-27-4	26	13	0.77	13.7	**0.6**	100 U	5 U	8.4	0.5 U
BROMOFORM	75-25-2	26	0			4.4	100 U	5 U	0.5 U	0.5 U
BROMOMETHANE	74-83-9	26	0			9.8	200 U	10 U	1 U	1 U
CARBON DISULFIDE	75-15-0	26	2	1.3	1.5	700	200 U	10 U	1 U	1 U
CARBON TETRACHLORIDE	56-23-5	26	0			3	100 U	5 U	0.5 U	0.5 U
CHLOROBENZENE	108-90-7	26	0			100	100 U	5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	124-48-1	26	6	1.3	4.9	**0.4**	80 U	4 U	2.9	0.4 U
CHLOROETHANE	75-00-3	26	0			12	200 U	10 U	1 U	1 U
CHLOROFORM	67-66-3	26	24	0.93	38.9	70	100 U	6.5 J	28.2	1.4
CHLOROMETHANE	74-87-3	26	0			2.7	200 U	10 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	156-59-2	26	3	1.4	367	**70**	100 U	5 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	10061-01-5	26	0			--	60 U	3 U	0.3 U	0.3 U
ETHYLBENZENE	100-41-4	26	0			30	100 U	5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	75-09-2	26	0			5	200 U	10 U	1 U	1 U
STYRENE	100-42-5	26	0			100	100 U	5 U	0.5 U	0.5 U
TETRACHLOROETHENE	127-18-4	26	7	5.7	29900	**3**	11900	526	45.2	5.7
TOLUENE	108-88-3	26	1	1.7	1.7	40	100 U	5 U	0.5 U	0.5 U
TOTAL XYLENES	1330-20-7	26	0			20	200 U	10 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	156-60-5	26	0			100	100 U	5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	10061-02-6	26	0			--	60 U	3 U	0.3 U	0.3 U
TRICHLOROETHENE	79-01-6	26	6	2.2	1890	**3**	516	60.2	2.2	0.5 U
VINYL CHLORIDE	75-01-4	26	0			1	100 U	5 U	0.5 U	0.5 U

TABLE F-3

GROUNDWATER PROFILE SAMPLING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Botton of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. HITS**	**MIN**	**MAX**	**GCTL**	**13SB04** **NTC13GSB04105115** **105** **115** **06/20/06**	**13SB04** **NTC13GSB04115125** **115** **125** **06/20/06**	**13SB04** **NTC13GSB04115125-AVG** **115** **125** **06/20/06**	**13SB04** **NTC13GSB04115125-D** **115** **125** **06/20/06**
VOLATILE ORGANICS (UG/L)										
1,1,1-TRICHLOROETHANE	71-55-6	26	0			200	250 U	10 U	10 U	10 U
1,1,2,2-TETRACHLOROETHANE	79-34-5	26	0			0.2	200 U	8 U	8 U	8 U
1,1,2-TRICHLOROETHANE	79-00-5	26	0			5	250 U	10 U	10 U	10 U
1,1-DICHLOROETHANE	75-34-3	26	0			70	250 U	10 U	10 U	10 U
1,1-DICHLOROETHENE	75-35-4	26	0			7	250 U	10 U	10 U	10 U
1,2-DICHLOROETHANE	107-06-2	26	0			3	250 U	10 U	10 U	10 U
1,2-DICHLOROPROPANE	78-87-5	26	0			5	250 U	10 U	10 U	10 U
2-BUTANONE	78-93-3	26	1	5.5	5.5	4200	1300 U	50 U	50 U	50 U
2-HEXANONE	591-78-6	26	0			280	1300 U	50 U	50 U	50 U
4-METHYL-2-PENTANONE	108-10-1	26	0			560	1300 U	50 U	50 U	50 U
ACETONE	67-64-1	26	5	5.2	33.3	6300	2500 U	100 U	100 U	100 U
BENZENE	71-43-2	26	0			1	250 U	10 U	10 U	10 U
BROMODICHLOROMETHANE	75-27-4	26	13	0.77	13.7	**0.6**	250 U	10 U	10 U	10 U
BROMOFORM	75-25-2	26	0			4.4	250 U	10 U	10 U	10 U
BROMOMETHANE	74-83-9	26	0			9.8	500 U	20 U	20 U	20 U
CARBON DISULFIDE	75-15-0	26	2	1.3	1.5	700	500 U	20 U	20 U	20 U
CARBON TETRACHLORIDE	56-23-5	26	0			3	250 U	10 U	10 U	10 U
CHLOROBENZENE	108-90-7	26	0			100	250 U	10 U	10 U	10 U
CHLORODIBROMOMETHANE	124-48-1	26	6	1.3	4.9	**0.4**	200 U	8 U	8 U	8 U
CHLOROETHANE	75-00-3	26	0			12	500 U	20 U	20 U	20 U
CHLOROFORM	67-66-3	26	24	0.93	38.9	70	250 U	27.8	27.55	27.3
CHLOROMETHANE	74-87-3	26	0			2.7	500 U	20 U	20 U	20 U
CIS-1,2-DICHLOROETHENE	156-59-2	26	3	1.4	367	**70**	367 J	13.5 J	14.1 J	14.7 J
CIS-1,3-DICHLOROPROPENE	10061-01-5	26	0			--	150 U	6 U	6 U	6 U
ETHYLBENZENE	100-41-4	26	0			30	250 U	10 U	10 U	10 U
METHYLENE CHLORIDE	75-09-2	26	0			5	500 U	20 U	20 U	20 U
STYRENE	100-42-5	26	0			100	250 U	10 U	10 U	10 U
TETRACHLOROETHENE	127-18-4	26	7	5.7	29900	**3**	29900	1060	1105	1150
TOLUENE	108-88-3	26	1	1.7	1.7	40	250 U	10 U	10 U	10 U
TOTAL XYLENES	1330-20-7	26	0			20	500 U	20 U	20 U	20 U
TRANS-1,2-DICHLOROETHENE	156-60-5	26	0			100	250 U	10 U	10 U	10 U
TRANS-1,3-DICHLOROPROPENE	10061-02-6	26	0			--	150 U	6 U	6 U	6 U
TRICHLOROETHENE	79-01-6	26	6	2.2	1890	**3**	1890	70.8	73.3	75.8
VINYL CHLORIDE	75-01-4	26	0			1	250 U	10 U	10 U	10 U

TABLE F-3

GROUNDWATER PROFILE SAMPLING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Botton of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. HITS**	**MIN**	**MAX**	**GCTL**	**13SB04** **NTC13GSB04125135** **125** **135** **06/20/06**	**13SB05** **NTC13GSB05065075** **65** **75** **06/29/06**	**13SB05** **NTC13GSB05075085** **75** **85** **06/29/06**	**13SB05** **NTC13GSB05105115** **105** **115** **06/29/06**
VOLATILE ORGANICS (UG/L)										
1,1,1-TRICHLOROETHANE	71-55-6	26	0			200	2.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	79-34-5	26	0			0.2	2 U	0.4 U	0.4 U	0.4 U
1,1,2-TRICHLOROETHANE	79-00-5	26	0			5	2.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	75-34-3	26	0			70	2.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	75-35-4	26	0			7	2.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	107-06-2	26	0			3	2.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROPROPANE	78-87-5	26	0			5	2.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	78-93-3	26	1	5.5	5.5	4200	13 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	591-78-6	26	0			280	13 U	2.5 U	2.5 U	2.5 U
4-METHYL-2-PENTANONE	108-10-1	26	0			560	13 U	2.5 U	2.5 U	2.5 U
ACETONE	67-64-1	26	5	5.2	33.3	6300	25 U	16.5 U	8.1 U	6.7 U
BENZENE	71-43-2	26	0			1	2.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	75-27-4	26	13	0.77	13.7	**0.6**	2.5 U	1.6	11.3	0.5 U
BROMOFORM	75-25-2	26	0			4.4	2.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	74-83-9	26	0			9.8	5 U	1 U	1 U	1 U
CARBON DISULFIDE	75-15-0	26	2	1.3	1.5	700	5 U	1 U	1.5 J	1 U
CARBON TETRACHLORIDE	56-23-5	26	0			3	2.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	108-90-7	26	0			100	2.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	124-48-1	26	6	1.3	4.9	**0.4**	2 U	0.4 U	4.8	0.4 U
CHLOROETHANE	75-00-3	26	0			12	5 U	1 U	1 U	1 U
CHLOROFORM	67-66-3	26	24	0.93	38.9	70	13.6	9.5	35.2	5.3
CHLOROMETHANE	74-87-3	26	0			2.7	5 U	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	156-59-2	26	3	1.4	367	**70**	2.5 U	0.5 U	0.5 U	1.4
CIS-1,3-DICHLOROPROPENE	10061-01-5	26	0			--	1.5 U	0.3 U	0.3 U	0.3 U
ETHYLBENZENE	100-41-4	26	0			30	2.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	75-09-2	26	0			5	5 U	1 U	1 U	1 U
STYRENE	100-42-5	26	0			100	2.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	127-18-4	26	7	5.7	29900	**3**	186	0.5 U	0.5 U	0.5 U
TOLUENE	108-88-3	26	1	1.7	1.7	40	2.5 U	0.5 U	0.5 U	0.5 U
TOTAL XYLENES	1330-20-7	26	0			20	5 U	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	156-60-5	26	0			100	2.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	10061-02-6	26	0			--	1.5 U	0.3 U	0.3 U	0.3 U
TRICHLOROETHENE	79-01-6	26	6	2.2	1890	**3**	12.8	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	75-01-4	26	0			1	2.5 U	0.5 U	0.5 U	0.5 U

TABLE F-3

GROUNDWATER PROFILE SAMPLING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Botton of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. HITS**	**MIN**	**MAX**	**GCTL**	**13SB05** **NTC13GSB05115125** **115** **125** **06/29/06**	**13SB06** **NTC13GSB06065075** **65** **75** **07/01/06**	**13SB06** **NTC13GSB06095105** **95** **105** **07/01/06**	**13SB06** **NTC13GSB06115125** **115** **125** **07/01/06**
VOLATILE ORGANICS (UG/L)										
1,1,1-TRICHLOROETHANE	71-55-6	26	0			200	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	79-34-5	26	0			0.2	0.4 U	0.4 U	0.4 U	0.4 U
1,1,2-TRICHLOROETHANE	79-00-5	26	0			5	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	75-34-3	26	0			70	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	75-35-4	26	0			7	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	107-06-2	26	0			3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROPROPANE	78-87-5	26	0			5	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	78-93-3	26	1	5.5	5.5	4200	2.5 U	5.5	2.5 U	2.5 U
2-HEXANONE	591-78-6	26	0			280	2.5 U	2.5 U	2.5 U	2.5 U
4-METHYL-2-PENTANONE	108-10-1	26	0			560	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	67-64-1	26	5	5.2	33.3	6300	8.5 U	33.3 J	5 U	5.5 J
BENZENE	71-43-2	26	0			1	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	75-27-4	26	13	0.77	13.7	**0.6**	1.7	13.7	0.5 U	10.9
BROMOFORM	75-25-2	26	0			4.4	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	74-83-9	26	0			9.8	1 U	1 U	1 U	1 U
CARBON DISULFIDE	75-15-0	26	2	1.3	1.5	700	1 U	1.3 J	1 U	1 U
CARBON TETRACHLORIDE	56-23-5	26	0			3	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	108-90-7	26	0			100	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	124-48-1	26	6	1.3	4.9	**0.4**	0.4 U	4.9	0.4 U	4.2
CHLOROETHANE	75-00-3	26	0			12	1 U	1 U	1 U	1 U
CHLOROFORM	67-66-3	26	24	0.93	38.9	70	23	38.8	7.5	38.9
CHLOROMETHANE	74-87-3	26	0			2.7	1 U	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	156-59-2	26	3	1.4	367	**70**	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	10061-01-5	26	0			--	0.3 U	0.3 U	0.3 U	0.3 U
ETHYLBENZENE	100-41-4	26	0			30	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	75-09-2	26	0			5	1 U	1 U	1 U	1 U
STYRENE	100-42-5	26	0			100	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	127-18-4	26	7	5.7	29900	**3**	0.5 U	0.5 U	0.5 U	0.5 U
TOLUENE	108-88-3	26	1	1.7	1.7	40	0.5 U	1.7	0.5 U	0.5 U
TOTAL XYLENES	1330-20-7	26	0			20	1 U	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	156-60-5	26	0			100	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	10061-02-6	26	0			--	0.3 U	0.3 U	0.3 U	0.3 U
TRICHLOROETHENE	79-01-6	26	6	2.2	1890	**3**	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	75-01-4	26	0			1	0.5 U	0.5 U	0.5 U	0.5 U

TABLE F-3

GROUNDWATER PROFILE SAMPLING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Botton of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. HITS**	**MIN**	**MAX**	**GCTL**	**13SB06** **NTC13GSB06115125-AVG** **115** **125** **07/01/06**	**13SB06** **NTC13GSB06115125-D** **115** **125** **07/01/06**	**13SB07** **NTC13GSB07065075** **65** **75** **07/02/06**
VOLATILE ORGANICS (UG/L)									
1,1,1-TRICHLOROETHANE	71-55-6	26	0			200	0.50 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	79-34-5	26	0			0.2	0.40 U	0.4 U	0.4 U
1,1,2-TRICHLOROETHANE	79-00-5	26	0			5	0.50 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	75-34-3	26	0			70	0.50 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	75-35-4	26	0			7	0.50 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	107-06-2	26	0			3	0.50 U	0.5 U	0.5 U
1,2-DICHLOROPROPANE	78-87-5	26	0			5	0.50 U	0.5 U	0.5 U
2-BUTANONE	78-93-3	26	1	5.5	5.5	4200	2.5 U	2.5 U	2.5 U
2-HEXANONE	591-78-6	26	0			280	2.5 U	2.5 U	2.5 U
4-METHYL-2-PENTANONE	108-10-1	26	0			560	2.5 U	2.5 U	2.5 U
ACETONE	67-64-1	26	5	5.2	33.3	6300	4 J	5 U	7.9 J
BENZENE	71-43-2	26	0			1	0.50 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	75-27-4	26	13	0.77	13.7	**0.6**	10.45	10	1.8
BROMOFORM	75-25-2	26	0			4.4	0.50 U	0.5 U	0.5 U
BROMOMETHANE	74-83-9	26	0			9.8	1 U	1 U	1 U
CARBON DISULFIDE	75-15-0	26	2	1.3	1.5	700	1 U	1 U	1 U
CARBON TETRACHLORIDE	56-23-5	26	0			3	0.50 U	0.5 U	0.5 U
CHLOROBENZENE	108-90-7	26	0			100	0.50 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	124-48-1	26	6	1.3	4.9	**0.4**	4	3.8	0.4 U
CHLOROETHANE	75-00-3	26	0			12	1 U	1 U	1 U
CHLOROFORM	67-66-3	26	24	0.93	38.9	70	36.95	35	9.3
CHLOROMETHANE	74-87-3	26	0			2.7	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	156-59-2	26	3	1.4	367	**70**	0.50 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	10061-01-5	26	0			--	0.30 U	0.3 U	0.3 U
ETHYLBENZENE	100-41-4	26	0			30	0.50 U	0.5 U	0.5 U
METHYLENE CHLORIDE	75-09-2	26	0			5	1 U	1 U	1 U
STYRENE	100-42-5	26	0			100	0.50 U	0.5 U	0.5 U
TETRACHLOROETHENE	127-18-4	26	7	5.7	29900	**3**	0.50 U	0.5 U	0.5 U
TOLUENE	108-88-3	26	1	1.7	1.7	40	0.50 U	0.5 U	0.5 U
TOTAL XYLENES	1330-20-7	26	0			20	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	156-60-5	26	0			100	0.50 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	10061-02-6	26	0			--	0.30 U	0.3 U	0.3 U
TRICHLOROETHENE	79-01-6	26	6	2.2	1890	**3**	0.50 U	0.5 U	0.5 U
VINYL CHLORIDE	75-01-4	26	0			1	0.50 U	0.5 U	0.5 U

TABLE F-3

GROUNDWATER PROFILE SAMPLING ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Soil Boring Number **Sample Number** **Depth to Top of Sample, ft bgs** **Depth to Botton of Sample, ft bgs** **Sample Date**	**CAS NO.**	**NO. SAMPLES**	**NO. HITS**	**MIN**	**MAX**	**GCTL**	**13SB07** **NTC13GSB07095105** **95** **105** **07/02/06**	**13SB07** **NTC13GSB07115125** **115** **125** **07/02/06**
VOLATILE ORGANICS (UG/L)								
1,1,1-TRICHLOROETHANE	71-55-6	26	0			200	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	79-34-5	26	0			0.2	0.4 U	0.4 U
1,1,2-TRICHLOROETHANE	79-00-5	26	0			5	0.5 U	0.5 U
1,1-DICHLOROETHANE	75-34-3	26	0			70	0.5 U	0.5 U
1,1-DICHLOROETHENE	75-35-4	26	0			7	0.5 U	0.5 U
1,2-DICHLOROETHANE	107-06-2	26	0			3	0.5 U	0.5 U
1,2-DICHLOROPROPANE	78-87-5	26	0			5	0.5 U	0.5 U
2-BUTANONE	78-93-3	26	1	5.5	5.5	4200	2.5 U	2.5 U
2-HEXANONE	591-78-6	26	0			280	2.5 U	2.5 U
4-METHYL-2-PENTANONE	108-10-1	26	0			560	2.5 U	2.5 U
ACETONE	67-64-1	26	5	5.2	33.3	6300	5 U	5.5 J
BENZENE	71-43-2	26	0			1	0.5 U	0.5 U
BROMODICHLOROMETHANE	75-27-4	26	13	0.77	13.7	**0.6**	0.5 U	0.77 J
BROMOFORM	75-25-2	26	0			4.4	0.5 U	0.5 U
BROMOMETHANE	74-83-9	26	0			9.8	1 U	1 U
CARBON DISULFIDE	75-15-0	26	2	1.3	1.5	700	1 U	1 U
CARBON TETRACHLORIDE	56-23-5	26	0			3	0.5 U	0.5 U
CHLOROBENZENE	108-90-7	26	0			100	0.5 U	0.5 U
CHLORODIBROMOMETHANE	124-48-1	26	6	1.3	4.9	**0.4**	0.4 U	0.4 U
CHLOROETHANE	75-00-3	26	0			12	1 U	1 U
CHLOROFORM	67-66-3	26	24	0.93	38.9	70	0.93 J	4.4
CHLOROMETHANE	74-87-3	26	0			2.7	1 U	1 U
CIS-1,2-DICHLOROETHENE	156-59-2	26	3	1.4	367	**70**	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	10061-01-5	26	0			--	0.3 U	0.3 U
ETHYLBENZENE	100-41-4	26	0			30	0.5 U	0.5 U
METHYLENE CHLORIDE	75-09-2	26	0			5	1 U	1 U
STYRENE	100-42-5	26	0			100	0.5 U	0.5 U
TETRACHLOROETHENE	127-18-4	26	7	5.7	29900	**3**	0.5 U	0.5 U
TOLUENE	108-88-3	26	1	1.7	1.7	40	0.5 U	0.5 U
TOTAL XYLENES	1330-20-7	26	0			20	1 U	1 U
TRANS-1,2-DICHLOROETHENE	156-60-5	26	0			100	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	10061-02-6	26	0			--	0.3 U	0.3 U
TRICHLOROETHENE	79-01-6	26	6	2.2	1890	**3**	0.5 U	0.5 U
VINYL CHLORIDE	75-01-4	26	0			1	0.5 U	0.5 U

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL (µg/L)	OLD1358D 0311358DQ205-20050601 101 111 06/01/05	OLD1358D 0311358DQ405-20051109 101 111 11/09/05	OLD1358D 0311358DQ206-20060725 101 111 07/25/06
VOLATILE ORGANICS (µg/L)									
1,1,1-Trichloroethane	71-55-6	45	0			200	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	45	0			0.2	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	45	0			5	1 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	76-13-1	22	0			210000	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	45	0			70	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	7	1 U	1 U	1 U
1,2,3-Trichlorobenzene	87-61-6	22	0			70	1 U	1 U	1 U
1,2,4-Trichlorobenzene	120-82-1	22	0			70	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	96-12-8	22	0			0.2	1 U	1 U	1 U
1,2-Dibromoethane	106-93-4	22	0			0.02	1 U	1 U	1 U
1,2-Dichlorobenzene	95-50-1	22	0			600	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	45	0			3	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	45	0			5	1 U	1 U	1 U
1,3-Dichlorobenzene	541-73-1	22	0			210	1 U	1 U	1 U
1,4-Dichlorobenzene	106-46-7	22	0			75	1 U	1 U	1 U
2-Butanone	78-93-3	45	1	4.4	4.4	4200	4 U	4 U	4 U
2-Hexanone	591-78-6	45	0			280	4 U	4 U	4 U
4-Methyl-2-pentanone	108-10-1	45	0			560	4 U	4 U	2 U
Acetone	67-64-1	45	6	1.9	27.9	6300	4 U	4 U	4 U
Benzene	71-43-2	45	1	1	1	1	1 U	1 U	1 U
Bromochloromethane	74-97-5	22	0			91	1 U	1 U	1 U
Bromodichloromethane	75-27-4	45	0			0.6	1 U	1 U	1 U
Bromoform	75-25-2	45	0			4.4	1 U	1 U	1 U
Bromomethane	74-83-9	45	0			9.8	1 U	1 U	1 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	1 U	1 U	1 U
Carbon tetrachloride	56-23-5	45	0			3	1 U	1 U	1 U
Chlorobenzene	108-90-7	45	0			100	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	45	0			0.4	1 U	1 U	1 U
Chloroethane	75-00-3	45	0			12	1 U	1 U	1 U
Chloroform	67-66-3	45	7	0.65	3.2	70	1 U	1 U	1 U
Chloromethane	74-87-3	45	0			2.7	1 U	1 U	1 U
cis -1,2-Dichloroethene	156-59-2	45	22	1	1980	70	1 U	1 U	1 U
cis -1,3-Dichloropropene	10061-01-5	45	0			--	1 U	1 U	1 U
Cyclohexane	110-82-7	22	0			--	1 U	1 U	1 U
Dichlorodifluoromethane	75-71-8	22	0			1400	1 U	1 U	1 U
Ethylbenzene	100-41-4	45	0			30	1 U	1 U	1 U
Isopropylbenzene	98-82-8	22	0			0.8	1 U	1 U	1 U
Methyl acetate	79-20-9	22	1	2.4	2.4	3000	1 U	1 U	1 U
Methyl cyclohexane	108-87-2	22	0			--	1 U	1 U	1 U
Methyl tert-butyl ether	1634-04-4	22	0			20	1 U	1 U	1 U
Methylene chloride	75-09-2	45	2	2.3	3.7	5	1 U	1 U	1 U
Styrene	100-42-5	45	0			100	1 U	1 U	1 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	3	0.68 J	1 U	0.55 J

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1358D** **0311358DQ205-20050601** **101** **111** **06/01/05**	**OLD1358D** **0311358DQ405-20051109** **101** **111** **11/09/05**	**OLD1358D** **0311358DQ206-20060725** **101** **111** **07/25/06**
Toluene	108-88-3	45	0			40	1 U	1 U	1 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	3 U	3 U	3 U
trans-1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	1 U	1 U	1 U
trans-1,3-Dichloropropene	10061-02-6	45	0			--	1 U	1 U	1 U
Trichloroethene	79-01-6	45	20	0.32	2030	3	1 U	1 U	1 U
Trichlorofluoromethane	75-69-4	22	0			2100	1 U	1 U	1 U
Vinyl chloride	75-01-4	45	4	0.7	1.1	1	1 U	1 U	1 U
VOLATILE ORGANICS GASES (µg/l)									
Ethane	74-84-0	22	17	0.028	2.5	--	1.2 U		
Ethene	74-85-1	22	19	0.006	12.8	--	1 U		
Methane	74-82-8	22	22	11	1920	--	626		
INORGANICS (µg/l)									
Antimony	7440-36-0	1	0			6			
Iron	7439-89-6	22	21	30.8	11600	300	**733**		
Manganese	7439-96-5	22	22	0.486	420	50	45.3		

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1358D** **0311358DQ205-20050601** **101** **111** **06/01/05**	**OLD1358D** **0311358DQ405-20051109** **101** **111** **11/09/05**	**OLD1358D** **0311358DQ206-20060725** **101** **111** **07/25/06**
MISCELLANEOUS PARAMETERS									
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--	129		
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--	121		
Chloride (mg/L)	16887-00-6	22	22	28.1	982	250	**528**		
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--	0.776 J		
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--	28		
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10			
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1			
Nitrite/Nitrate-n (mg/L)	TTNUS494	7	0			10	0.1 U		
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--			
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--			
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--			
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250	4.42		
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--	2 U		
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--	2.01		

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL (µg/L)	OLD1358D NTC13G58D01 101 111 07/25/06	OLD1359D 0311359DQ205-20050617 100 110 06/17/05	OLD1359D 0311359DQ405-20051109 100 110 11/09/05
VOLATILE ORGANICS (µg/L)									
1,1,1-Trichloroethane	71-55-6	45	0			200	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	45	0			0.2	0.8 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	45	0			5	1 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	76-13-1	22	0			210000		1 U	1 U
1,1-Dichloroethane	75-34-3	45	0			70	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	7	1 U	1 U	1 U
1,2,3-Trichlorobenzene	87-61-6	22	0			70		1 U	1 U
1,2,4-Trichlorobenzene	120-82-1	22	0			70		1 U	1 U
1,2-Dibromo-3-chloropropane	96-12-8	22	0			0.2		1 U	1 U
1,2-Dibromoethane	106-93-4	22	0			0.02		1 U	1 U
1,2-Dichlorobenzene	95-50-1	22	0			600		1 U	1 U
1,2-Dichloroethane	107-06-2	45	0			3	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	45	0			5	1 U	1 U	1 U
1,3-Dichlorobenzene	541-73-1	22	0			210		1 U	1 U
1,4-Dichlorobenzene	106-46-7	22	0			75		1 U	1 U
2-Butanone	78-93-3	45	1	4.4	4.4	4200	5 U	4 U	4 U
2-Hexanone	591-78-6	45	0			280	5 U	4 U	4 U
4-Methyl-2-pentanone	108-10-1	45	0			560	5 U	2 U	4 U
Acetone	67-64-1	45	6	1.9	27.9	6300	27.9 J	10 U	4 U
Benzene	71-43-2	45	1	1	1	1	1 J	1 U	1 U
Bromochloromethane	74-97-5	22	0			91		1 U	1 U
Bromodichloromethane	75-27-4	45	0			0.6	1 U	1 U	1 U
Bromoform	75-25-2	45	0			4.4	1 U	1 U	1 U
Bromomethane	74-83-9	45	0			9.8	2 U	1 U	1 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	2 U	1 U	1 U
Carbon tetrachloride	56-23-5	45	0			3	1 U	1 U	1 U
Chlorobenzene	108-90-7	45	0			100	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	45	0			0.4	0.8 U	1 U	1 U
Chloroethane	75-00-3	45	0			12	2 U	1 U	1 U
Chloroform	67-66-3	45	7	0.65	3.2	70	1 U	1 U	1 U
Chloromethane	74-87-3	45	0			2.7	2 U	1 U	1 U
cis -1,2-Dichloroethene	156-59-2	45	22	1	1980	70	1 U	1 U	1 U
cis -1,3-Dichloropropene	10061-01-5	45	0			--	0.6 U	1 U	1 U
Cyclohexane	110-82-7	22	0			--		1 U	1 U
Dichlorodifluoromethane	75-71-8	22	0			1400		1 U	1 U
Ethylbenzene	100-41-4	45	0			30	1 U	1 U	1 U
Isopropylbenzene	98-82-8	22	0			0.8		1 U	1 U
Methyl acetate	79-20-9	22	1	2.4	2.4	3000		1 U	1 U
Methyl cyclohexane	108-87-2	22	0			--		1 U	1 U
Methyl tert-butyl ether	1634-04-4	22	0			20		1 U	1 U
Methylene chloride	75-09-2	45	2	2.3	3.7	5	7.5 U	1 U	1 U
Styrene	100-42-5	45	0			100	1 U	1 U	1 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	3	1 U	1 U	1 U

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1358D** **NTC13G58D01** **101** **111** **07/25/06**	**OLD1359D** **0311359DQ205-20050617** **100** **110** **06/17/05**	**OLD1359D** **0311359DQ405-20051109** **100** **110** **11/09/05**
Toluene	108-88-3	45	0			40	1 U	1 U	1 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	2 U	3 U	3 U
trans-1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	1 U	1 U	1 U
trans-1,3-Dichloropropene	10061-02-6	45	0			--	0.6 U	1 U	1 U
Trichloroethene	79-01-6	45	20	0.32	2030	3	1 U	1 U	1 U
Trichlorofluoromethane	75-69-4	22	0			2100		1 U	1 U
Vinyl chloride	75-01-4	45	4	0.7	1.1	1	1 U	1 U	1 U
VOLATILE ORGANICS GASES (µg/l)									
Ethane	74-84-0	22	17	0.028	2.5	--	0.15	1.2 U	
Ethene	74-85-1	22	19	0.006	12.8	--	0.006 J	1 U	
Methane	74-82-8	22	22	11	1920	--	750	213	
INORGANICS (µg/l)									
Antimony	7440-36-0	1	0			6			
Iron	7439-89-6	22	21	30.8	11600	300	**550**	**1570**	
Manganese	7439-96-5	22	22	0.486	420	50	39.8	47.3	

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1358D** **NTC13G58D01** **101** **111** **07/25/06**	**OLD1359D** **0311359DQ205-20050617** **100** **110** **06/17/05**	**OLD1359D** **0311359DQ405-20051109** **100** **110** **11/09/05**
MISCELLANEOUS PARAMETERS									
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--		183	
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--	5.9	167 J	
Chloride (mg/L)	16887-00-6	22	22	28.1	982	250	**510**	**526**	
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--		1.82	
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--	4.8	9.1	
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10	0.05 U		
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1	0.05 U		
Nitrite/Nitrate-n (mg/L)	TTNUS494	7	0			10		0.1 U	
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--	18		
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--	0.06		
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--	1.1		
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250	6	5.99	
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--		1.12 J	
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--	0.92	0.475 J	

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1359D** **0311359DQ206-20060719** **100** **110** **07/19/06**	**OLD1359D** **NTC13G59D01** **100** **110** **07/25/06**	**OLD1360D** **0311360DQ205-20050614** **100** **110** **06/14/05**
VOLATILE ORGANICS (µg/L)									
1,1,1-Trichloroethane	71-55-6	45	0			200	1 U	1 U	10 U
1,1,2,2-Tetrachloroethane	79-34-5	45	0			0.2	1 U	0.8 U	10 U
1,1,2-Trichloroethane	79-00-5	45	0			5	1 U	1 U	10 U
1,1,2-Trichlorotrifluoroethane	76-13-1	22	0			210000	1 U		10 U
1,1-Dichloroethane	75-34-3	45	0			70	1 U	1 U	10 U
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	7	1 U	1 U	10 U
1,2,3-Trichlorobenzene	87-61-6	22	0			70	1 U		10 U
1,2,4-Trichlorobenzene	120-82-1	22	0			70	1 U		10 U
1,2-Dibromo-3-chloropropane	96-12-8	22	0			0.2	1 U		10 U
1,2-Dibromoethane	106-93-4	22	0			0.02	1 U		10 U
1,2-Dichlorobenzene	95-50-1	22	0			600	1 U		10 U
1,2-Dichloroethane	107-06-2	45	0			3	1 U	1 U	10 U
1,2-Dichloropropane	78-87-5	45	0			5	1 U	1 U	10 U
1,3-Dichlorobenzene	541-73-1	22	0			210	1 U		10 U
1,4-Dichlorobenzene	106-46-7	22	0			75	1 U		10 U
2-Butanone	78-93-3	45	1	4.4	4.4	4200	4 U	5 U	40 U
2-Hexanone	591-78-6	45	0			280	4 U	5 U	40 U
4-Methyl-2-pentanone	108-10-1	45	0			560	2 U	5 U	20 U
Acetone	67-64-1	45	6	1.9	27.9	6300	4 U	10 U	40 U
Benzene	71-43-2	45	1	1	1	1	1 U	1 U	10 U
Bromochloromethane	74-97-5	22	0			91	1 U		10 U
Bromodichloromethane	75-27-4	45	0			0.6	1 U	1 U	10 U
Bromoform	75-25-2	45	0			4.4	1 U	1 U	10 U
Bromomethane	74-83-9	45	0			9.8	1 U	2 U	10 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	1 U	2 U	10 U
Carbon tetrachloride	56-23-5	45	0			3	1 U	1 U	10 U
Chlorobenzene	108-90-7	45	0			100	1 U	1 U	10 U
Chlorodibromomethane	124-48-1	45	0			0.4	1 U	0.8 U	10 U
Chloroethane	75-00-3	45	0			12	1 U	2 U	10 U
Chloroform	67-66-3	45	7	0.65	3.2	70	1 U	1 U	10 U
Chloromethane	74-87-3	45	0			2.7	1 U	2 U	10 U
cis -1,2-Dichloroethene	156-59-2	45	22	1	1980	70	1 U	1 U	**418**
cis -1,3-Dichloropropene	10061-01-5	45	0			--	1 U	0.6 U	10 U
Cyclohexane	110-82-7	22	0			--	1 U		10 U
Dichlorodifluoromethane	75-71-8	22	0			1400	1 U		10 U
Ethylbenzene	100-41-4	45	0			30	1 U	1 U	10 U
Isopropylbenzene	98-82-8	22	0			0.8	1 U		10 U
Methyl acetate	79-20-9	22	1	2.4	2.4	3000	1 U		10 U
Methyl cyclohexane	108-87-2	22	0			--	1 U		10 U
Methyl tert-butyl ether	1634-04-4	22	0			20	1 U		10 U
Methylene chloride	75-09-2	45	2	2.3	3.7	5	1 U	6.3 U	10 U
Styrene	100-42-5	45	0			100	1 U	1 U	10 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	3	1 U	1 U	**32600**

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1359D** **0311359DQ206-20060719** **100** **110** **07/19/06**	**OLD1359D** **NTC13G59D01** **100** **110** **07/25/06**	**OLD1360D** **0311360DQ205-20050614** **100** **110** **06/14/05**
Toluene	108-88-3	45	0			40	1 U	1 U	10 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	3 U	2 U	30 U
trans-1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	1 U	1 U	10 U
trans-1,3-Dichloropropene	10061-02-6	45	0			--	1 U	0.6 U	10 U
Trichloroethene	79-01-6	45	20	0.32	2030	3	1 U	1 U	**2030**
Trichlorofluoromethane	75-69-4	22	0			2100	1 U		10 U
Vinyl chloride	75-01-4	45	4	0.7	1.1	1	1 U	1 U	10 U
VOLATILE ORGANICS GASES (µg/l)									
Ethane	74-84-0	22	17	0.028	2.5	--		0.052	1.2 U
Ethene	74-85-1	22	19	0.006	12.8	--		0.086	0.52 J
Methane	74-82-8	22	22	11	1920	--		450	74.7
INORGANICS (µg/l)									
Antimony	7440-36-0	1	0			6			5 U
Iron	7439-89-6	22	21	30.8	11600	300		**569**	**2320**
Manganese	7439-96-5	22	22	0.486	420	50		33.8	**88.1**

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1359D** **0311359DQ206-20060719** **100** **110** **07/19/06**	**OLD1359D** **NTC13G59D01** **100** **110** **07/25/06**	**OLD1360D** **0311360DQ205-20050614** **100** **110** **06/14/05**
MISCELLANEOUS PARAMETERS									
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--			128
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--		7	119 J
Chloride (mg/L)	16887-00-6	22	22	28.1	982	250		**350**	**621**
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--			1.44
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--		4.5	20
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10		0.05 U	
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1		0.05 U	
Nitrite/Nitrate-n (mg/L)	TTNUS494	7	0			10			0.1 U
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--		18	
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--		0.071	
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--		1.4	
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250		1 U	10.7
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--			2 U
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--		1.1	2.32

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL (µg/L)	OLD1360D 0311360DQ405-20051109 100 110 11/09/05	OLD1360D 0311360DQ206-20060725 100 110 07/25/06	OLD1360D NTC13G60D01 100 110 07/25/06	OLD1360D 0311360DQ206FP-20060803 100 110 08/03/06
VOLATILE ORGANICS (µg/L)										
1,1,1-Trichloroethane	71-55-6	45	0			200	50 U	50 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	45	0			0.2	50 U	50 U	0.8 U	1 U
1,1,2-Trichloroethane	79-00-5	45	0			5	50 U	50 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	76-13-1	22	0			210000	50 U	50 U		1 U
1,1-Dichloroethane	75-34-3	45	0			70	50 U	50 U	1 U	1 U
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	7	50 U	50 U	4.3	0.97 J
1,2,3-Trichlorobenzene	87-61-6	22	0			70	50 U	50 U		1 U
1,2,4-Trichlorobenzene	120-82-1	22	0			70	50 U	50 U		1 U
1,2-Dibromo-3-chloropropane	96-12-8	22	0			0.2	50 U	50 U		1 U
1,2-Dibromoethane	106-93-4	22	0			0.02	50 U	50 U		1 U
1,2-Dichlorobenzene	95-50-1	22	0			600	50 U	50 U		1 U
1,2-Dichloroethane	107-06-2	45	0			3	50 U	50 U	1 U	1 U
1,2-Dichloropropane	78-87-5	45	0			5	50 U	50 U	1 U	1 U
1,3-Dichlorobenzene	541-73-1	22	0			210	50 U	50 U		1 U
1,4-Dichlorobenzene	106-46-7	22	0			75	50 U	50 U		1 U
2-Butanone	78-93-3	45	1	4.4	4.4	4200	200 U	200 U	5 U	4 U
2-Hexanone	591-78-6	45	0			280	200 U	200 U	5 U	4 U
4-Methyl-2-pentanone	108-10-1	45	0			560	200 U	100 U	5 U	2 U
Acetone	67-64-1	45	6	1.9	27.9	6300	200 U	200 U	10 U	4 U
Benzene	71-43-2	45	1	1	1	1	50 U	50 U	1 U	1 U
Bromochloromethane	74-97-5	22	0			91	50 U	50 U		1 U
Bromodichloromethane	75-27-4	45	0			0.6	50 U	50 U	1 U	1 U
Bromoform	75-25-2	45	0			4.4	50 U	50 U	1 U	1 U
Bromomethane	74-83-9	45	0			9.8	50 U	50 U	2 U	1 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	50 U	50 U	2 U	1 U
Carbon tetrachloride	56-23-5	45	0			3	50 U	50 U	1 U	1 U
Chlorobenzene	108-90-7	45	0			100	50 U	50 U	1 U	1 U
Chlorodibromomethane	124-48-1	45	0			0.4	50 U	50 U	0.8 U	1 U
Chloroethane	75-00-3	45	0			12	50 U	50 U	2 U	1 U
Chloroform	67-66-3	45	7	0.65	3.2	70	50 U	50 U	1 U	1 U
Chloromethane	74-87-3	45	0			2.7	50 U	50 U	2 U	1 U
cis -1,2-Dichloroethene	156-59-2	45	22	1	1980	70	**403**	**351 J**	**159 J**	**402**
cis -1,3-Dichloropropene	10061-01-5	45	0			--	50 U	50 U	0.6 U	1 U
Cyclohexane	110-82-7	22	0			--	50 U	50 U		1 U
Dichlorodifluoromethane	75-71-8	22	0			1400	50 U	50 U		1 U
Ethylbenzene	100-41-4	45	0			30	50 U	50 U	1 U	1 U
Isopropylbenzene	98-82-8	22	0			0.8	50 U	50 U		1 U
Methyl acetate	79-20-9	22	1	2.4	2.4	3000	50 U	50 U		1 U
Methyl cyclohexane	108-87-2	22	0			--	50 U	50 U		1 U
Methyl tert-butyl ether	1634-04-4	22	0			20	50 U	50 U		1 U
Methylene chloride	75-09-2	45	2	2.3	3.7	5	50 U	50 U	6.2 U	1 U
Styrene	100-42-5	45	0			100	50 U	50 U	1 U	1 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	3	**52600**	**35800 J**	**6180**	**829**

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1360D** **0311360DQ405-20051109** **100** **110** **11/09/05**	**OLD1360D** **0311360DQ206-20060725** **100** **110** **07/25/06**	**OLD1360D** **NTC13G60D01** **100** **110** **07/25/06**	**OLD1360D** **0311360DQ206FP-20060803** **100** **110** **08/03/06**
Toluene	108-88-3	45	0			40	50 U	50 U	1 U	1 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	150 U	19.9 J	2.9 J	3 U
trans-1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	50 U	50 U	1.1 J	2.4
trans-1,3-Dichloropropene	10061-02-6	45	0			--	50 U	50 U	0.6 U	1 U
Trichloroethene	79-01-6	45	20	0.32	2030	3	**2010**	**1900 J**	**500**	**253**
Trichlorofluoromethane	75-69-4	22	0			2100	50 U	50 U		1 U
Vinyl chloride	75-01-4	45	4	0.7	1.1	1	50 U	50 U	1 U	1 U
VOLATILE ORGANICS GASES (µg/l)										
Ethane	74-84-0	22	17	0.028	2.5	--			1.1	
Ethene	74-85-1	22	19	0.006	12.8	--			6	
Methane	74-82-8	22	22	11	1920	--			670	
INORGANICS (µg/l)										
Antimony	7440-36-0	1	0			6				
Iron	7439-89-6	22	21	30.8	11600	300			**573**	
Manganese	7439-96-5	22	22	0.486	420	50			**68.6**	

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1360D** **0311360DQ405-20051109** **100** **110** **11/09/05**	**OLD1360D** **0311360DQ206-20060725** **100** **110** **07/25/06**	**OLD1360D** **NTC13G60D01** **100** **110** **07/25/06**	**OLD1360D** **0311360DQ206FP-20060803** **100** **110** **08/03/06**
MISCELLANEOUS PARAMETERS										
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--				
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--			7.9	
Chloride (mg/L)	16887-00-6	22	22	28.1	982	250			**856**	
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--				
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--			3.4	
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10			0.05 U	
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1			0.05 U	
Nitrite/Nitrate-n (mg/L)	TTNUS494	7	0			10				
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--			18	
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--			0.049	
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--			1.2	
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250			1 U	
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--				
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--			0.9	

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL (µg/L)	OLD1361D 0311361DQ205-20050601 99 109 06/01/05	OLD1361D 0311361DQ405-20051109 99 109 11/09/05	OLD1361D 0311361DQ206-20060725 99 109 07/25/06	OLD1361D NTC13G61D01 99 109 07/25/06
VOLATILE ORGANICS (µg/L)										
1,1,1-Trichloroethane	71-55-6	45	0			200	1 U	1 U	1 U	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	45	0			0.2	1 U	1 U	1 U	0.4 U
1,1,2-Trichloroethane	79-00-5	45	0			5	1 U	1 U	1 U	0.5 U
1,1,2-Trichlorotrifluoroethane	76-13-1	22	0			210000	1 U	1 U	1 U	
1,1-Dichloroethane	75-34-3	45	0			70	1 U	1 U	1 U	0.5 U
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	7	1 U	1 U	1 U	0.5 U
1,2,3-Trichlorobenzene	87-61-6	22	0			70	1 U	1 U	1 U	
1,2,4-Trichlorobenzene	120-82-1	22	0			70	1 U	1 U	1 U	
1,2-Dibromo-3-chloropropane	96-12-8	22	0			0.2	1 U	1 U	1 U	
1,2-Dibromoethane	106-93-4	22	0			0.02	1 U	1 U	1 U	
1,2-Dichlorobenzene	95-50-1	22	0			600	1 U	1 U	1 U	
1,2-Dichloroethane	107-06-2	45	0			3	1 U	1 U	1 U	0.5 U
1,2-Dichloropropane	78-87-5	45	0			5	1 U	1 U	1 U	0.5 U
1,3-Dichlorobenzene	541-73-1	22	0			210	1 U	1 U	1 U	
1,4-Dichlorobenzene	106-46-7	22	0			75	1 U	1 U	1 U	
2-Butanone	78-93-3	45	1	4.4	4.4	4200	4 U	4 U	4 U	2.5 U
2-Hexanone	591-78-6	45	0			280	4 U	4 U	4 U	2.5 U
4-Methyl-2-pentanone	108-10-1	45	0			560	4 U	4 U	2 U	2.5 U
Acetone	67-64-1	45	6	1.9	27.9	6300	4 U	3 J	4 U	5 U
Benzene	71-43-2	45	1	1	1	1	1 U	1 U	1 U	0.5 U
Bromochloromethane	74-97-5	22	0			91	1 U	1 U	1 U	
Bromodichloromethane	75-27-4	45	0			0.6	1 U	1 U	1 U	0.5 U
Bromoform	75-25-2	45	0			4.4	1 U	1 U	1 U	0.5 U
Bromomethane	74-83-9	45	0			9.8	1 U	1 U	1 U	1 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	1 U	0.43 J	1.2	1 U
Carbon tetrachloride	56-23-5	45	0			3	1 U	1 U	1 U	0.5 U
Chlorobenzene	108-90-7	45	0			100	1 U	1 U	1 U	0.5 U
Chlorodibromomethane	124-48-1	45	0			0.4	1 U	1 U	1 U	0.4 U
Chloroethane	75-00-3	45	0			12	1 U	1 U	1 U	1 U
Chloroform	67-66-3	45	7	0.65	3.2	70	1 U	1 U	1 U	0.5 U
Chloromethane	74-87-3	45	0			2.7	1 U	1 U	1 U	1 U
cis -1,2-Dichloroethene	156-59-2	45	22	1	1980	70	1 U	1 U	1 U	0.5 U
cis -1,3-Dichloropropene	10061-01-5	45	0			--	1 U	1 U	1 U	0.3 U
Cyclohexane	110-82-7	22	0			--	1 U	1 U	1 U	
Dichlorodifluoromethane	75-71-8	22	0			1400	1 U	1 U	1 U	
Ethylbenzene	100-41-4	45	0			30	1 U	1 U	1 U	0.5 U
Isopropylbenzene	98-82-8	22	0			0.8	1 U	1 U	1 U	
Methyl acetate	79-20-9	22	1	2.4	2.4	3000	1 U	2.4	1 U	
Methyl cyclohexane	108-87-2	22	0			--	1 U	1 U	1 U	
Methyl tert-butyl ether	1634-04-4	22	0			20	1 U	1 U	1 U	
Methylene chloride	75-09-2	45	2	2.3	3.7	5	1 U	1 U	1 U	3 U
Styrene	100-42-5	45	0			100	1 U	1 U	1 U	0.5 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	3	1 U	1 U	1 U	0.5 U

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1361D** **0311361DQ205-20050601** **99** **109** **06/01/05**	**OLD1361D** **0311361DQ405-20051109** **99** **109** **11/09/05**	**OLD1361D** **0311361DQ206-20060725** **99** **109** **07/25/06**	**OLD1361D** **NTC13G61D01** **99** **109** **07/25/06**
Toluene	108-88-3	45	0			40	1 U	1 U	1 U	0.5 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	3 U	3 U	3 U	1 U
trans -1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	1 U	1 U	1 U	0.5 U
trans -1,3-Dichloropropene	10061-02-6	45	0			--	1 U	1 U	1 U	0.3 U
Trichloroethene	79-01-6	45	20	0.32	2030	3	1 U	1 U	1 U	0.5 U
Trichlorofluoromethane	75-69-4	22	0			2100	1 U	1 U	1 U	
Vinyl chloride	75-01-4	45	4	0.7	1.1	1	1 U	1 U	1 U	0.5 U
VOLATILE ORGANICS GASES (µg/l)										
Ethane	74-84-0	22	17	0.028	2.5	--	1.2 U			0.028
Ethene	74-85-1	22	19	0.006	12.8	--	1.6			0.29
Methane	74-82-8	22	22	11	1920	--	1920			260
INORGANICS (µg/l)										
Antimony	7440-36-0	1	0			6				
Iron	7439-89-6	22	21	30.8	11600	300	**424**			**1130**
Manganese	7439-96-5	22	22	0.486	420	50	44.7			**60**

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1361D** **0311361DQ205-20050601** **99** **109** **06/01/05**	**OLD1361D** **0311361DQ405-20051109** **99** **109** **11/09/05**	**OLD1361D** **0311361DQ206-20060725** **99** **109** **07/25/06**	**OLD1361D** **NTC13G61D01** **99** **109** **07/25/06**
MISCELLANEOUS PARAMETERS										
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--	94			
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--	85.4			0.82 J
Chloride (mg/L)	16887-00-6	22	22	28.1	982	250	**982**			**556**
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--	1.73			
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--	160000			5.8
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10				0.05 U
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1				0.05 U
Nitrite/Nitrate-n (mg/L)	TTNUS494	7	0			10	0.1 U			
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--				18
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--				0.042
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--				4.1
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250	4.18			1 U
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--	2 U			
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--	2.07			0.91

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL (µg/L)	OLD1362D 0311362DQ205-20050601 110 120 06/01/05	OLD1362D 0311362DQ405-20051109 110 120 11/09/05	OLD1362D 0311362DQ206-20060726 110 120 07/26/06	OLD1362D NTC13G62D01 110 120 07/26/06
VOLATILE ORGANICS (µg/L)										
1,1,1-Trichloroethane	71-55-6	45	0			200	5 U	5 U	10 U	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	45	0			0.2	5 U	5 U	10 U	0.4 U
1,1,2-Trichloroethane	79-00-5	45	0			5	5 U	5 U	10 U	0.5 U
1,1,2-Trichlorotrifluoroethane	76-13-1	22	0			210000	5 U	5 U	10 U	
1,1-Dichloroethane	75-34-3	45	0			70	5 U	5 U	10 U	0.5 U
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	7	5 U	**7.7**	10 U	2.7
1,2,3-Trichlorobenzene	87-61-6	22	0			70	5 U	5 U	10 U	
1,2,4-Trichlorobenzene	120-82-1	22	0			70	5 U	5 U	10 U	
1,2-Dibromo-3-chloropropane	96-12-8	22	0			0.2	5 U	5 U	10 U	
1,2-Dibromoethane	106-93-4	22	0			0.02	5 U	5 U	10 U	
1,2-Dichlorobenzene	95-50-1	22	0			600	5 U	5 U	10 U	
1,2-Dichloroethane	107-06-2	45	0			3	5 U	5 U	10 U	0.5 U
1,2-Dichloropropane	78-87-5	45	0			5	5 U	5 U	10 U	0.5 U
1,3-Dichlorobenzene	541-73-1	22	0			210	5 U	5 U	10 U	
1,4-Dichlorobenzene	106-46-7	22	0			75	5 U	5 U	10 U	
2-Butanone	78-93-3	45	1	4.4	4.4	4200	20 U	20 U	40 U	2.5 U
2-Hexanone	591-78-6	45	0			280	20 U	20 U	40 U	2.5 U
4-Methyl-2-pentanone	108-10-1	45	0			560	20 U	20 U	20 U	2.5 U
Acetone	67-64-1	45	6	1.9	27.9	6300	20 U	20 U	40 U	5 U
Benzene	71-43-2	45	1	1	1	1	5 U	5 U	10 U	0.5 U
Bromochloromethane	74-97-5	22	0			91	5 U	5 U	10 U	
Bromodichloromethane	75-27-4	45	0			0.6	5 U	5 U	10 U	0.5 U
Bromoform	75-25-2	45	0			4.4	5 U	5 U	10 U	0.5 U
Bromomethane	74-83-9	45	0			9.8	5 U	5 U	10 U	1 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	77.1	12.6	10 U	1 U
Carbon tetrachloride	56-23-5	45	0			3	5 U	5 U	10 U	0.5 U
Chlorobenzene	108-90-7	45	0			100	5 U	5 U	10 U	0.5 U
Chlorodibromomethane	124-48-1	45	0			0.4	5 U	5 U	10 U	0.4 U
Chloroethane	75-00-3	45	0			12	5 U	5 U	10 U	1 U
Chloroform	67-66-3	45	7	0.65	3.2	70	1.6 J	5 U	10 U	0.5 U
Chloromethane	74-87-3	45	0			2.7	5 U	5 U	10 U	1 U
cis-1,2-Dichloroethene	156-59-2	45	22	1	1980	70	**581**	**1370**	**488**	**468**
cis-1,3-Dichloropropene	10061-01-5	45	0			--	5 U	5 U	10 U	0.3 U
Cyclohexane	110-82-7	22	0			--	5 U	5 U	10 U	
Dichlorodifluoromethane	75-71-8	22	0			1400	5 U	5 U	10 U	
Ethylbenzene	100-41-4	45	0			30	5 U	5 U	10 U	0.5 U
Isopropylbenzene	98-82-8	22	0			0.8	5 U	5 U	10 U	
Methyl acetate	79-20-9	22	1	2.4	2.4	3000	5 U	5 U	10 U	
Methyl cyclohexane	108-87-2	22	0			--	5 U	5 U	10 U	
Methyl tert-butyl ether	1634-04-4	22	0			20	5 U	5 U	10 U	
Methylene chloride	75-09-2	45	2	2.3	3.7	5	2.3 J	3.7 J	10 U	1 U
Styrene	100-42-5	45	0			100	5 U	5 U	10 U	0.5 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	3	**15600**	**7020**	**12900**	**16800**

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1362D** **0311362DQ205-20050601** **110** **120** **06/01/05**	**OLD1362D** **0311362DQ405-20051109** **110** **120** **11/09/05**	**OLD1362D** **0311362DQ206-20060726** **110** **120** **07/26/06**	**OLD1362D** **NTC13G62D01** **110** **120** **07/26/06**
Toluene	108-88-3	45	0			40	5 U	5 U	10 U	0.5 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	15 U	15 U	30 U	1 U
trans-1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	5 U	1.3 J	10 U	0.92 J
trans-1,3-Dichloropropene	10061-02-6	45	0			--	5 U	5 U	10 U	0.3 U
Trichloroethene	79-01-6	45	20	0.32	2030	3	**1540**	**1600**	**385**	**409**
Trichlorofluoromethane	75-69-4	22	0			2100	5 U	5 U	10 U	
Vinyl chloride	75-01-4	45	4	0.7	1.1	1	5 U	5 U	10 U	0.81 J
VOLATILE ORGANICS GASES (µg/l)										
Ethane	74-84-0	22	17	0.028	2.5	--	1.5			2.5
Ethene	74-85-1	22	19	0.006	12.8	--	12.8			9
Methane	74-82-8	22	22	11	1920	--	69.4			700
INORGANICS (µg/l)										
Antimony	7440-36-0	1	0			6				
Iron	7439-89-6	22	21	30.8	11600	300	50 U			**1660**
Manganese	7439-96-5	22	22	0.486	420	50	0.486 J			**59.9**

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1362D** **0311362DQ205-20050601** **110** **120** **06/01/05**	**OLD1362D** **0311362DQ405-20051109** **110** **120** **11/09/05**	**OLD1362D** **0311362DQ206-20060726** **110** **120** **07/26/06**	**OLD1362D** **NTC13G62D01** **110** **120** **07/26/06**
MISCELLANEOUS PARAMETERS										
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--	18			
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--	26.6			7.6
Chloride (mg/L)	16887-00-6	22	22	28.1	982	250	**579**			**946**
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--	2.49			
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--	3800			41
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10				0.05 U
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1				0.25 U
Nitrite/Nitrate-n (mg/L)	TTNUS494	7	0			10	0.1 U			
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--				18
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--				0.25
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--				1.7
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250	23.6			6
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--	0.4 J			
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--	4.95			1

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1363D** **0311363DQ205-20050517** **96** **106** **05/17/05**	**OLD1363D** **0311363DQ405-20051108** **96** **106** **11/08/05**	**OLD1363D** **0311363DQ206-20060725** **96** **106** **07/25/06**
VOLATILE ORGANICS (µg/L)									
1,1,1-Trichloroethane	71-55-6	45	0			200	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	45	0			0.2	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	45	0			5	1 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	76-13-1	22	0			210000	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	45	0			70	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	7	1 U	1 U	1 U
1,2,3-Trichlorobenzene	87-61-6	22	0			70	1 U	1 U	1 U
1,2,4-Trichlorobenzene	120-82-1	22	0			70	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	96-12-8	22	0			0.2	1 U	1 U	1 U
1,2-Dibromoethane	106-93-4	22	0			0.02	1 U	1 U	1 U
1,2-Dichlorobenzene	95-50-1	22	0			600	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	45	0			3	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	45	0			5	1 U	1 U	1 U
1,3-Dichlorobenzene	541-73-1	22	0			210	1 U	1 U	1 U
1,4-Dichlorobenzene	106-46-7	22	0			75	1 U	1 U	1 U
2-Butanone	78-93-3	45	1	4.4	4.4	4200	4 U	4 U	4 U
2-Hexanone	591-78-6	45	0			280	4 U	4 U	4 U
4-Methyl-2-pentanone	108-10-1	45	0			560	4 U	4 U	2 U
Acetone	67-64-1	45	6	1.9	27.9	6300	4 U	1.9 J	4 U
Benzene	71-43-2	45	1	1	1	1	1 U	1 U	1 U
Bromochloromethane	74-97-5	22	0			91	1 U	1 U	1 U
Bromodichloromethane	75-27-4	45	0			0.6	1 U	1 U	1 U
Bromoform	75-25-2	45	0			4.4	1 U	1 U	1 U
Bromomethane	74-83-9	45	0			9.8	1 U	1 U	1 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	8.8	0.43 J	2.1
Carbon tetrachloride	56-23-5	45	0			3	1 U	1 U	1 U
Chlorobenzene	108-90-7	45	0			100	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	45	0			0.4	1 U	1 U	1 U
Chloroethane	75-00-3	45	0			12	1 U	1 U	1 U
Chloroform	67-66-3	45	7	0.65	3.2	70	1 U	1 U	1 U
Chloromethane	74-87-3	45	0			2.7	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	45	22	1	1980	70	10.5	6.6	10.1
cis-1,3-Dichloropropene	10061-01-5	45	0			--	1 U	1 U	1 U
Cyclohexane	110-82-7	22	0			--	1 U	1 U	1 U
Dichlorodifluoromethane	75-71-8	22	0			1400	1 U	1 U	1 U
Ethylbenzene	100-41-4	45	0			30	1 U	1 U	1 U
Isopropylbenzene	98-82-8	22	0			0.8	1 U	1 U	1 U
Methyl acetate	79-20-9	22	1	2.4	2.4	3000	1 U	1 U	1 U
Methyl cyclohexane	108-87-2	22	0			--	1 U	1 U	1 U
Methyl tert-butyl ether	1634-04-4	22	0			20	1 U	1 U	1 U
Methylene chloride	75-09-2	45	2	2.3	3.7	5	1 U	1 U	1 U
Styrene	100-42-5	45	0			100	1 U	1 U	1 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	3	**4.9**	1.8	**4.1**

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1363D** **0311363DQ205-20050517** **96** **106** **05/17/05**	**OLD1363D** **0311363DQ405-20051108** **96** **106** **11/08/05**	**OLD1363D** **0311363DQ206-20060725** **96** **106** **07/25/06**
Toluene	108-88-3	45	0			40	1 U	1 U	1 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	3 U	3 U	3 U
trans -1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	1 U	1 U	1 U
trans -1,3-Dichloropropene	10061-02-6	45	0			--	1 U	1 U	1 U
Trichloroethene	79-01-6	45	20	0.32	2030	3	**4.6**	0.93 J	**5.1**
Trichlorofluoromethane	75-69-4	22	0			2100	1 U	1 U	1 U
Vinyl chloride	75-01-4	45	4	0.7	1.1	1	1 U	1 U	1 U
VOLATILE ORGANICS GASES (µg/l)									
Ethane	74-84-0	22	17	0.028	2.5	--	0.76 J		
Ethene	74-85-1	22	19	0.006	12.8	--	4.3		
Methane	74-82-8	22	22	11	1920	--	1550		
INORGANICS (µg/l)									
Antimony	7440-36-0	1	0			6			
Iron	7439-89-6	22	21	30.8	11600	300	**423**		
Manganese	7439-96-5	22	22	0.486	420	50	47.4		

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1363D** **0311363DQ205-20050517** **96** **106** **05/17/05**	**OLD1363D** **0311363DQ405-20051108** **96** **106** **11/08/05**	**OLD1363D** **0311363DQ206-20060725** **96** **106** **07/25/06**
MISCELLANEOUS PARAMETERS									
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--	112		
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--	95.7		
Chloride (mg/L)	16887-00-6	22	22	28.1	982	250	201		
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--	4.12		
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--			
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10			
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1			
Nitrite/Nitrate-n (mg/L)	TTNUS494	7	0			10	0.1 U		
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--			
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--			
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--			
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250	1.8		
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--	2 U		
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--	3.23		

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1363D** **NTC13G63D01** **96** **106** **07/25/06**	**OLD1364D** **0311364DQ205-20050519** **100** **110** **05/19/05**	**OLD1364D** **0311364DQ405-20051110** **100** **110** **11/10/05**
VOLATILE ORGANICS (µg/L)									
1,1,1-Trichloroethane	71-55-6	45	0			200	0.5 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	45	0			0.2	0.4 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	45	0			5	0.5 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	76-13-1	22	0			210000		1 U	1 U
1,1-Dichloroethane	75-34-3	45	0			70	0.5 U	1 U	1 U
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	7	0.5 U	1 U	1 U
1,2,3-Trichlorobenzene	87-61-6	22	0			70		1 U	1 U
1,2,4-Trichlorobenzene	120-82-1	22	0			70		1 U	1 U
1,2-Dibromo-3-chloropropane	96-12-8	22	0			0.2		1 U	1 U
1,2-Dibromoethane	106-93-4	22	0			0.02		1 U	1 U
1,2-Dichlorobenzene	95-50-1	22	0			600		1 U	1 U
1,2-Dichloroethane	107-06-2	45	0			3	0.5 U	1 U	1 U
1,2-Dichloropropane	78-87-5	45	0			5	0.5 U	1 U	1 U
1,3-Dichlorobenzene	541-73-1	22	0			210		1 U	1 U
1,4-Dichlorobenzene	106-46-7	22	0			75		1 U	1 U
2-Butanone	78-93-3	45	1	4.4	4.4	4200	2.5 U	4 U	4 U
2-Hexanone	591-78-6	45	0			280	2.5 U	4 U	4 U
4-Methyl-2-pentanone	108-10-1	45	0			560	2.5 U	4 U	4 U
Acetone	67-64-1	45	6	1.9	27.9	6300	5 U	4 U	4 U
Benzene	71-43-2	45	1	1	1	1	0.5 U	1 U	1 U
Bromochloromethane	74-97-5	22	0			91		1 U	1 U
Bromodichloromethane	75-27-4	45	0			0.6	0.5 U	1 U	1 U
Bromoform	75-25-2	45	0			4.4	0.5 U	1 U	1 U
Bromomethane	74-83-9	45	0			9.8	1 U	1 U	1 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	1 U	1 U	1 U
Carbon tetrachloride	56-23-5	45	0			3	0.5 U	1 U	1 U
Chlorobenzene	108-90-7	45	0			100	0.5 U	1 U	1 U
Chlorodibromomethane	124-48-1	45	0			0.4	0.4 U	1 U	1 U
Chloroethane	75-00-3	45	0			12	1 U	1 U	1 U
Chloroform	67-66-3	45	7	0.65	3.2	70	0.5 U	1 U	1 U
Chloromethane	74-87-3	45	0			2.7	1 U	1 U	1 U
cis -1,2-Dichloroethene	156-59-2	45	22	1	1980	70	4.6	1 U	1 U
cis -1,3-Dichloropropene	10061-01-5	45	0			--	0.3 U	1 U	1 U
Cyclohexane	110-82-7	22	0			--		1 U	1 U
Dichlorodifluoromethane	75-71-8	22	0			1400		1 U	1 U
Ethylbenzene	100-41-4	45	0			30	0.5 U	1 U	1 U
Isopropylbenzene	98-82-8	22	0			0.8		1 U	1 U
Methyl acetate	79-20-9	22	1	2.4	2.4	3000		1 U	1 U
Methyl cyclohexane	108-87-2	22	0			--		1 U	1 U
Methyl tert-butyl ether	1634-04-4	22	0			20		1 U	1 U
Methylene chloride	75-09-2	45	2	2.3	3.7	5	1 U	1 U	1 U
Styrene	100-42-5	45	0			100	0.5 U	1 U	1 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	3	0.85 J	1 U	1 U

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1363D** **NTC13G63D01** **96** **106** **07/25/06**	**OLD1364D** **0311364DQ205-20050519** **100** **110** **05/19/05**	**OLD1364D** **0311364DQ405-20051110** **100** **110** **11/10/05**
Toluene	108-88-3	45	0			40	0.5 U	1 U	1 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	1 U	3 U	3 U
trans-1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	0.5 U	1 U	1 U
trans-1,3-Dichloropropene	10061-02-6	45	0			--	0.3 U	1 U	1 U
Trichloroethene	79-01-6	45	20	0.32	2030	3	0.5 U	1 U	1 U
Trichlorofluoromethane	75-69-4	22	0			2100		1 U	1 U
Vinyl chloride	75-01-4	45	4	0.7	1.1	1	0.5 U	1 U	1 U
VOLATILE ORGANICS GASES (µg/l)									
Ethane	74-84-0	22	17	0.028	2.5	--	0.11	1.2 U	
Ethene	74-85-1	22	19	0.006	12.8	--	0.76	1 U	
Methane	74-82-8	22	22	11	1920	--	470	127	
INORGANICS (µg/l)									
Antimony	7440-36-0	1	0			6			
Iron	7439-89-6	22	21	30.8	11600	300	**518**	189	
Manganese	7439-96-5	22	22	0.486	420	50	40.5	9.54	

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1363D** **NTC13G63D01** **96** **106** **07/25/06**	**OLD1364D** **0311364DQ205-20050519** **100** **110** **05/19/05**	**OLD1364D** **0311364DQ405-20051110** **100** **110** **11/10/05**
MISCELLANEOUS PARAMETERS									
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--		216	
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--	6.7	262	
Chloride (mg/L)	16887-00-6	22	22	28.1	982	250	**300**	38.7 J	
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--		2.08	
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--	1500	4.7	
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10	0.61		
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1	0.05 U		
Nitrite/Nitrate-n (mg/L)	TTNUS494	7	0			10		0.1 U	
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--	17		
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--	0.16		
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--	7.3		
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250	6	1.57	
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--		2 U	
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--	2.6	1 U	

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL (µg/L)	OLD1364D 0311364DQ405-20051110-D 100 110 11/10/05	OLD1364D 0311364DQ405-20051114-D 100 110 11/14/05	OLD1364D 0311364DQ206-20060725 100 110 07/25/06	OLD1364D NTC13G64D01 100 110 07/25/06
VOLATILE ORGANICS (µg/L)										
1,1,1-Trichloroethane	71-55-6	45	0			200	1 U	1 U	1 U	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	45	0			0.2	1 U	1 U	1 U	0.4 U
1,1,2-Trichloroethane	79-00-5	45	0			5	1 U	1 U	1 U	0.5 U
1,1,2-Trichlorotrifluoroethane	76-13-1	22	0			210000	1 U	1 U	1 U	
1,1-Dichloroethane	75-34-3	45	0			70	1 U	1 U	1 U	0.5 U
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	7	1 U	1 U	1 U	0.5 U
1,2,3-Trichlorobenzene	87-61-6	22	0			70	1 U	1 U	1 U	
1,2,4-Trichlorobenzene	120-82-1	22	0			70	1 U	1 U	1 U	
1,2-Dibromo-3-chloropropane	96-12-8	22	0			0.2	1 U	1 U	1 U	
1,2-Dibromoethane	106-93-4	22	0			0.02	1 U	1 U	1 U	
1,2-Dichlorobenzene	95-50-1	22	0			600	1 U	1 U	1 U	
1,2-Dichloroethane	107-06-2	45	0			3	1 U	1 U	1 U	0.5 U
1,2-Dichloropropane	78-87-5	45	0			5	1 U	1 U	1 U	0.5 U
1,3-Dichlorobenzene	541-73-1	22	0			210	1 U	1 U	1 U	
1,4-Dichlorobenzene	106-46-7	22	0			75	1 U	1 U	1 U	
2-Butanone	78-93-3	45	1	4.4	4.4	4200	4 U	4 U	4 U	2.5 U
2-Hexanone	591-78-6	45	0			280	4 U	4 U	4 U	2.5 U
4-Methyl-2-pentanone	108-10-1	45	0			560	4 U	4 U	2 U	2.5 U
Acetone	67-64-1	45	6	1.9	27.9	6300	4 U	4 U	4 U	5 U
Benzene	71-43-2	45	1	1	1	1	1 U	1 U	1 U	0.5 U
Bromochloromethane	74-97-5	22	0			91	1 U	1 U	1 U	
Bromodichloromethane	75-27-4	45	0			0.6	1 U	1 U	1 U	0.5 U
Bromoform	75-25-2	45	0			4.4	1 U	1 U	1 U	0.5 U
Bromomethane	74-83-9	45	0			9.8	1 U	1 U	1 U	1 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	1 U	1 U	1 U	1 U
Carbon tetrachloride	56-23-5	45	0			3	1 U	1 U	1 U	0.5 U
Chlorobenzene	108-90-7	45	0			100	1 U	1 U	1 U	0.5 U
Chlorodibromomethane	124-48-1	45	0			0.4	1 U	1 U	1 U	0.4 U
Chloroethane	75-00-3	45	0			12	1 U	1 U	1 U	1 U
Chloroform	67-66-3	45	7	0.65	3.2	70	1 U	1 U	1 U	0.5 U
Chloromethane	74-87-3	45	0			2.7	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	45	22	1	1980	70	1 U	3.3	1 U	0.5 U
cis-1,3-Dichloropropene	10061-01-5	45	0			--	1 U	1 U	1 U	0.3 U
Cyclohexane	110-82-7	22	0			--	1 U	1 U	1 U	
Dichlorodifluoromethane	75-71-8	22	0			1400	1 U	1 U	1 U	
Ethylbenzene	100-41-4	45	0			30	1 U	1 U	1 U	0.5 U
Isopropylbenzene	98-82-8	22	0			0.8	1 U	1 U	1 U	
Methyl acetate	79-20-9	22	1	2.4	2.4	3000	1 U	1 U	1 U	
Methyl cyclohexane	108-87-2	22	0			--	1 U	1 U	1 U	
Methyl tert-butyl ether	1634-04-4	22	0			20	1 U	1 U	1 U	
Methylene chloride	75-09-2	45	2	2.3	3.7	5	1 U	1 U	1 U	1 U
Styrene	100-42-5	45	0			100	1 U	1 U	1 U	0.5 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	3	1 U	1 U	1 U	0.5 U

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1364D** **0311364DQ405-20051110-D** **100** **110** **11/10/05**	**OLD1364D** **0311364DQ405-20051114-D** **100** **110** **11/14/05**	**OLD1364D** **0311364DQ206-20060725** **100** **110** **07/25/06**	**OLD1364D** **NTC13G64D01** **100** **110** **07/25/06**
Toluene	108-88-3	45	0			40	1 U	1 U	1 U	0.5 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	3 U	3 U	3 U	1 U
trans-1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	1 U	1 U	1 U	0.5 U
trans-1,3-Dichloropropene	10061-02-6	45	0			--	1 U	1 U	1 U	0.3 U
Trichloroethene	79-01-6	45	20	0.32	2030	3	1 U	0.32 J	1 U	0.5 U
Trichlorofluoromethane	75-69-4	22	0			2100	1 U	1 U	1 U	
Vinyl chloride	75-01-4	45	4	0.7	1.1	1	1 U	1 U	1 U	0.5 U
VOLATILE ORGANICS GASES (µg/l)										
Ethane	74-84-0	22	17	0.028	2.5	--				0.06
Ethene	74-85-1	22	19	0.006	12.8	--				0.076
Methane	74-82-8	22	22	11	1920	--				500
INORGANICS (µg/l)										
Antimony	7440-36-0	1	0			6				
Iron	7439-89-6	22	21	30.8	11600	300				168
Manganese	7439-96-5	22	22	0.486	420	50				11.5

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1364D** **0311364DQ405-20051110-D** **100** **110** **11/10/05**	**OLD1364D** **0311364DQ405-20051114-D** **100** **110** **11/14/05**	**OLD1364D** **0311364DQ206-20060725** **100** **110** **07/25/06**	**OLD1364D** **NTC13G64D01** **100** **110** **07/25/06**
MISCELLANEOUS PARAMETERS										
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--				
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--				9.2
Chloride (mg/L)	16887-00-6	22	22	28.1	982	250				66.4
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--				
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--				3.9
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10				0.05 U
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1				0.42
Nitrite/Nitrate-n (mg/L)	TTNUS494	7	0			10				
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--				18
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--				0.06
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--				4.5
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250				1 U
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--				
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--				1.9

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL (µg/L)	OLD1365D NTC13G65D401 102 107 07/31/06	OLD1366D NTC13G66D101 60 65 08/02/06	OLD1366D NTC13G66D201 74 79 08/02/06	OLD1366D NTC13G66D401 109 114 08/02/06	OLD1366D NTC13G66D401-D 109 114 08/02/06
VOLATILE ORGANICS (µg/L)											
1,1,1-Trichloroethane	71-55-6	45	0			200	0.5 U	5 U	25 U	5 U	5 U
1,1,2,2-Tetrachloroethane	79-34-5	45	0			0.2	0.4 U	4 U	20 U	4 U	4 U
1,1,2-Trichloroethane	79-00-5	45	0			5	0.5 U	5 U	25 U	5 U	5 U
1,1,2-Trichlorotrifluoroethane	76-13-1	22	0			210000					
1,1-Dichloroethane	75-34-3	45	0			70	0.5 U	5 U	25 U	5 U	5 U
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	7	0.5 U	5 U	25 U	5 U	5 U
1,2,3-Trichlorobenzene	87-61-6	22	0			70					
1,2,4-Trichlorobenzene	120-82-1	22	0			70					
1,2-Dibromo-3-chloropropane	96-12-8	22	0			0.2					
1,2-Dibromoethane	106-93-4	22	0			0.02					
1,2-Dichlorobenzene	95-50-1	22	0			600					
1,2-Dichloroethane	107-06-2	45	0			3	0.5 U	5 U	25 U	5 U	5 U
1,2-Dichloropropane	78-87-5	45	0			5	0.5 U	5 U	25 U	5 U	5 U
1,3-Dichlorobenzene	541-73-1	22	0			210					
1,4-Dichlorobenzene	106-46-7	22	0			75					
2-Butanone	78-93-3	45	1	4.4	4.4	4200	4.4 J	25 U	130 U	25 U	25 U
2-Hexanone	591-78-6	45	0			280	2.5 U	25 U	130 U	25 U	25 U
4-Methyl-2-pentanone	108-10-1	45	0			560	2.5 U	25 U	130 U	25 U	25 U
Acetone	67-64-1	45	6	1.9	27.9	6300	11.9 J	50 U	250 U	50 U	50 U
Benzene	71-43-2	45	1	1	1	1	0.5 U	5 U	25 U	5 U	5 U
Bromochloromethane	74-97-5	22	0			91					
Bromodichloromethane	75-27-4	45	0			0.6	0.5 U	5 U	25 U	5 U	5 U
Bromoform	75-25-2	45	0			4.4	0.5 U	5 U	25 U	5 U	5 U
Bromomethane	74-83-9	45	0			9.8	1 U	10 U	50 U	10 U	10 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	1 U	10 U	50 U	10 U	10 U
Carbon tetrachloride	56-23-5	45	0			3	0.5 U	5 U	25 U	5 U	5 U
Chlorobenzene	108-90-7	45	0			100	0.5 U	5 U	25 U	5 U	5 U
Chlorodibromomethane	124-48-1	45	0			0.4	0.4 U	4 U	20 U	4 U	4 U
Chloroethane	75-00-3	45	0			12	1 U	10 U	50 U	10 U	10 U
Chloroform	67-66-3	45	7	0.65	3.2	70	0.5 U	5 U	25 U	5 U	5 U
Chloromethane	74-87-3	45	0			2.7	1 U	10 U	50 U	10 U	10 U
cis-1,2-Dichloroethene	156-59-2	45	22	1	1980	70	0.5 U	**422**	**1050**	**515**	**521**
cis-1,3-Dichloropropene	10061-01-5	45	0			--	0.3 U	3 U	15 U	3 U	3 U
Cyclohexane	110-82-7	22	0			--					
Dichlorodifluoromethane	75-71-8	22	0			1400					
Ethylbenzene	100-41-4	45	0			30	0.5 U	5 U	25 U	5 U	5 U
Isopropylbenzene	98-82-8	22	0			0.8					
Methyl acetate	79-20-9	22	1	2.4	2.4	3000					
Methyl cyclohexane	108-87-2	22	0			--					
Methyl tert-butyl ether	1634-04-4	22	0			20					
Methylene chloride	75-09-2	45	2	2.3	3.7	5	1 U	19.2 U	91.4 U	19.6 U	19.7 U
Styrene	100-42-5	45	0			100	0.5 U	5 U	25 U	5 U	5 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	3	0.5 U	**111**	**1970**	**64.2**	**65.4**

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1365D** **NTC13G65D401** **102** **107** **07/31/06**	**OLD1366D** **NTC13G66D101** **60** **65** **08/02/06**	**OLD1366D** **NTC13G66D201** **74** **79** **08/02/06**	**OLD1366D** **NTC13G66D401** **109** **114** **08/02/06**	**OLD1366D** **NTC13G66D401-D** **109** **114** **08/02/06**
Toluene	108-88-3	45	0			40	0.5 U	5 U	25 U	5 U	5 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	1 U	10 U	50 U	10 U	10 U
trans -1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	0.5 U	5 U	25 U	5 U	5 U
trans -1,3-Dichloropropene	10061-02-6	45	0			--	0.3 U	3 U	15 U	3 U	3 U
Trichloroethene	79-01-6	45	20	0.32	2030	3	0.5 U	**32.6**	**487**	**77.7**	**78.9**
Trichlorofluoromethane	75-69-4	22	0			2100					
Vinyl chloride	75-01-4	45	4	0.7	1.1	1	0.5 U	5 U	25 U	5 U	5 U
VOLATILE ORGANICS GASES (µg/l)											
Ethane	74-84-0	22	17	0.028	2.5	--	0.19	0.26		0.72	
Ethene	74-85-1	22	19	0.006	12.8	--	0.22	0.91		3.4	
Methane	74-82-8	22	22	11	1920	--	36	11		180	
INORGANICS (µg/l)											
Antimony	7440-36-0	1	0			6					
Iron	7439-89-6	22	21	30.8	11600	300	**1010**	**11600**		**670**	
Manganese	7439-96-5	22	22	0.486	420	50	**100**	**420**		**171**	

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1365D** **NTC13G65D401** **102** **107** **07/31/06**	**OLD1366D** **NTC13G66D101** **60** **65** **08/02/06**	**OLD1366D** **NTC13G66D201** **74** **79** **08/02/06**	**OLD1366D** **NTC13G66D401** **109** **114** **08/02/06**	**OLD1366D** **NTC13G66D401-D** **109** **114** **08/02/06**
MISCELLANEOUS PARAMETERS											
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--					
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--	8.8	23		3.7 J	
Chloride (mg/L)	16887-00-6	22	22	28.1	982	250	28.1	57.6		**425 J**	
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--					
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--	3.9	1.5		1.6	
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10	0.05	0.05 U		0.05 U	
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1	0.05 U	0.05 U		0.05 U	
Nitrite/Nitrate-n (mg/L)	TTNUS494	7	0			10					
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--	18	18		18	
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--	1.5	0.67		0.36	
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--	6.1	6		3.6	
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250	37.9	33.1		22.7	
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--					
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--	5.4				

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL (µg/L)	OLD1366D NTC13G66D601 127 132 08/02/06	OLD1366D NTC13G66D274 74 10/24/06	OLD1366D NTC13G66D274-D 74 10/24/06	OLD1366D NTC13G66D276 76 10/24/06	OLD1366D NTC13G66D279 79 10/24/06
VOLATILE ORGANICS (µg/L)											
1,1,1-Trichloroethane	71-55-6	45	0			200	0.5 U	0.5 U	25 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	45	0			0.2	0.4 U	0.4 U	20 U	0.4 U	0.4 U
1,1,2-Trichloroethane	79-00-5	45	0			5	0.5 U	0.5 U	25 U	0.5 U	0.5 U
1,1,2-Trichlorotrifluoroethane	76-13-1	22	0			210000					
1,1-Dichloroethane	75-34-3	45	0			70	0.5 U	0.5 U	25 U	0.5 U	0.5 U
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	7	0.5 U	2.8	25 U	2.9	3.4
1,2,3-Trichlorobenzene	87-61-6	22	0			70					
1,2,4-Trichlorobenzene	120-82-1	22	0			70					
1,2-Dibromo-3-chloropropane	96-12-8	22	0			0.2					
1,2-Dibromoethane	106-93-4	22	0			0.02					
1,2-Dichlorobenzene	95-50-1	22	0			600					
1,2-Dichloroethane	107-06-2	45	0			3	0.5 U	0.5 U	25 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	45	0			5	0.5 U	0.5 U	25 U	0.5 U	0.5 U
1,3-Dichlorobenzene	541-73-1	22	0			210					
1,4-Dichlorobenzene	106-46-7	22	0			75					
2-Butanone	78-93-3	45	1	4.4	4.4	4200	2.5 U	2.5 U	130 U	2.5 U	2.5 U
2-Hexanone	591-78-6	45	0			280	2.5 U	2.5 U	130 U	2.5 U	2.5 U
4-Methyl-2-pentanone	108-10-1	45	0			560	2.5 U	2.5 U	130 U	2.5 U	2.5 U
Acetone	67-64-1	45	6	1.9	27.9	6300	5 U	5 U	250 U	5 U	5 U
Benzene	71-43-2	45	1	1	1	1	0.5 U	0.5 U	25 U	0.5 U	0.5 U
Bromochloromethane	74-97-5	22	0			91					
Bromodichloromethane	75-27-4	45	0			0.6	0.5 U	0.5 U	25 U	0.5 U	0.5 U
Bromoform	75-25-2	45	0			4.4	0.5 U	0.5 U	25 U	0.5 U	0.5 U
Bromomethane	74-83-9	45	0			9.8	1 U	1 U	50 U	1 U	1 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	1 U	1 U	50 U	1 U	1 U
Carbon tetrachloride	56-23-5	45	0			3	0.5 U	0.5 U	25 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	45	0			100	0.5 U	0.5 U	25 U	0.5 U	0.5 U
Chlorodibromomethane	124-48-1	45	0			0.4	0.4 U	0.4 U	20 U	0.4 U	0.4 U
Chloroethane	75-00-3	45	0			12	1 U	1 U	50 U	1 U	1 U
Chloroform	67-66-3	45	7	0.65	3.2	70	0.5 U	0.5 U	25 U	0.5 U	0.5 U
Chloromethane	74-87-3	45	0			2.7	1 U	1 U	50 U	1 U	1 U
cis -1,2-Dichloroethene	156-59-2	45	22	1	1980	70	2	**1220**	**1320**	**1280**	**1980**
cis -1,3-Dichloropropene	10061-01-5	45	0			--	0.3 U	0.3 U	15 U	0.3 U	0.3 U
Cyclohexane	110-82-7	22	0			--					
Dichlorodifluoromethane	75-71-8	22	0			1400					
Ethylbenzene	100-41-4	45	0			30	0.5 U	0.5 U	25 U	0.5 U	0.5 U
Isopropylbenzene	98-82-8	22	0			0.8					
Methyl acetate	79-20-9	22	1	2.4	2.4	3000					
Methyl cyclohexane	108-87-2	22	0			--					
Methyl tert-butyl ether	1634-04-4	22	0			20					
Methylene chloride	75-09-2	45	2	2.3	3.7	5	1 U	1 U	50 U	1 U	1 U
Styrene	100-42-5	45	0			100	0.5 U	0.5 U	25 U	0.5 U	0.5 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	3	**15.1**	**9840**	**9250**	**9140**	**6520**

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1366D** **NTC13G66D601** **127** **132** **08/02/06**	**OLD1366D** **NTC13G66D274** **74** **10/24/06**	**OLD1366D** **NTC13G66D274-D** **74** **10/24/06**	**OLD1366D** **NTC13G66D276** **76** **10/24/06**	**OLD1366D** **NTC13G66D279** **79** **10/24/06**
Toluene	108-88-3	45	0			40	0.5 U	0.5 U	25 U	0.5 U	0.5 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	1 U	1.3 J	50 U	1.2 J	1 U
trans-1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	0.5 U	6.1	25 U	8.8	21.8
trans-1,3-Dichloropropene	10061-02-6	45	0			--	0.3 U	0.3 U	15 U	0.3 U	0.3 U
Trichloroethene	79-01-6	45	20	0.32	2030	3	2.2	**1170**	**1170**	**1120**	**1100**
Trichlorofluoromethane	75-69-4	22	0			2100					
Vinyl chloride	75-01-4	45	4	0.7	1.1	1	0.5 U	0.7 J	25 U	0.74 J	**1.1**
VOLATILE ORGANICS GASES (µg/l)											
Ethane	74-84-0	22	17	0.028	2.5	--					
Ethene	74-85-1	22	19	0.006	12.8	--					
Methane	74-82-8	22	22	11	1920	--					
INORGANICS (µg/l)											
Antimony	7440-36-0	1	0			6					
Iron	7439-89-6	22	21	30.8	11600	300					
Manganese	7439-96-5	22	22	0.486	420	50					

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1366D** **NTC13G66D601** **127** **132** **08/02/06**	**OLD1366D** **NTC13G66D274** **74** **10/24/06**	**OLD1366D** **NTC13G66D274-D** **74** **10/24/06**	**OLD1366D** **NTC13G66D276** **76** **10/24/06**	**OLD1366D** **NTC13G66D279** **79** **10/24/06**
MISCELLANEOUS PARAMETERS											
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--					
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--					
Chloride (mg/L)	16887-00-6	22	22	28.1	982	250					
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--					
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--					
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10					
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1					
Nitrite/Nitrate-n (mg/L)	TTNUS494	7	0			10					
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--					
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--					
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--					
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250					
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--					
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--					

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL (µg/L)	OLD1367D NTC13G67D401 110 115 07/31/06	OLD1368D NTC13G68D301 73 78 07/31/06	OLD1368D NTC13G68D501 106 111 07/31/06	OLD1368D NTC13G68D601 118 128 07/31/06
VOLATILE ORGANICS (µg/L)										
1,1,1-Trichloroethane	71-55-6	45	0			200	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	45	0			0.2	0.4 U	0.4 U	0.4 U	0.4 U
1,1,2-Trichloroethane	79-00-5	45	0			5	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichlorotrifluoroethane	76-13-1	22	0			210000				
1,1-Dichloroethane	75-34-3	45	0			70	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	7	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	87-61-6	22	0			70				
1,2,4-Trichlorobenzene	120-82-1	22	0			70				
1,2-Dibromo-3-chloropropane	96-12-8	22	0			0.2				
1,2-Dibromoethane	106-93-4	22	0			0.02				
1,2-Dichlorobenzene	95-50-1	22	0			600				
1,2-Dichloroethane	107-06-2	45	0			3	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	45	0			5	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	541-73-1	22	0			210				
1,4-Dichlorobenzene	106-46-7	22	0			75				
2-Butanone	78-93-3	45	1	4.4	4.4	4200	2.5 U	2.5 U	2.5 U	2.5 U
2-Hexanone	591-78-6	45	0			280	2.5 U	2.5 U	2.5 U	2.5 U
4-Methyl-2-pentanone	108-10-1	45	0			560	2.5 U	2.5 U	2.5 U	2.5 U
Acetone	67-64-1	45	6	1.9	27.9	6300	5 U	7.3 J	5 U	5 U
Benzene	71-43-2	45	1	1	1	1	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	74-97-5	22	0			91				
Bromodichloromethane	75-27-4	45	0			0.6	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	45	0			4.4	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	45	0			9.8	1 U	1 U	1 U	1 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	1 U	1 U	1 U	1 U
Carbon tetrachloride	56-23-5	45	0			3	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	45	0			100	0.5 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	124-48-1	45	0			0.4	0.4 U	0.4 U	0.4 U	0.4 U
Chloroethane	75-00-3	45	0			12	1 U	1 U	1 U	1 U
Chloroform	67-66-3	45	7	0.65	3.2	70	0.78 J	3.2	0.5 U	0.5 U
Chloromethane	74-87-3	45	0			2.7	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	45	22	1	1980	70	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,3-Dichloropropene	10061-01-5	45	0			--	0.3 U	0.3 U	0.3 U	0.3 U
Cyclohexane	110-82-7	22	0			--				
Dichlorodifluoromethane	75-71-8	22	0			1400				
Ethylbenzene	100-41-4	45	0			30	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	98-82-8	22	0			0.8				
Methyl acetate	79-20-9	22	1	2.4	2.4	3000				
Methyl cyclohexane	108-87-2	22	0			--				
Methyl tert-butyl ether	1634-04-4	22	0			20				
Methylene chloride	75-09-2	45	2	2.3	3.7	5	1 U	1 U	1 U	1 U
Styrene	100-42-5	45	0			100	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	3	0.5 U	0.5 U	0.5 U	0.5 U

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1367D** **NTC13G67D401** **110** **115** **07/31/06**	**OLD1368D** **NTC13G68D301** **73** **78** **07/31/06**	**OLD1368D** **NTC13G68D501** **106** **111** **07/31/06**	**OLD1368D** **NTC13G68D601** **118** **128** **07/31/06**
Toluene	108-88-3	45	0			40	0.5 U	0.5 U	0.5 U	0.5 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	10061-02-6	45	0			--	0.3 U	0.3 U	0.3 U	0.3 U
Trichloroethene	79-01-6	45	20	0.32	2030	3	0.5 U	0.5 U	0.5 U	0.5 U
Trichlorofluoromethane	75-69-4	22	0			2100				
Vinyl chloride	75-01-4	45	4	0.7	1.1	1	0.5 U	0.5 U	0.5 U	0.5 U
VOLATILE ORGANICS GASES (µg/l)										
Ethane	74-84-0	22	17	0.028	2.5	--	0.15		0.13	
Ethene	74-85-1	22	19	0.006	12.8	--	0.051		0.052	
Methane	74-82-8	22	22	11	1920	--	460		380	
INORGANICS (µg/l)										
Antimony	7440-36-0	1	0			6				
Iron	7439-89-6	22	21	30.8	11600	300	30.8		**646**	
Manganese	7439-96-5	22	22	0.486	420	50	41.1		**78.4**	

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1367D** **NTC13G67D401** **110** **115** **07/31/06**	**OLD1368D** **NTC13G68D301** **73** **78** **07/31/06**	**OLD1368D** **NTC13G68D501** **106** **111** **07/31/06**	**OLD1368D** **NTC13G68D601** **118** **128** **07/31/06**
MISCELLANEOUS PARAMETERS										
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--				
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--	5.3		6.4	
Chloride (mg/L)	16887-00-6	22	22	28.1	982	250	73.8		37.9	
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--				
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--	2.8		48	
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10	0.05 U		0.16	
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1	0.05 U		0.05 U	
Nitrite/Nitrate-n (mg/L)	TTNUS494	7	0			10				
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--	18		18	
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--	0.38		0.21	
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--	1.5		2.7	
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250	16.1		8.3	
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--				
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--	1.5		1.9	

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification Sample Number Depth to Top of Screen, ft bgs Depth to Bottom of Screen, ft bgs Sample Date	CAS NO.	NO. OF SAMPLES	NO. OF DETECTS	MIN. CONC. (µg/L)	MAX. CONC. (µg/L)	FLORIDA GCTL (µg/L)	OLD1369D NTC13G69D301 85 90 08/01/06	OLD1369D NTC13G69D501 110 115 08/01/06	OLD1369D NTC13G69D501-D 110 115 08/01/06	OLD1369D NTC13G69D601 122 127 08/01/06	OLD1370D NTC13G70D401 101 106 07/31/06
VOLATILE ORGANICS (µg/L)											
1,1,1-Trichloroethane	71-55-6	45	0			200	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	45	0			0.2	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
1,1,2-Trichloroethane	79-00-5	45	0			5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichlorotrifluoroethane	76-13-1	22	0			210000					
1,1-Dichloroethane	75-34-3	45	0			70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	75-35-4	45	7	0.97	7.7	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	87-61-6	22	0			70					
1,2,4-Trichlorobenzene	120-82-1	22	0			70					
1,2-Dibromo-3-chloropropane	96-12-8	22	0			0.2					
1,2-Dibromoethane	106-93-4	22	0			0.02					
1,2-Dichlorobenzene	95-50-1	22	0			600					
1,2-Dichloroethane	107-06-2	45	0			3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	45	0			5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	541-73-1	22	0			210					
1,4-Dichlorobenzene	106-46-7	22	0			75					
2-Butanone	78-93-3	45	1	4.4	4.4	4200	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
2-Hexanone	591-78-6	45	0			280	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
4-Methyl-2-pentanone	108-10-1	45	0			560	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Acetone	67-64-1	45	6	1.9	27.9	6300	5 U	5.1 J	5.1 J	5 U	5 U
Benzene	71-43-2	45	1	1	1	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	74-97-5	22	0			91					
Bromodichloromethane	75-27-4	45	0			0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	45	0			4.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	45	0			9.8	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	75-15-0	45	7	0.43	77.1	700	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	56-23-5	45	0			3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	45	0			100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	124-48-1	45	0			0.4	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Chloroethane	75-00-3	45	0			12	1 U	1 U	1 U	1 U	1 U
Chloroform	67-66-3	45	7	0.65	3.2	70	0.65 J	1.6	1.5	0.75 J	1.2
Chloromethane	74-87-3	45	0			2.7	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	45	22	1	1980	70	1	8.3	8.1	0.5 U	0.5 U
cis-1,3-Dichloropropene	10061-01-5	45	0			--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Cyclohexane	110-82-7	22	0			--					
Dichlorodifluoromethane	75-71-8	22	0			1400					
Ethylbenzene	100-41-4	45	0			30	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	98-82-8	22	0			0.8					
Methyl acetate	79-20-9	22	1	2.4	2.4	3000					
Methyl cyclohexane	108-87-2	22	0			--					
Methyl tert-butyl ether	1634-04-4	22	0			20					
Methylene chloride	75-09-2	45	2	2.3	3.7	5	1.7 U	2 U	2 U	1 U	1.1 U
Styrene	100-42-5	45	0			100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	127-18-4	45	23	0.55	52600	3	1.5	0.5 U	0.5 U	0.5 U	0.5 U

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. OF SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1369D** **NTC13G69D301** **85** **90** **08/01/06**	**OLD1369D** **NTC13G69D501** **110** **115** **08/01/06**	**OLD1369D** **NTC13G69D501-D** **110** **115** **08/01/06**	**OLD1369D** **NTC13G69D601** **122** **127** **08/01/06**	**OLD1370D** **NTC13G70D401** **101** **106** **07/31/06**
Toluene	108-88-3	45	0			40	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Total xylenes	1330-20-7	45	4	1.2	19.9	20	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	156-60-5	45	7	0.92	21.8	100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	10061-02-6	45	0			--	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Trichloroethene	79-01-6	45	20	0.32	2030	3	1.2	0.5 U	0.5 U	0.5 U	0.5 U
Trichlorofluoromethane	75-69-4	22	0			2100					
Vinyl chloride	75-01-4	45	4	0.7	1.1	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
VOLATILE ORGANICS GASES (µg/l)											
Ethane	74-84-0	22	17	0.028	2.5	--	0.46	0.49			0.19
Ethene	74-85-1	22	19	0.006	12.8	--	0.27	0.71			0.13
Methane	74-82-8	22	22	11	1920	--	81	330			160
INORGANICS (µg/l)											
Antimony	7440-36-0	1	0			6					
Iron	7439-89-6	22	21	30.8	11600	300	278	**630**			**680**
Manganese	7439-96-5	22	22	0.486	420	50	**63.9**	**184**			**121**

TABLE F-4

MONITORING WELL GROUNDWATER ANALYTICAL DATA - VALIDATED
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Identification **Sample Number** **Depth to Top of Screen, ft bgs** **Depth to Bottom of Screen, ft bgs** **Sample Date**	**CAS NO.**	**NO. Of SAMPLES**	**NO. OF DETECTS**	**MIN. CONC. (µg/L)**	**MAX. CONC. (µg/L)**	**FLORIDA GCTL (µg/L)**	**OLD1369D** **NTC13G69D301** **85** **90** **08/01/06**	**OLD1369D** **NTC13G69D501** **110** **115** **08/01/06**	**OLD1369D** **NTC13G69D501-D** **110** **115** **08/01/06**	**OLD1369D** **NTC13G69D601** **122** **127** **08/01/06**	**OLD1370D** **NTC13G70D401** **101** **106** **07/31/06**
MISCELLANEOUS PARAMETERS											
Alkalinity (mg/L)	TTNUS008	7	7	18	216	--					
Carbon dioxide (mg/L)	124-38-9	22	22	0.82	262	--	5.9	3.3 J			9.5
Chloride (mg/L)	16887-00-6	22	22	28.1	982	250	45.5	100			**356 J**
Dissolved Organic Carbon (mg/L)	TTNUS019	7	7	0.776	4.12	--					
Hydrogen (nM)	1333-74-0	21	21	1.5	160000	--	2.7	31			880
Nitrate-N (mg/L)	TTNUS495	15	3	0.05	0.61	10	0.05 U	0.05 U			0.05 U
Nitrite-N (mg/L)	TTNUS496	15	1	0.42	0.42	1	0.05 U	0.05 U			0.05 U
Nitrite/Nitrate-n (mg/L)	TTNUS494	7	0			10					
Nitrogen (mg/L)	7727-37-9	15	15	17	19	--	19	18			18
Orthophosphate (mg/L)	TTNUS032	15	15	0.042	2	--	2	0.23			0.15
Oxygen (mg/L)	7782-44-7	15	15	1.1	7.3	--	1.9	1.8			3.7
Sulfate (mg/L)	14808-79-8	22	18	1.57	104	250	28	104			24.6
Sulfide (mg/L)	18496-25-8	7	2	0.4	1.12	--					
Total Organic Carbon (mg/L)	TTNUS003	18	17	0.475	5.4	--					2.1

Notes:
J indicates estimated result.
U indicates non detect result.
Shaded cell indicates results equal to or greater than GCTL.

APPENDIX G

SUPPORTING INFORMATION

TABLE G-1

SUMMARY OF 2004 INVESTIGATION RESULTS UPPER HAWTHORN CLAY SOIL*
OPERABLE UNIT 4

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

ID	Easting	Northing	Depth ft bgs	Soil Description	PCE ug/kg)		TCE ug/kg)	
T1-2	545033.383	1536838.71	63	Soupy, sandy, CLAY, very wet, gray (dark)	5,300		150	J
T1-6	545032.783	1536820.09	63	Sandy clay to clay	13,000	D	110	
T1-15	545014.462	1536798.17	63	Sandy clay, green, soupy, wet	8,300		72	
T3-10	544925.865	1536819.79	63	Sandy CLAY, very wet, soupy, gray,	17		3	J
T1-5	545022.872	1536829.7	64	SAND, gray/sandy clay, very wet,	490,000	D	20,000	U
T1-4R2	545012.146	1536844.39	65	Sandy CLAY, wet	3,900		160	J
T1-21	545014.462	1536857.63	66	sandy clay, very wet, with some dry clay, greenish gray with yellow streaks	8	U	8	U
T1-30	545086.57	1536821.17	66	clayey SAND	6	U	6	U
T2-10R3	544863.396	1536809.28	66	SAND, fine to medium grain, gray, very wet, no odor	5	U	5	U
T1-5	545022.872	1536829.7	67	Dry CLAY with minor sand	5	J	7	U
T2-5	544846.878	1536857.63	68	**	5	U	5	U
T1-2	545033.383	1536838.71	69	Sandy CLAY, more wet, streaks of limestone	4	J	7	U
T3-10	544925.865	1536819.79	69	Drier CLAY with streaks of yellow Kaolinite	3	J	7	U
T2-11	544898.535	1536810.18	70	**	13,000		590	
T1-26	545059.03	1536810.36	71	Soupy CLAY, very wet, minor sand, dark gray	7	U	7	U
T2-10R3	544863.396	1536809.28	71	CLAY, very sticky, formable, greenish gray, wet	4,800		150	
T1-26	545059.03	1536810.36	72	Dry CLAY, greenish gray with yellow streaks.	530	U	530	U
T1-5	545022.872	1536829.7	74	Clayey LIMESTONE, very wet	3,800		580	
T1-16	545013.261	1536778.35	76	LIMESTONE, abundant rocks	8,500		1,300	
T1-30	545086.57	1536821.17	76	CLAY, still moist, gray, no sand	11	U	11	U
T1-26	545059.03	1536810.36	77	Sandy CLAY, wet	7	U	7	U
T1-5	545022.872	1536829.7	79	Sandy, greenish gray, CLAY	33,000		2,200	
T1-27	545049.21	1536761.98	80	LIMESTONE/CLAY, small rocks, wet, soupy	7,100		460	
T1-6	545032.783	1536820.09	81	LIMESTONE with rock pebbles, minor clay, very wet	2,900		140	
T1-26	545059.03	1536810.36	84	Sandy CLAY, abundant shell fragmets	5	U	5	U

*Source: Summary of Hydrogeologic Investigation Activities at Operable Unit 4, Former NTC Orlando, Technical Memorandum, CH2MHill, Februrary 2005.

APPENDIX H

SOIL GRAIN SIZE DATA

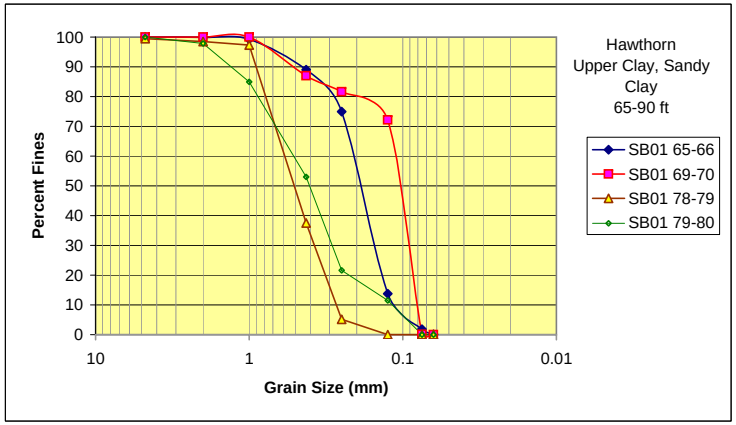
APPENDIX H

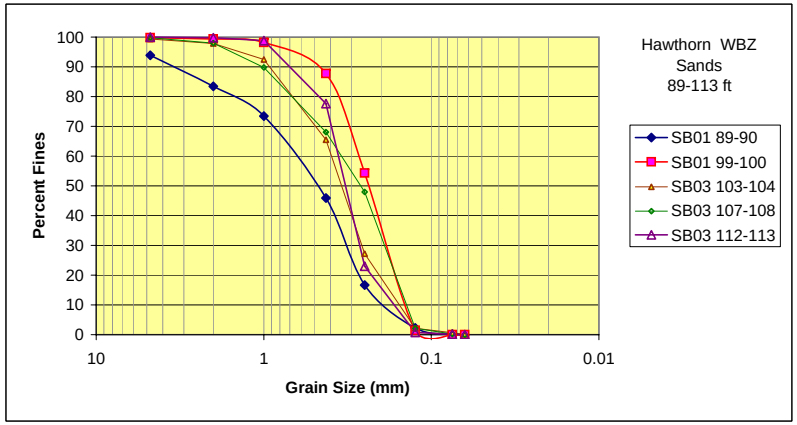
SUMMARY OF SOIL GRAIN SIZE DISTRIBUTION DATA
OPERABLE UNIT 4

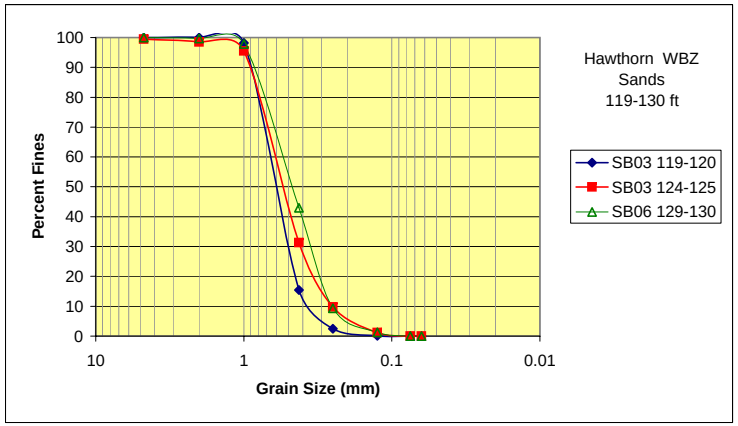
NAVAL TRAINING CENTER
ORLANDO, FLORIDA

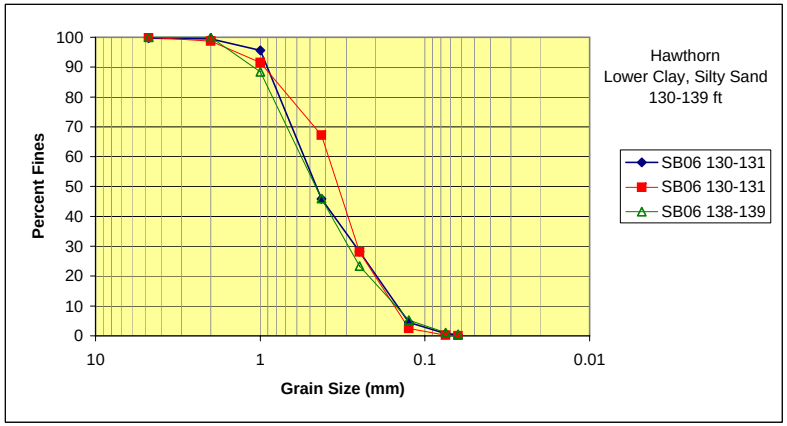
---------- Boring / Sample Interval (ft bgs) / USCS ----------

Sieve Size (mm)	SB01	SB01	SB01	SB01	SB01	SB01	SB03	SB03	SB03	SB03	SB03	SB06	SB06	SB06	SB06	SB06
	65-66	69-70	78-79	79-80	89-90	99-100	103-104	107-108	112-113	119-120	124-125	125-126	129-130	130-131	130-131	138-139
	SC	CL	SC	CL-SC	SP	SP	SP	SW	SP	SC	SC	GW	SC-ML	CL	CL	SP-ML
4.75	100	100	99.5	100	93.9	99.8	99.4	99.8	100	100	99.5	90.6	100	99.7	100	100
2	99.9	100	98.5	97.8	83.4	99.4	97.8	98	99.8	100	98.5	85.7	99.7	99.5	98.7	100
1	99.2	100	97.3	84.9	73.4	98.2	92.5	89.8	98.8	98.2	95.5	75.2	97.9	95.6	91.5	88.4
0.425	89	87	37.5	53	45.9	87.7	65.5	68.1	77.6	15.4	31.3	32.6	43	45.9	67.2	46
0.25	74.9	81.6	5.2	21.6	16.7	54.3	27.2	48	23	2.5	9.8	10.2	9.3	28.2	28.1	23.4
0.125	13.8	72.2	0	11.5	2.3	1.4	2.2	2.2	0.7	0.1	1.2	1	1.3	4.5	2.5	5.2
0.075	1.8	0.1	0	0	0.2	0	0.6	0.2	0.1	0	0	0.2	0	0.8	0.2	1.1
0.063	0.1	0	0	0	0	0	0.1	0	0	0	0	0.1	0	0.2	0	0.5









APPENDIX I

2008 GROUNDWATER ANALYTICAL RESULTS

TABLE I-1
SELECT CMT GROUNDWATER ANALYTICAL RESULTS - VALIDATED
OPERABLE UNIT 4
NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID	**Florida GCTL[1] (µg/L)**	**OLD1368D**	**OLD1369D**	**OLD1370D**	**OLD1369D**	**OLD1369D**
Sample ID		**0581368DQ108**	**0581369DQ108**	**0581370DQ108**	**NTC13G69D404162008**	**NTC13G69D504162008**
Company		**CH2MHILL**	**CH2MHILL**	**CH2MHILL**	**TtNUS**	**TtNUS**
Top of Screen, ft bgs		**105**	**100**	**101**	**100**	**110**
Bottom of Screen, ft bgs		**110**	**105**	**106**	**105**	**115**
Sample Date		**1/24/2008**	**1/24/2008**	**1/24/2008**	**04/16/2008**	**04/16/2008**
Volatile Organics (µg/L)						
1,1,1-Trichloroethane	200	1 U	5 U	1 U	2.9 U	0.58 U
1,1,2,2-Tetrachloroethane	0.2	0.5 U	2.5 U	0.5 U	3.7 U	0.74 U
1,1,2-trichloro-1,2,2-trifluoroethane	210000	1 U	2 J	1 U		
1,1,2-Trichloroethane	5	1 U	5 U	1 U	3 U	0.6 U
1,1-Dichloroethane	70	1 U	5 U	1 U	2.5 U	0.5 U
1,1-Dichloroethene	7	1 U	1.6 J	1 U	2.3 U	1.7 J
1,2,3-trichlorobenzene	70	1 U	5 U	1 U		
1,2,4-Trichlorobenzene	70	1 U	5 U	1 U		
1,2-Dibromo-3-chloropropane	0.2	0.5 U	2.5 U	0.5 U		
1,2-Dibromoethane (Ethylene dibromide	0.02	0.5 U	2.5 U	0.5 U		
1,2-Dichlorobenzene	600	1 U	5 U	1 U		
1,2-Dichloroethane	3	1 U	5 U	1 U	2 U	0.4 U
1,2-Dichloropropane	5	1 U	5 U	1 U	2.5 U	0.5 U
1,3-Dichlorobenzene	210	1 U	5 U	1 U		
1,4-Dichlorobenzene	75	1 U	5 U	1 U		
2-Hexanone	280	5 U	25 U	5 U	29 U	5.7 U
Acetone	6300	10 UJ	50 UJ	10 UJ	100 U	20 U
Benzene	1	1 U	5 U	1 U	2 U	0.4 U
Bromochloromethane	91	1 U	5 U	1 U		
Bromodichloromethane	0.6	0.6 U	3 U	0.6 U	2.9 U	0.58 U
Bromoform	4.4	1 U	5 U	1 U	2.8 U	0.56 U
Bromomethane	9.8	1 UJ	5 UJ	1 UJ	5.4 U	1.1 U
Carbon disulfide	700	1 U	5 U	1 U	2 U	0.4 U
Carbon tetrachloride	3	1 U	5 U	1 U	2.9 U	0.58 U
Chlorobenzene	100	1 U	5 U	1 U	2 U	0.4 U
Chloroethane	12	1 U	5 U	1 U	4.6 U	0.92 U
Chloroform	70	1 U	5 U	1 U	2.1 U	0.42 U
Chloromethane	2.7	1 U	5 U	1 U	3.8 U	0.76 U
cis-1,2-Dichloroethene	70	1 U	**170**	1 U	**139**	**167**
cis-1,3-Dichloropropene	NA	1 U	5 U	1 U	2.4 U	0.48 U
Dibromochloromethane	0.4	0.5 U	2.5 U	0.5 U		

TABLE I-1
SELECT CMT GROUNDWATER ANALYTICAL RESULTS - VALIDATED
OPERABLE UNIT 4
NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well ID	**Florida GCTL[1] (µg/L)**	**OLD1368D**	**OLD1369D**	**OLD1370D**	**OLD1369D**	**OLD1369D**
Sample ID		**0581368DQ108**	**0581369DQ108**	**0581370DQ108**	**NTC13G69D404162008**	**NTC13G69D504162008**
Company		**CH2MHILL**	**CH2MHILL**	**CH2MHILL**	**TtNUS**	**TtNUS**
Top of Screen, ft bgs		**105**	**100**	**101**	**100**	**110**
Bottom of Screen, ft bgs		**110**	**105**	**106**	**105**	**115**
Sample Date		**1/24/2008**	**1/24/2008**	**1/24/2008**	**04/16/2008**	**04/16/2008**
Volatile Organics (µg/L)						
Dichlorodifluoromethane	1400	1 U	5 U	1 U		
Ethylbenzene	30	1 U	5 U	1 U	2 U	0.4 U
Isopropylbenzene (Cumene	0.8	0.8 U	4 U	0.8 U		
methyl acetate	3000	1 U	5 U	1 U		
Methyl ethyl ketone (2-butanone	4200	10 UJ	50 UJ	10 UJ	20 U	4 U
Methyl isobutyl ketone (4-methyl-2-pentanone	560	5 U	25 U	5 U	22 U	4.4 U
Methyl-tert-Butyl Ethe	20	1 U	5 U	1 U	2.5 U	0.5 U
Methylene chloride	5	1 U	5 U	1 U	10 UJ	2 UJ
Styrene	100	1 U	5 U	1 U	2 U	0.4 U
Tetrachloroethene (PCE)	3	1 U	**1500**	**4.8**	**1980**	0.5 U
Toluene	40	1 U	5 U	1 U	2.7 U	0.54 U
trans-1,2-Dichloroethene	100	1 U	5 U	1 U	2 U	0.4 U
trans-1,3-Dichloropropene	NA	1 U	5 U	1 U	2.1 U	0.42 U
Trichloroethene (TCE)	3	1 U	**320**	0.23 J	**260**	0.76 U
Trichlorofluoromethane	2100	1 U	5 U	1 U		
Vinyl chloride	1	1 U	5 U	1 U	3.4 U	0.68 U
Xylenes, tota	20	1 U	5 U	1 U	5.6 U	1.1 U

Notes:
[1] Ch 62-777 FAC Groundwater Cleanup Target Levels (GCTLs) reported in µg/L
Bold indicates concentration equal to or greater than the (GCTL) Groundwater Target Cleanup Level
Empty cells indicate analyte not analyzed.
GCTL - Groundwater Cleanup Target Level
J - estimated value
U - The analyte was analyzed for , but not detected.
UJ- Value non-detected estimated.