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FINAL SITE INVESTIGATION REPORT FOR STUDY AREA 17 WITH TRANSMITTAL LETTER

NTC ORLANDO FL

1/5/2004

TETRA TECH

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1203-A097

January 5, 2004

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Naval Facilities Engineering Command
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Reference: CLEAN Contract No. N62467-94-D-0888
Contract Task Order No. 0234

Subject: Site Investigation Report, Study Area 17
Naval Training Center, Orlando, Florida

Dear Ms. Nwokike:

Enclosed is the final Site Investigation Report for Study Area 17 in hardcopy and CD formats. The final report incorporates comments received from the Orlando Partnering Team.

If you have any questions, please contact me at (865) 220-4730.

Sincerely,

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

SBM:ckf

Enclosure

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File/db

Rev. 1
01/05/04

Site Investigation Report
for
Study Area 17

Naval Training Center

Orlando, Florida

Southern Division
Naval Facilities Engineering Command

Contract Number N62467-94-D-0888

Contract Task Order 0234

January 2004

SITE INVESTIGATION REPORT
FOR
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:

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Naval Facilities Engineering Command
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CONTRACT NO. N62467-94-D-0888
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JANUARY 2004

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PROFESSIONAL GEOLOGIST CERTIFICATION

I hereby certify that this document, *Site Investigation Report for Study Area 17, Naval Training Center, Orlando, Florida,* was prepared under my direct supervision in accordance with acceptable standards of geological practice.

1/5/04

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ACRONYMS

ABB-ES	ABB Environmental Services
AST	aboveground storage tank
bgs	below ground surface
BRAC	Base Realignment and Closure
CCI	CH2MHill Constructors, Inc.
CLEAN	Comprehensive Long-Term Environmental Action Navy
CLP	Contract Laboratory Program
CPT	cone penetrometer testing
CVOC	chlorinated volatile organic compound
cDCE	cis-1,2-dichloroethene
DCE	dichloroethene
DET	Environmental Detachment Charleston
DNAPL	dense nonaqueous phase liquid
DO	dissolved oxygen
DPDO	Defense Property Disposal Office
DPT	direct push technology
DQO	Data Quality Objective
EISOPQAM	*Environmental Investigation, Standard Operating Procedures and Quality Assurance Manual*
ESSR	Environmental Site Screening Report
FDEP	Florida Department of Environmental Protection
GCI	Geo-Cleanse International, Inc.
GCTL	Groundwater Cleanup Target Level
HLA	Harding Lawson Associates
IDW	investigation-derived waste
IRA	Interim Remedial Action
ISCO	in situ chemical oxidation
mL/min	milliliters per minute
MS	matrix spike
MSD	matrix spike duplicate
NFESC	Naval Facilities Engineering Service Center
NTC	Naval Training Center
NTU	Nephelometric Turbidity Unit
OPT	Orlando Partnering Team
ORP/Eh	Oxidation-Reduction Potential
PAH	polynuclear aromatic hydrocarbon
POP	Project Operations Plan
PVC	polyvinyl chloride
SA	Study Area
SCTL	Soil Cleanup Target Level

SOUTHDIV	Southern Division, Naval Facilities Engineering Command
TCE	trichloroethene
TCL	Target Compound List
tDCE	trans-1,2-dichloroethene
TOC	top of casing
TtNUS	Tetra Tech NUS, Inc.
µg/L	micrograms per liter
USEPA	U. S. Environmental Protection Agency
UST	underground storage tank
VC	vinyl chloride
VOC	volatile organic compound

EXECUTIVE SUMMARY

An environmental site investigation was performed by Tetra Tech NUS, Inc. (TtNUS) at Study Area (SA) 17, located at McCoy Annex of the former Naval Training Center (NTC), Orlando. Prior site screening studies identified occurrences of soil and groundwater contamination. Surface and subsurface soil contained polynuclear aromatic hydrocarbon (PAH) contamination, while groundwater was found to be contaminated with trichloroethene (TCE), 1,1-dichloroethene (DCE), cis-1,2-dichloroethene (cDCE), trans-1,2-dichloroethene (tDCE), and vinyl chloride (VC). Surface soil excavation and off-site disposal, conducted by Environmental Detachment Charleston (DET) in May 1999, mitigated PAH-contaminated soil to levels compatible with a future non-residential land use (SUPSHIP, 1999). Subsequent environmental planning and investigation at the site have focused only on the groundwater contamination. The objective of this site investigation was to determine the nature and extent of groundwater contamination that may be related to past activities at the study area. This report describes the field activities performed during the site investigation, and presents and interprets the results including current interim remedial activities. The concentrations of contaminants detected in groundwater are compared to the Groundwater Cleanup Target Levels (GCTLs) developed by the Florida Department of Environmental Protection (FDEP).

Study Area Background

SA 17 occupies approximately 9 acres in the central part of the McCoy Annex. The site includes Buildings 7178, 7190, 7191, and 7193, and the adjacent area that formerly served as the Defense Property Disposal Office (DPDO) complex for the McCoy Annex. The southwestern portion of the site is undeveloped. The entire southeastern portion of the site, including the fenced area beneath which the highest levels of groundwater contamination have been encountered, consists of a soil and grass covered area formerly used by the motor pool. A shallow ditch that drains to the east extends along the entire southern boundary of the site.

Building 7178 was constructed in 1965 as the Training Materials Storage Building. A shed along the northwest wall of the building was used for the storage of drums and flammable and/or hazardous materials. A 110-gallon aboveground storage tank (AST) used for the storage of heating oil was removed from the building in 1994 (ABB-ES, 1994).

Building 7190 was constructed in 1952 as an administrative building housing an Army Maintenance Office. The building contained a 550-gallon underground storage tank (UST) that was used for heating oil

and was removed from the building in March 1993. Associated with Building 7190 is a fenced compound that formerly served as a motor pool area. This area was used to store a variety of hazardous and non-hazardous materials. A vehicle wash rack is located just outside the north fence line of the storage area, which reportedly is connected to a leachfield located south of the wash rack inside the fenced storage yard (HLA, 1999).

Building 7191 was constructed in 1955 and was most recently used for furniture storage. This 3,072-ft^2 building is constructed of concrete block walls on a slab foundation. A 110-gallon UST that held heating oil was removed some time in the past.

Building 7193 was constructed in 1959 and has a concrete slab floor with metal frame walls. A previous investigation reports that a 110-gallon UST and a 250-gallon AST were located within the DPDO area (HLA, 1999). Electrical transformers and 55-gallon drums with unknown contents may have been stored in this area (HLA, 1999).

Site Screening

The initial site screening at SA 17 was performed by ABB Environmental Services (ABB-ES) between 1995 and 1996. During the initial site screening a geophysics survey, passive soil gas survey, soil sampling, sediment and surface water sampling, and monitoring well installation and groundwater sampling were conducted. Following up the initial soil sampling, a two-phase PAH evaluation of soils was conducted. The first phase involved field screening using immunoassay. This was followed by Phase II confirmatory sampling, with the samples being sent to a laboratory to determine PAH compounds present. Confirmatory samples indicated surface and subsurface soils at the site contained concentrations of PAHs exceeding both residential and industrial screening criteria. This investigation also identified concentrations of chlorinated volatile organic compounds (CVOCs) in the surficial aquifer above FDEP GCTLs.

Harding Lawson Associates (HLA), formerly ABB-ES, performed supplemental groundwater investigations from January 1997 to August 1998. The groundwater evaluation involved two phases of fieldwork. The first phase involved the installation and sampling of additional monitoring wells in the immediate vicinity of monitoring well OLD-17-04A to determine whether the plume was isolated to the immediate area of the well. The second phase involved the use of cone penetrometer testing (CPT) and direct push technology (DPT) and was designed to delineate the plume and evaluate the factors affecting plume migration. Following the DPT investigation, 28 permanent monitoring wells were installed to

determine the nature and extent of the plume. The groundwater data showed that CVOCs were present at depths ranging from approximately 5 to 60 feet below ground surface (bgs).

Soils Interim Remedial Action

The DET was directed by the Navy to perform an IRA to excavate and dispose of contaminated soils. The IRA performed by DET did not address the contaminated subsurface soils, but mitigated PAH-contaminated surface soil to levels compatible with a future non-residential land use (SUPSHIP, 1999). Subsequent environmental planning and investigation at the site have focused only on the groundwater contamination.

Site Investigation

TtNUS performed a site investigation between August and November 2002 to define the lateral and vertical extent of CVOC contamination in the groundwater. In August 2002, DPT locations P100 through P121 were sampled and analyzed for volatile organic compounds (VOCs) and monitoring wells (38 through 45) were installed. These eight monitoring wells were sampled in September 2002. An additional six locations were sampled using DPT in November 2002 to confirm the downgradient limit of the plume. Based on these results, monitoring wells 46 through 51 were installed in November 2002 and sampled in December 2002.

TCE, DCE, CDCE, and VC were detected above their respective GCTLs in at least one monitoring well sample in the shallow zone. However, DCE was not detected in the groundwater samples collected from the intermediate and deep wells.

New monitoring well results combined with previous monitoring well results show there is a vertical and horizontal distribution of the CVOC plume. Upper and intermediate portions of the CVOC plume are contained within the site boundary; however, the deeper portion extends approximately 550 ft to the east beyond the site boundary.

Groundwater Interim Remedial Action

CH2M Hill Constructors, Inc. (CCI) initiated the groundwater IRA in February 2000 to address chlorinated solvent contamination at SA 17. CCI contracted Geo-Cleanse International, Inc. (GCI) to implement the IRA using its patented Geo-Cleanse® Process. This process involves the simultaneous injection of hydrogen peroxide and trace quantities of metallic salts under pressure into the subsurface to destroy organic contaminants in the soil and groundwater. The chemistry involved is based on Fenton's Reagent,

in which the hydroxyl free radicals react as a powerful, non-selective oxidant. The end products of CVOC oxidation are primarily carbon dioxide and water, with trace amounts of chloride. Unconsumed hydrogen peroxide naturally degrades to oxygen and water within a few days of injection.

During the first phase of the field implementation, a total of 6,307 gallons of 50% H_2O_2 solution was injected via 69 injectors with screen intervals ranging from 10 feet bgs to 25 feet bgs. In the second phase, ten "very deep" injectors (VD-39 through VD-48) were installed with a screen interval of 31 to 34 feet bgs. Based upon analytical data collected from these injectors and a DPT groundwater investigation conducted from June 11–19, 2001, an additional 26 injectors were installed with screens from 33 to 36 feet bgs. Phase II in situ chemical oxidation (ISCO) application occurred during three separate events in 2002 (March, August, and September), and a total of 13,923 gallons of 50% H_2O_2 solution were injected.

The change in the concentration of TCE and CVOC provides evidence of the success of the oxidation IRA within the plume source area. Dissolved TCE and CVOC concentrations decreased approximately 88 percent, based on a comparison of the pre-injection "baseline" sampling and subsequent sampling events.

Conclusions

The horizontal and vertical extent of CVOC contamination in groundwater was delineated for the areas hydraulically downgradient of the identified source area during the site investigation. As a result, the extent of CVOC contamination has been defined for the study area. The groundwater contamination extends beyond the site boundary of SA 17 to the north and east in the deeper portions of the aquifer.

1.0 INTRODUCTION

An environmental site investigation was conducted at Study Area (SA) 17, located at the McCoy Annex of the former Naval Training Center (NTC), Orlando, Florida. Contamination greater than the Florida Department of Environmental Protection (FDEP) Groundwater Cleanup Target Level (GCTL) of 3 micrograms per liter (µg/L) for trichloroethene (TCE) had been detected in groundwater beneath the source area to a depth of 63 feet below ground surface (bgs). Although direct push technology (DPT) groundwater sampling investigations had been previously performed, the extent of the groundwater contamination in the downgradient direction was not defined. The purpose of the current investigation was to gather sufficient information to adequately define the horizontal and vertical limit of the groundwater plume at the study area. The technical approach to the investigation was developed in conjunction with the Orlando Partnering Team (OPT), which includes representatives from the FDEP, the U.S. Environmental Protection Agency (USEPA) Region 4, and Southern Division, Naval Facilities Engineering Command (SOUTHDIV) and their contractors. This report provides the results of previous investigations, this site investigation, and interim remedial activities at SA 17 and presents conclusions based on those results.

1.1 SITE BACKGROUND

SA 17 occupies approximately 9 acres in the central part of the McCoy Annex (Figure 1-1). The site includes Buildings 7178, 7190, 7191, 7193, and the adjacent area that formerly served as the Defense Property Disposal Office (DPDO) complex for the McCoy Annex. The layout of the pertinent site features is shown in Figure 1-2. The southwestern portion of the site is undeveloped. The entire southeastern portion of the site, including the fenced area where the highest levels of groundwater contamination have been encountered, consists of a soil and grass covered area that was formerly used by the motor pool. A shallow ditch that drains to the east extends along the entire southern boundary of the site.

Building 7178 was constructed in 1965 as the Training Materials Storage Building. This 3,300-ft^2 building was most recently used for furniture and carpet storage. It has concrete block walls on a slab foundation. The asphalt pavement around the building is deteriorated and completely surrounded by a fence. A shed along the northwest wall of the building was used for the storage of drums and flammable and/or hazardous materials. A 110-gallon aboveground storage tank (AST) used for the storage of heating oil was removed from the building in 1994 (ABB-ES, 1994).

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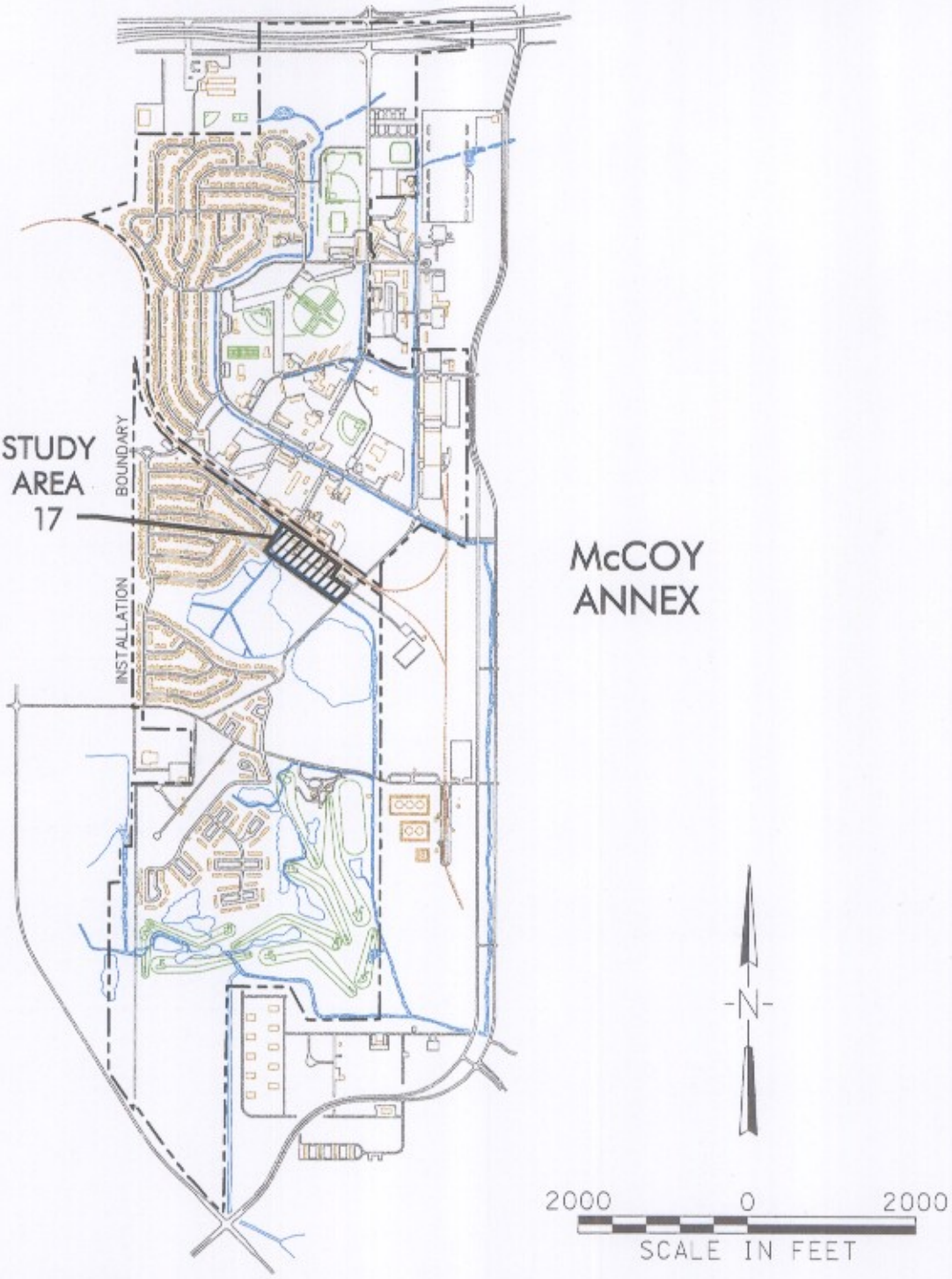

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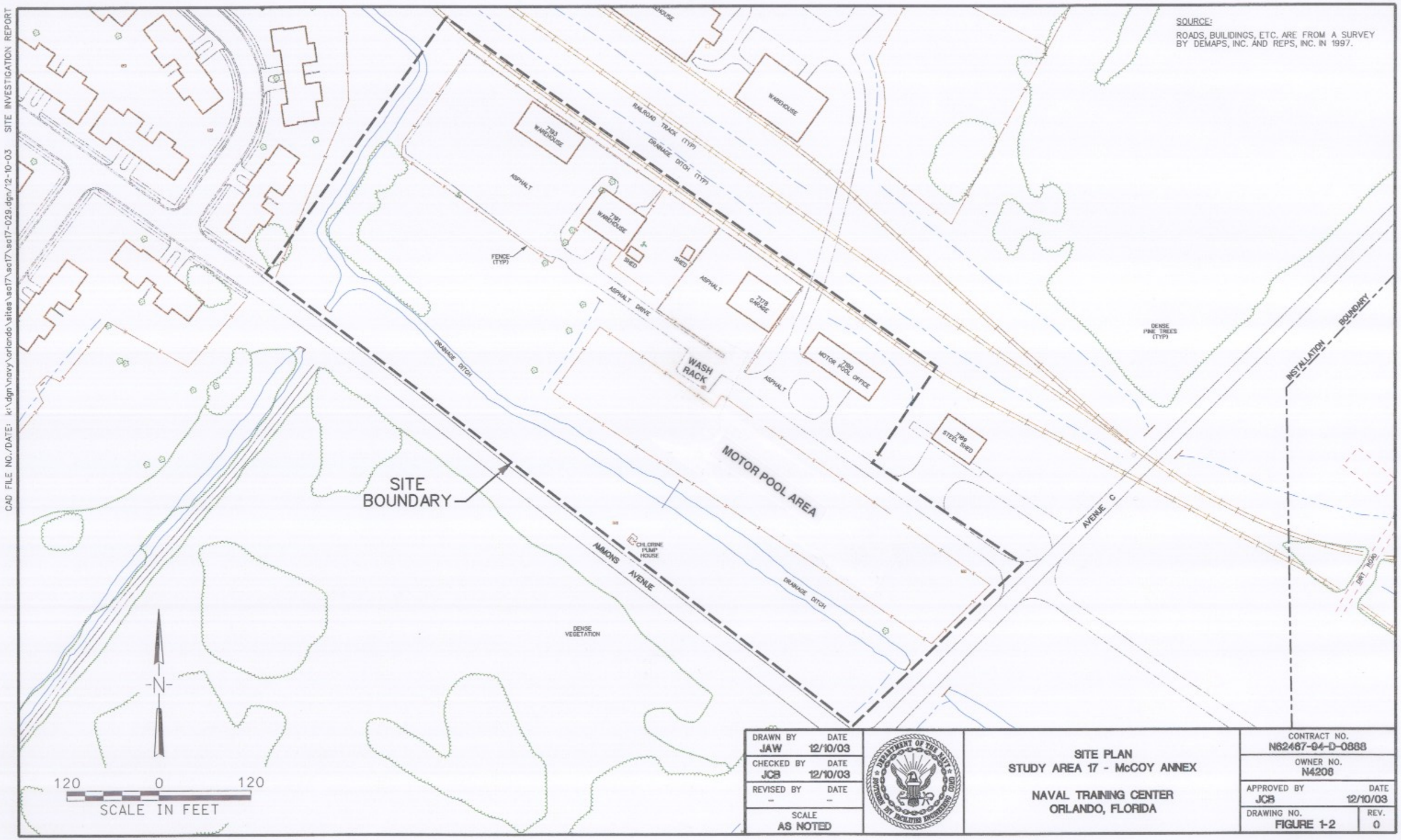

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CAD FILE NO./DATE: k:\dgn\navy\orlando\sites\ac17\ac17\ac17-029.dgn/12-10-03 SITE INVESTIGATION REPORT

Building 7190 was constructed in 1952 as an administrative building housing an Army Maintenance Office. The 3,000-ft^2 building is a cinderblock structure which supported light automotive maintenance. The building contained a 550-gallon underground storage tank (UST) that was used for heating oil and was removed from the building in March 1993. Associated with Building 7190 is a fenced compound that formerly served as a motor pool area. The compound is unpaved and covered by gravel. The compound was most recently used by the lawn maintenance contractor for equipment storage and maintenance. During the Environmental Baseline Survey, several 55-gallon drums of waste fuel, oil, and ethylene glycol were observed on wooden pallets along the northern fence line of the compound (ABB-ES, 1994). Hazardous materials (paints, oils, anti-freeze) were also reportedly stored here. These have since been removed (HLA, 1999). A vehicle wash rack is located just outside the north fence line of the storage area. The wash rack reportedly is connected to a leachfield located south of the wash rack inside the fenced storage yard (HLA, 1999).

Building 7191 was constructed in 1955 and was most recently used for furniture storage. This 3,072-ft^2 building is constructed of concrete block walls on a slab foundation. A-110 gallon UST that held heating oil was removed some time in the past. The fenced gravel lot between Buildings 7178 and 7191 was also used by the base lawn maintenance contractor to store equipment.

Building 7193 was constructed in 1959 and has a concrete slab floor with metal frame walls. It has an area of 3,320 ft^2 and is currently used for general storage. The building is surrounded by a fenced paved lot on three sides. An earlier investigation reported that a 110-gallon UST and a 250-gallon AST were located within the DPDO area (HLA, 1999). Electrical transformers and 55-gallon drums with unknown contents may have been stored in this area (HLA, 1999).

The open area located to the immediate south of Building 7193 was designated Initial Assessment Study Site 6. The verification study was performed there in 1986 (HLA, 1999). Drums were stored in this area as recently as March 1994.

1.2 ENVIRONMENTAL ACTIONS

The environmental activities at SA 17 are summarized in Table 1-1. The initial site screening investigation was conducted by ABB Environmental Services (ABB-ES) in 1995 and 1996. Surface soils at the site contained concentrations of polynuclear aromatic hydrocarbons (PAHs) exceeding screening criteria. The initial investigation also identified concentrations of organic contaminants in the surficial aquifer above screening criteria. Harding Lawson Associates (HLA) formerly ABB-ES, performed

TABLE 1-1

**CHRONOLOGICAL SUMMARY OF ENVIRONMENTAL ACTIVITIES
STUDY AREA 17**

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

Active Use Of The Site	
1940 to 1947	U.S. Army
1947 to 1968	U.S. Air Force
1968 to 1999	U.S. Navy
Environmental Baseline Survey (ABB-ES)	
December 1994	Submittal of Baseline Survey Report
Initial Site Screening (ABB-ES)	
February through May 1995	Geophysics survey. Passive soil gas survey. Surface and subsurface soil sampling. Installation and sampling of wells OLD-17-01A through OLD-17-05A, and OLD-17-24T. Surface water and sediment sampling of drainage ditch.
October through November 1996	PAH evaluation in soil using field immunoassay analysis.
Supplemental Site Screening (HLA)	
January through February 1997	Phase I: Install and sample monitoring wells OLD-17-06 through OLD-17-10
November 1997	Confirmatory soil sampling.
March through April 1998	Phase II: CPT/DPT 17Q001-17Q031; Install and sample piezometers PZ01-PZ06
April through June 1998	Phase II: Install and sample monitoring wells OLD-17-11 through OLD-17-33
Interim Remedial Action (IRA) (DET and CCI)	
May 1999	DET soil excavation
February 2000	Phase I confirmation: re-sample 14 monitoring wells
March through April 2000, August 2000	Phase II characterization: DPTs 1 through 20; Install monitoring wells OLD-17-34 through OLD-17-37; Replace OLD-17-23A and OLD-17-24B
October 2000	Collected basis of comparison groundwater samples from 3 shallow injectors, 9 intermediate injectors, 8 deep injectors, and 2 monitoring wells
November 2000	IRA Injection: ISCO shallow, intermediate, deep zones.
December 2000	Post injection sampling
January 2001	Installed 8 deep injectors and injected ISCO in deep zone.
January through February 2001	Post injection sampling.
May through June 2001	Phase III: Installed very deep injectors 39 - 48; DPTs 21 - 35
March 2002, August 2002, and September 2002	IRA injection: ISCO very deep zone; polishing of intermediate and deep zones
July 2002, October 2002, January 2003, and June 2003	Performance evaluation groundwater monitoring
Site Investigation Action (TtNUS)	
August 2002	DPTs P100 through P121; Installed monitoring wells OLD-17-38 through OLD-17-45
November 2002	DPTs P122, P123, P126, and P128 through 130; Installed monitoring wells OLD-17-46 through OLD-17-51

CPT-cone penetrometer testing
DPT-direct push technology
ISCO-in situ chemical oxidation

supplemental investigations from January 1997 to August 1998 to confirm and to quantify the various PAH compounds present in the soil. In addition, HLA conducted a supplemental groundwater screening investigation. When Phase I results established that the chlorinated volatile organic compounds (CVOC) plume did extend over a significant area of the site, a second phase of screening was implemented to better define the limits of the plume.

In May 1999, surface soil was excavated by Environmental Detachment Charleston (DET) to a depth of 2 feet across an area of approximately 300 by 100 feet (HLA, 1999). The Interim Remedial Action (IRA) performed by DET did not address the contaminated subsurface soils. The surface soil excavation and off-site disposal mitigated PAH-contaminated surface soil to levels compatible with a future non-residential land use (SUPSHIP, 1999). Subsequent environmental planning and investigation at the site has focused only on the groundwater contamination.

In February 2000, the OPT requested that CH2M Hill Constructors, Inc. (CCI) perform an IRA to confirm site conditions, develop an IRA approach, and implement an appropriate IRA. CCI was contracted to perform Phase I and Phase II Confirmatory Site Characterization activities at SA 17. Based on results from Phase I activities, CCI contracted Geo-Cleanse International, Inc. (GCI) to implement two phases of in situ chemical oxidation (ISCO) injection activities at SA 17. Phase I consisted of two injection events conducted from November 2000 through January 2001. The second phase consisted of three injection events conducted from March 2002 through September 2002.

Subsequently, Tetra Tech NUS, Inc. (TtNUS) performed the site investigation documented in this report to complete the definition of the horizontal and vertical extent of contamination. The investigation consisted of additional DPT groundwater sampling; installation of additional shallow, intermediate, and deep monitoring wells (including a D zone well immediately below the Hawthorn clay); and the collection of synoptic water levels to further evaluate groundwater flow direction. Estimates were also made for groundwater flow velocity based on observed aquifer characteristics. Details and results of this investigation are provided in the following pages of this report.

2.0 ENVIRONMENTAL SETTING

2.1 SOILS

The *Soil Survey of Orange County, Florida* (USDA, 1989) shows that SA 17 is located within the Smyrna-Urban land complex soil unit. These soils are described as nearly level and poorly drained. Smyrna-Urban land soils are typically found on the flatwoods with slopes of less than 2 percent. This map unit consists of about 53 percent Smyrna soil and about 40 percent Urban land. Typically, the thickness of the Smyrna soil is 80 inches or more and consists of fine sand. The Urban land part of this complex is covered by concrete, asphalt, buildings, or other impervious surfaces that obscure or alter the soils so that their identification is not feasible.

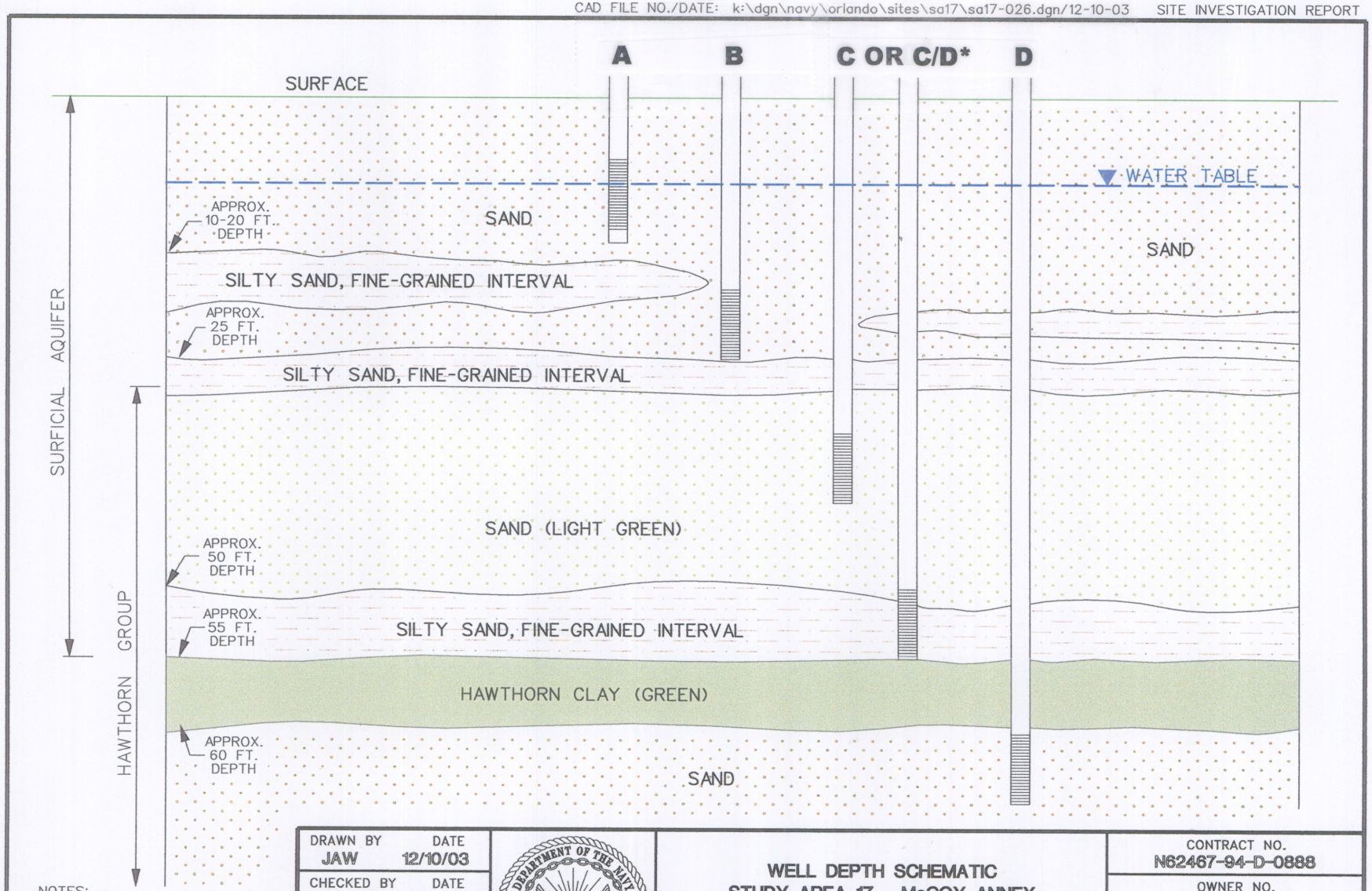
2.2 SITE GEOLOGY

Cone penetrometer testing (CPT) was conducted during the early stages of the site screening investigation to characterize the subsurface geology to depths of 65 feet bgs at SA 17. Geologic cross sections presented in the Environmental Site Screening Report (ESSR) (HLA, 1999) are provided in Appendix A. In general, the upper 30 feet of sediments consists primarily of fine sand with the exception of two thin (approximately 5 to 10 feet), discontinuous layers of silty sand. The upper layer of silty sand lies at about 10 to 15 feet bgs and appears to dip to the east and northeast. The lower layer of silty sand lies at about 25 to 30 feet bgs and appears to be continuous across the site, but thins slightly to the north and east in the area investigated. The groundwater chemistry investigation results suggest that these layers act as aquitards and retard the downward flow of groundwater (and contaminants) at the site.

Below the lower layer of silty sand is an interval of fine- to coarse-grained sand that extends from about 30 to 50 feet bgs. Because of its green coloration, this layer marks the upper part of the Hawthorn Group sediments. This interval is underlain by another silty-sand layer that extends from 50 to 55 feet bgs, which is in turn underlain by approximately 10 feet of sandy, silty clay. This clay is considered to be the bottom of the surficial aquifer. It is in turn underlain by fine- to coarse-grained sand of the Hawthorn Group sediments.

2.3 SITE HYDROGEOLOGY

The hydrogeology of the surficial aquifer of interest at SA 17 has been investigated by the installation and monitoring of wells installed at the site. The water table lies at approximately 6 feet bgs across the site, with a variation of 2 feet. The surficial aquifer extends to a depth of about 55 feet and the uppermost Hawthorn Clay layer described in Section 2.2 defines its lower extent. Figure 2-1 provides a well depth



NOTES:

1) "C" AND "D" WELLS MAY OR MAY NOT BE DOUBLE CASED DEPENDING ON LOCATION.

✳ WELLS OLD-17-25C AND OLD-17-28C

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DEPARTMENT OF THE NAVY ★ SOUTHERN DIV FACILITIES ENGINEERING COM

WELL DEPTH SCHEMATIC
STUDY AREA 17 - McCOY ANNEX

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

CONTRACT NO. N62467-94-D-0888	
OWNER NO. N4206	
APPROVED BY JCB	DATE 12/10/03
DRAWING NO. FIGURE 2-1	REV. 0

FORM CADD NO. SDIV-AH.DGN - REV 2 - 10/23/03

schematic that demonstrates the relationship of the wells and the nomenclature used to distinguish the aquifer depth intervals at SA 17. It was noted that two “C”-depth wells, OLD-17-25C and OLD-17-28C, were installed at or in the silty-clay transition zone that marks the bottom of the surficial aquifer. These C wells have screened intervals deeper than most C-depth wells and their water levels are consistently lower in elevation. For the remainder of this report, monitoring wells will be referred to with an abbreviated notation; for example, the designation for monitoring well OLD-17-04A will be shortened to 04A.

The groundwater elevation data (presented in Section 4.0) in the shallowest portion of the surficial aquifer (less than 14 feet bgs) indicate radial flow away from a groundwater high located across the central portion of SA 17. The location of a buried water-supply line that runs across SA 17 suggests that leakage from the line may be responsible for the localized groundwater high and resulting radial drainage. The absence of an artificial recharge source and the presence of the ditch along the southern perimeter of SA 17 suggest that the local water table would otherwise slope toward the south and that shallow groundwater would flow and discharge into the ditch during typical water table conditions. The groundwater flow direction in the intermediate portion of the aquifer, between the two upper silty-sand intervals (15 to 30 feet bgs), suggests that local features (i.e., the drainage ditch) may also influence this interval. Flow in the intermediate zone is toward the ditch to the south, but a component of flow also exists to the east. The groundwater flow direction in the deep portion of the aquifer, below the lower, silty-sand interval (>30 feet bgs), suggests that local features have no influence on this interval. Flow in the deep zone is toward the south or the east. Groundwater flow across the surficial aquifer has a strong downward component.

3.0 SITE INVESTIGATION

3.1 SITE SCREENING

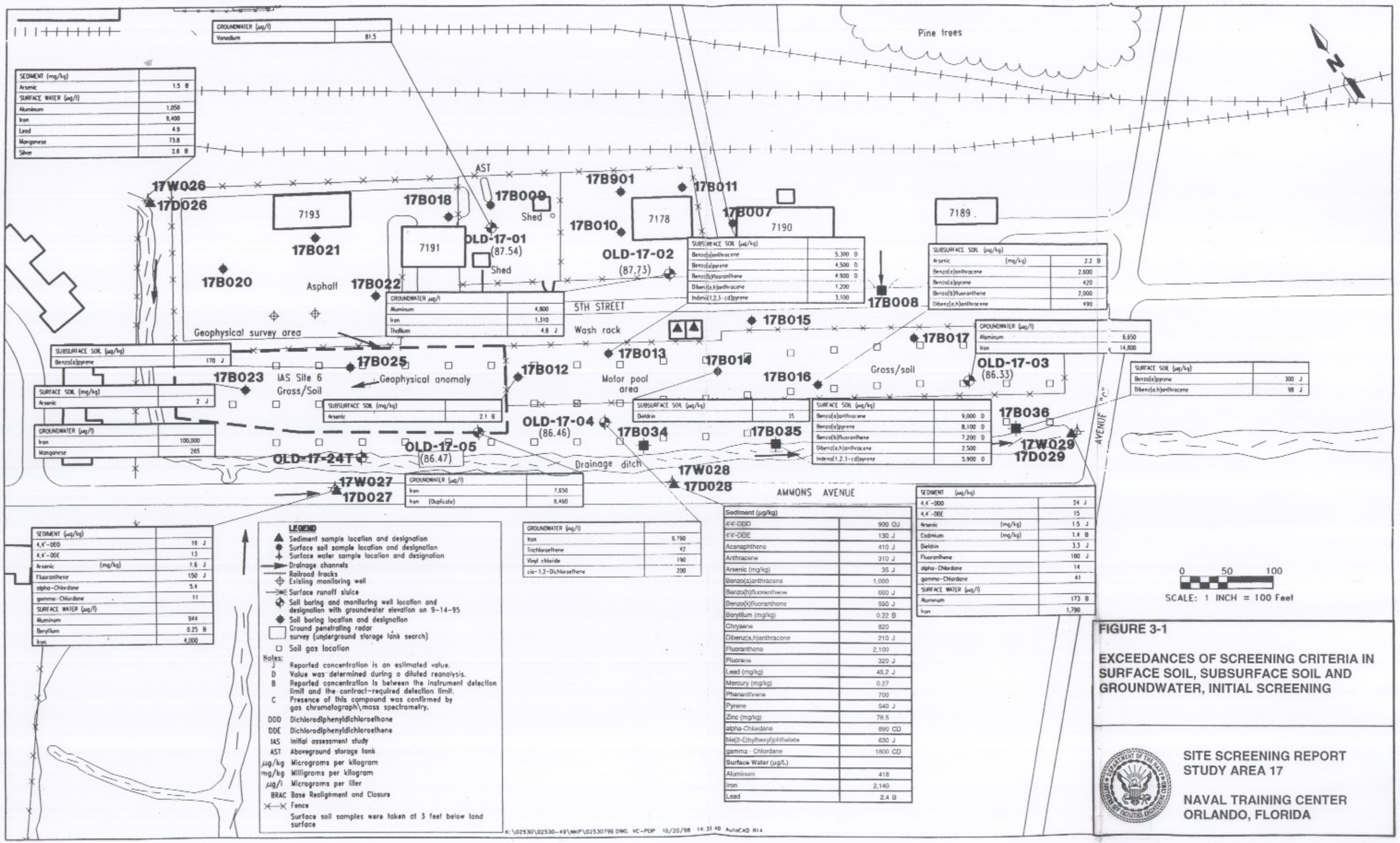
ABB-ES conducted initial site screening activities at SA 17 between February 1995 and November 1996. The activities included a geophysics survey, passive soil-gas survey, soil sampling, monitoring well installation, groundwater monitoring well sampling, surface water sampling, and sediment sampling. Supplemental site screening activities were conducted by HLA from January 1997 to August 1998. HLA presented the details of the site screening activities in a report titled *Base Realignment and Closure (BRAC) Environmental Site Screening Report, Study Area 17, Naval Training Center, Orlando, Florida* (HLA, 1999). The surface soil excavation and off-site disposal conducted by DET in May 1999 mitigated PAH-contaminated surface soil to levels compatible with a future non-residential land use (SUPSHIP, 1999). Subsequently, recent environmental planning and investigations at the site have focused only on the groundwater contamination. Below is a summary of the soil and groundwater site screening sampling activities.

3.1.1 Soil Gas Survey

During the initial site screening conducted by ABB-ES, 60 passive soil-gas samplers were installed in a grid pattern with 50-foot centers (see Figure 3-1). The samplers were buried 2 to 3 feet bgs. After a 2-day exposure period, the passive collectors were retrieved and analyzed for halogenated hydrocarbons and petroleum hydrocarbons. One passive sampler that was installed south of Building 7193 indicated very low detections of benzene and toluene. No other detections were noted.

3.1.2 Soil Sampling

During the initial site screening conducted by ABB-ES, surface and subsurface soils were found to contain concentrations of PAHs exceeding screening criteria (Figure 3-1). For PAHs, the industrial screening criterion is the FDEP industrial Soil Cleanup Target Level (SCTL). ABB-ES conducted a PAH soil evaluation to determine the extent of contamination. The first phase of the evaluation involved field screening using immunoassay analysis. The second phase involved confirmatory sampling from selected locations for laboratory analysis. Eight of the 26 confirmatory samples had PAH concentrations exceeding the industrial SCTLs. Detections from these surface and subsurface soil sampling activities are presented in Figure 3-2, and analytical data can be found in Appendix A.



GROUNDWATER (µg/l)	
Vanadium	81.5

SEDIMENT (mg/kg)	
Arsenic	1.5 B
SURFACE WATER (µg/l)	
Aluminum	1,050
Iron	9,400
Lead	4.9
Manganese	73.8
Silver	2.8 B

SUBSURFACE SOIL (µg/kg)	
Benzo(a)anthracene	5,300 D
Benzo(a)pyrene	4,500 D
Benzo(b)fluoranthene	4,900 D
Dibenz(a,h)anthracene	1,200
Indeno(1,2,3-cd)pyrene	3,100

GROUNDWATER µg/l	
Aluminum	4,800
Iron	1,310
Thallium	4.8 J

SUBSURFACE SOIL (µg/kg)	
Arsenic (mg/kg)	2.2 B
Benzo(a)anthracene	2,600
Benzo(a)pyrene	420
Benzo(b)fluoranthene	2,000
Dibenz(a,h)anthracene	490

GROUNDWATER (µg/l)	
Aluminum	6,650
Iron	14,800

SURFACE SOIL (µg/kg)	
Benzo(a)pyrene	300 J
Dibenz(a,h)anthracene	98 J

SUBSURFACE SOIL (µg/kg)	
Benzo(a)pyrene	170 J

SURFACE SOIL (mg/kg)	
Arsenic	2 J

GROUNDWATER (µg/l)	
Iron	100,000
Manganese	265

SUBSURFACE SOIL (mg/kg)	
Arsenic	2.1 B

SUBSURFACE SOIL (µg/kg)	
Dieldrin	35

SURFACE SOIL (µg/kg)	
Benzo(a)anthracene	9,000 D
Benzo(a)pyrene	8,100 D
Benzo(b)fluoranthene	7,200 D
Dibenz(a,h)anthracene	2,500
Indeno(1,2,3-cd)pyrene	5,900 D

GROUNDWATER (µg/l)	
Iron	7,850
Iron (Duplicate)	6,460

GROUNDWATER (µg/l)	
Iron	6,760
Trichloroethene	47
Vinyl chloride	190
cis-1,2-Dichloroethene	200

SEDIMENT (µg/kg)	
4,4'-DDD	18 J
4,4'-DDE	13
Arsenic (mg/kg)	1.6 J
Fluoranthene	150 J
alpha-Chlordane	5.4
gamma-Chlordane	11
SURFACE WATER (µg/l)	
Aluminum	944
Beryllium	0.25 B
Iron	4,000

Sediment (µg/kg)	
4'4'-DDD	900 OJ
4'4'-DDE	130 J
Acenaphthene	410 J
Anthracene	310 J
Arsenic (mg/kg)	35 J
Benzo(a)anthracene	1,000
Benzo(b)fluoranthene	660 J
Benzo(k)fluoranthene	590 J
Beryllium (mg/kg)	0.22 B
Chrysene	820
Dibenz(a,h)anthracene	210 J
Fluoranthene	2,100
Fluorene	320 J
Lead (mg/kg)	45.2 J
Mercury (mg/kg)	0.27
Phenanthrene	700
Pyrene	540 J
Zinc (mg/kg)	78.5
alpha-Chlordane	890 CD
bis(2-Ethylhexyl)phthalate	630 J
gamma - Chlordane	1800 CD
Surface Water (µg/L)	
Aluminum	418
Iron	2,140
Lead	2.4 B

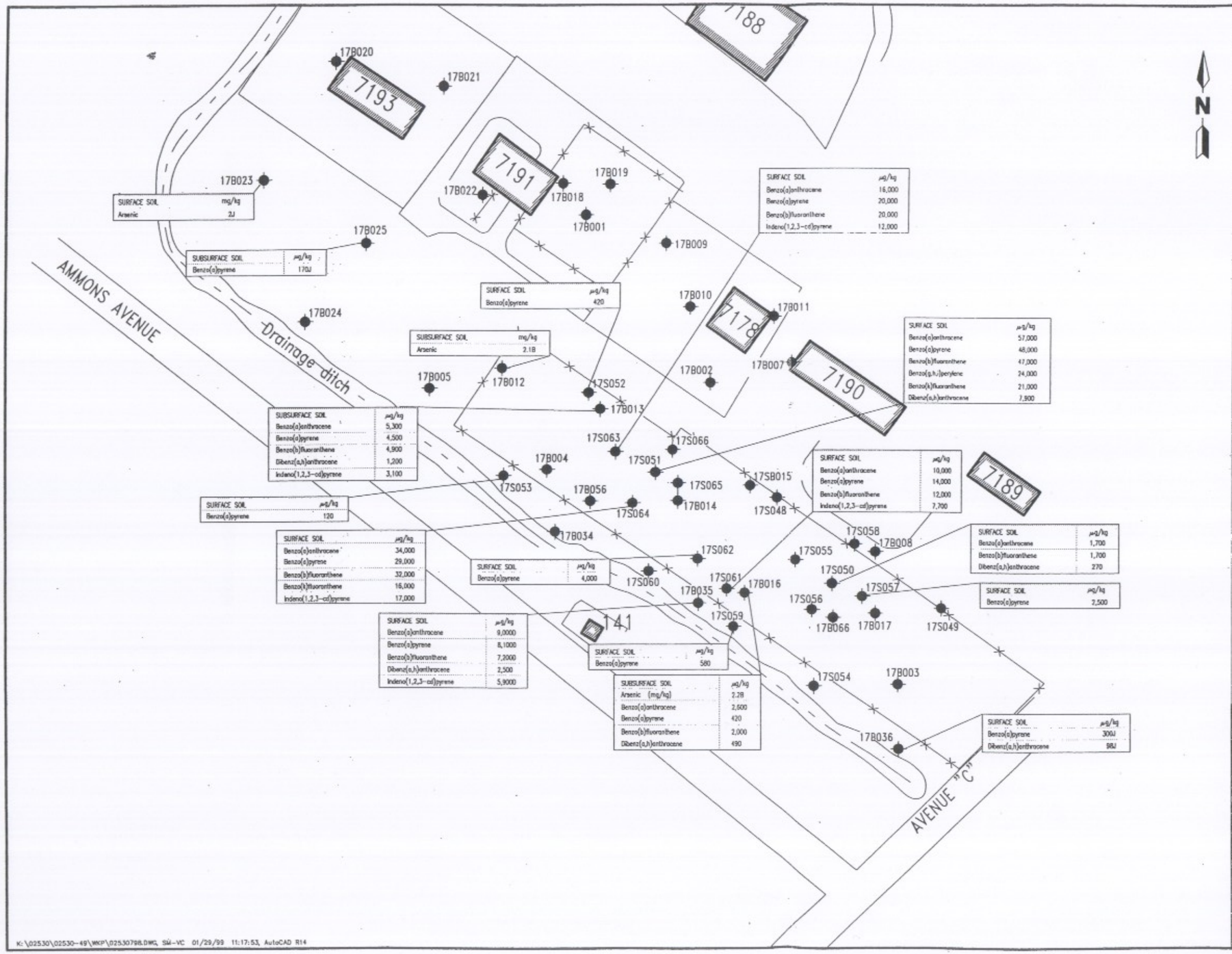
SEDIMENT (µg/kg)	
4,4'-DDD	24 J
4,4'-DDE	15
Arsenic (mg/kg)	1.5 J
Cadmium (mg/kg)	1.4 B
Dieldrin	3.3 J
Fluoranthene	180 J
alpha-Chlordane	14
gamma-Chlordane	41
SURFACE WATER (µg/l)	
Aluminum	173 B
Iron	1,790

FIGURE 3-1

EXCEEDANCES OF SCREENING CRITERIA IN SURFACE SOIL, SUBSURFACE SOIL AND GROUNDWATER, INITIAL SCREENING

SITE SCREENING REPORT
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA



LEGEND

17B011 ●	Soil boring location and designation
B	Reported concentration is between the instrument detection limit and the contract-required detection limit
J	Reported concentration is an estimated value
D	Indicates value was determined during a diluted reanalysis
mg/kg	Milligrams per kilogram
µg/kg	Micrograms per kilogram
BRAC	Base Realignment and Closure
×—×	Fence

0 50 100
SCALE: 1 INCH = 100 FEET

FIGURE 3-2

EXCEEDANCES OF SCREENING CRITERIA IN SOIL

SITE SCREENING REPORT
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

3.1.3 Soils Remediation

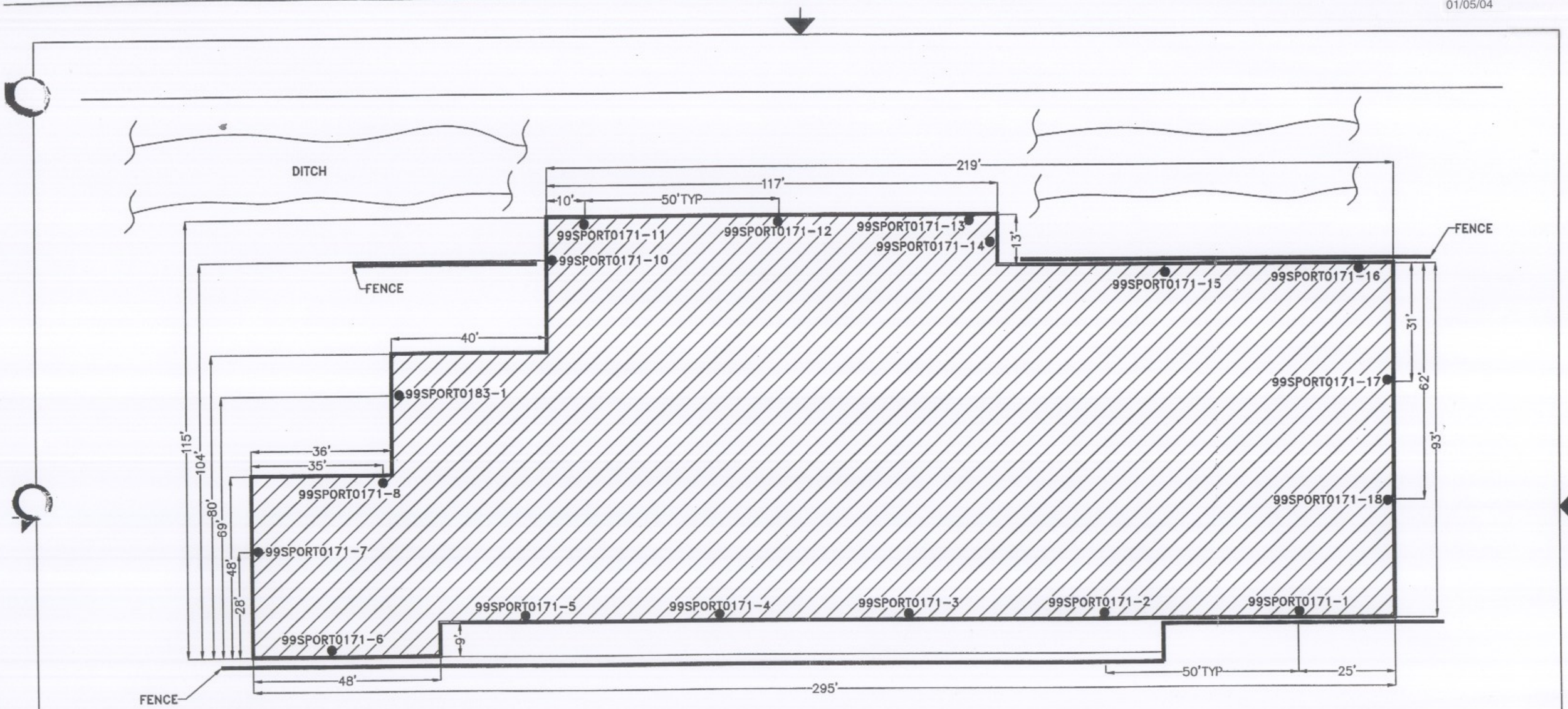
Based on the confirmatory sampling results, HLA recommended an IRA be performed to remove contaminated surface and subsurface soils (HLA, 1999). In May 1999, the DET excavated surface soils to a depth of 2 feet across an area of approximately 300 by 100 feet (SUPSHIP, 1999). Following the excavation confirmation samples were collected from the sidewalls. Figure 3-3 shows the locations of the excavation area and confirmatory sample locations. Analytical data from the confirmatory samples can be found in the *Completion Report, Interim Remedial Action at SA 17, 18, 23, 35, 37, 40, and OU 3 & 4, Naval Training Center and McCoy Annex* (SUPSHIP, 1999). The IRA performed by the DET did not address the contaminated subsurface soils. The surface soil excavation and off-site disposal mitigated PAH-contaminated surface soil to levels compatible with a future non-residential land use (SUPSHIP, 1999). Subsequent environmental planning and investigation at the site have focused only on the groundwater contamination.

3.1.4 Groundwater Sampling

ABB-ES installed five permanent (01A through 05A) and one temporary (24T) shallow monitoring wells during the initial investigation. The groundwater sampling results from site screening activities are presented in Appendix A. A sample from well 04A contained TCE at a concentration of 42 µg/L, cis-1,2-dichlorolethene (cDCE) at 200 µg/L, and vinyl chloride (VC) at 190 µg/L, and each exceeded their respective FDEP GCTLs of 3 µg/L, 70 µg/L, and 1 µg/L (FDEP, 1999) (Figure 3-1).

The supplemental groundwater screening investigation was conducted by HLA in two phases. The first phase was implemented to determine whether the plume was isolated to the immediate vicinity of well 04A. When the Phase I results established that the plume extended over a significant area, a more extensive field program was designed and implemented to determine the nature and extent of the groundwater plume.

During Phase I activities, five additional monitoring wells were installed. Four of the wells (06A through 09A) were placed in a cross pattern centered on 04A (Figure 3-4). The fifth monitoring well (10C) was installed to test the groundwater quality at the base of the surficial aquifer in the immediate vicinity of 04A. VC was detected above the GCTL in all six wells (04A and 06A through 10C), with concentrations ranging from 1.6 µg/L to 450 µg/L. cDCE was also detected in all six wells, but only the concentration from 04A (460 µg/L) exceeded the GCTL. TCE was detected in two wells, but the concentration from 04A (42 µg/L) was the only one that exceeded screening criteria. The other compounds detected were 1,1-dichloroethene (DCE) and trans-1,2-dichloroethene (tDCE) at 04A; only DCE was detected at a concentration (16 µg/L) exceeding its GCTL.



LEGEND

● CONFIRMATORY SAMPLE POINT

EXCAVATED TO 2 FEET DEEP

N

ENVIRONMENTAL DETACHMENT CHARLESTON
1899 NORTH HOBSON AVENUE – BUILDING 30
NORTH CHARLESTON, SOUTH CAROLINA 29405-2106

FIGURE 3-3
McCOY ANNEX ORLANDO SA 17
EXCAVATION BOUNDARIES AND
CONFIRMATORY SAMPLE LOCATIONS

DATE	PREPARED BY:	REV
17 AUGUST 1999	A. J. MOYER	—
SCALE: NONE		SHEET

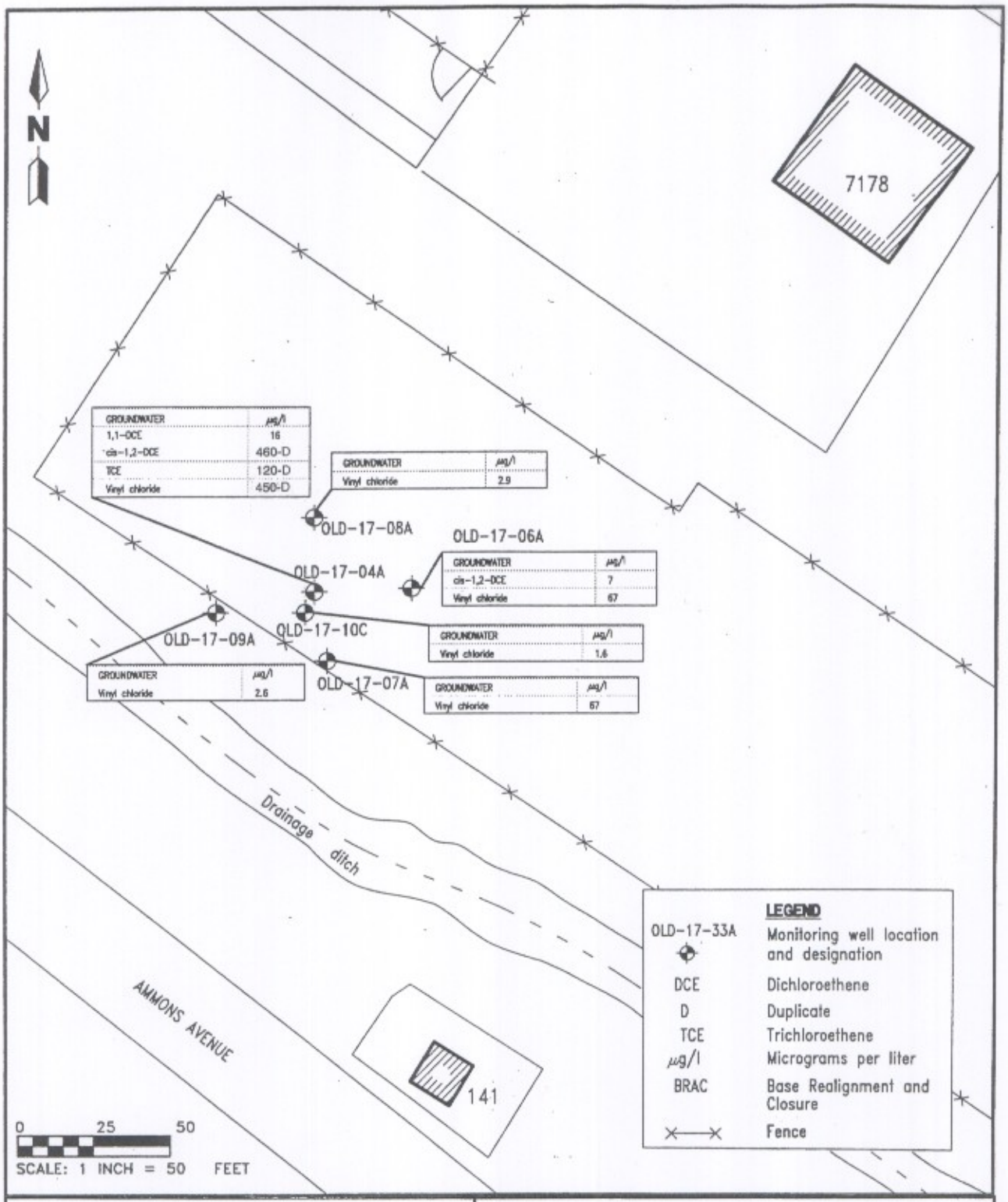


FIGURE 3-4

EXCEEDANCES OF SCREENING CRITERIA IN GROUNDWATER EVALUATION, PHASE I

SITE SCREENING REPORT STUDY AREA 17

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Phase II investigation activities involved CPT to characterize the subsurface lithology across the site, DPT groundwater sampling, surface water, and sediment sampling. CPT was performed at nine locations and extended to at least the top of the shallowest clay unit within the Hawthorn Group. Six piezometers (17PZ01 through 17PZ06) at three locations were installed on the south side of the drainage canal to investigate the downgradient limits of the plume. A total of 185 groundwater samples were collected from 31 DPT locations. Samples were analyzed at an on-site field analytical laboratory. At most DPT locations, groundwater samples were collected at 5-ft intervals to a depth of 30 ft bgs and at 10-ft intervals from 30 ft to 60 ft bgs. Based on the results of the Phase II DPT sampling, 18 new monitoring wells (18A through 33A) were installed (Figure 3-5). The new wells were incorporated with existing wells to form seven well clusters with each cluster containing a shallow, intermediate, and deep monitoring well. Samples collected from 16 of the 28 monitoring wells and drive points had detections of one or more CVOCs. The exceedances detected in the Site Screening Investigation are presented in Figure 3-5. The concentrations of cDCE, VC, and TCE at 12 of the 16 well locations exceeded the GCTLs. There were no surface water or sediment samples exceeding surface water standards or sediment screening criteria.

3.2 SITE INVESTIGATION

TtNUS conducted additional sampling in September and November 2002 in order to define the lateral and vertical extent of the groundwater plume. TtNUS performed the work in accordance with the *Work Plan for Plume Delineation at Study Area 17* (TtNUS, 2002). The work plan references the guidance detailed in the *Project Operations Plan* (POP) *for Site Investigation and Remedial Investigations, Volume 1* (ABB-ES, 1997), FDEP SOPs (January 2002), and the USEPA *Environmental Investigation, Standard Operating Procedures and Quality Assurance Manual* (EISOPQAM) (November 2001). Health and safety aspects of the work at SA 17 were controlled in accordance with the *Health and Safety Plan for Completion of Investigative Work and Data Sampling* (TtNUS, 2001) and addenda.

3.2.1 DPT Groundwater Sampling

DPT sample locations were selected based on groundwater flow and contaminant transport patterns determined from the site screening investigations monitoring well and DPT sampling results (Figure 3-6). The analytical data from monitoring well sampling conducted in June 1998, February and April 2000, and from DPT groundwater investigations conducted in April 2000 and June 2001 were used collectively to define the plume configuration at various depths in the surficial aquifer and to identify data gaps. The main focus of the 2002 DPT investigation was to fill data gaps in the intermediate and deep portions of the surficial aquifer (i.e., just above and below the lower silty-sand layer).

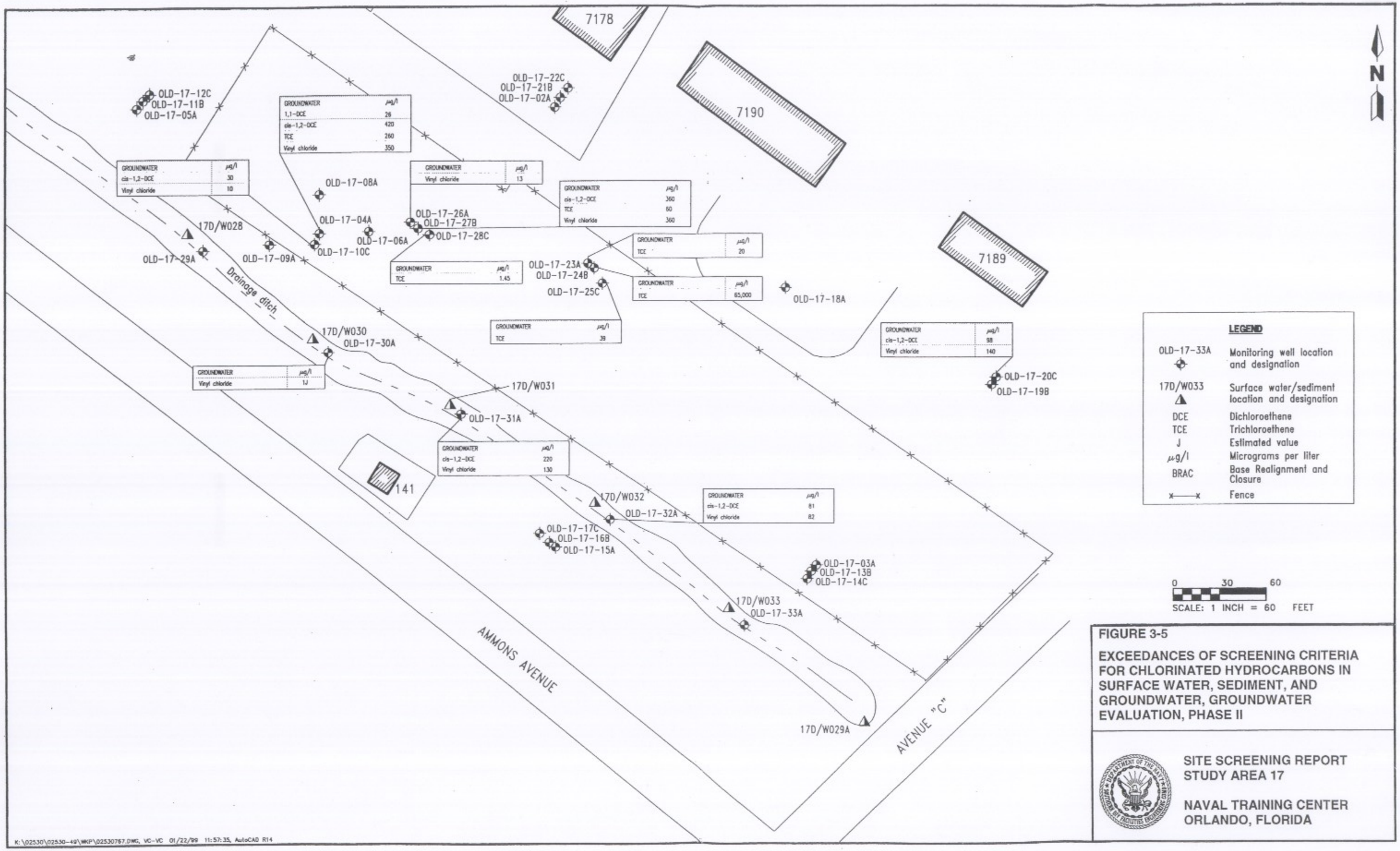
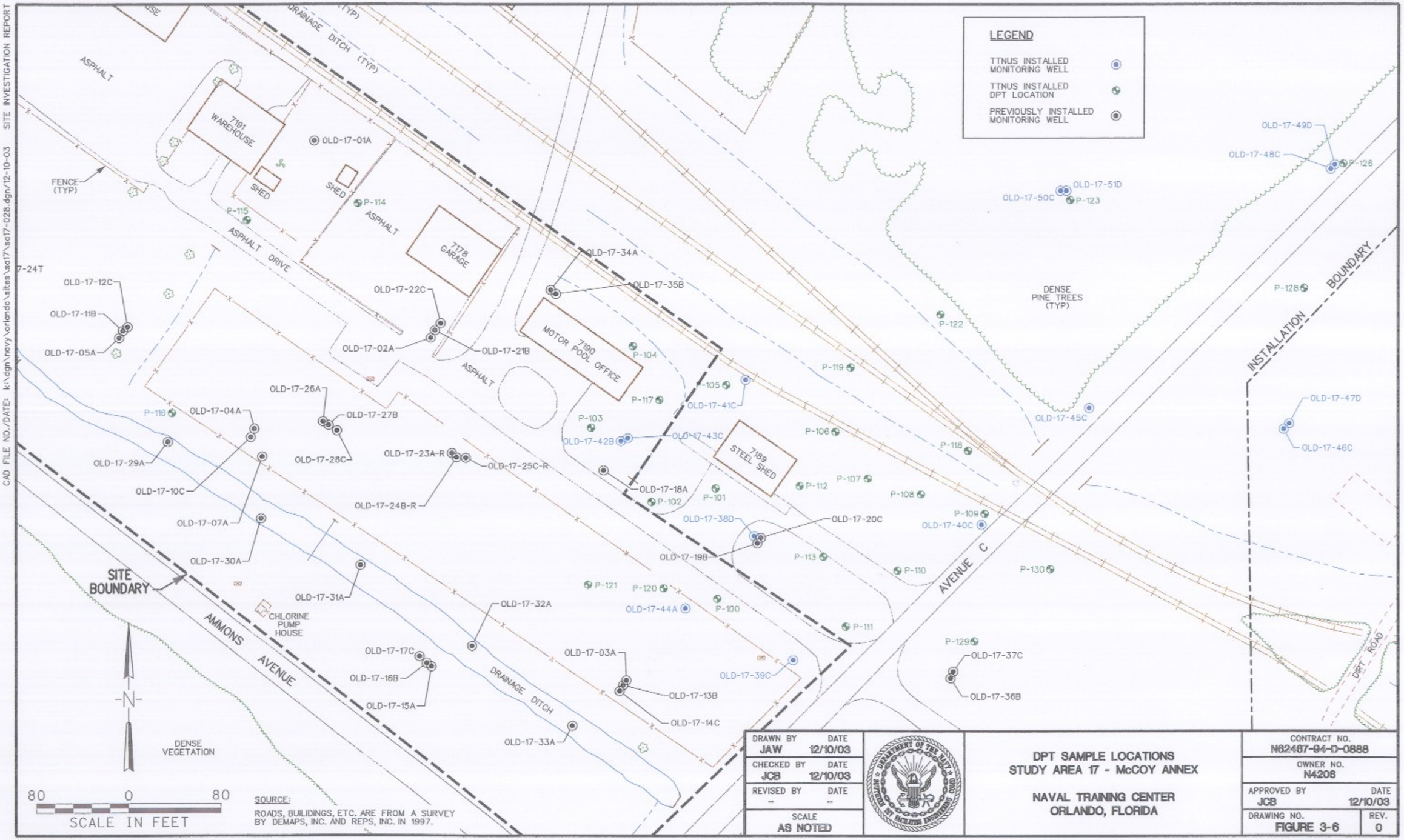


FIGURE 3-5

EXCEEDANCES OF SCREENING CRITERIA FOR CHLORINATED HYDROCARBONS IN SURFACE WATER, SEDIMENT, AND GROUNDWATER, GROUNDWATER EVALUATION, PHASE II

SITE SCREENING REPORT
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA



DRAWN BY JAW	DATE 12/10/03	DPT SAMPLE LOCATIONS STUDY AREA 17 - McCOY ANNEX NAVAL TRAINING CENTER ORLANDO, FLORIDA	CONTRACT NO. N62467-94-D-0888
CHECKED BY JCB	DATE 12/10/03		OWNER NO. N4206
REVISED BY --	DATE --		APPROVED BY JCB / DATE 12/10/03
SCALE AS NOTED			DRAWING NO. FIGURE 3-6 / REV. 0

FORM CADD NO. SDIV-BH.DGN - REV 2 - 10/23/03

CAD FILE NO./DATE: k:\dgn\navy\orlando\sites\sa17\sa17-028.dgn/12-10-03 SITE INVESTIGATION REPORT

Selection of DPT Locations

In August 2002, groundwater samples were collected from DPT locations P100–P121 and analyzed for volatile organic compounds (VOCs). The shallow portion of the aquifer (zone A) was defined using six additional locations (P102, P114–P116, P120, and P121) with samples collected from a depth of 10 feet bgs in the area north and east of the plume. Twenty locations (P100–P117, P120, and P121) were sampled at depths of 15, 25, and/or 35 feet bgs to complete the delineation of the intermediate portion of the aquifer. Samples in the intermediate zone (P100–P113, P116–P117, P120, and P121) were collected primarily east of the plume where few data points existed. Additionally, two samples (P114 and P115) were collected from the northwest to fill in the data gap from previous DPT and monitoring well sampling, and a sample was also collected to the west along the drainage ditch where no data exist. In the deep portion of the aquifer (zone C), 17 locations were sampled at depths of approximately 40 and 50 feet bgs due to insufficient data. This interval was selected because the sand represents the most conductive groundwater flow path in the deep zone of the surficial aquifer and because the interface of the sand with the underlying silty sand and clay layers represented a potential point of accumulation of dense nonaqueous phase liquid (DNAPL). Previous sample data showed that relatively high concentrations of either TCE, cDCE, and/or VC had migrated to the east and northeast, and samples from 20C demonstrated that VC had migrated further downgradient than predicted by the contaminant velocity estimated in the work plan (see Appendix B, TtNUS, 2002).

Additional DPT sampling was conducted in November 2002, to complete the definition of the plume in the deep aquifer. Six locations (P122, P123, P126, and P128 through 130) were sampled in the area northeast of the plume to confirm the downgradient extent.

DPT Sampling Procedures

DPT groundwater samples were collected by attaching a factory-slotted well point/screen to the end of the drive rods and advancing the string to the desired sample collection depth. At the desired sample interval the well point was exposed to the aquifer and allowed to equilibrate. The well point was then "purged" using a peristaltic pump in order to reduce turbidity and remove the groundwater directly impacted by installation (USEPA, 2001). The well was purged until the groundwater was relatively clear. After the water cleared, pumping continued until three readings at 5-minute intervals of temperature, specific conductance, pH, and turbidity were recorded. In cases where a low turbidity was not achieved, the best sample obtainable was collected. Sample aliquots for volatile organic analyses were collected using the tube evacuation method described in Section 4.5.2.2 of the POP (ABB-ES, 1997); these samples were also collected directly into laboratory-supplied preservation containers. Samples were

analyzed using quick turnaround in order to minimize collection and analysis of samples outside the plume area.

DPT Sample Numbering

The DPT samples were numbered as follows:

NTC17TWWWDD

where:	NTC	=	Naval Training Center
	17	=	two-digit SA designation (17)
	T	=	sample type ("P" for groundwater collected with DPT, "D" for duplicate)
	WWW	=	DPT sample location (e.g., 001)
	DD	=	depth bgs sample collected (e.g., 25)

For example, the sample collected from P001 at a depth of 25 feet bgs was designated as NTC17P00125. Samples for field duplicates were identified with a "blind" number (e.g., NTC17D1000). The corresponding environmental sample was noted in the field logbook.

3.2.2 Monitoring Well Groundwater Sampling

Monitoring Well Installation

TtNUS installed 14 monitoring wells (38–51) between September and November 2002. Monitoring wells were installed based on the results of DPT sampling and previous sampling events. Wells 38–45 were installed in August 2002, after the first round of DPT sampling. Additional DPT sampling was conducted in November 2002 to define the eastern extent of the deeper plume, and monitoring wells 46–51 were subsequently installed in November 2002.

Monitoring Well Construction

Monitoring wells 39–51 were constructed of Schedule 40, flush-joint threaded, 1-inch ID polyvinyl chloride (PVC) pipe and flush-joint threaded, factory-slotted 0.006-inch, pre-packed well screen with a threaded end cap. Monitoring well 38D was constructed with 59 ft of permanent 4-inch diameter Schedule 40 PVC outer casing set into the Hawthorn Clay and sealed with grout. The well was completed with 70 ft of Schedule 40, flush-joint threaded, 2-inch ID PVC pipe and flush-joint threaded, factory-slotted 0.006-inch well screen with a threaded end cap. Each section of well casing and screen was certified as compliant with the National Sanitation Foundation standards. Monitoring wells 47D, 49D, and 51D were completed in downgradient areas that did not show exceedances of GCTLs during DPT sampling, and were completed on top of the Hawthorn Clay; therefore, these wells were not double cased. The shallow, A-depth well screens were 10 feet long to allow for potential water table fluctuation; the well screens were 5 feet long for all other well depths (i.e., B, C, and D). The bottom of the well screens was placed a

minimum of 6 inches, but no more than 3 feet, above the bottom of the drilled borehole. Bottom plugs were flush threaded. No solvents or glues were used during the construction of monitoring wells.

For all monitoring wells, a 30/45 size filter pack was installed in the annular space through the hollow stem augers. A minimum 1-foot-thick layer of fine sand (uniformly graded with 100 percent weight passing the No. 30 U.S. Standard sieve, and less than 2 percent by weight passing the No. 200 U.S. Standard sieve) was placed on top of the filter pack. Except for the A wells, a minimum 2-foot-thick bentonite pellet seal was installed above the fine sand pack and allowed to hydrate as per the manufacturer's recommendations. Only 100 percent, certified pure, sodium bentonite was used for well construction. For the A monitoring wells (approximately 15 feet bgs), the top of the screen was above the static water level. Therefore, no bentonite seal was installed. Instead, the fine sand layer was increased to a minimum of 2 feet. The depth of backfill materials was frequently monitored during well installation using a weighted stainless steel or fiberglass tape measure. The remaining annulus above the hydrated bentonite seal (or above the fine sand layer in A wells) was backfilled to the surface, using a tremie pipe, with a 20:1 cement/bentonite grout. A maximum of 10 gallons of water per 94-pound bag of Type I cement was used for the grout. A summary of monitoring well installation information can be found in Table 3-1. Well boring and completion logs are provided in Appendix B.

Preliminary well development was conducted during well construction by gently surging the well with a surge block to facilitate settlement of the filter pack sand around the screen. After the level of the filter pack sand was stabilized, the remaining grout and seal materials were added to the annulus of the well. Final well development was performed no sooner than 24 hours after well installation. This development consisted of bailing and surging, and/or pumping, to restore the hydraulic properties of the borehole wall and to remove mobile fines from the filter pack and disturbed formation. This process continued until the site geologist determined that no additional increase in water clarity or reduction in turbidity could be achieved.

Groundwater Sampling

Monitoring wells were sampled using low-flow or micro-purge techniques and were analyzed by the Target Compound List (TCL) VOCs only. Before sampling, the static groundwater level in each well was measured. Samples were collected and analyzed in accordance with USEPA Level IV data quality objectives (DQOs). The work was performed in accordance with the site-specific work plan (Tetra Tech, 2002) and the requirements in the POP (ABB-ES, 1997). The following summarizes the purging procedures used:

- The depth to water and total well depth were determined, and the discharge tubing was lowered into the well as slowly as possible to minimize disturbance to the water in the well.

TABLE 3-1

MONITORING WELL DATA
STUDY AREA 17 - McCOY ANNEX

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well	Date Installed	Installed by	Type*	Screen Interval (feet bgs)	Location**		TOC Elevation*** (feet AMSL)
					Easting	Northing	
OLD-17-01A	15-May-95	HLA	2" well	2 to 12	546727.59	1490675.66	90.28
OLD-17-02A	14-May-95	HLA	2" well	2 to 12	546828.44	1490504.68	90.14
OLD-17-03A	18-May-95	HLA	2" well	2 to 12	546999.59	1490206.35	89.47
OLD-17-04A	16-May-95	HLA	2" well	2 to 12	546676.07	1490425.42	89.07
OLD-17-05A	15-May-95	HLA	2" well	2 to 12	546558.27	1490504.66	89.02
OLD-17-06A	23-Jan-97	HLA	0.5" well	2 to 11	546708.00	1490426.00	89.80
OLD-17-07A	23-Jan-97	HLA	0.5" well	2 to 11	546683.00	1490401.00	89.40
OLD-17-08A	23-Jan-97	HLA	0.5" well	2 to 11	546676.00	1490450.00	89.70
OLD-17-09A	23-Jan-97	HLA	0.5" well	2 to 11	546644.00	1490418.00	89.00
OLD-17-10C	4-Feb-97	HLA	2" well	42 to 47	546673.00	1490418.00	89.20
OLD-17-11B	28-Apr-98	HLA	2" well	15 to 20	546562.43	1490510.48	89.76
OLD-17-12C	28-Apr-98	HLA	2" well	45 to 50	546566.57	1490514.24	89.65
OLD-17-13B	28-Apr-98	HLA	2" well	15 to 20	546996.76	1490202.11	90.01
OLD-17-14C	28-Apr-98	HLA	2" well	43 to 48	546993.74	1490197.04	89.85
OLD-17-15A	28-Apr-98	HLA	2" well	2 to 12	546829.37	1490218.24	88.85
OLD-17-16B	29-Apr-98	HLA	2" well	15 to 20	546825.25	1490221.13	88.72
OLD-17-17C	29-Apr-98	HLA	2" well	43 to 48	546818.99	1490227.00	88.56
OLD-17-18A	30-Apr-98	HLA	2" well	2 to 12	546979.55	1490388.92	91.12
OLD-17-19B	1-May-98	HLA	2" well	25 to 30	547113.23	1490325.31	91.46
OLD-17-20C	1-May-98	HLA	2" well	47 to 52	547116.19	1490330.09	91.45
OLD-17-21B	5-May-98	HLA	2" well	15 to 20	546832.01	1490511.21	90.48
OLD-17-22C	4-May-98	HLA	2" well	43 to 48	546837.04	1490517.42	90.48
OLD-17-23A	5-May-98	HLA	2" well	2 to 12	546850.18	1490405.01	90.31
OLD-17-23A-R	26-Sep-00	CCI	2" well	2.2 to 12.2	546847.00	1490404.06	89.38
OLD-17-24B	5-May-98	HLA	2" well	20 to 25	546854.28	1490401.62	90.44
OLD-17-24B-R	26-Sep-00	CCI	2" well	15 to 20	546851.06	1490400.23	89.56
OLD-17-25C	7-May-98	HLA	2" well	58 to 63	546859.65	1490391.61	90.32
OLD-17-25C-R		CCI	2" well		546851.06	1490400.23	89.16
OLD-17-26A	5-May-98	HLA	2" well	2 to 12	546735.46	1490431.61	90.00
OLD-17-27B	5-May-98	HLA	2" well	15 to 20	546740.42	1490428.37	89.99
OLD-17-28C	7-May-98	HLA	2" well	58 to 63	546747.71	1490423.67	89.96
OLD-17-29A		HLA	1" DP	5 to 6	546601.00	1490414.00	89.40
OLD-17-30A		HLA	1" DP	5 to 6	546682.00	1490347.00	89.40
OLD-17-31A		HLA	1" DP	5 to 6	546768.00	1490306.00	89.60
OLD-17-32A		HLA	1" DP	5 to 6	546865.00	1490236.00	89.70
OLD-17-33A		HLA	1" DP	5 to 6	546953.00	1490167.00	89.50
OLD-17-34A	27-Mar-00	CCI	2" well	5 to 15	546933.56	1490546.61	90.44
OLD-17-35B	27-Mar-00	CCI	2" well	15 to 20	546938.11	1490543.09	90.20
OLD-17-36B	28-Mar-00	CCI	2" well	24 to 29	547281.25	1490208.37	89.18
OLD-17-37C	28-Mar-00	CCI	2" well	45 to 50	547283.66	1490214.22	89.24
OLD-17-38D	20-Aug-02	TtNUS	2" well	45 to 50	547110.36	1490331.78	94.05
OLD-17-39C	19-Aug-02	TtNUS	1" well	45 to 50	547144.18	1490223.78	89.72
OLD-17-40C	20-Aug-02	TtNUS	1" well	45 to 50	547307.97	1490341.88	91.74
OLD-17-41C	20-Aug-02	TtNUS	1" well	46 to 51	547102.86	1490468.15	90.77
OLD-17-42B	21-Aug-02	TtNUS	1" well	24 to 29	546994.37	1490414.72	92.63
OLD-17-43C	21-Aug-02	TtNUS	1" well	46 to 51	547000.41	1490417.3	92.45
OLD-17-44A	21-Aug-02	TtNUS	1" well	5 to 15	547050.75	1490268.75	92.65
OLD-17-45C	22-Nov-02	TtNUS	1" well	45 to 50	547400.27	1490443.76	90.82
OLD-17-46C	21-Nov-02	TtNUS	1" well	45 to 50	547569.24	1490425.43	88.20
OLD-17-47D	21-Nov-02	TtNUS	1" well	52 to 57	547574.02	1490430.19	88.02
OLD-17-48C	22-Nov-02	TtNUS	1" well	45 to 50	547610.03	1490651.42	91.20
OLD-17-49D	22-Nov-02	TtNUS	1" well	52 to 57	547613.53	1490655.21	91.07
OLD-17-50C	22-Nov-02	TtNUS	1" well	45 to 50	547375.29	1490632.91	92.79
OLD-17-51D	22-Nov-02	TtNUS	1" well	52 to 57	547380.26	1490632.94	92.62

* All wells except drive points and replacement wells are constructed of PVC
** North American Datum 83, Florida East Zone
*** North American Vertical Datum 88
AMSL - Above mean sea level
bgs - Below ground surface
DP - drive points located in canal
TOC - Top of casing

- The end of the tubing was positioned near the midpoint of the saturated screen length and kept 2 to 3 feet above the bottom of the well, to minimize mobilization of particulates present in the bottom of the well.
- Purging began with the pump at the lowest setting and the speed slowly increased until discharge occurred.
- The pumping rate was adjusted until there was little or no water level drawdown; the drawdown goal was a maximum of 0.3 foot. The water level in the well was monitored continuously until the pumping rate stabilized. The water level and pumping rate were monitored and recorded every 3 to 5 minutes (or as appropriate) during purging. Purging proceeded at approximately 100 milliliters per minute (mL/min), except where well-specific conditions warranted a change.
- The parameters listed below were monitored and were recorded on the sample purging/collection log (Appendix C). Purging was considered complete when all the field parameters stabilized. Stabilization was considered to have been achieved when three consecutive readings, taken at 3- to 5-minute intervals, were within the limits listed below.

Temperature (°F)	± 5%
Specific conductance	± 5%
pH	± 5%
Dissolved Oxygen (DO)	± 5%
Turbidity	± 5% (values > 7 Nephelometric Turbidity Unit (NTU); ± 10% (values <7 NTU)

Samples were collected immediately after purging was complete. Sample aliquots for volatile organics analyses were collected using the tube evacuation method described in Section 4.5.2.2 of the POP (ABB ES, 1997); these samples were also collected directly into laboratory-supplied preservation containers. The sample field parameters were recorded on the sample purging/collection log (Appendix C). All sample containers were immediately labeled, placed on ice in a shipping cooler, and kept under the custody of the sampling team. One trip blank set was included with each shipping container that included samples for VOC analyses.

Groundwater Sample Numbering

The monitoring well samples were numbered as follows:

NTC17TWWWRR

where: NTC = Naval Training Center

17	=	two-digit SA designation (17)
T	=	sample type ("G" for groundwater, "D" for duplicate)
WWW	=	well location and screen depth designation (e.g., 46C)
RR	=	sampling round number (e.g., 10)

For example, the sample collected from monitoring well 46C was designated as NTC17G46C01. Samples for field duplicates were identified with a "blind" number (e.g., NTC17D1000). The corresponding environmental sample was noted in the field logbook.

Quality Control Samples

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

MS/MSD samples were identified on the labels and on the chain of custody. New sample numbers were not created for these samples. Additional sample volume was collected for each MS and MSD set.

3.3 INTERIM REMEDIAL ACTION (IRA)

An IRA of ISCO of the plume source is ongoing at SA 17. A series of injection wells have been installed at various depths within an "L" shaped treatment area located southwest of Building 7190. The vertical extent of the treatment area extended from the water table to a depth of approximately 36 feet bgs. The goal of the ISCO, as established by the OPT, is to reduce concentrations of CVOCs in the groundwater source areas to levels below 500 µg/L. Subsequent plume migration via natural attenuation processes is anticipated to be the final remedy for groundwater at the site.

3.4 DATA VALIDATION

The analytical data for samples used in the site investigation to determine the extent of groundwater contamination were subjected to a "full" validation equivalent to the former USEPA Level IV designation. The samples receiving the full validation include all DPT and monitoring well groundwater samples collected by TtNUS, CCI, and GCI. The validation was performed in accordance with the USEPA *Contract Laboratory Program National Functional Guidelines for Organic Review* (USEPA, 1999), and the *Navy Installation Restoration Laboratory Quality Assurance Guide* (NFESC, 1999).

The data were reviewed for completeness, holding time compliance, calibration, laboratory blank contamination, surrogate spike recovery, matrix spike recovery, blank spike recovery, internal standard response, sample quantitation, and detection limits.

4.0 SITE INVESTIGATION RESULTS

The results for the Site Investigation activities are presented and evaluated in this section. Validated data are provided in Appendix D. Reference is made to the IRA data summarized in Section 5.0 where useful to understand the hydrogeological regime and to define the nature and extent of contamination at the site.

4.1 GROUNDWATER FLOW

The geographic distribution of dissolved VOCs in groundwater, as evidenced by the results of monitoring well sampling and analyses, indicates that the groundwater plume, consisting primarily of chlorinated chemicals, is migrating to the east. The vertical distribution of dissolved contaminants in groundwater, primarily TCE, indicates that vertical downward groundwater movement is also occurring. Groundwater flow is considered to be the primary mechanism of contaminant migration at SA 17.

4.1.1 Groundwater Data (2003)

Water level measurements in the site's monitoring wells were collected during investigations in July 1998, April 2000, September 2002, and December 2002. A comprehensive synoptic water level survey was conducted in May 2003. The monitoring well locations and well top elevations were surveyed and the depth-to-water and well top elevation data were used to determine the elevation of the potentiometric head at each well. The potentiometric data that are provided in Table 4-1 were used to construct potentiometric surface contour maps using the May 2003 measurements. The May 2003 data were selected because the survey was the latest and most comprehensive water level survey available at the time of the report.

These data were used to construct potentiometric contours and to determine the groundwater flow patterns at different depths in the surficial aquifer. As shown on Figure 4-1, the groundwater flow direction in the shallow portion of the aquifer, above the uppermost silty-sand layer, indicates radial flow away from a groundwater high located across the central portion of SA 17. Based on the elevation of the ditch along the southern perimeter of SA 17 and the presence of surface water, the local water table is expected to dip toward the south and shallow groundwater is likely to discharge into the ditch during typical water table conditions. Figure 4-2, showing the groundwater flow direction in the intermediate portion of the aquifer between the two upper silty-sand intervals (15 to 30 feet bgs), suggests that the ditch may also influence this interval. These figures show that flow in the upper part of the aquifer is toward the ditch to the south, but that a component of flow also exists to the southeast. Figure 4-3 showing the groundwater flow direction in the deep portion of the aquifer, below the lower, silty-sand

TABLE 4-1

GROUNDWATER ELEVATIONS
STUDY AREA 17 - McCOY ANNEX

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

PAGE 1 OF 2

Well	Well Type	Screen Interval (BGS)	TOC Elevation (AMSL)	7/14/98		8/12/98		9/16 & 17/02		12/17/02		5/17/03	
				Depth to Water (BTOC)	Groundwater Elevation (AMSL)	Depth to Water (BTOC)	Groundwater Elevation (AMSL)	Depth to Water (BTOC)	Groundwater Elevation (AMSL)	Depth to Water (BTOC)	Groundwater Elevation (AMSL)	Depth to Water (BTOC)	Groundwater Elevation (AMSL)
OLD-17-01A	2" well	2 to 12	90.28	NM	NM	NM	NM	NM	NM	NM	NM	4.61	85.67
OLD-17-02A	2" well	2 to 12	90.14	3.90	86.24	2.60	87.54	NM	NM	NM	NM	4.09	86.05
OLD-17-03A	2" well	2 to 12	89.47	3.80	85.67	2.90	86.57	NM	NM	NM	NM	4.30	85.17
OLD-17-04A	2" well	2 to 12	89.07	3.20	85.87	2.30	86.77	NM	NM	NM	NM	3.75	85.32
OLD-17-05A	2" well	2 to 12	89.02	2.90	86.12	2.00	87.02	NM	NM	NM	NM	4.00	85.02
OLD-17-06A	0.5" well	2 to 11	89.80	NM	NM	NM	NM	NM	NM	NM	NM	Abandoned	Abandoned
OLD-17-07A	0.5" well	2 to 11	89.40	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
OLD-17-08A	0.5" well	2 to 11	89.70	NM	NM	NM	NM	NM	NM	NM	NM	Abandoned	Abandoned
OLD-17-09A	0.5" well	2 to 11	89.00	NM	NM	NM	NM	NM	NM	NM	NM	Abandoned	Abandoned
OLD-17-10C	2" well	42 to 47	89.20	3.90	85.30	2.30	86.90	NM	NM	NM	NM	4.10	85.10
OLD-17-11B	2" well	15 to 20	89.76	3.60	86.16	2.40	87.36	NM	NM	NM	NM	4.26	85.50
OLD-17-12C	2" well	45 to 50	89.65	4.40	85.25	2.70	86.95	NM	NM	NM	NM	4.14	85.51
OLD-17-13B	2" well	15 to 20	90.01	4.00	86.01	3.20	86.81	NM	NM	NM	NM	4.56	85.45
OLD-17-14C	2" well	43 to 48	89.85	5.30	84.55	3.20	86.65	NM	NM	NM	NM	4.70	85.15
OLD-17-15A	2" well	2 to 12	88.85	2.80	86.05	2.20	86.65	NM	NM	NM	NM	3.33	85.52
OLD-17-16B	2" well	15 to 20	88.72	2.90	85.82	2.20	86.52	NM	NM	NM	NM	3.46	85.26
OLD-17-17C	2" well	43 to 48	88.56	4.20	84.36	2.20	86.36	NM	NM	NM	NM	3.57	84.99
OLD-17-18A	2" well	2 to 12	91.12	4.30	86.82	3.10	88.02	NM	NM	NM	NM	4.68	86.44
OLD-17-19B	2" well	25 to 30	91.46	6.40	85.06	4.30	87.16	NM	NM	NM	NM	5.90	85.56
OLD-17-20C	2" well	47 to 52	91.45	7.00	84.45	4.90	86.55	NM	NM	NM	NM	6.41	85.04
OLD-17-21B	2" well	15 to 20	90.48	4.10	86.38	2.80	87.68	NM	NM	NM	NM	4.30	86.18
OLD-17-22C	2" well	43 to 48	90.48	5.40	85.08	3.40	87.08	NM	NM	NM	NM	5.04	85.44
OLD-17-23A	2" well	2 to 12	90.31	3.60	86.71	2.70	87.61	NM	NM	NM	NM	Destoyed	Destoyed
OLD-17-23A-R	2" well	2.2 to 12.2	89.38	NA	NA	NA	NA	NM	NM	NM	NM	4.17	85.21
OLD-17-24B	2" well	20 to 25	90.44	4.20	86.24	2.90	87.54	NM	NM	NM	NM	Destroyed	Destroyed
OLD-17-24B-R	2" well	15 to 20	89.56	NA	NA	NA	NA	NM	NM	NM	NM	4.45	85.11
OLD-17-25C	2" well	58 to 63	90.32	33.40	56.92	34.00	56.32	NM	NM	NM	NM	Destroyed	Destroyed
OLD-17-25C-R	2" well		89.16	NA	NA	NA	NA	NM	NM	NM	NM	30.58	58.58
OLD-17-26A	2" well	2 to 12	90.00	3.10	86.90	3.40	86.60	NM	NM	NM	NM	3.91	86.09
OLD-17-27B	2" well	15 to 20	89.99	3.40	86.59	2.60	87.39	NM	NM	NM	NM	4.17	85.82
OLD-17-28C	2" well	58 to 63	89.96	32.10	57.86	30.10	59.86	NM	NM	NM	NM	29.28	60.68
OLD-17-29A		5 to 6	89.4	3.30	86.10	2.70	86.70	NM	NM	NM	NM	NM	NM
OLD-17-30A		5 to 6	89.4	3.40	86.00	2.80	86.60	NM	NM	NM	NM	NM	NM
OLD-17-31A		5 to 6	89.6	3.70	85.90	3.20	86.40	NM	NM	NM	NM	NM	NM
OLD-17-32A		5 to 6	89.7	3.70	86.00	3.30	86.40	NM	NM	NM	NM	NM	NM
OLD-17-33A		5 to 6	89.5	3.60	85.90	3.10	86.40	NM	NM	NM	NM	NM	NM
OLD-17-34A			90.44	NA	NA	NA	NA	NM	NM	NM	NM	4.90	85.54
OLD-17-35B	2" well	15 to 20	90.2	NA	NA	NA	NA	NM	NM	NM	NM	4.69	85.51

TABLE 4-1

GROUNDWATER ELEVATIONS
STUDY AREA 17 - McCOY ANNEX

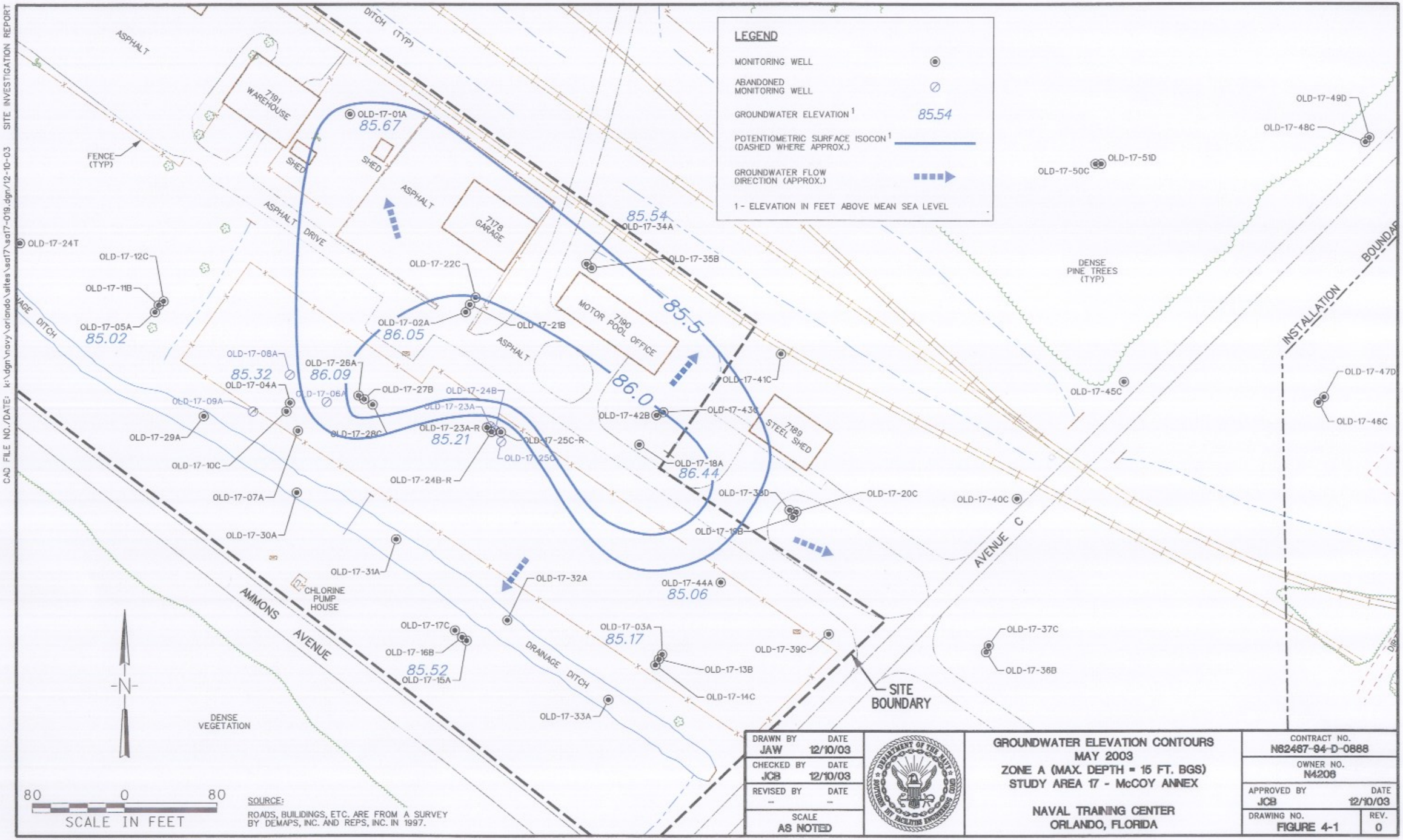
NAVAL TRAINING CENTER
ORLANDO, FLORIDA

PAGE 2 OF 2

Well	Well Type	Screen Interval (BGS)	TOC Elevation (AMSL)	7/14/98		8/12/98		9/16 & 17/02		12/17/02		5/17/03	
				Depth to Water (BTOC)	Groundwater Elevation (AMSL)	Depth to Water (BTOC)	Groundwater Elevation (AMSL)	Depth to Water (BTOC)	Groundwater Elevation (AMSL)	Depth to Water (BTOC)	Groundwater Elevation (AMSL)	Depth to Water (BTOC)	Groundwater Elevation (AMSL)
OLD-17-36B	2" well	24 to 29	89.18	NA	NA	NA	NA	NM	NM	NM	NM	4.71	84.47
OLD-17-37C	2" well	45 to 50	89.24	NA	NA	NA	NA	NM	NM	NM	NM	5.17	84.07
OLD-17-38D	2" well	45 to 50	94.05	NA	NA	NA	NA	34.75	59.30	NM	NM	36.58	57.47
OLD-17-39C	1" well	45 to 50	89.72	NA	NA	NA	NA	3.43	86.29	NM	NM	5.44	84.28
OLD-17-40C	1" well	45 to 50	91.74	NA	NA	NA	NA	5.32	86.42	NM	NM	7.71	84.03
OLD-17-41C	1" well	46 to 51	90.77	NA	NA	NA	NA	4.48	86.29	NM	NM	6.54	84.23
OLD-17-42B	1" well	24 to 29	92.63	NA	NA	NA	NA	5.54	87.09	5.31	87.32	7.49	85.14
OLD-17-43C	1" well	46 to 51	92.45	NA	NA	NA	NA	6.16	86.29	5.58	86.87	8.75	83.70
OLD-17-44A	1" well	5 to 15	92.65	NA	NA	NA	NA	6.12	86.53	NM	NM	7.59	85.06
OLD-17-45C	1" well	45 to 50	90.82	NA	NA	NA	NA	3.98	86.84	NM	NM	7.05	83.77
OLD-17-46C	1" well	45 to 50	88.195	NA	NA	NA	NA	NM	NM	1.6	86.60	5.05	83.15
OLD-17-47D	1" well	52 to 57	88.02	NA	NA	NA	NA	NM	NM	1.65	86.37	4.92	83.10
OLD-17-48C	1" well	45 to 50	91.2	NA	NA	NA	NA	NM	NM	5.27	85.93	8.17	83.03
OLD-17-49D	1" well	52 to 57	91.065	NA	NA	NA	NA	NM	NM	5.2	85.87	8.04	83.03
OLD-17-50C	1" well	45 to 50	92.79	NA	NA	NA	NA	NM	NM	6.15	86.64	9.22	83.57
OLD-17-51D	1" well	52 to 57	92.62	NA	NA	NA	NA	NM	NM	7.02	85.60	9.23	83.39

Notes:

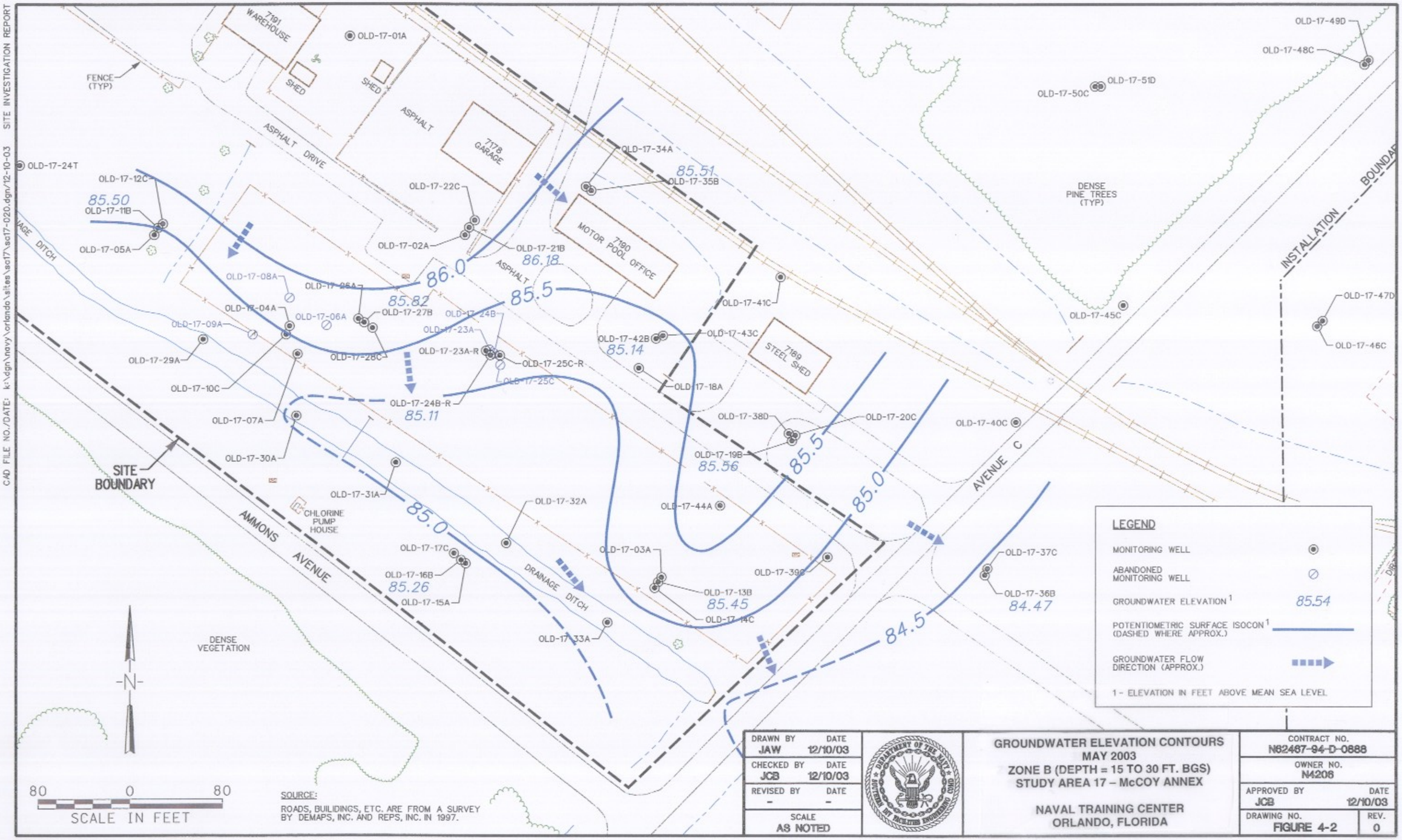
All measurements are in units of feet
AMSL - Above mean sea level
BGS - Below ground surface
BTOC - Below top of casing
NA - Not applicable
NM - Not measured
TOC - Top of casing

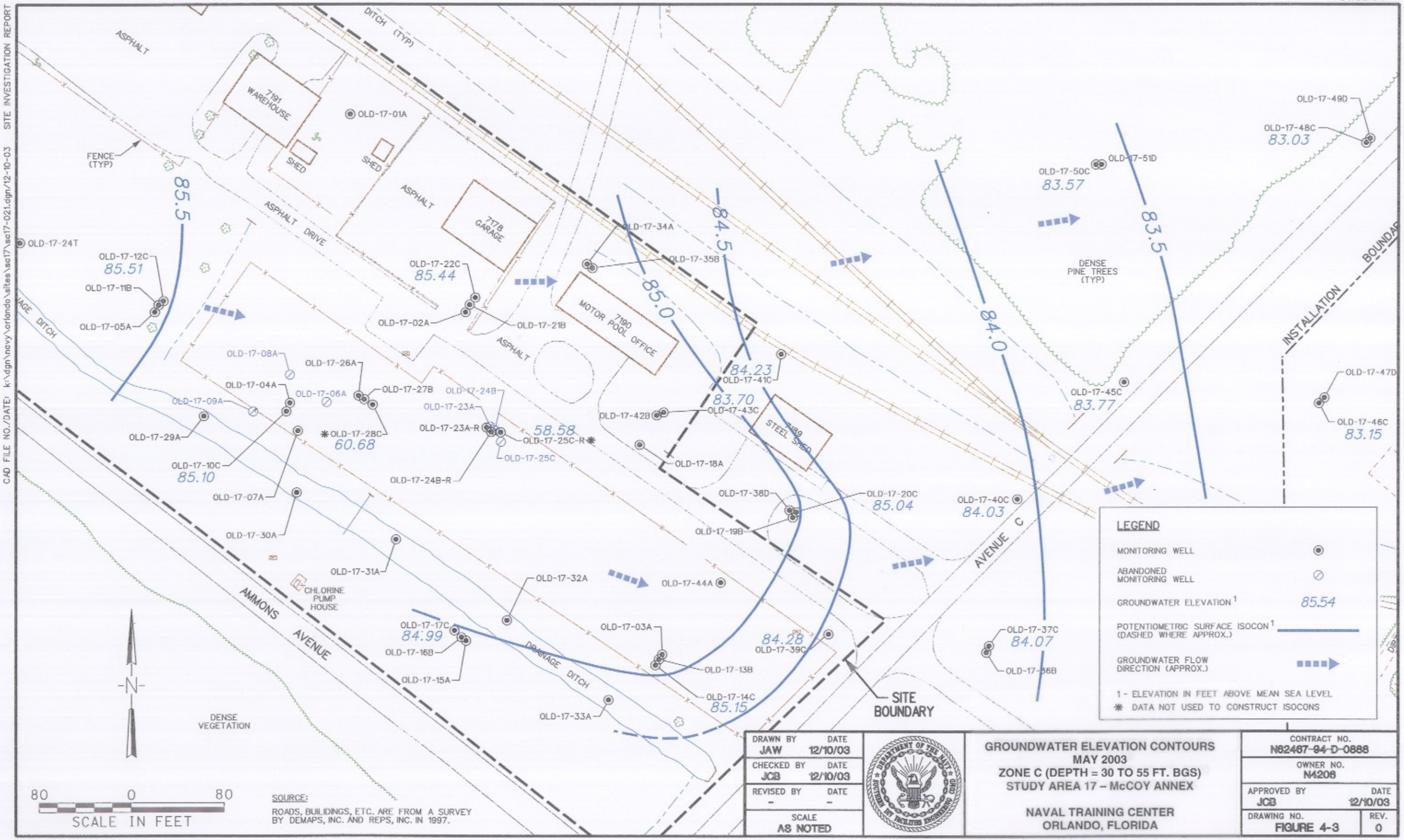


SOURCE:
ROADS, BUILIDINGS, ETC. ARE FROM A SURVEY BY DEMAPS, INC. AND REPS, INC. IN 1997.

DRAWN BY JAW	DATE 12/10/03	GROUNDWATER ELEVATION CONTOURS MAY 2003 ZONE A (MAX. DEPTH = 15 FT. BGS) STUDY AREA 17 - McCOY ANNEX NAVAL TRAINING CENTER ORLANDO, FLORIDA	CONTRACT NO. N62467-94-D-0888
CHECKED BY JCB	DATE 12/10/03		OWNER NO. N4206
REVISED BY --	DATE --		APPROVED BY JCB / DATE 12/10/03
SCALE AS NOTED			DRAWING NO. FIGURE 4-1 / REV. 0

FORM CADD NO. SDIV-BH.DGN - REV 2 - 10/23/03


7191 WAREHOUSE
SHED
SHED
ASPHALT
7178 GARAGE
ASPHALT DRIVE
FENCE (TYP)
OLD-17-01A
OLD-17-24T
OLD-17-12C
OLD-17-11B
OLD-17-05A
85.50
OLD-17-22C
OLD-17-02A
OLD-17-34A
85.51
OLD-17-35B
OLD-17-21B
86.18
MOTOR POOL OFFICE
7190
ASPHALT
86.0
85.5
85.82
OLD-17-08A
OLD-17-26A
OLD-17-04A
OLD-17-06A
OLD-17-27B
OLD-17-24B
OLD-17-09A
OLD-17-23A
OLD-17-23A-R
OLD-17-25C-R
OLD-17-25C
OLD-17-28C
OLD-17-29A
OLD-17-10C
OLD-17-24B-R
85.11
OLD-17-07A
OLD-17-30A
SITE BOUNDARY
OLD-17-31A
CHLORINE PUMP HOUSE
OLD-17-32A
85.0
AMMONS AVENUE
OLD-17-17C
OLD-17-16B
85.26
OLD-17-15A
DRAINAGE DITCH
OLD-17-33A
OLD-17-03A
OLD-17-13B
85.45
OLD-17-14C
OLD-17-41C
OLD-17-42B
85.14
OLD-17-43C
7189 STEEL SHED
OLD-17-18A
OLD-17-38D
OLD-17-20C
OLD-17-19B
85.56
85.5
85.0
OLD-17-44A
OLD-17-39C
84.5
OLD-17-37C
OLD-17-36B
84.47
AVENUE C
OLD-17-40C
OLD-17-45C
DENSE PINE TREES (TYP)
OLD-17-50C
OLD-17-51D
OLD-17-49D
OLD-17-48C
INSTALLATION BOUNDARY
OLD-17-47D
OLD-17-46C
DENSE VEGETATION
-N-
80 0 80
SCALE IN FEET
LEGEND
MONITORING WELL
ABANDONED MONITORING WELL
GROUNDWATER ELEVATION 1 85.54
POTENTIOMETRIC SURFACE ISOCON 1 (DASHED WHERE APPROX.)
GROUNDWATER FLOW DIRECTION (APPROX.)
1 - ELEVATION IN FEET ABOVE MEAN SEA LEVEL
SOURCE:
ROADS, BUILDINGS, ETC. ARE FROM A SURVEY BY DEMAPS, INC. AND REPS, INC. IN 1997.
DRAWN BY JAW DATE 12/10/03
CHECKED BY JCB DATE 12/10/03
REVISED BY - DATE -
SCALE AS NOTED
GROUNDWATER ELEVATION CONTOURS
MAY 2003
ZONE B (DEPTH = 15 TO 30 FT. BGS)
STUDY AREA 17 – McCOY ANNEX
NAVAL TRAINING CENTER
ORLANDO, FLORIDA
CONTRACT NO. N62467-94-D-0888
OWNER NO. N4206
APPROVED BY JCB DATE 12/10/03
DRAWING NO. FIGURE 4-2
REV. 0
SITE INVESTIGATION REPORT
CAD FILE NO./DATE: k:\dgn\navy\orlando\sites\sc17\sc17-020.dgn/12-10-03
FORM CADD NO. SDIV-BH.DGN - REV 2 - 10/23/03


SITE INVESTIGATION REPORT
CAD FILE NO./DATE: k:\dgn\navy\orlando\sites\sa17\sa17-021.dgn/12-10-03
ASPHALT
DITCH (TYP)
7191 WAREHOUSE
SHED
SHED
ASPHALT
7178 GARAGE
ASPHALT DRIVE
FENCE (TYP)
OLD-17-01A
OLD-17-24T
OLD-17-12C
85.51
OLD-17-11B
OLD-17-05A
DRAINAGE DITCH
OLD-17-22C
85.44
OLD-17-02A
OLD-17-21B
OLD-17-34A
OLD-17-35B
7190 MOTOR POOL OFFICE
ASPHALT
85.5
85.0
84.5
84.0
83.5
OLD-17-08A
OLD-17-26A
OLD-17-04A
OLD-17-06A
OLD-17-27B
OLD-17-09A
OLD-17-29A
OLD-17-28C
60.68
OLD-17-23A
OLD-17-24B
OLD-17-23A-R
58.58
OLD-17-25C-R
OLD-17-25C
OLD-17-10C
85.10
OLD-17-24B-R
OLD-17-07A
OLD-17-30A
OLD-17-31A
CHLORINE PUMP HOUSE
OLD-17-32A
OLD-17-44A
OLD-17-17C
84.99
OLD-17-16B
OLD-17-15A
OLD-17-03A
DRAINAGE DITCH
OLD-17-33A
OLD-17-13B
OLD-17-14C
85.15
84.28
OLD-17-39C
84.23
OLD-17-41C
83.70
OLD-17-43C
OLD-17-42B
7189 STEEL SHED
OLD-17-18A
OLD-17-38D
OLD-17-19B
OLD-17-20C
85.04
OLD-17-40C
84.03
OLD-17-37C
84.07
OLD-17-36B
SITE BOUNDARY
AVENUE C
AMMONS AVENUE
DENSE VEGETATION
OLD-17-50C
83.57
OLD-17-51D
DENSE PINE TREES (TYP)
OLD-17-45C
83.77
OLD-17-49D
OLD-17-48C
83.03
OLD-17-47D
OLD-17-46C
83.15
INSTALLATION BOUNDARY
LEGEND
MONITORING WELL
ABANDONED MONITORING WELL
GROUNDWATER ELEVATION 1
85.54
POTENTIOMETRIC SURFACE ISOCON 1 (DASHED WHERE APPROX.)
GROUNDWATER FLOW DIRECTION (APPROX.)
1 - ELEVATION IN FEET ABOVE MEAN SEA LEVEL
✱ DATA NOT USED TO CONSTRUCT ISOCONS
N
80 0 80
SCALE IN FEET
SOURCE:
ROADS, BUILDINGS, ETC. ARE FROM A SURVEY BY DEMAPS, INC. AND REPS, INC. IN 1997.
DRAWN BY JAW DATE 12/10/03
CHECKED BY JCB DATE 12/10/03
REVISED BY - DATE -
SCALE AS NOTED
GROUNDWATER ELEVATION CONTOURS
MAY 2003
ZONE C (DEPTH = 30 TO 55 FT. BGS)
STUDY AREA 17 – McCOY ANNEX
NAVAL TRAINING CENTER
ORLANDO, FLORIDA
CONTRACT NO. N62467-94-D-0888
OWNER NO. N4206
APPROVED BY JCB DATE 12/10/03
DRAWING NO. FIGURE 4-3
REV. 0
FORM CADD NO. SDIV-BH.DGN - REV 2 - 10/23/03

interval (>30 feet bgs), suggests that the ditch has little influence on this interval. This figure shows that flow in the deep zone is toward the east, and is consistent with the observed direction of deep plume migration at this site.

The groundwater elevation measured in the two deepest wells at SA 17 (25C and 28C) were observed in July and August 1998, April 2000, and May 2003 to be 26 to 30 feet lower than the elevation reported in the wells completed in the surficial aquifer. Because the well screens for these two wells are installed beneath the clay interval that lies about 55 feet bgs at the site, these wells reflect potentiometric conditions in the Hawthorn aquifer that lies below the surficial aquifer. The large potentiometric difference between the two aquifers indicates that the clay has low permeability and suggests that groundwater flow (and contaminant migration) between the two units is limited.

The hydraulic conductivity of the surficial aquifer was estimated by conducting slug tests in wells completed at various depths in the surficial aquifer (HLA, 1999). Table 4-2 presents a summary of the slug test results presented in the ESSR (HLA, 1999) and provides the geometric mean of the data for each aquifer depth. As indicated in the table, the test results for all wells are within a relatively narrow range; however, the deeper portion of the aquifer has a slightly higher hydraulic conductivity. The horizontal gradient for each aquifer depth zone presented in the ESSR is consistent with the gradients indicated by the May 2003 potentiometric data, and is summarized in Table 4-3. Collectively, the site-specific hydraulic conductivity and hydraulic gradient, along with literature values for porosity, were used to estimate the groundwater seepage velocity (Table 4-3). These calculations suggest that groundwater flow at the site is relatively slow (2–7 ft/year).

4.2 GROUNDWATER SAMPLING RESULTS

The analytes that were detected in groundwater during the site investigation are presented in Tables 4-4 and 4-5, and the complete validated results are contained in Appendix D. The groundwater data were compared to the FDEP GCTL screening criteria.

4.2.1 DPT Sampling (August 2002)

In August 2002, groundwater samples collected from DPT locations P100–P121 were analyzed for VOCs to delineate the lateral and vertical extent of contamination (Table 4-4). DPT samples were collected from multiple depths in the aquifer. Data gaps in the shallow portion of the aquifer (zone A) were investigated at 6 locations (P102, P114, P115, P116, P120, and P121) with samples collected from a depth of 10 feet bgs in the northwestern and southeastern portions of the study area. All samples contained no detectable concentration of CVOCs (Figure 4-4).

TABLE 4-2

SUMMARY OF SLUG TEST RESULTS

STUDY AREA 17
NTC, ORLANDO

Well No.	Screen (ft bgs)		Slug Test Result (K = feet/day)
	Top	Bottom	
A Zone			
2	3	13	1.5
5	3	13	3.4
15	2	12	0.6
18	2	12	0.3
		Geometric Mean =	0.9
B Zone			
11	15	20	0.2
16	15	20	0.6
19	25	30	0.5
21	15	20	0.5
		Geometric Mean =	0.4
C Zone			
12[a]	47	52	0.9
17	43	48	2.6
20	47	52	3.8
22	43	48	0.6
		Geometric Mean =	1.5

[a] Screen interval estimated from cross section A-A'

TABLE 4-3

GROUNDWATER GRADIENT AND FLOW VELOCITY SUMMARY

STUDY AREA 17
NTC, ORLANDO

Aquifer Interval	Gradient[a] (ft/ft)	K[b] (ft/day)	Effective Porosity[c]	Groundwater Seepage Velocity (ft/yr)
A	0.004	0.9	0.2	6.6
B[d]	0.003	0.4	0.15	2.9
C	0.002	1.5	0.25	4.4

[a] Gradient values from ESSR (HLA, 1999)
[b] Hydraulic Conductivity, K; geometric mean of slug tests from ESSR (HLA, 1999)
[c] Effective porosity estimated based on site lithology (AFCEE, 1996) as follows:
A = fine sand; B = silty, fine sand; C = fine to coarse sand.
[d] May 2003 potentiometric data indicate that gradients in the range of 0.005 to 0.01 may exist in this interval; the resulting seepage velocity may be as high as about 10 ft/year.

TABLE 4-4

SUMMARY OF DETECTIONS IN DPT GROUNDWATER SAMPLES
STUDY AREA 17 - MCCOY ANNEX

NAVAL TRAINNG CENTER
ORLANDO, FLORIDA

PAGE 1 OF 12

DPT Location	CAS No.	Screening Criteria	P100 @ 15 ft	P100 @ 25 ft	P100 @ 32 ft	P100 @ 40 ft	P100 @ 50 ft	P101 @ 32 ft
Sample Number			NTC17P10015	NTC17P10025	NTC17P10032	NTC17P10040	NTC17P10050	NTC17P10132
Sample Date		Florida GCTL	8/8/02	8/8/02	8/8/02	8/8/02	8/8/02	8/8/02
Volatiles (µg/L)								
1,1-Dichloroethane	75-34-3	70						5.6 J
1,1-Dichloroethene	75-35-4	7						18.3
Acetone	67-64-1	700	5.2 J		9 J	5.3 J		
Benzene	71-43-2	1						
Carbon Disulfide	75-15-0	700	3.2 J		7.5	1.6 J	3.4 J	
Chloroform	67-66-3	5.7						
cis-1,2-Dichloroethene	156-59-2	70				1.8		764
Methyl Tert-Butyl Ether	1634-04-4	50						
Methylene Chloride	75-09-2	5		15 J				
Toluene	108-88-3	40			0.94 J			
trans-1,2-Dichloroethene	1330-20-7	100						45.2
Trichloroethene	79-01-4	3						
Vinyl Chloride	75-01-4	1						39.8

TABLE 4-4

SUMMARY OF DETECTIONS IN DPT GROUNDWATER SAMPLES
STUDY AREA 17 - MCCOY ANNEX

NAVAL TRAINNG CENTER
ORLANDO, FLORIDA

DPT Location	CAS No.	Screening Criteria	P101 @ 40 ft	P101 @ 50 ft		P102 @ 10 ft	P102 @ 15 ft	P102 @ 34 ft
Sample Number			NTC17P10140	NTC17P10150	NTC17P10150-D	NTC17P10210	NTC17P10215	NTC17P10234
Sample Date		Florida GCTL	8/8/02	8/8/02	8/8/02	8/8/02	8/8/02	8/9/02
Volatiles (µg/L)								
1,1-Dichloroethane	75-34-3	70						6.7 J
1,1-Dichloroethene	75-35-4	7	88.9 J	6.9 J	6.6 J			
Acetone	67-64-1	700						
Benzene	71-43-2	1						
Carbon Disulfide	75-15-0	700				1.1 J	1.3 J	
Chloroform	67-66-3	5.7						
cis-1,2-Dichloroethene	156-59-2	70	3490	678	702			44.1
Methyl Tert-Butyl Ether	1634-04-4	50						
Methylene Chloride	75-09-2	5						
Toluene	108-88-3	40						
trans-1,2-Dichloroethene	1330-20-7	100	302	45.6	44.6			9.3 J
Trichloroethene	79-01-4	3	150					
Vinyl Chloride	75-01-4	1	306	92	102			465

TABLE 4-4

SUMMARY OF DETECTIONS IN DPT GROUNDWATER SAMPLES
STUDY AREA 17 - MCCOY ANNEX

NAVAL TRAINNG CENTER
ORLANDO, FLORIDA

DPT Location	CAS No.	Screening Criteria	P102 @ 40 ft	P102 @ 50 ft	P103 @ 25 ft	P103 @ 34 ft	P103 @ 40 ft	P103 @ 50 ft
Sample Number			NTC17P10240	NTC17P10250	NTC17P10325	NTC17P10334	NTC17P10340	NTC17P10350
Sample Date		Florida GCTL	8/9/02	8/9/02	8/9/02	8/9/02	8/9/02	8/9/02
Volatiles (µg/L)								
1,1-Dichloroethane	75-34-3	70						
1,1-Dichloroethene	75-35-4	7	16.2 J					
Acetone	67-64-1	700			9.9 J			
Benzene	71-43-2	1						
Carbon Disulfide	75-15-0	700			16.9	1.7 J	2.1 J	
Chloroform	67-66-3	5.7						
cis-1,2-Dichloroethene	156-59-2	70	644	9.5		49.3	16.3	199
Methyl Tert-Butyl Ether	1634-04-4	50						
Methylene Chloride	75-09-2	5						
Toluene	108-88-3	40						
trans-1,2-Dichloroethene	1330-20-7	100	58.2			4.7	1.7	19.9
Trichloroethene	79-01-4	3				0.73 J	1.1	
Vinyl Chloride	75-01-4	1	603	219		6.4	0.78 J	

TABLE 4-4

SUMMARY OF DETECTIONS IN DPT GROUNDWATER SAMPLES
STUDY AREA 17 - MCCOY ANNEX

NAVAL TRAINNG CENTER
ORLANDO, FLORIDA

DPT Location	CAS No.	Screening Criteria	P104 @ 25 ft	P104 @ 40 ft	P104 @ 50 ft	P105 @ 40 ft	P106 @ 36 ft	P106 @ 42 ft
Sample Number			NTC17P10425	NTC17P10440	NTC17P10450	NTC17P10540	NTC17P10636	NTC17P10642
Sample Date		Florida GCTL	8/12/02	8/12/02	8/12/02	8/12/02	8/13/02	8/13/02
Volatiles (µg/L)								
1,1-Dichloroethane	75-34-3	70						
1,1-Dichloroethene	75-35-4	7						
Acetone	67-64-1	700	5.9 J					
Benzene	71-43-2	1						
Carbon Disulfide	75-15-0	700						
Chloroform	67-66-3	5.7						
cis-1,2-Dichloroethene	156-59-2	70		7.5	10.8	3.3	0.83 J	115
Methyl Tert-Butyl Ether	1634-04-4	50						
Methylene Chloride	75-09-2	5						
Toluene	108-88-3	40						
trans-1,2-Dichloroethene	1330-20-7	100						1.1
Trichloroethene	79-01-4	3		0.7 J				
Vinyl Chloride	75-01-4	1						

TABLE 4-4

SUMMARY OF DETECTIONS IN DPT GROUNDWATER SAMPLES
STUDY AREA 17 - MCCOY ANNEX

NAVAL TRAINNG CENTER
ORLANDO, FLORIDA

DPT Location	CAS No.	Screening Criteria	P106 @ 52 ft	P107 @ 34 ft	P107 @ 40 ft	P107 @ 50 ft	P108 @ 34 ft	P108 @ 40 ft
Sample Number			NTC17P10652	NTC17P10734	NTC17P10740	NTC17P10750	NTC17P10834	NTC17P10840
Sample Date		Florida GCTL	8/13/02	8/13/02	8/13/02	8/13/02	8/13/02	8/13/02
Volatiles (µg/L)								
1,1-Dichloroethane	75-34-3	70			2.4	15.1		2.4
1,1-Dichloroethene	75-35-4	7			7.1	65.7		9.2
Acetone	67-64-1	700					5.1 J	
Benzene	71-43-2	1						
Carbon Disulfide	75-15-0	700					2.2 J	
Chloroform	67-66-3	5.7						
cis-1,2-Dichloroethene	156-59-2	70	193	11	210	2960		329
Methyl Tert-Butyl Ether	1634-04-4	50						
Methylene Chloride	75-09-2	5						
Toluene	108-88-3	40						
trans-1,2-Dichloroethene	1330-20-7	100	0.86 J		1.3	16.4		1.9
Trichloroethene	79-01-4	3				0.98 J		
Vinyl Chloride	75-01-4	1			7	49.6		0.75 J

TABLE 4-4

SUMMARY OF DETECTIONS IN DPT GROUNDWATER SAMPLES
STUDY AREA 17 - MCCOY ANNEX

NAVAL TRAINNG CENTER
ORLANDO, FLORIDA

DPT Location	CAS No.	Screening Criteria	P108 @ 50 ft	P109 @ 35 ft	P109 @ 42 ft	P109 @ 52 ft	P110 @ 34 ft	P110 @ 50 ft
Sample Number			NTC17P10850	NTC17P10935	NTC17P10942	NTC17P10952	NTC17P11034	NTC17P11050
Sample Date		Florida GCTL	8/13/02	8/14/02	8/14/02	8/14/02	8/14/02	8/14/02
Volatiles (µg/L)								
1,1-Dichloroethane	75-34-3	70						
1,1-Dichloroethene	75-35-4	7						
Acetone	67-64-1	700		5.6 J		8.4 J		7.4 J
Benzene	71-43-2	1	1.8		0.93 J			
Carbon Disulfide	75-15-0	700		10.3		4.3 J	1.4 J	1.8 J
Chloroform	67-66-3	5.7						
cis-1,2-Dichloroethene	156-59-2	70	0.58 J			3.7		
Methyl Tert-Butyl Ether	1634-04-4	50						
Methylene Chloride	75-09-2	5						
Toluene	108-88-3	40						
trans-1,2-Dichloroethene	1330-20-7	100						
Trichloroethene	79-01-4	3						
Vinyl Chloride	75-01-4	1						

TABLE 4-4

SUMMARY OF DETECTIONS IN DPT GROUNDWATER SAMPLES
STUDY AREA 17 - MCCOY ANNEX

NAVAL TRAINNG CENTER
ORLANDO, FLORIDA

DPT Location	CAS No.	Screening Criteria	P111 @ 34 ft	P111 @ 50 ft	P112 @ 34 ft	P112 @ 40 ft	P112 @ 50 ft	P113 @ 34 ft
Sample Number			NTC17P11134	NTC17P11150	NTC17P11234	NTC17P11240	NTC17P11250	NTC17P11334
Sample Date		Florida GCTL	8/14/02	8/14/02	8/15/02	8/15/02	8/15/02	8/15/02
Volatiles (µg/L)								
1,1-Dichloroethane	75-34-3	70						1.1 J
1,1-Dichloroethene	75-35-4	7						4.3
Acetone	67-64-1	700		8.8 J				
Benzene	71-43-2	1						
Carbon Disulfide	75-15-0	700	3.6 J	2.2 J				
Chloroform	67-66-3	5.7						
cis-1,2-Dichloroethene	156-59-2	70			5.7	19.6	445	82.8
Methyl Tert-Butyl Ether	1634-04-4	50						
Methylene Chloride	75-09-2	5						
Toluene	108-88-3	40						
trans-1,2-Dichloroethene	1330-20-7	100						
Trichloroethene	79-01-4	3						
Vinyl Chloride	75-01-4	1					165	29.7

TABLE 4-4

SUMMARY OF DETECTIONS IN DPT GROUNDWATER SAMPLES
STUDY AREA 17 - MCCOY ANNEX

NAVAL TRAINNG CENTER
ORLANDO, FLORIDA

DPT Location	CAS No.	Screening Criteria	P113 @ 41 ft	P113 @ 50 ft	P114 @ 15 ft	P115 @ 15 ft	P116 @ 10 ft	P116 @ 15 ft
Sample Number			NTC17P11341	NTC17P11350	NTC17P11415	NTC17P11515	NTC17P11610	NTC17P11615
Sample Date		Florida GCTL	8/15/02	8/15/02	8/15/02	8/16/02	8/16/02	8/16/02
Volatiles (µg/L)								
1,1-Dichloroethane	75-34-3	70		0.82 J				
1,1-Dichloroethene	75-35-4	7		1.7				
Acetone	67-64-1	700						
Benzene	71-43-2	1						
Carbon Disulfide	75-15-0	700						
Chloroform	67-66-3	5.7						
cis-1,2-Dichloroethene	156-59-2	70	38.7	29	0.59 J	0.7 J	0.51 J	1.6
Methyl Tert-Butyl Ether	1634-04-4	50				0.66 J		
Methylene Chloride	75-09-2	5						
Toluene	108-88-3	40						
trans-1,2-Dichloroethene	1330-20-7	100		0.55 J				
Trichloroethene	79-01-4	3						
Vinyl Chloride	75-01-4	1		136				

TABLE 4-4

SUMMARY OF DETECTIONS IN DPT GROUNDWATER SAMPLES
STUDY AREA 17 - MCCOY ANNEX

NAVAL TRAINNG CENTER
ORLANDO, FLORIDA

DPT Location	CAS No.	Screening Criteria	P116 @ 34 ft	P117 @ 34 ft	P117 @ 40 ft	P117 @ 50 ft	P118 @ 42 ft	P118 @ 52 ft
Sample Number			NTC17P11634	NTC17P11734	NTC17P11740	NTC17P11750	NTC17P11842	NTC17P11852
Sample Date		Florida GCTL	8/16/02	8/16/02	8/16/02	8/16/02	8/17/02	8/17/02
Volatiles (µg/L)								
1,1-Dichloroethane	75-34-3	70						
1,1-Dichloroethene	75-35-4	7						
Acetone	67-64-1	700					65.1	
Benzene	71-43-2	1						
Carbon Disulfide	75-15-0	700						
Chloroform	67-66-3	5.7				0.53 J		
cis-1,2-Dichloroethene	156-59-2	70		3.8	5.8		19.9	314
Methyl Tert-Butyl Ether	1634-04-4	50						
Methylene Chloride	75-09-2	5						
Toluene	108-88-3	40						
trans-1,2-Dichloroethene	1330-20-7	100					2	31.5
Trichloroethene	79-01-4	3	0.76 J					
Vinyl Chloride	75-01-4	1						

TABLE 4-4

SUMMARY OF DETECTIONS IN DPT GROUNDWATER SAMPLES
STUDY AREA 17 - MCCOY ANNEX

NAVAL TRAINNG CENTER
ORLANDO, FLORIDA

DPT Location	CAS No.	Screening Criteria	P119 @ 42 ft	P119 @ 52 ft		P 120 @ 25 ft	P120 @ 34 ft	P121 @ 25 ft
Sample Number			NTC17P11942	NTC17P11952	NTC17P11952-D	NTC17P12025	NTC17P12034	NTC17P12125
Sample Date		Florida GCTL	8/17/02	8/17/02	8/17/02	8/17/02	8/17/02	8/19/02
Volatiles (µg/L)								
1,1-Dichloroethane	75-34-3	70						
1,1-Dichloroethene	75-35-4	7						
Acetone	67-64-1	700						
Benzene	71-43-2	1						
Carbon Disulfide	75-15-0	700				3.1 J	1 J	5.7 J
Chloroform	67-66-3	5.7						
cis-1,2-Dichloroethene	156-59-2	70	7.9	122	115		28	
Methyl Tert-Butyl Ether	1634-04-4	50						
Methylene Chloride	75-09-2	5						6.4 J
Toluene	108-88-3	40						
trans-1,2-Dichloroethene	1330-20-7	100		1.1 J	1 J		2.9	
Trichloroethene	79-01-4	3						
Vinyl Chloride	75-01-4	1						

TABLE 4-4

SUMMARY OF DETECTIONS IN DPT GROUNDWATER SAMPLES
STUDY AREA 17 - MCCOY ANNEX

NAVAL TRAINNG CENTER
ORLANDO, FLORIDA

DPT Location	CAS No.	Screening Criteria	P 121 @ 34 ft		P122 @ 45 ft		P122 @ 50 ft	P122 @ 57 ft
Sample Number			NTC17P12134	NTC17P12134-D	NTC17P12245	NTC17P12245-D	NTC17P12250	NTC17P12257
Sample Date		Florida GCTL	8/19/02	8/19/02	11/19/02	11/19/02	11/19/02	11/19/02
Volatiles (µg/L)								
1,1-Dichloroethane	75-34-3	70						
1,1-Dichloroethene	75-35-4	7						
Acetone	67-64-1	700						
Benzene	71-43-2	1						
Carbon Disulfide	75-15-0	700	47.7	39.4	1.6 J	2 J	12.1	
Chloroform	67-66-3	5.7						
cis-1,2-Dichloroethene	156-59-2	70			26.2	25.2	32.3	7 J
Methyl Tert-Butyl Ether	1634-04-4	50						
Methylene Chloride	75-09-2	5						
Toluene	108-88-3	40						
trans-1,2-Dichloroethene	1330-20-7	100						
Trichloroethene	79-01-4	3						
Vinyl Chloride	75-01-4	1						

TABLE 4-4

SUMMARY OF DETECTIONS IN DPT GROUNDWATER SAMPLES
STUDY AREA 17 - MCCOY ANNEX

NAVAL TRAINNG CENTER
ORLANDO, FLORIDA

DPT Location	CAS No.	Screening Criteria	P123 @ 45ft	P123 @ 50 ft	P123 @ 55 ft	P126 @ 50 ft	P130 @ 45 ft	P130 @ 57 ft
Sample Number			NTC17P12345	NTC17P12350	NTC17P12355	NTC17P12650	NTC17P13045	NTC17P13057
Sample Date		Florida GCTL	11/18/02	11/18/02	11/18/02	11/18/02	11/19/02	11/19/02
Volatiles (µg/L)								
1,1-Dichloroethane	75-34-3	70						
1,1-Dichloroethene	75-35-4	7						
Acetone	67-64-1	700						
Benzene	71-43-2	1						
Carbon Disulfide	75-15-0	700	9.3	4.3 J	2.9 J		2.8 J	4.2 J
Chloroform	67-66-3	5.7						
cis-1,2-Dichloroethene	156-59-2	70	3	11.6		12.3		
Methyl Tert-Butyl Ether	1634-04-4	50						
Methylene Chloride	75-09-2	5						
Toluene	108-88-3	40						
trans-1,2-Dichloroethene	1330-20-7	100		2.1				
Trichloroethene	79-01-4	3						
Vinyl Chloride	75-01-4	1						

TABLE 4-5

SUMMARY OF DETECTIONS IN GROUNDWATER
STUDY AREA 17 - MCCOY ANNEX

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Designation	CAS No.	Screening Criteria	OLD-17-38D	OLD-17-39C	OLD-17-40C	OLD-17-41C	OLD-17-42B
Sample			NTC17G38D01	NTC17G39C01	NTC17G40C01	NTC17G41C01	NTC17G04201
Sample Date		Florida GCTL	9/17/02	9/16/02	9/16/02	9/16/02	12/17/02
Volatiles (µg/L)							
Bromodichloromethane	75-27-4	0.6			5		
Carbon Disulfide	75-15-0	700	25	0.7 J	0.6 J	0.4 J	1.1
Chlorodibromomethane	124-48-1	0.4			1 J		
Chloroform	67-66-3	5.7			30		
cis-1,2-Dichloroethene	156-59-2	70	4			8	1.1
trans-1,2-Dichloroethene	1330-20-7	100					
Vinyl Chloride	75-01-4	1				0.3 J	

TABLE 4-5

SUMMARY OF DETECTIONS IN GROUNDWATER
STUDY AREA 17 - MCCOY ANNEX

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

PAGE 2 OF 3

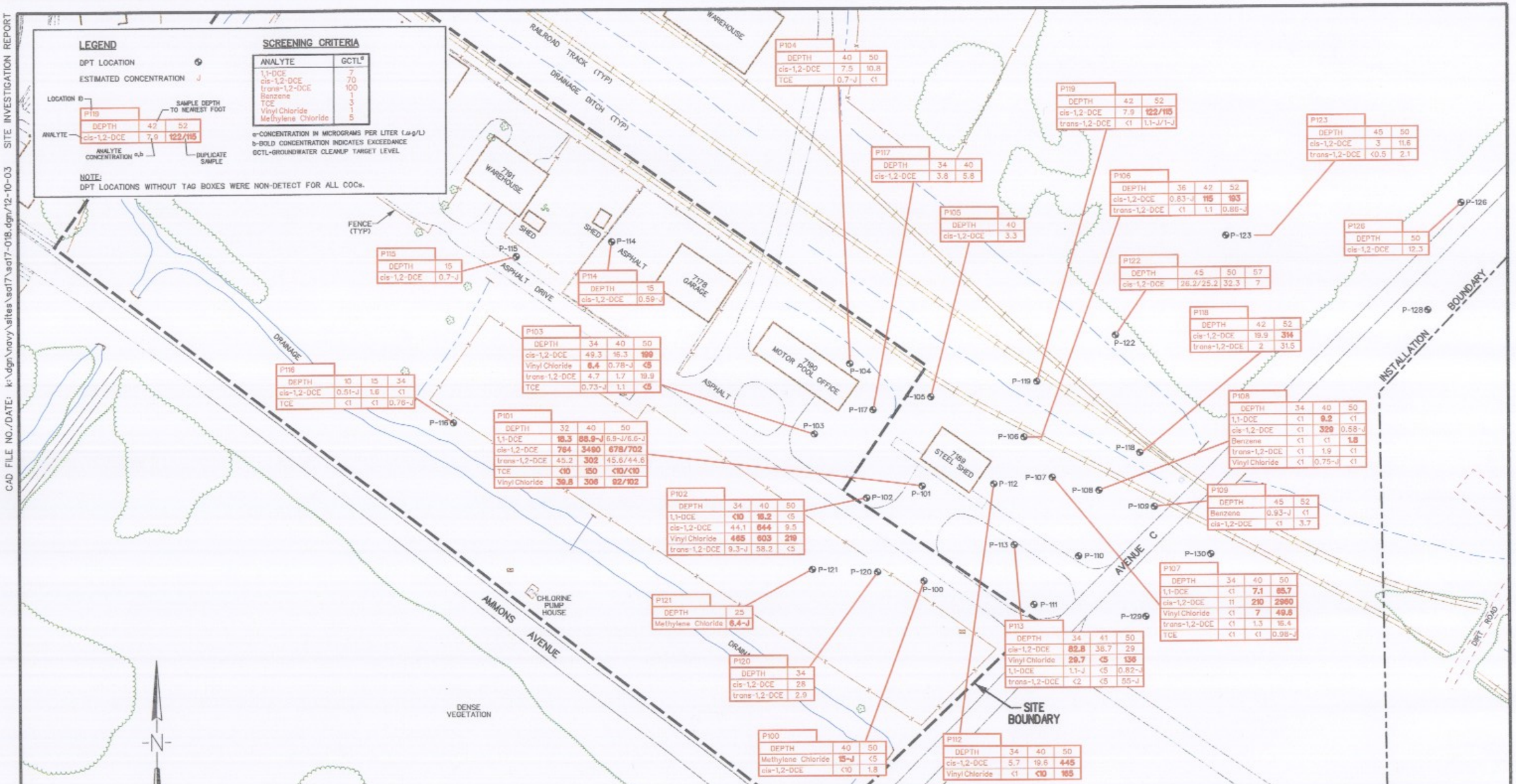
Well Designation	CAS No.	Screening Criteria	OLD-17-43C	OLD-17-45C	OLD-17-46C	OLD-17-47D	OLD-17-48C
Sample			NTC17G04301	NTC17G45C01	NTC17G46C01	NTC17G47D01	NTC17G04801
Sample Date		Florida GCTL	12/17/02	9/17/02	12/17/02	12/17/02	12/17/02
Volatiles (µg/L)							
Bromodichloromethane	75-27-4	0.6					
Carbon Disulfide	75-15-0	700		0.4 J	4.3		0.92 J
Chlorodibromomethane	124-48-1	0.4					
Chloroform	67-66-3	5.7			2.8	0.92 J	
cis-1,2-Dichloroethene	156-59-2	70	80	100			1.8
trans-1,2-Dichloroethene	1330-20-7	100		1 J			
Vinyl Chloride	75-01-4	1					

TABLE 4-5

SUMMARY OF DETECTIONS IN GROUNDWATER
STUDY AREA 17 - MCCOY ANNEX

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Designation	CAS No.	Screening Criteria	OLD-17-49D	OLD-17-50C		OLD-17-51D
Sample			NTC17G04901	NTC17G05001	NTC17G05001-D	NTC17G05101
Sample Date		Florida GCTL	12/17/02	12/17/02	12/17/02	12/17/02
Volatiles (µg/L)						
Bromodichloromethane	75-27-4	0.6				
Carbon Disulfide	75-15-0	700	2.6	2.3	3.3	3.6
Chlorodibromomethane	124-48-1	0.4				
Chloroform	67-66-3	5.7	2.1	2.6	2	2.4
cis-1,2-Dichloroethene	156-59-2	70	21	6.3	5.7	4.9
trans-1,2-Dichloroethene	1330-20-7	100		1.1	1.1	0.82 J
Vinyl Chloride	75-01-4	1				



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DPT INVESTIGATION
DETECTED CONCENTRATIONS
STUDY AREA 17 - McCOY ANNEX

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

CONTRACT NO.	N62467-94-D-0888
OWNER NO.	N4206
APPROVED BY JCB	DATE 12/10/03
DRAWING NO. FIGURE 4-4	REV. 0

FORM CADD NO. SDIV-BH.DGN - REV 2 - 10/23/03

Twenty locations (P100–P117, P120, and P121) were sampled to define the limits of the plume in the intermediate portion of the aquifer (zone B). Samples were collected at depths of approximately 15, 25, and/or 35 feet bgs. These samples represented the intervals near or on top of the upper silty sand, between the two silty sand layers, and at the bottom or just below the lower silty sand layer. Samples were collected primarily east of the plume where few data points existed. Two samples were collected from the north of the plume to fill in data gaps from previous investigations, and a sample was collected to the west along the drainage ditch where no data exist. Detected analytes are depicted in Figure 4-4. Samples collected from depth intervals 15 and 25 feet bgs contained no detectable concentrations of CVOCs. Although CVOCs were detected above the GCTLs in 4 locations (P101, P102, P103, and P113) at the 35 feet bgs interval, the plume of zone B is delineated because CVOCs were not detected in DPT locations downgradient. VC was detected (6.4 – 465 µg/L) at all four locations at concentrations above the GCTL of 1 µg/L. cDCE was detected at all four locations, but only the concentrations in the P101 and P113 samples were above the GCTL of 70 µg/L. At P101 and P102 concentrations of DCE exceeded the GCTL of 7 µg/L. At P101, TCE was also detected at a concentration exceeding the GCTL of 3 µg/L.

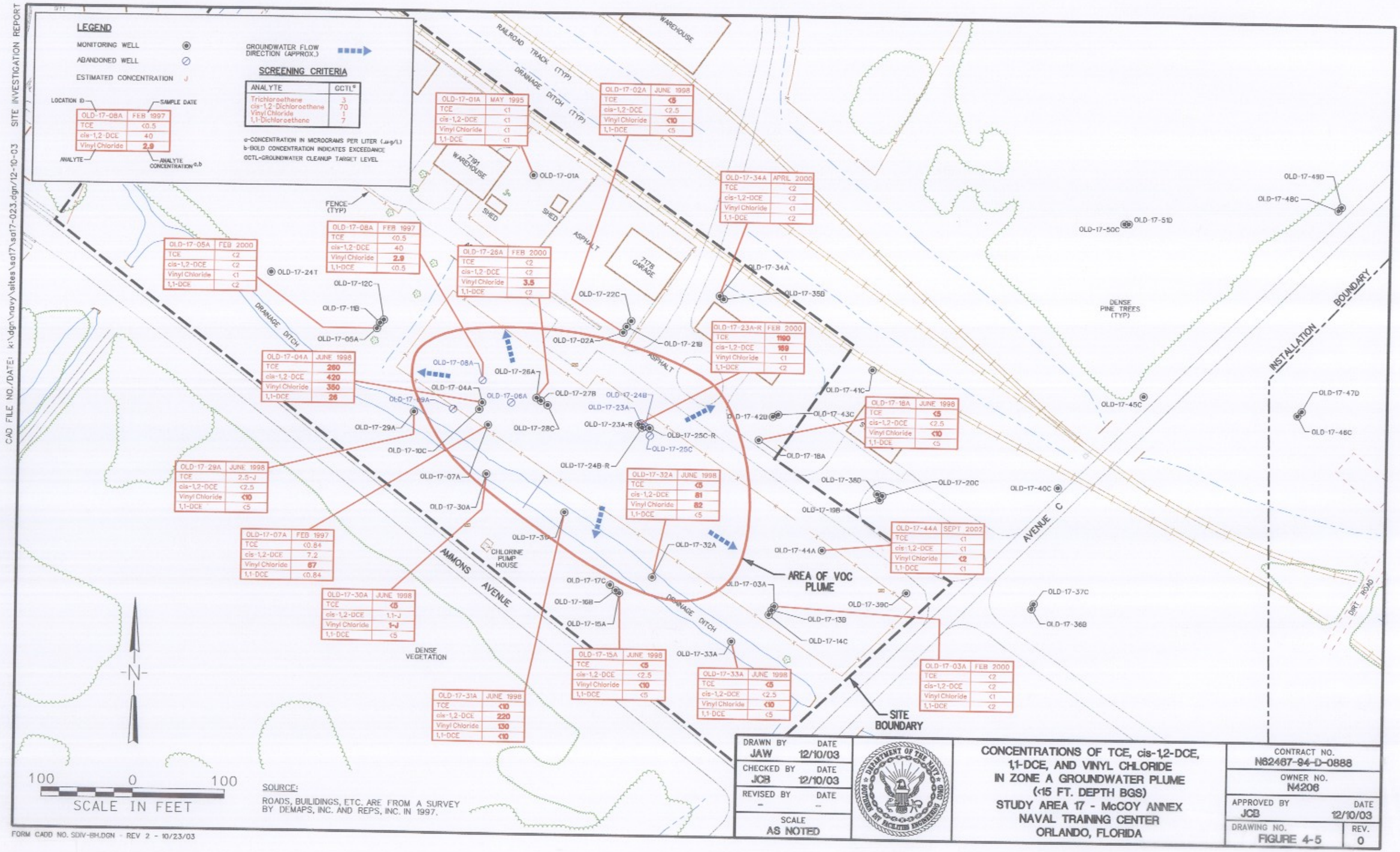
Seventeen DPT locations (P100–P113 and P117–P119) were sampled in the deep portion of the aquifer (zone C) east of the plume where existing data points were widely spaced (eastward) or did not exist (northeastward). DPT samples were collected at approximate depths of 40 and 50 feet bgs. These sample depths represent the intervals within the sand (below the lower silty sand layer) and at the bottom of the sand interval, above the basal silty sand that marks the bottom of the surficial aquifer. Ten of the 17 locations contained exceedances of DCE, cDCE, tDCE, TCE, or VC above the respective GCTLs. Detected concentrations are shown on Figure 4-4.

4.2.2 DPT Sampling (November 2002)

Based on the results from the August 2002 DPT and September 2002 monitoring well sampling, DPT locations in the downgradient area of the site (P122, P123, P126, and P128–P130) were sampled in November of 2002 to verify the plume boundary. Samples were collected at 45, 50, and/or 57 ft bgs. Although cDCE and tDCE were detected, all concentrations were below the respective GCTLs (Figure 4-4).

4.2.3 Monitoring Well Sampling

In September 2002, TtNUS installed and developed monitoring wells 38 through 45 around the perimeter of the plume to define its limit to the north, east and south (Figures 4-5, 4-6, 4-7, and 4-8). Samples that TtNUS collected from wells 38–41, 44, and 45 in September 2002 provided the data needed to define the plume in Zone C, except for the eastern boundary. At 40, located along Avenue C east of



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

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SCALE AS NOTED		

CONCENTRATIONS OF TCE, cis-1,2-DCE, 1,1-DCE, AND VINYL CHLORIDE IN ZONE A GROUNDWATER PLUME (<15 FT. DEPTH BGS)
STUDY AREA 17 - McCOY ANNEX
NAVAL TRAINING CENTER
ORLANDO, FLORIDA

CONTRACT NO. N62467-94-D-0888
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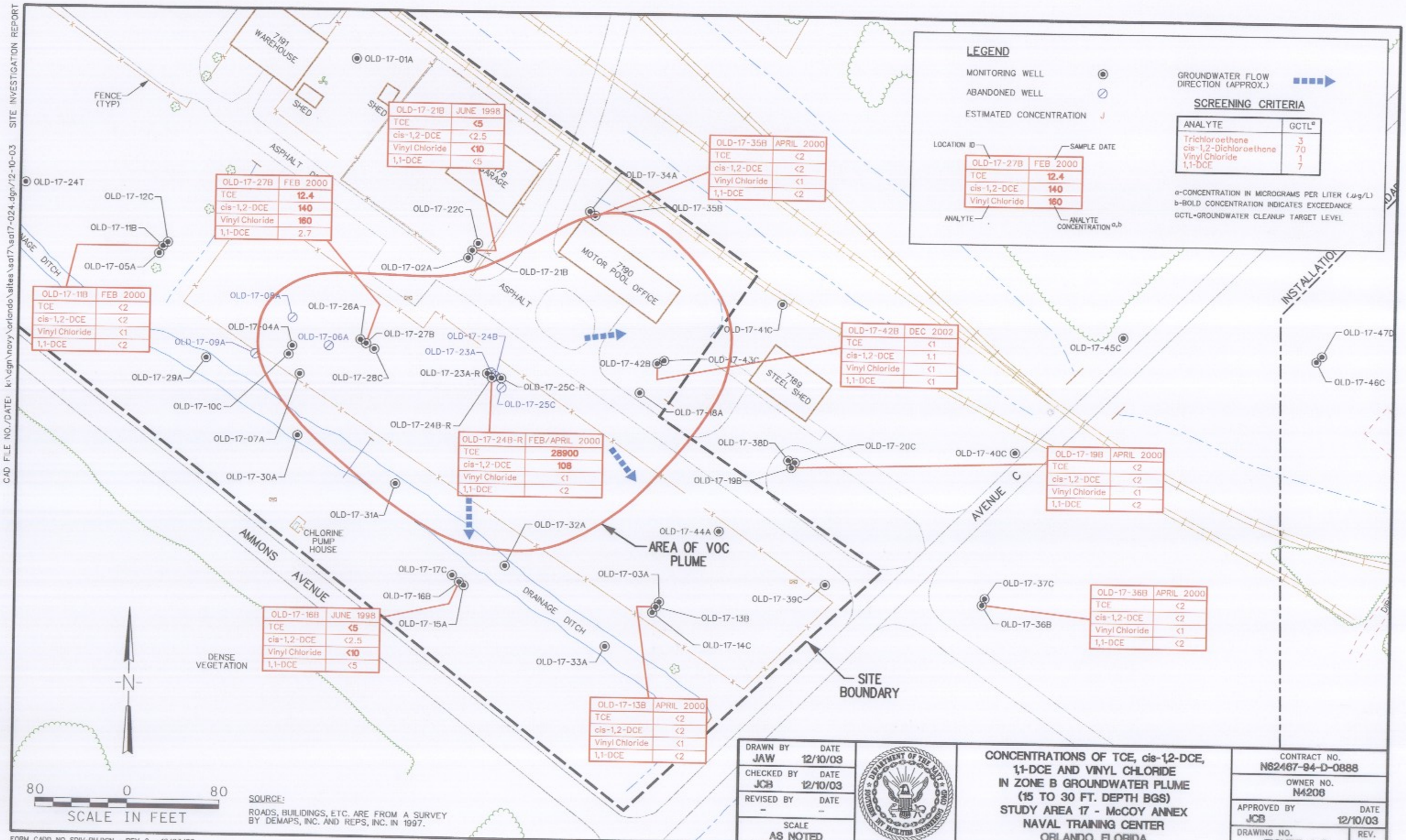

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CONCENTRATIONS OF TCE, cis-1,2-DCE, 1,1-DCE AND VINYL CHLORIDE IN ZONE B GROUNDWATER PLUME (15 TO 30 FT. DEPTH BGS)
STUDY AREA 17 - McCOY ANNEX
NAVAL TRAINING CENTER
ORLANDO, FLORIDA

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OWNER NO. N4206	
APPROVED BY JCB	DATE 12/10/03
DRAWING NO. FIGURE 4-6	REV. 0

FORM CADD NO. SDIV-BH.DGN - REV 2 - 10/23/03

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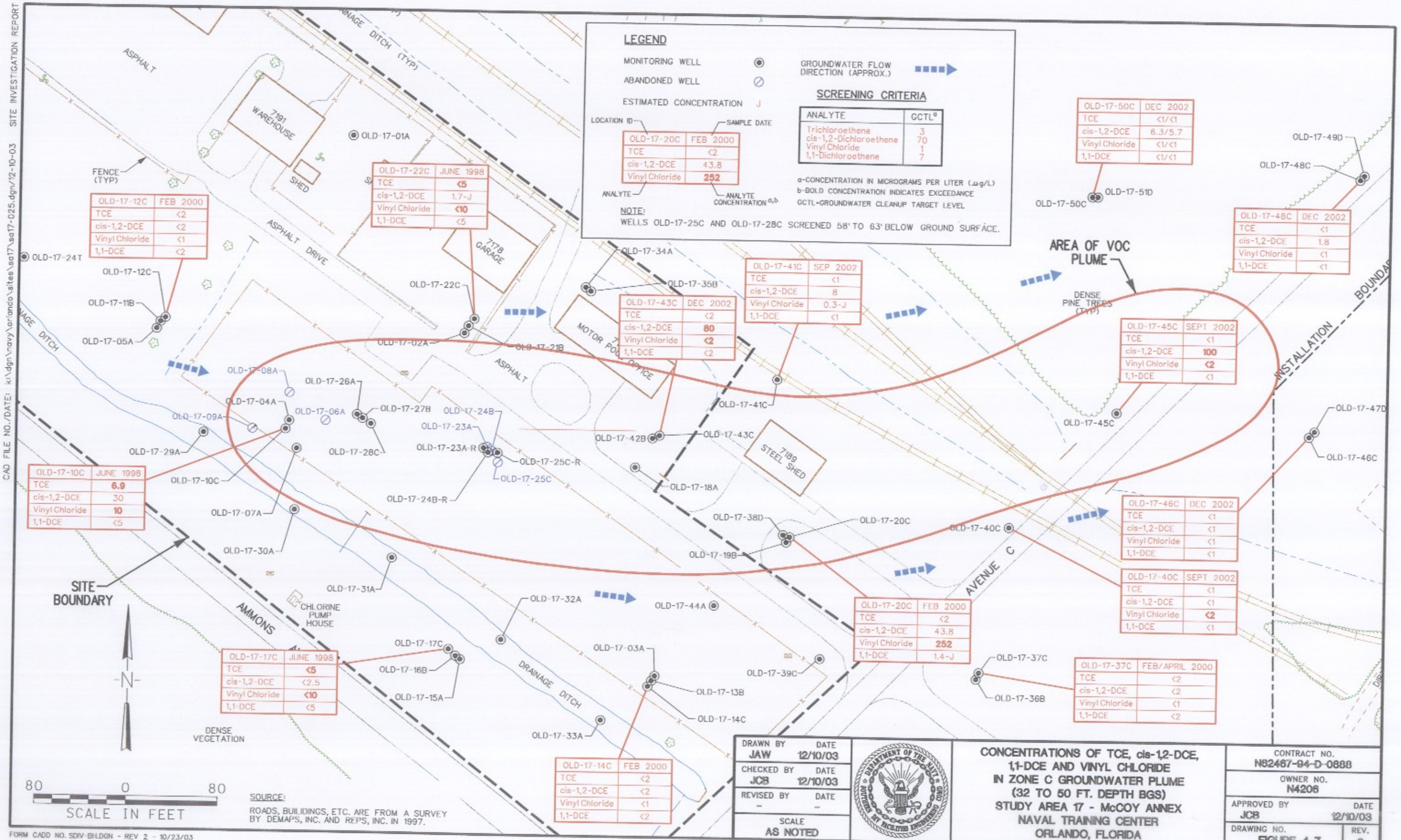

OLD-17-20C	FEB 2000
TCE	<2
cis-1,2-DCE	43.8
Vinyl Chloride	**252**

ANALYTE	GCTL[a]
Trichloroethene	3
cis-1,2-Dichloroethene	70
Vinyl Chloride	1
1,1-Dichloroethene	7

OLD-17-12C	FEB 2000
TCE	<2
cis-1,2-DCE	<2
Vinyl Chloride	<1
1,1-DCE	<2

OLD-17-22C	JUNE 1998
TCE	**<5**
cis-1,2-DCE	1.7-J
Vinyl Chloride	**<10**
1,1-DCE	<5

OLD-17-43C	DEC 2002
TCE	<2
cis-1,2-DCE	**80**
Vinyl Chloride	**<2**
1,1-DCE	<2

OLD-17-41C	SEP 2002
TCE	<1
cis-1,2-DCE	8
Vinyl Chloride	0.3-J
1,1-DCE	<1

OLD-17-50C	DEC 2002
TCE	<1/<1
cis-1,2-DCE	6.3/5.7
Vinyl Chloride	<1/<1
1,1-DCE	<1/<1

OLD-17-48C	DEC 2002
TCE	<1
cis-1,2-DCE	1.8
Vinyl Chloride	<1
1,1-DCE	<1

OLD-17-45C	SEPT 2002
TCE	<1
cis-1,2-DCE	**100**
Vinyl Chloride	**<2**
1,1-DCE	<1

OLD-17-10C	JUNE 1998
TCE	**6.9**
cis-1,2-DCE	30
Vinyl Chloride	**10**
1,1-DCE	<5

OLD-17-46C	DEC 2002
TCE	<1
cis-1,2-DCE	<1
Vinyl Chloride	<1
1,1-DCE	<1

OLD-17-40C	SEPT 2002
TCE	<1
cis-1,2-DCE	<1
Vinyl Chloride	**<2**
1,1-DCE	<1

OLD-17-20C	FEB 2000
TCE	<2
cis-1,2-DCE	43.8
Vinyl Chloride	**252**
1,1-DCE	1.4-J

OLD-17-37C	FEB/APRIL 2000
TCE	<2
cis-1,2-DCE	<2
Vinyl Chloride	<1
1,1-DCE	<2

OLD-17-17C	JUNE 1998
TCE	**<5**
cis-1,2-DCE	<2.5
Vinyl Chloride	**<10**
1,1-DCE	<5

OLD-17-14C	FEB 2000
TCE	<2
cis-1,2-DCE	<2
Vinyl Chloride	<1
1,1-DCE	<2

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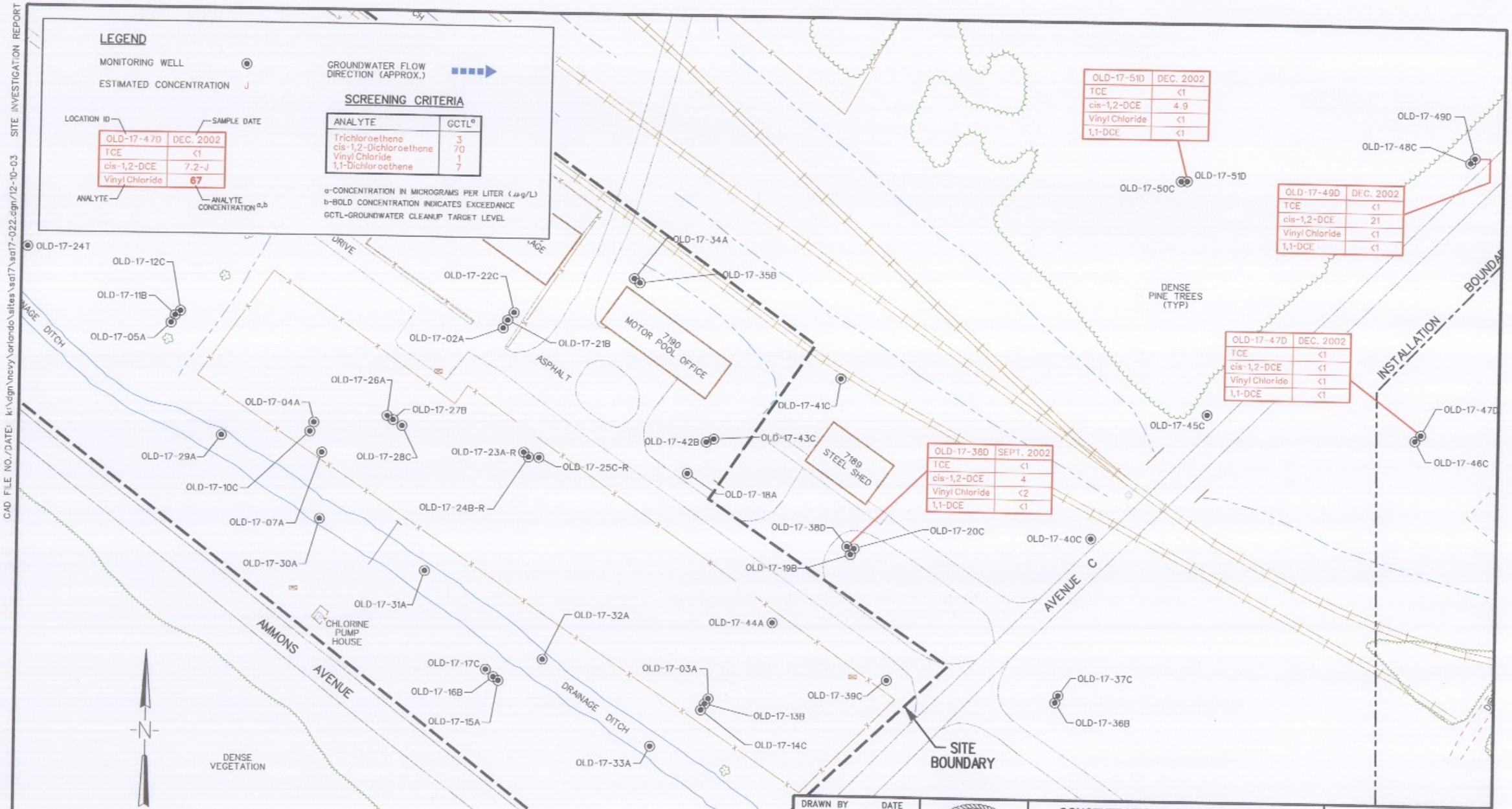

SOURCE:
ROADS, BUILDINGS, ETC. ARE FROM A SURVEY BY DEMAPS, INC. AND REPS, INC. IN 1997.

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CONCENTRATIONS OF TCE, cis-1,2-DCE, 1,1-DCE AND VINYL CHLORIDE IN ZONE D GROUNDWATER PLUME (>50 FT. DEPTH BGS)
STUDY AREA 17 - McCOY ANNEX
NAVAL TRAINING CENTER
ORLANDO, FLORIDA

CONTRACT NO.	
N62467-94-D-0888	
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FIGURE 4-8	0

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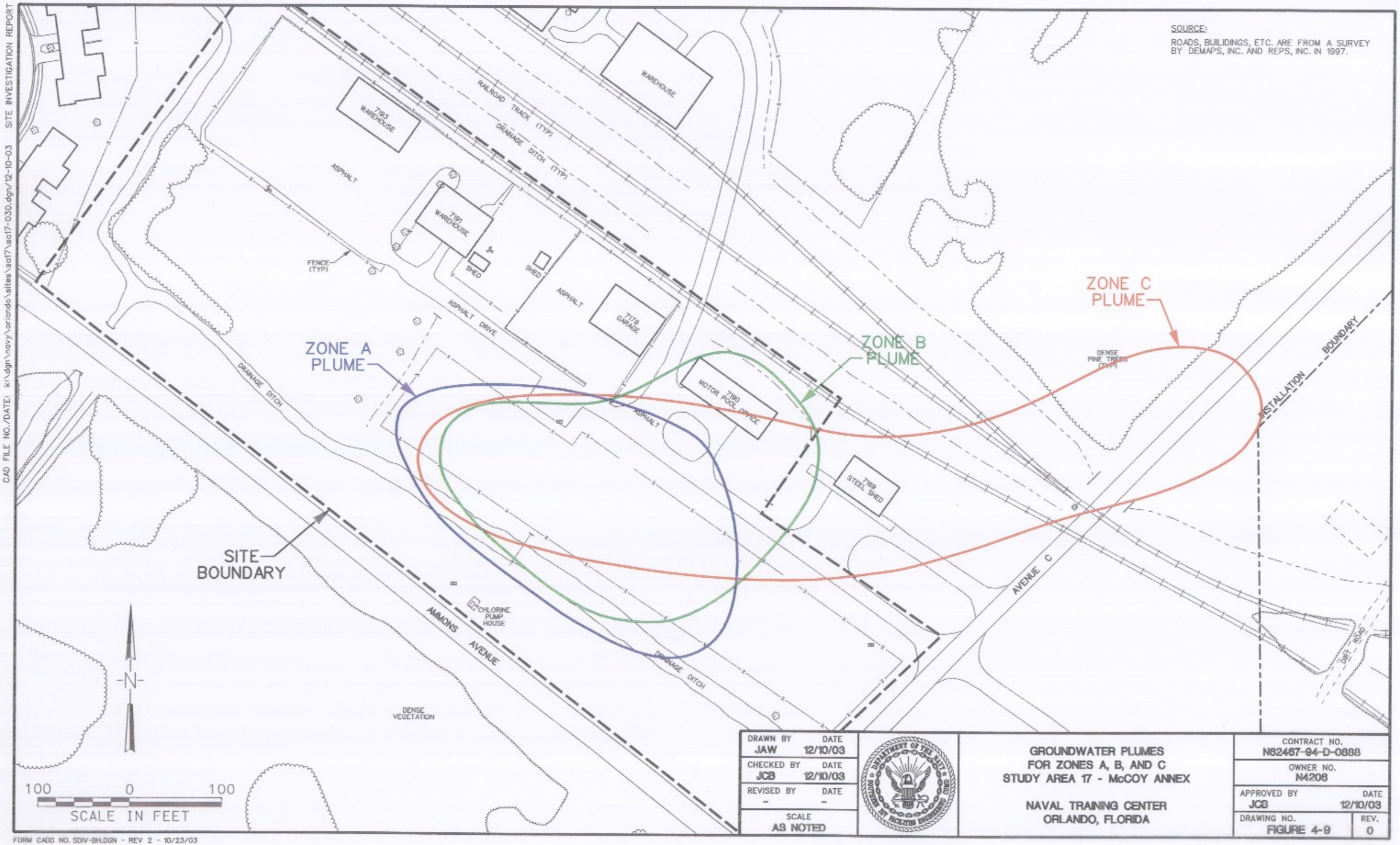
FORM CADD NO. SDIV-BH.DGN - REV 2 - 10/23/03

the site, bromodichloromethane, chlorodibromomethane, and chloroform were detected above the respective GCTLs of 5 µg/L, 1-J µg/L, and 30 µg/L. These analytes are not considered to be associated with the TCE source and were not included in the plume definition. Although cDCE, VC, and tDCE were detected in three of the four wells sampled, only the concentration of cDCE at 45 (100 µg/L) was above the GCTL of 70 µg/L (Table 4-4). These data indicated that the plume extended to the east and north beyond the site boundary of SA 17.

In November 2002, TtNUS collected additional DPT samples and installed six monitoring wells (46-51) to the east and north of the study area. These monitoring wells were installed outside the plume area to confirm the plume delineation and serve as compliance points for long-term monitoring. Monitoring wells were installed in pairs with each pair containing a well screened in the C and D zones. Samples were collected in December 2002 from monitoring wells 42, 43, and 46–51 and analyzed for VOCs. Only the sample collected from 43 contained a contaminant (cDCE at 80 µg/L) exceeding the respective GCTL. Although cDCE was detected in six of eight wells and tDCE in three of eight wells, the concentrations were below the GCTLs. With the installation of these wells the east limit of the plume is defined as shown in Figure 4-9.



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FORM CADD NO. SDIV-BH.DGN - REV 2 - 10/23/03

5.0 GROUNDWATER INTERIM REMEDIAL ACTION

The OPT initiated the groundwater IRA in February 2000 to address chlorinated solvent contamination at SA 17. CCI conducted the IRA using a two phase approach, which included the following tasks (CCI, 2000):

- Evaluate site hydrogeologic and geochemical conditions using existing monitoring wells and available data and to identify data gaps (Phase I).
- Complete the delineation of the contamination and obtain additional information on site-specific geologic conditions.
- ISCO injections into the groundwater to oxidize CVOCs to carbon dioxide, water, and chloride.
- Quarterly sampling and analysis of monitoring wells after injection-related activities are complete to assess progress in achieving the Florida GCTLs.
- Reporting results or remedial actions and groundwater monitoring to the OPT.

5.1 PROCESS DESCRIPTION

CCI contracted GCI to implement the IRA using its Geo-Cleanse® Process. The Geo-Cleanse® Process is a patented technology that simultaneously injects hydrogen peroxide and trace quantities of metallic salts under pressure to the subsurface to destroy organic contaminants in soil and groundwater. The chemistry involved is based on Fenton's reagent. The hydroxyl free radical generated by Fenton's reagent is a powerful, non-selective oxidant. Rate constants for reactions of hydroxyl free radical with common environmental pollutants are typically in the range of 10^7 to 10^{10} $M^{-1}s^{-1}$ (CCI, 2000), and 100 percent mineralization is generally completed in minutes. The end products of CVOC oxidation are primarily carbon dioxide and water, and chloride. Unconsumed hydrogen peroxide naturally degrades to oxygen and water within a few days of injection.

5.2 FIELD ACTIVITIES

5.2.1 IRA Installation

During the initial phase of the IRA, CCI replaced two monitoring wells and installed 69 injection wells in three vertical zones using the hollow stem auger drilling method. Injection wells have been installed at various depths within an "L" shaped treatment area located southwest of Building 7190 (see Appendix E). Nine injectors (S-1 through S-9) were installed in the shallow zone with screens from 10 to 13 feet bgs.

The intermediate zone treatment (I-1 through I-30) consisted of 30 injectors installed and screened from 16 to 19 feet bgs. Thirty injectors (D-1 through D-30), screened from 22 to 25 feet bgs were installed in the deep zone. Monitoring wells 23A and 24B were replaced using stainless steel well materials, because the exothermic reaction of Fenton's reagent resulted in degradation of the PVC. These wells were most likely to be affected because they are located in the most contaminated portion of the plume and within the target treatment area.

5.2.2 Fenton's Reagent Injection

Injections of Fenton's reagent were carried out in two phases. During the first phase, a total of 6,307 gallons of 50% H_2O_2 solution were injected. Initially, 4,350 gallons were injected from November 7 through 30, 2000. Based upon the results from these injects, CCI installed eight additional deep zone injectors (D-31 through D-38) around monitoring well 24B. A total of 1,957 gallons of 50% H_2O_2 solution were injected into the new deep injectors in January 2001. Upon the completion of Phase I activities, Phase II activities were initiated. Phase II activities included installing ten "very deep" injectors (VD-39 through VD-48) screened from 31 to 34 feet bgs. Based upon analytical data collected from these injectors and a DPT groundwater investigation conducted from June 11 through 19, 2001, an additional 26 very deep injectors were installed with screens from 33 to 36 feet bgs. Phase II ISCO application occurred during three separate events in 2002 (March, August, and September). A total of 13,923 gallons of 50% H_2O_2 solution were injected during Phase II activities.

5.3 RESULTS

The change in the concentration of TCE and CVOC provides evidence of the success of the oxidation IRA within the plume source area. Maps depicting changes in plume size and concentration from pre-injection to post-injection are provided in Appendix E (Figure 2-1 through 2-5 and Figure 2-10).

- Dissolved TCE and CVOC concentrations decreased 88.1 and 87.7 percent, respectively, based on a comparison of the pre-injection "baseline" sample collection event to the January 2003 or June 2003 sampling event.
- Based upon data from the January and June 2003 sampling event, only two deep injectors (D-25 and D-33) and one monitoring well (23A) contained concentrations of TCE at or greater than 1 percent of the maximum solubility in water.

6.0 CONCLUSIONS

6.1 SOILS CONTAMINATION

In May 1999, the OPT contracted DET to perform the IRA to excavate and dispose of contaminated soils. DET excavated surface soils to a depth of 2 feet across an area of approximately 300 by 100 feet (SUPSHIP, 1999). The IRA performed by DET did not address the contaminated subsurface soils. The surface soil excavation and off-site disposal mitigated PAH-contaminated surface soil to levels compatible with a future non-residential land use (SUPSHIP, 1999).

6.2 GROUNDWATER CONTAMINATION

The interaction of the CVOC contamination with the changes in stratigraphy has resulted in a complex plume configuration beneath SA 17. The stratigraphy associated with lithological variations within the aquifer has resulted in several groundwater flow pathways within the surficial aquifer. The concentrations of some of the CVOCs in wells at some source locations were greater than one percent of their solubility in groundwater (e.g., TCE >11,000 µg/L). This suggests that a DNAPL may exist at depths corresponding to the two silt-sand zones in the upper portion of the surficial aquifer; however, DNAPL has not been observed in DPT or monitoring well samples collected at this site.

Chlorinated solvents undergo biodegradation through one of three different pathways: as an electron acceptor, as an electron donor, or cometabolism. Under anaerobic conditions, biodegradation of chlorinated solvents proceeds through a process of sequential dechlorination. Dechlorination progresses from TCE to DCE to VC and ethenes. During dechlorination, all three isomers of DCE can be present; however, cDCE is the more common intermediate isomer, followed by tDCE then DCE. Reductive dechlorination of chlorinated solvent compounds is associated with the accumulation of daughter products and an increase in the concentration of chloride ions. Chemical data collected from the monitoring wells indicate that natural biodegradation of chlorinated solvents in the groundwater has resulted in the destruction of TCE and the production of daughter products cDCE and VC. The contaminant biodegradation and the stratigraphy have caused changes in the groundwater plume characteristics in both the horizontal and vertical direction across SA 17.

Groundwater flow in the shallow portion of the surficial aquifer has historically been in a radial pattern due to an on-site groundwater mound. The drainage ditch appears to limit contaminant migration in the shallow and intermediate portions of the aquifer. This has kept the CVOC contamination somewhat centralized in these portions (Zones A and B) of the surficial aquifer. The deeper portion of the surficial aquifer typically flows north and east. This has resulted in the CVOC plume extending further east in the

deeper portion of the aquifer than what occurs in Zones A and B of the surficial aquifer. In addition to the lateral migration of CVOCs due to groundwater flow, CVOCs have also migrated downward through the surficial aquifer. The lateral and vertical migration of the CVOCs has resulted in the lateral extent of the plume growing larger with depth. As evidenced from the Zone D wells, the clay zone unit found at the bottom of the surficial aquifer (i.e., top of the Hawthorn Formation) has prevented any significant downward migration of the plume.

The horizontal and vertical extent of CVOC contamination in groundwater has been delineated for the areas hydraulically downgradient of the identified source area. Initial DPT sampling, along with the installation of monitoring wells 38 through 45, successfully delineated Zones A and B. Additionally, these samples were used to define the northern, western, and southern plume boundary of Zone C at the study area. Six monitoring wells (46 through 51) were installed off-site to the east and north of the study area. These monitoring wells were installed outside the plume area to confirm the plume delineation and serve as compliance points for long-term monitoring. With the installation of these wells, the downgradient boundary of the plume is defined.

REFERENCES

ABB-ES (ABB Environmental Services, Inc.), 1994. *Base Realignment and Closure (BRAC) Environmental Baseline Survey Report,* Naval Training Center, Orlando, Florida. December.

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

CCI (CH2MHILL Contractors Inc.), 2000. *Work Plan for In-Situ Chemical Oxidation IRA at Study Area 17, Naval Training Center,* Orlando, Florida, September.

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

FDEP, 2002. *DEP Standard Operating Procedures for Laboratory Operations and Sample Collection Activities*. DEP QA-001/01, January.

HLA (Harding Lawson Associates), 1999. *Base Realignment and Closure (BRAC) Environmental Site Screening Report, Study Area 17, Naval Training Center, Orlando, Florida,* Unit Identification Code N65928, Navy CLEAN District 1, Contract No. N62467-89-D-0317/017. March.

NFESC (Naval Facilities Engineering Service Center), 1999. *Navy Installation Restoration Chemical Data Quality Guide,* September.

SUPSHIP (Supervisor of Shipbuilding, Conversion and Repair – Environmental Detachment, Charleston, S. C.), 1999. *Completion Report, Interim Remedial Action at SA 17, 18, 23, 35, 37, 40, and OU 3 & 4,* Naval Training Center and McCoy Annex, Orlando, Florida.

TtNUS (Tetra Tech NUS, Inc.), 2001. *Health and Safety Plan for Completion of Investigative Work and Data Sampling*, Naval Training Center, Orlando, Florida, Contract No. N62467-94D-0888. June.

TtNUS, 2002. *Work Plan for Plume Delineation at Study Area 17*, Naval Training Center, Orlando, Florida. Contract No. N62467-94-D0888. March.

USDA (U.S. Department of Agriculture), 1989. *Soil Survey of Orange County, Florida.* Soil Conservation Service.

USEPA (U.S. Environmental Protection Agency), 1999. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review,* EPA/540/R-99/088, Office of Emergency and Remedial Response. Washington, D.C. October.

USEPA, 2001. *Environmental Investigations, Standard Operating Procedures and Quality Assurance Manual* including 1997 revisions. Region 4 Science and Ecosystem Support Division, Enforcement and Investigation Branch, November.

APPENDIX A

ANALYTICAL INFORMATION AND FIGURES FROM PREVIOUS INVESTIGATION REPORTS

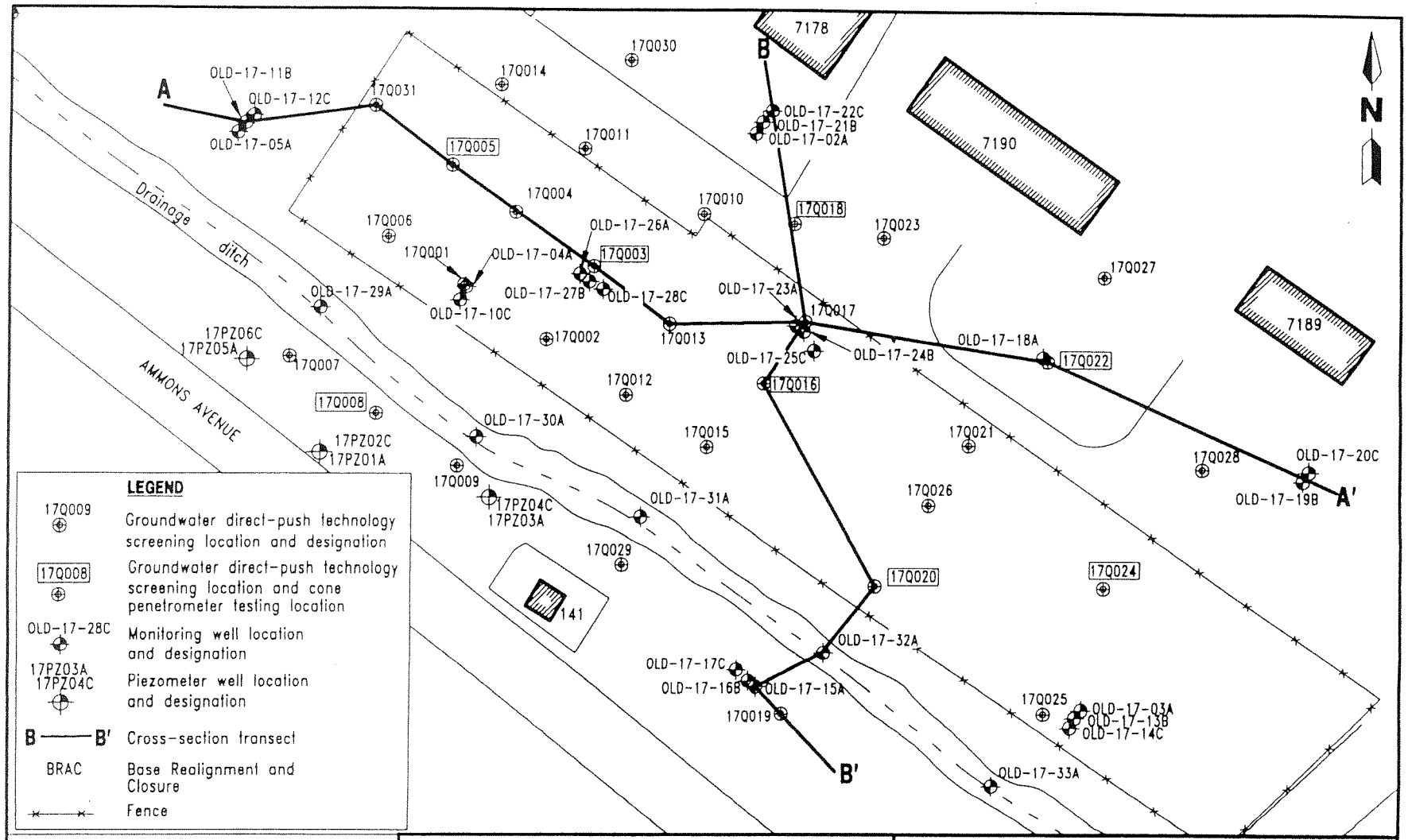

FIGURE 4-2
LOCATION OF SCREENING POINTS AND PERMANENT MONITORING WELLS, GROUNDWATER EVALUATION PHASE II

BRAC ENVIRONMENTAL SITE SCREENING REPORT STUDY AREA 17

NAVAL TRAINING CENTER ORLANDO, FLORIDA

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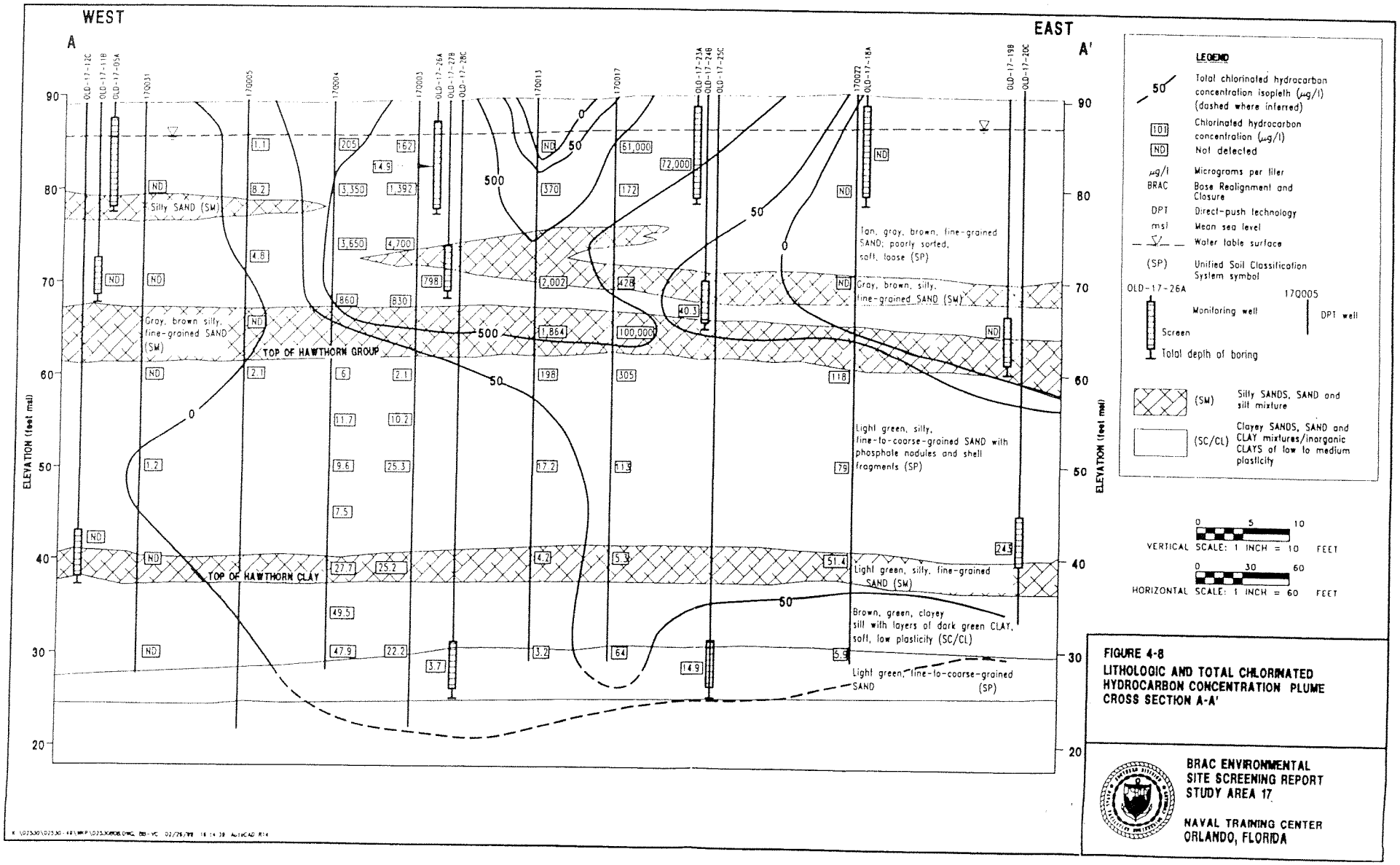


FIGURE 4-8
LITHOLOGIC AND TOTAL CHLORINATED HYDROCARBON CONCENTRATION PLUME CROSS SECTION A-A'

BRAC ENVIRONMENTAL SITE SCREENING REPORT STUDY AREA 17

NAVAL TRAINING CENTER ORLANDO, FLORIDA

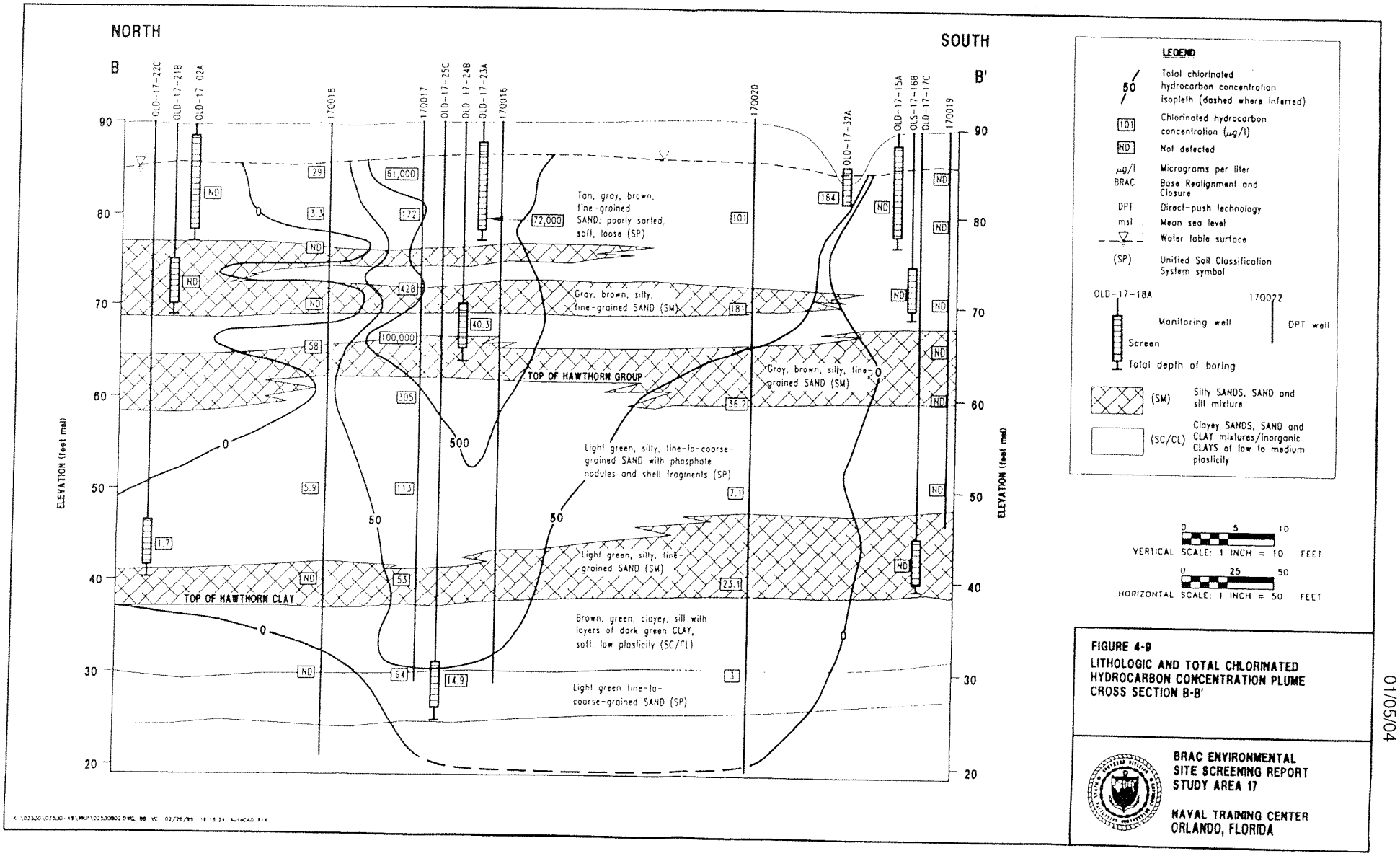


FIGURE 4-9
LITHOLOGIC AND TOTAL CHLORINATED HYDROCARBON CONCENTRATION PLUME CROSS SECTION B-B'

BRAC ENVIRONMENTAL SITE SCREENING REPORT STUDY AREA 17

NAVAL TRAINING CENTER ORLANDO, FLORIDA

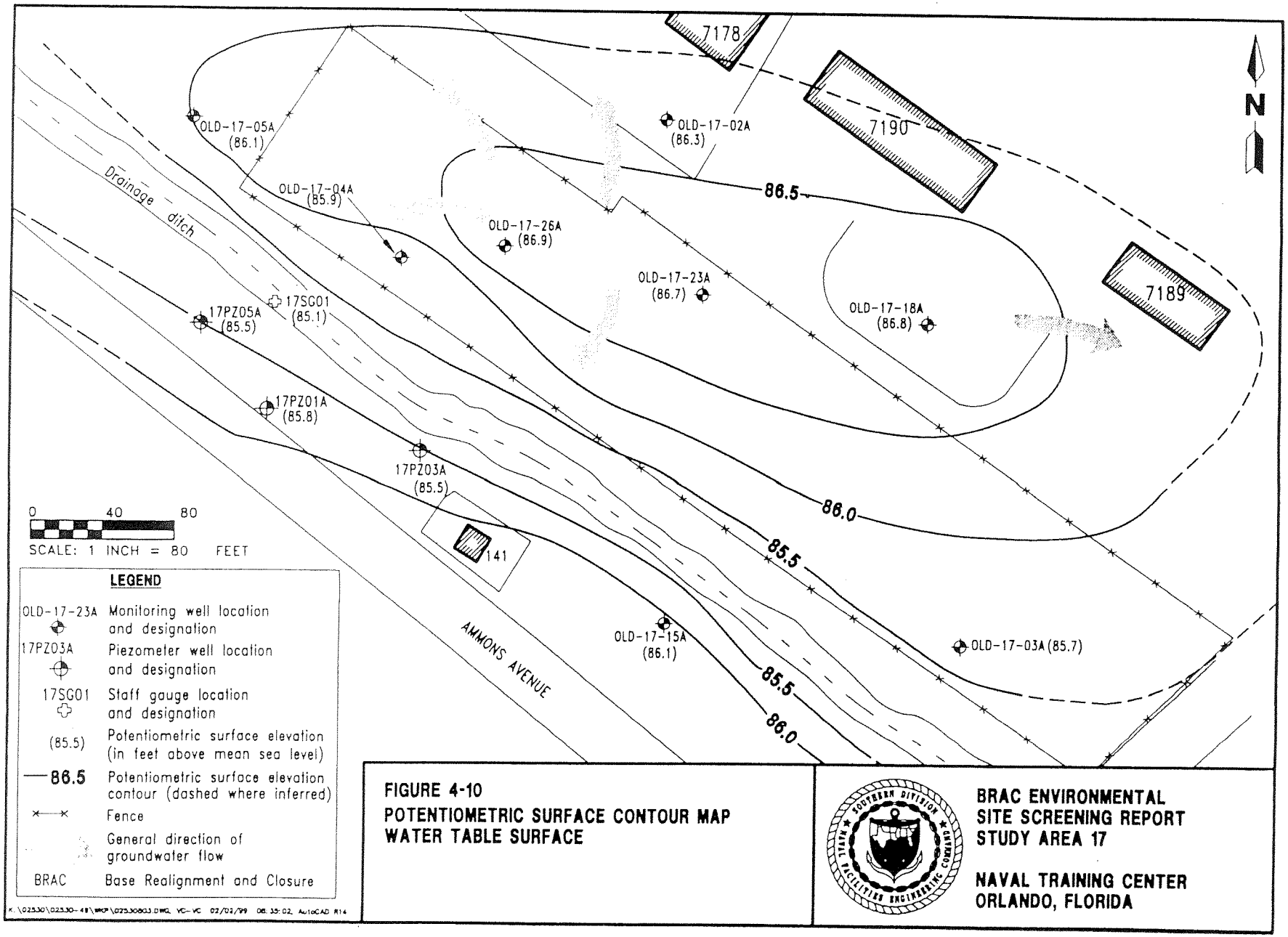
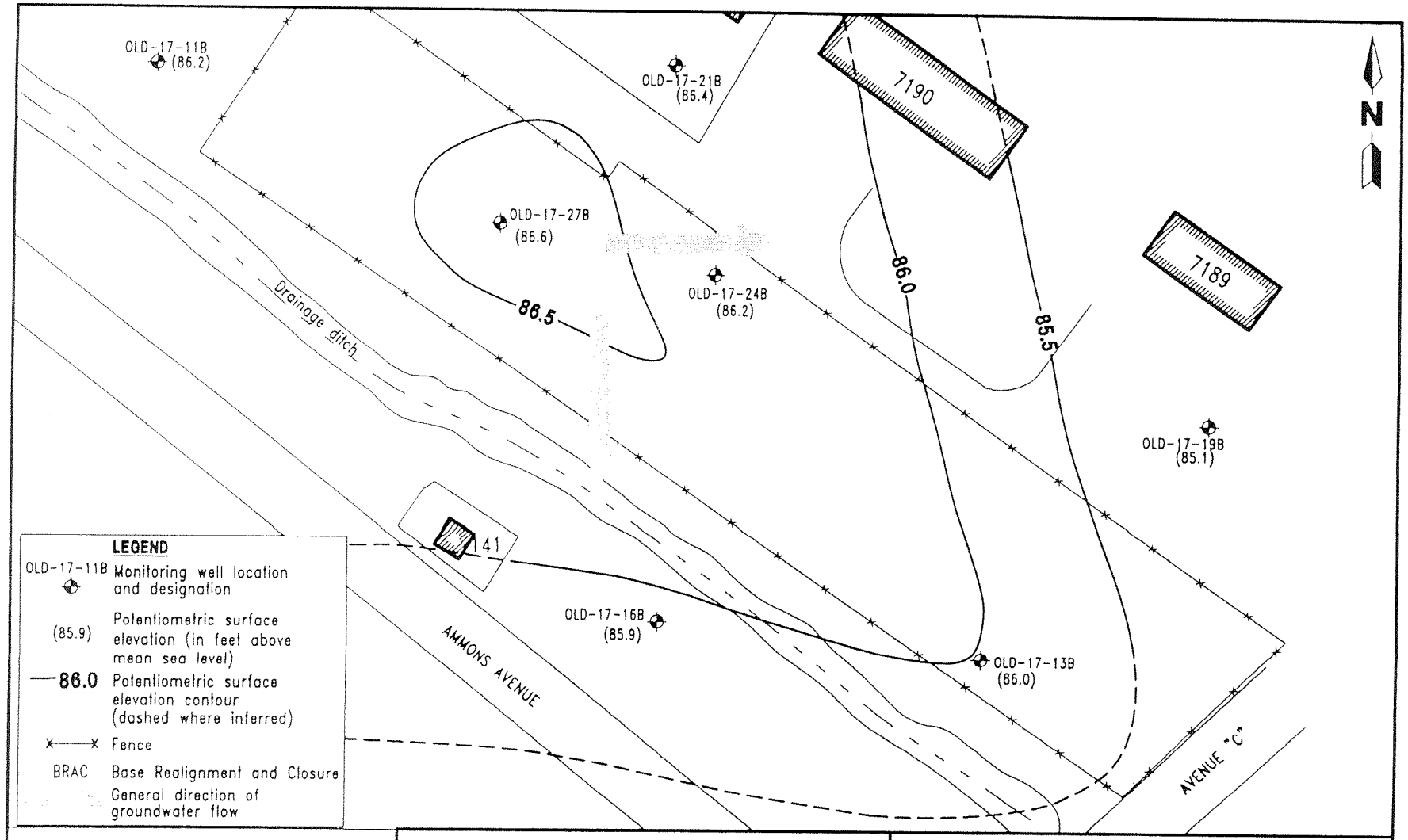


FIGURE 4-10
POTENTIOMETRIC SURFACE CONTOUR MAP
WATER TABLE SURFACE

BRAC ENVIRONMENTAL SITE SCREENING REPORT STUDY AREA 17

NAVAL TRAINING CENTER ORLANDO, FLORIDA

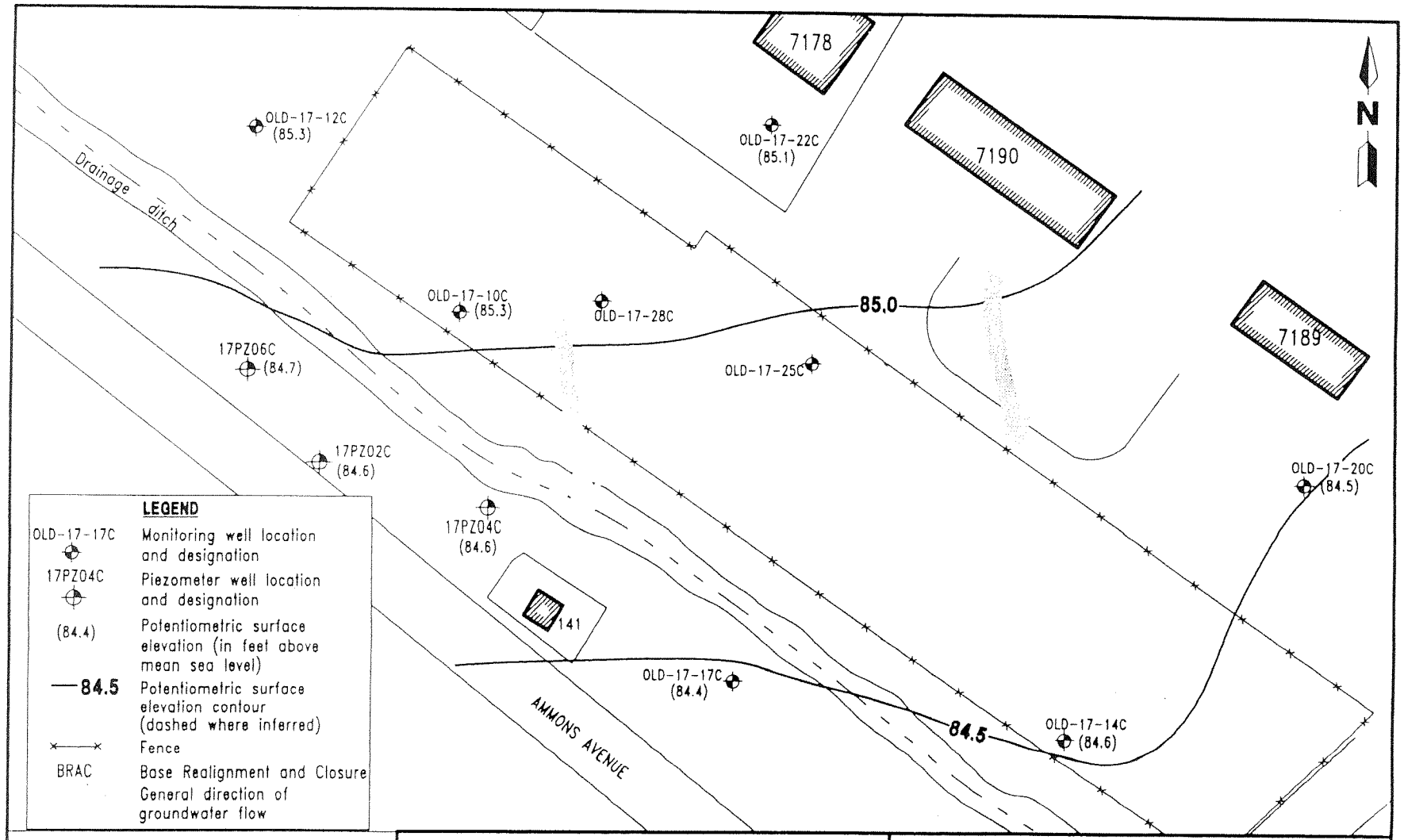


0 40 80
SCALE: 1 INCH = 80 FEET

FIGURE 4-11
POTENTIOMETRIC SURFACE CONTOUR MAP
INTERMEDIATE ZONE

BRAC ENVIRONMENTAL SITE SCREENING REPORT STUDY AREA 17

NAVAL TRAINING CENTER ORLANDO, FLORIDA



0 40 80
SCALE: 1 INCH = 80 FEET

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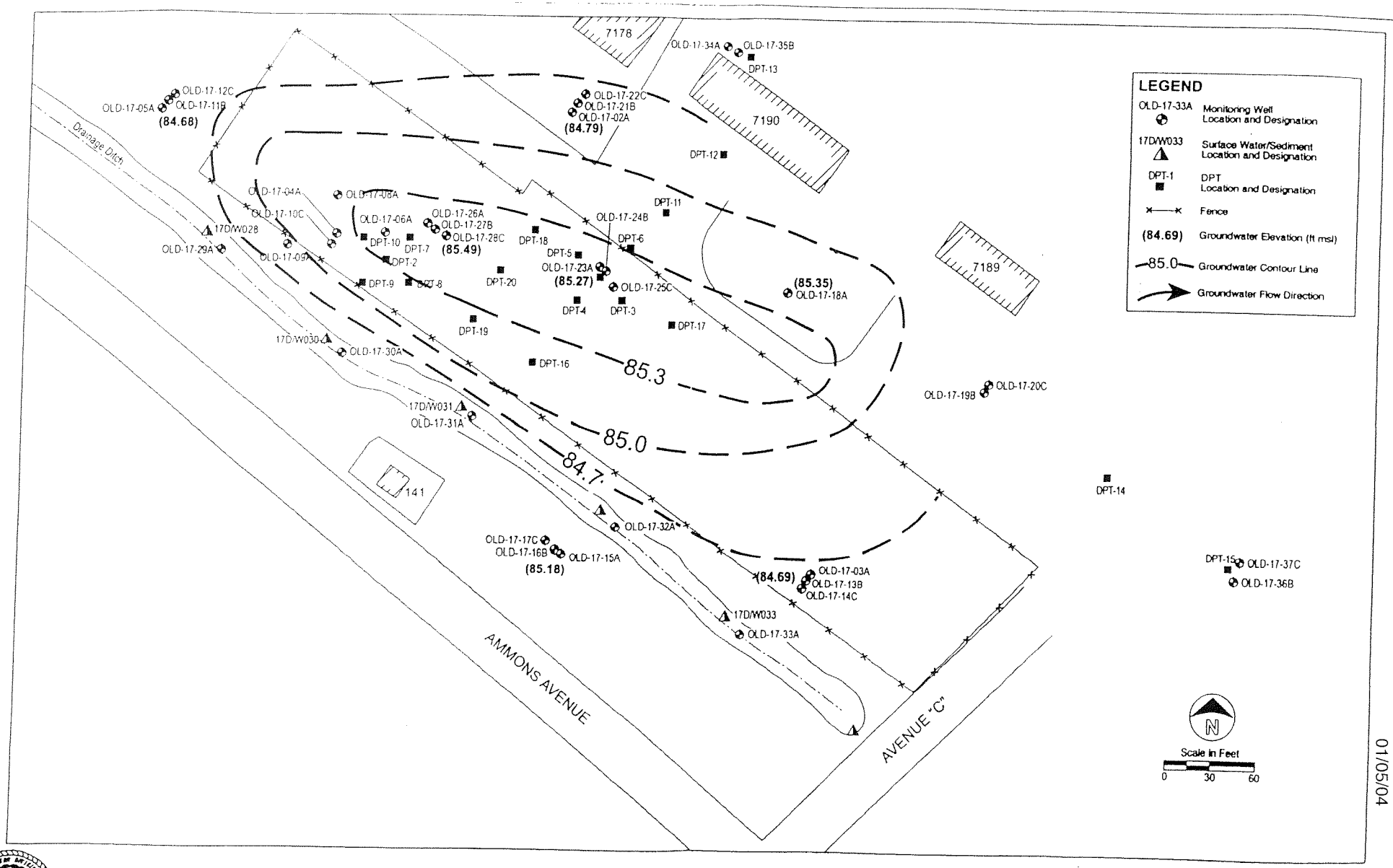
FIGURE 4-12
POTENTIOMETRIC SURFACE CONTOUR MAP
DEEP ZONE

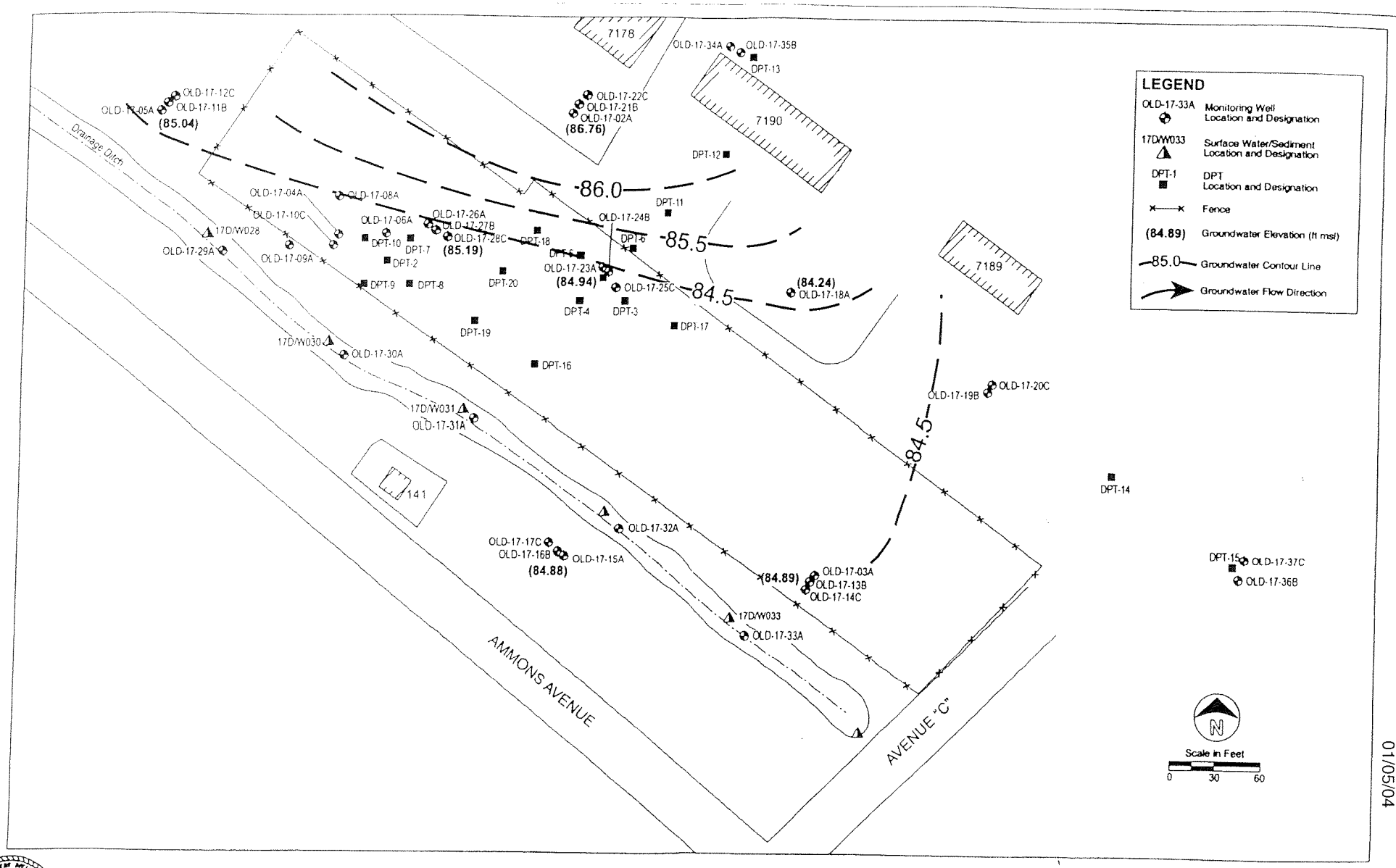
BRAC ENVIRONMENTAL SITE SCREENING REPORT STUDY AREA 17

NAVAL TRAINING CENTER ORLANDO, FLORIDA



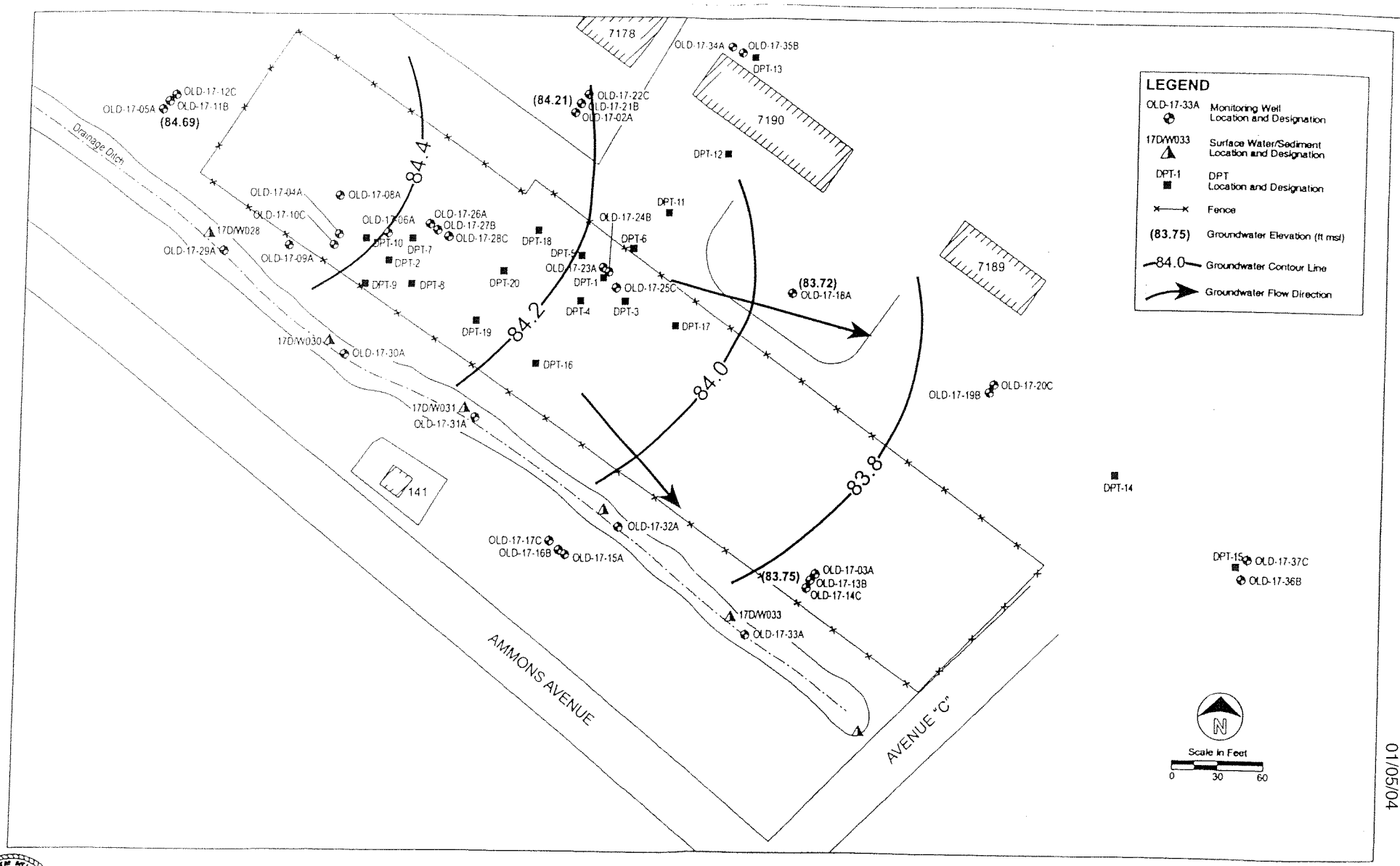
Rev. 1
01/05/04

FIGURE 6
Shallow Groundwater Contour Map, SA17



Rev. 1
01/05/04

FIGURE 7
Intermediate Groundwater Contour Map, SA17
April 28, 2000



Rev. 1
01/05/04

FIGURE 8
Deep Groundwater Contour Map, SA17
April 28, 2000

Table 3-1
Polynuclear Aromatic Hydrocarbon Immunoassay Testing Results

Base Realignment and Closure
Environmental Site Screening Report
Study Area 17
Naval Training Center
Orlando, Florida

Sample Location	Sampling Interval (feet bls)	Immunoassay Results	
		Optical Density	Total PAH Concentration (μg/kg)
17S037	0 to 1	0.32	4,500
17B037	2 to 3	0.47	900
17S038	0 to 1	0.06	30,000
17B038	2 to 3	0.06	30,000
17S039	0 to 1	0.03	60,000
17B039	2 to 3	0.06	30,000
17S040	0 to 1	0.04	45,000
17B040	2 to 3	0.42	1,000
17S041	0 to 1	0.30	4,800
17S042	0 to 1	0.38	1,200
17B042	2 to 3	0.50	500
17S043	0 to 1	0.12	25,000
17B043	2 to 3	0.16	18,000
17S044	0 to 1	0.21	15,000
17B044	2 to 3	0.09	30,000
17S045	0 to 1	0.12	20,000
17B045	2 to 3	0.12	20,000
17S046	0 to 1	0.12	20,000
17B046	2 to 3	0.10	26,000
17S047	0 to 1	0.12	20,000
17B047	2 to 3	0.11	23,000

Notes: Immunological testing methods based on USEPA Methods SW846 and 4035.

bls = below land surface.
PAH = polynuclear aromatic hydrocarbon.
μg/kg = micrograms per kilogram.

Appendix B

Table B-1. Summary of Positive Detections in Surface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background	SCTL for Residential Soil	RBC for Residential Soil		RBC for Industrial Soil		17B00801		17B01801		17B01901		17B02301		17B02301D		17B02401	
Sampling Date							4/26/95		4/25/95		4/26/95		5/26/95		5/26/95		5/26/95	
Feet bls							1		1		0.5-1.5		1		1		1	
Volatile Organics, µg/kg																		
Acetone		770,000	7,800,000	n	200,000,000	n							7	J				
Xylene (total)		290,000	16,000,000	n	1,000,000,000	n					53							
Semivolatile Organics, µg/kg																		
1-Methylnaphthalene		290,000	ND		ND		NA		NA		NA		NA		NA		NA	
2-Methylnaphthalene		1,500,000	3,100,000	n	82,000,000	n					110	J						
Acenaphthene		2,300,000	4,700,000	n	120,000,000	n							150	J				
Acenaphthylene		1,100,000	ND		ND		NA		NA		NA		NA		NA		NA	
Anthracene		19,000,000	23,000,000	n	610,000,000	n												
Benzo(a)anthracene		1,400	880	c	7,800	c							240	J				
Benzo(a)pyrene		100	88	c	780	c												
Benzo(b)fluoranthene		1,400	880	c	7,800	c							180	J				
Benzo(g,h,i)perylene		2,300,000	2,300,000		61,000,000													
Benzo(k)fluoranthene		15,000	8,800	c	78,000	c							140	J				
Butylbenzylphthalate		15,000,000	16,000,000	n	410,000,000	n												
Carbazole		53,000	32,000	c	290,000	c												
Chrysene		140,000	88,000	c	780,000	c							210	J				
Dibenz(a,h)anthracene		100	88	c	780	c												
Dibenzofuran		270,000	310,000	n	82,000,000	n												
Fluoranthene		2,800,000	3,100,000	n	82,000,000	n	130	J	170	J			580					
Fluorene		2,100,000	3,100,000	n	82,000,000	n												
Indeno(1,2,3-cd)pyrene		1,500	880	c	7,800	c												
Naphthalene		1,000,000	3,100,000	n	82,000,000	n								NA				
Phenanthrene		1,900,000	2,300,000	n	61,000,000	n			110	J			290	J				
Pyrene		2,200,000	2,300,000	n	61,000,000	n	140	J	110	J			120	J				
Pesticides, µg/kg																		
4,4'-DDD		4,500	2,700	c	24,000	c												
4,4'-DDE		3,200	1,900	c	17,000	c					5		9	J	8	J	7	J
4,4'-DDT		3,200	1,900	c	17,000	c											12	J
alpha-Chlordane		3,000	490	c	4,400	c							110	DJ	95	D	7	
Dieldrin		70	40	c	360	c							17		18		2	J

Appendix B

Table B-1. Summary of Positive Detections in Surface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background	SCTL for Residential Soil	RBC for Residential Soil		RBC for Industrial Soil		17B00801		17B01801		17B01901		17B02301		17B02301D		17B02401	
Sampling Date							4/26/95		4/25/95		4/26/95		5/26/95		5/26/95		5/26/95	
Feet bls							1		1		0.5-1.5		1		1		1	
Endrin ketone		ND	23,000	n	610,000	n												
gamma-Chlordane		3,000	490	c	4,400	c							120	DJ	100	D	5.8	J
Heptachlor		10	140	c	1,300	c							7.8		8.9			
Inorganics, mg/kg																		
Aluminum	4,890	72,000	78,000	n	1,000,000	n	1,080		5,400	J	538		2,280		2,460		1,040	
Arsenic	1.9	0.8	0.43 /23	c/n	3.8 /610	c/n			0.7	BJ			2.0	J	0.73	B	1.4	B
Barium	21.6	105	5,500	n	140,000	n	2.3	B	6.6	BJ	0.57	B	6.6	B	7.3	B	7.5	B
Beryllium	0.46	120.0	0.15	c	1.3	c			0.08	B			0.02	B	0.02	B	0.1	B
Cadmium	ND	75	39	n	1,000	n											1.3	
Calcium	33,568	ND	1,000,000		1,000,000		745	J	3,200	J	226	J	21,400		19,600		235,000	
Chromium	7.7	290	390	n	10,000	n	1.6	B	5.2	J	0.79	B	5.1		6.2		7.7	
Cobalt	ND	4,700	4,700,000	n	120,000,000	n											0.93	B
Copper	2.6	105	3,100	n	82,000	n	0.7	B			0.46	B	6.1		5	B	9	
Iron	843	23,000	23,000	n	610,000	n	155	J	312	J	800	J	497		477		632	
Lead	21.3	500	400		400		2.1		6.6		0.8		23.6	J	25.4	J	39.7	J
Magnesium	381	ND	460,468		460,468		19.5	B	66.6	J	11.7	B	190	B	179	B	1700	
Manganese	10.8	1,600	1,800	n	47,000	n	1.7	B	2.4	J	0.6	B	7.4		8.4		18.8	
Mercury	0.05	3.7	23	n	610	n	0.0	B	0.1				0.03	B	0.03	B	0.07	
Silver	ND	390	390	n	10,000	n			57.5									
Sodium	ND	ND	1,000,000		1,000,000								9.8	B	10.2	B	75	B
Thallium	ND	ND	6.3	n	160	n					0.7	B						
Vanadium	4.9	15	550	n	14,000	n	0.9	B	2.1	B	1.2	B	3.7	B	3.4	B	15.4	
Zinc	4.6	23,000	23,000	n	610,000	n	11.4		4.0	J	1.7	B	11.1		15.4		20.1	
General chemistry, mg/kg																		
Total Petroleum Hydrocarbons	ND	ND	ND		ND		6		23				110		95		28	

Appendix B

Table B-1. Summary of Positive Detections in Surface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background	SCTL for Residential Soil	RBC for Residential Soil	RBC for Industrial Soil	17B02501	17B03401	17B03501	17B03601	17B05001	17B05301
Sampling Date					5/26/95	5/26/95	5/26/95	5/26/95	11/21/97	11/24/97
Feet bls					1	1	1	1	1-2	1-2
Volatile Organics, µg/kg										
Acetone		770,000	7,800,000 n	200,000,000 n	9 J		13 J	8 J	NA	NA
Xylene (total)		290,000	16,000,000 n	1,000,000,000 n					NA	NA
Semivolatile Organics, µg/kg										
1-Methylnaphthalene		290,000	ND	ND	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene		1,500,000	3,100,000 n	82,000,000 n			140 J			
Acenaphthene		2,300,000	4,700,000 n	120,000,000 n			1,500		42	
Acenaphthylene		1,100,000	ND	ND	NA	NA	NA	NA	NA	NA
Anthracene		19,000,000	23,000,000 n	610,000,000 n			2,600	90 J		
Benzo(a)anthracene		1,400	880 c	7,800 c			**9,000** D	340 J	27	12
Benzo(a)pyrene		100	88 c	780 c			**8,100** D	**1,300** J	26	23
Benzo(b)fluoranthene		1,400	880 c	7,800 c			**7,200** D	320 J	54	42
Benzo(g,h,i)perylene		2,300,000	2,300,000	61,000,000			6,400 D	220 J	56	44
Benzo(k)fluoranthene		15,000	8,800 c	78,000 c			2,400	250 J	13 PF	18
Butylbenzylphthalate		15,000,000	16,000,000 n	410,000,000 n				460	NA	NA
Carbazole		53,000	32,000 c	290,000 c			1,700			
Chrysene		140,000	88,000 c	780,000 c			9,300 D	380	42	22
Dibenz(a,h)anthracene		100	88 c	780 c			**2,500**	**98** J		10 PF
Dibenzofuran		270,000	310,000 n	82,000,000 n			630			
Fluoranthene		2,800,000	3,100,000 n	82,000,000 n			13,000 D	710	64	22
Fluorene		2,100,000	3,100,000 n	82,000,000 n			1,400			
Indeno(1,2,3-cd)pyrene		1,500	880 c	7,800 c			**5,900** D	170 J		20 PF
Naphthalene		1,000,000	3,100,000 n	82,000,000 n			210 J		39	
Phenanthrene		1,900,000	2,300,000 n	61,000,000 n			11,000 D	440		
Pyrene		2,200,000	2,300,000 n	61,000,000 n			16,000 D	640	74	24
Pesticides, µg/kg										
4,4'-DDD		4,500	2,700 c	24,000 c			2,600 C	8	NA	NA
4,4'-DDE		3,200	1,900 c	17,000 c			430	6 J	NA	NA
4,4'-DDT		3,200	1,900 c	17,000 c			1,700 C	13	NA	NA
alpha-Chlordane		3,000	490 c	4,400 c			260	4 J	NA	NA
Dieldrin		70	40 c	360 c				5 J	NA	NA

Appendix B

Table B-1. Summary of Positive Detections in Surface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background		SCTL for Residential Soil		RBC for Residential Soil		RBC for Industrial Soil		17B02501		17B03401		17B03501		17B03601		17B05001		17B05301	
Sampling Date									5/26/95		5/26/95		5/26/95		5/26/95		11/21/97		11/24/97	
Feet bls									1		1		1		1		1-2		1-2	
Endrin ketone			ND		23,000	n	610,000	n									NA		NA	
gamma-Chlordane			3,000		490	c	4,400	c					320		5		NA		NA	
Heptachlor			10		140	c	1,300	c									NA		NA	
Inorganics, mg/kg																				
Aluminum	4 890		72,000		78,000	n	1,000,000	n	1,550	J	1,200	J	1,580	J	1,980	J	NA		NA	
Arsenic	1 9		0 8		0 43 /23	c/n	3.8 /610	c/			0.53	B	0.68	B	0.46	B	NA		NA	
Barium	21 6		105		5,500	n	140,000	n	3.3	B	5.2	B	16.3	B	6.1	B	NA		NA	
Beryllium	0 46		120 0		0 15	c	1.3	c					0.15	B			NA		NA	
Cadmium	ND		75		39	n	1,000	n									NA		NA	
Calcium	33,568		ND		1,000,000		1,000,000		629	B	3,910		88,200		5,270		NA		NA	
Chromium	7 7		290		390	n	10,000	n	1.8	B	1.6	B	22.7		2.8		NA		NA	
Cobalt	ND		4,700		4,700,000	n	120,000,000	n									NA		NA	
Copper	2 6		105		3,100	n	82,000	n					7.9				NA		NA	
Iron	843		23,000		23,000	n	610,000	n	236	J	332	J	10,400	J	563	J	NA		NA	
Lead	21.3		500		400		400		0.9	J	3.6	J	50.2	J	16.5	J	NA		NA	
Magnesium	381		ND		460,468		460,468		51.4	B	96.6	B	1,020	B	80.6	B	NA		NA	
Manganese	10.8		1,600		1,800	n	47,000	n	1.1	B	5.5		47.7		2.6	B	NA		NA	
Mercury	0.05		3.7		23	n	610	n					0.08		0.03	B	NA		NA	
Silver	ND		390		390	n	10,000	n									NA		NA	
Sodium	ND		ND		1,000,000		1,000,000						47.7	B			NA		NA	
Thallium	ND		ND		6.3	n	160	n									NA		NA	
Vanadium	4 9		15		550	n	14,000	n	2.5	B	3.1	B	8.4	B	4.8	B	NA		NA	
Zinc	4.6		23,000		23,000	n	610,000	n	0.89	B	2.7	B	32.7		6.2		NA		NA	
General chemistry, mg/kg																				
Total Petroleum Hydrocarbons	ND		ND		ND		ND		29		58		99		9		NA		NA	

Appendix B

Table B-1 Summary of Positive Detections in Surface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background	SCTL for Residential Soil	RBC for Residential Soil		RBC for Industrial Soil		17B05401		17S04801		17S04901		17S05001		17S05001D		17S05101	
Sampling Date							11/24/97		11/21/97		11/21/97		11/21/97		11/21/97		11/21/97	
Feet bls							1-2		0-1		0-1		0-1		0-1		0-1	
Volatile Organics, µg/kg																		
Acetone		770,000	7,800,000	n	200,000,000	n	NA		NA		NA		NA		NA		NA	
Xylene (total)		290,000	16,000,000	n	1,000,000,000	n	NA		NA		NA		NA		NA		NA	
Semivolatile Organics, µg/kg																		
1-Methylnaphthalene		290,000	ND		ND		NA		NA		NA		NA		NA		NA	
2-Methylnaphthalene		1,500,000	3,100,000	n	82,000,000	n												
Acenaphthene		2,300,000	4,700,000	n	120,000,000	n					38				3,000		190,000	
Acenaphthylene		1,100,000	ND		ND		NA		NA		NA		NA		NA		NA	
Anthracene		19,000,000	23,000,000	n	610,000,000	n												
Benzo(a)anthracene		1,400	880	c	7,800	c	32				4	PF	1,700		980		57,000	
Benzo(a)pyrene		100	88	c	780	c	29				8		1,700		1,100		48,000	
Benzo(b)fluoranthene		1,400	880	c	7,800	c	34				10		1,700		1,200		47,000	
Benzo(g,h,i)perylene		2,300,000	2,300,000		61,000,000		43				11		1,000		1,000		24,000	
Benzo(k)fluoranthene		15,000	8,800	c	78,000	c	15				5		820		510		21,000	
Butylbenzylphthalate		15,000,000	16,000,000	n	410,000,000	n	NA		NA		NA		NA		NA		NA	
Carbazole		53,000	32,000	c	290,000	c												
Chrysene		140,000	88,000	c	780,000	c	29				12		1,600		930		50,000	
Dibenz(a,h)anthracene		100	88	c	780	c							270	PF			7,900	PF
Dibenzofuran		270,000	310,000	n	82,000,000	n												
Fluoranthene		2,800,000	3,100,000	n	82,000,000	n	35				17		3,700		2,100		160,000	
Fluorene		2,100,000	3,100,000	n	82,000,000	n												
Indeno(1,2,3-cd)pyrene		1,500	880	c	7,800	c							280	PF				
Naphthalene		1,000,000	3,100,000	n	82,000,000	n												
Phenanthrene		1,900,000	2,300,000	n	61,000,000	n							3,300	PF			120,000	
Pyrene		2,200,000	2,300,000	n	61,000,000	n	52		56		23		3,900		1,800		100,000	
Pesticides, µg/kg																		
4,4'-DDD		4,500	2,700	c	24,000	c	NA		NA		NA		NA		NA		NA	
4,4'-DDE		3,200	1,900	c	17,000	c	NA		NA		NA		NA		NA		NA	
4,4'-DDT		3,200	1,900	c	17,000	c	NA		NA		NA		NA		NA		NA	
alpha-Chlordane		3,000	490	c	4,400	c	NA		NA		NA		NA		NA		NA	
Dieldrin		70	40	c	360	c	NA		NA		NA		NA		NA		NA	

Appendix B

Table B-1. Summary of Positive Detections in Surface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background	SCTL for Residential Soil	RBC for Residential Soil		RBC for Industrial Soil		17B05401	17S04801	17S04901	17S05001	17S05001D	17S05101
Sampling Date							11/24/97	11/21/97	11/21/97	11/21/97	11/21/97	11/21/97
Feet bls							1-2	0-1	0-1	0-1	0-1	0-1
Endrin ketone		ND	23,000	n	610,000	n	NA	NA	NA	NA	NA	NA
gamma-Chlordane		3,000	490	c	4,400	c	NA	NA	NA	NA	NA	NA
Heptachlor		10	140	c	1,300	c	NA	NA	NA	NA	NA	NA
Inorganics, mg/kg												
Aluminum	4,890	72,000	78,000	n	1,000,000	n	NA	NA	NA	NA	NA	NA
Arsenic	1.9	0.8	0.43 /23	c/n	3.8 /610	c/	NA	NA	NA	NA	NA	NA
Barium	21.6	105	5,500	n	140,000	n	NA	NA	NA	NA	NA	NA
Beryllium	0.46	120.0	0.15	c	1.3	c	NA	NA	NA	NA	NA	NA
Cadmium	ND	75	39	n	1,000	n	NA	NA	NA	NA	NA	NA
Calcium	33,568	ND	1,000,000		1,000,000		NA	NA	NA	NA	NA	NA
Chromium	7.7	290	390	n	10,000	n	NA	NA	NA	NA	NA	NA
Cobalt	ND	4,700	4,700,000	n	120,000,000	n	NA	NA	NA	NA	NA	NA
Copper	2.6	105	3,100	n	82,000	n	NA	NA	NA	NA	NA	NA
Iron	843	23,000	23,000	n	610,000	n	NA	NA	NA	NA	NA	NA
Lead	21.3	500	400		400		NA	NA	NA	NA	NA	NA
Magnesium	381	ND	460,468		460,468		NA	NA	NA	NA	NA	NA
Manganese	10.8	1,600	1,800	n	47,000	n	NA	NA	NA	NA	NA	NA
Mercury	0.05	3.7	23	n	610	n	NA	NA	NA	NA	NA	NA
Silver	ND	390	390	n	10,000	n	NA	NA	NA	NA	NA	NA
Sodium	ND	ND	1,000,000		1,000,000		NA	NA	NA	NA	NA	NA
Thallium	ND	ND	6.3	n	160	n	NA	NA	NA	NA	NA	NA
Vanadium	4.9	15	550	n	14,000	n	NA	NA	NA	NA	NA	NA
Zinc	4.6	23,000	23,000	n	610,000	n	NA	NA	NA	NA	NA	NA
General chemistry, mg/kg												
Total Petroleum Hydrocarbons	ND	ND	ND		ND		NA	NA	NA	NA	NA	NA

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Table B-1. Summary of Positive Detections in Surface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background	SCTL for Residential Soil	RBC for Residential Soil	RBC for Industrial Soil	17S05201	17S05301	17S05401	17S05601	17S05701	17S05801
Sampling Date					11/21/97	11/24/97	11/24/97	11/17/98	11/17/98	11/17/98
Feet bls					0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organics, µg/kg										
Acetone		770,000	7,800,000 n	200,000,000 n	NA	NA	NA	NA	NA	NA
Xylene (total)		290,000	16,000,000 n	1,000,000,000 n	NA	NA	NA	NA	NA	NA
Semivolatile Organics, µg/kg										
1-Methylnaphthalene		290,000	ND	ND	NA	NA	NA			
2-Methylnaphthalene		1,500,000	3,100,000 n	82,000,000 n						
Acenaphthene		2,300,000	4,700,000 n	120,000,000 n	1,200	260	770			
Acenaphthylene		1,100,000	ND	ND	NA	NA	NA			
Anthracene		19,000,000	23,000,000 n	610,000,000 n						
Benzo(a)anthracene		1,400	880 c	7,800 c	410	83	270	330	2,200	14
Benzo(a)pyrene		100	88 c	780 c	420	120	62 PF	430	2,600	55
Benzo(b)fluoranthene		1,400	880 c	7,800 c	500	140	270	430	2,200	24
Benzo(g,h,i)perylene		2,300,000	2,300,000	61,000,000	400	110		330	1,600	36
Benzo(k)fluoranthene		15,000	8,800 c	78,000 c	240	57	67 PF	220	1,200	17
Butylbenzylphthalate		15,000,000	16,000,000 n	410,000,000 n	NA	NA	NA	NA	NA	NA
Carbazole		53,000	32,000 c	290,000 c				NA	NA	NA
Chrysene		140,000	88,000 c	780,000 c	390	100	250	340	2,100	16
Dibenz(a,h)anthracene		100	88 c	780 c	54 PF	26 PF	57 PF			
Dibenzofuran		270,000	310,000 n	82,000,000 n				NA	NA	NA
Fluoranthene		2,800,000	3,100,000 n	82,000,000 n	900	210	530	780	6,000	15
Fluorene		2,100,000	3,100,000 n	82,000,000 n						
Indeno(1,2,3-cd)pyrene		1,500	880 c	7,800 c	360	58	35 PF	290		
Naphthalene		1,000,000	3,100,000 n	82,000,000 n		98				
Phenanthrene		1,900,000	2,300,000 n	61,000,000 n			390			
Pyrene		2,200,000	2,300,000 n	61,000,000 n	630	160	630	550	4,300	17
Pesticides, µg/kg										
4,4'-DDD		4,500	2,700 c	24,000 c	NA	NA	NA	NA	NA	NA
4,4'-DDE		3,200	1,900 c	17,000 c	NA	NA	NA	NA	NA	NA
4,4'-DDT		3,200	1,900 c	17,000 c	NA	NA	NA	NA	NA	NA
alpha-Chlordane		3,000	490 c	4,400 c	NA	NA	NA	NA	NA	NA
Dieldrin		70	40 c	360 c	NA	NA	NA	NA	NA	NA

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Table B-1. Summary of Positive Detections in Surface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background	SCTL for Residential Soil	RBC for Residential Soil		RBC for Industrial Soil		17S05201	17S05301	17S05401	17S05601	17S05701	17S05801
Sampling Date							11/21/97	11/24/97	11/24/97	11/17/98	11/17/98	11/17/98
Feet bls							0-1	0-1	0-1	0-1	0-1	0-1
Endrin ketone		ND	23,000	n	610,000	n	NA	NA	NA	NA	NA	NA
gamma-Chlordane		3,000	490	c	4,400	c	NA	NA	NA	NA	NA	NA
Heptachlor		10	140	c	1,300	c	NA	NA	NA	NA	NA	NA
Inorganics, mg/kg												
Aluminum	4,890	72,000	78,000	n	1,000,000	n	NA	NA	NA	NA	NA	NA
Arsenic	1.9	0.8	0.43 /23	c/n	3.8 /610	c/	NA	NA	NA	NA	NA	NA
Barium	21.6	105	5,500	n	140,000	n	NA	NA	NA	NA	NA	NA
Beryllium	0.46	120.0	0.15	c	1.3	c	NA	NA	NA	NA	NA	NA
Cadmium	ND	75	39	n	1,000	n	NA	NA	NA	NA	NA	NA
Calcium	33,568	ND	1,000,000		1,000,000		NA	NA	NA	NA	NA	NA
Chromium	7.7	290	390	n	10,000	n	NA	NA	NA	NA	NA	NA
Cobalt	ND	4,700	4,700,000	n	120,000,000	n	NA	NA	NA	NA	NA	NA
Copper	2.6	105	3,100	n	82,000	n	NA	NA	NA	NA	NA	NA
Iron	843	23,000	23,000	n	610,000	n	NA	NA	NA	NA	NA	NA
Lead	21.3	500	400		400		NA	NA	NA	NA	NA	NA
Magnesium	381	ND	460,468		460,468		NA	NA	NA	NA	NA	NA
Manganese	10.8	1,600	1,800	n	47,000	n	NA	NA	NA	NA	NA	NA
Mercury	0.05	3.7	23	n	610	n	NA	NA	NA	NA	NA	NA
Silver	ND	390	390	n	10,000	n	NA	NA	NA	NA	NA	NA
Sodium	ND	ND	1,000,000		1,000,000		NA	NA	NA	NA	NA	NA
Thallium	ND	ND	6.3	n	160	n	NA	NA	NA	NA	NA	NA
Vanadium	4.9	15	550	n	14,000	n	NA	NA	NA	NA	NA	NA
Zinc	4.6	23,000	23,000	n	610,000	n	NA	NA	NA	NA	NA	NA
General chemistry, mg/kg												
Total Petroleum Hydrocarbons	ND	ND	ND		ND		NA	NA	NA	NA	NA	NA

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Table B-1. Summary of Positive Detections in Surface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background	SCTL for Residential Soil	RBC for Residential Soil		RBC for Industrial Soil		17S05901	17S06001	17S06101	17S06201	17S06301	17S06401
Sampling Date							11/17/98	11/17/98	11/17/98	11/17/98	11/17/98	11/17/98
Feet bls							0-1	0-1	0-1	0-1	0-1	0-1
Volatile Organics, µg/kg												
Acetone		770,000	7,800,000	n	200,000,000	n	NA	NA	NA	NA	NA	NA
Xylene (total)		290,000	16,000,000	n	1,000,000,000	n	NA	NA	NA	NA	NA	NA
Semivolatile Organics, µg/kg												
1-Methylnaphthalene		290,000	ND		ND							
2-Methylnaphthalene		1,500,000	3,100,000	n	82,000,000	n						
Acenaphthene		2,300,000	4,700,000	n	120,000,000	n						
Acenaphthylene		1,100,000	ND		ND							
Anthracene		19,000,000	23,000,000	n	610,000,000	n						
Benzo(a)anthracene		1,400	880	c	7,800	c	210		**10,000**	**3,000**	**16,000**	**6,200**
Benzo(a)pyrene		100	88	c	780	c	**580**	28	**14,000**	**4,000**	**20,000**	**6,600**
Benzo(b)fluoranthene		1,400	880	c	7,800	c	610	17	**12,000**	**3,700**	**20,000**	**7,400**
Benzo(g,h,i)perylene		2,300,000	2,300,000		61,000,000		610	15	8,700	2,700	13,000	4,100
Benzo(k)fluoranthene		15,000	8,800	c	78,000	c	300	7	6,100	1,900	9,500	**3,400**
Butylbenzylphthalate		15,000,000	16,000,000	n	410,000,000	n	NA	NA	NA	NA	NA	NA
Carbazole		53,000	32,000	c	290,000	c	NA	NA	NA	NA	NA	NA
Chrysene		140,000	88,000	c	780,000	c	240	8	11,000	3,100	17,000	6,700
Dibenz(a,h)anthracene		100	88	c	780	c						
Dibenzofuran		270,000	310,000	n	82,000,000	n	NA	NA	NA	NA	NA	NA
Fluoranthene		2,800,000	3,100,000	n	82,000,000	n	230		27,000	7,400	46,000	19,000
Fluorene		2,100,000	3,100,000	n	82,000,000	n						
Indeno(1,2,3-cd)pyrene		1,500	880	c	7,800	c	570		**7,700**		**12,000**	**4,100**
Naphthalene		1,000,000	3,100,000	n	82,000,000	n						
Phenanthrene		1,900,000	2,300,000	n	61,000,000	n						
Pyrene		2,200,000	2,300,000	n	61,000,000	n	370	13	19,000	5,100	29,000	12,000
Pesticides, µg/kg												
4,4'-DDD		4,500	2,700	c	24,000	c	NA	NA	NA	NA	NA	NA
4,4'-DDE		3,200	1,900	c	17,000	c	NA	NA	NA	NA	NA	NA
4,4'-DDT		3,200	1,900	c	17,000	c	NA	NA	NA	NA	NA	NA
alpha-Chlordane		3,000	490	c	4,400	c	NA	NA	NA	NA	NA	NA
Dieldrin		70	40	c	360	c	NA	NA	NA	NA	NA	NA

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Table B-1. Summary of Positive Detections in Surface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background	SCTL for Residential Soil	RBC for Residential Soil		RBC for Industrial Soil		17S05901	17S06001	17S06101	17S06201	17S06301	17S06401
Sampling Date							11/17/98	11/17/98	11/17/98	11/17/98	11/17/98	11/17/98
Feet bls							0-1	0-1	0-1	0-1	0-1	0-1
Endrin ketone		ND	23,000	n	610,000	n	NA	NA	NA	NA	NA	NA
gamma-Chlordane		3,000	490	c	4,400	c	NA	NA	NA	NA	NA	NA
Heptachlor		10	140	c	1,300	c	NA	NA	NA	NA	NA	NA
Inorganics, mg/kg												
Aluminum	4,890	72,000	78,000	n	1,000,000	n	NA	NA	NA	NA	NA	NA
Arsenic	1.9	0.8	0.43 /23	c/n	3.8 /610	c/	NA	NA	NA	NA	NA	NA
Barium	21.6	105	5,500	n	140,000	n	NA	NA	NA	NA	NA	NA
Beryllium	0.46	120.0	0.15	c	1.3	c	NA	NA	NA	NA	NA	NA
Cadmium	ND	75	39	n	1,000	n	NA	NA	NA	NA	NA	NA
Calcium	33,568	ND	1,000,000		1,000,000		NA	NA	NA	NA	NA	NA
Chromium	7.7	290	390	n	10,000	n	NA	NA	NA	NA	NA	NA
Cobalt	ND	4,700	4,700,000	n	120,000,000	n	NA	NA	NA	NA	NA	NA
Copper	2.6	105	3,100	n	82,000	n	NA	NA	NA	NA	NA	NA
Iron	843	23,000	23,000	n	610,000	n	NA	NA	NA	NA	NA	NA
Lead	21.3	500	400		400		NA	NA	NA	NA	NA	NA
Magnesium	381	ND	460,468		460,468		NA	NA	NA	NA	NA	NA
Manganese	10.8	1,600	1,800	n	47,000	n	NA	NA	NA	NA	NA	NA
Mercury	0.05	3.7	23	n	610	n	NA	NA	NA	NA	NA	NA
Silver	ND	390	390	n	10,000	n	NA	NA	NA	NA	NA	NA
Sodium	ND	ND	1,000,000		1,000,000		NA	NA	NA	NA	NA	NA
Thallium	ND	ND	6.3	n	160	n	NA	NA	NA	NA	NA	NA
Vanadium	4.9	15	550	n	14,000	n	NA	NA	NA	NA	NA	NA
Zinc	4.6	23,000	23,000	n	610,000	n	NA	NA	NA	NA	NA	NA
General chemistry, mg/kg												
Total Petroleum Hydrocarbons	ND	ND	ND		ND		NA	NA	NA	NA	NA	NA

Appendix B

Table B-1. Summary of Positive Detections in Surface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background	SCTL for Residential Soil	RBC for Residential Soil		RBC for Industrial Soil		17S06401D	17S06501	17S06601
Sampling Date							11/17/98	11/17/98	11/17/98
Feet bls							0-1	0-1	0-1
Volatile Organics, µg/kg									
Acetone		770,000	7,800,000	n	200,000,000	n	NA	NA	NA
Xylene (total)		290,000	16,000,000	n	1,000,000,000	n	NA	NA	NA
Semivolatile Organics, µg/kg									
1-Methylnaphthalene		290,000	ND		ND				
2-Methylnaphthalene		1,500,000	3,100,000	n	82,000,000	n			
Acenaphthene		2,300,000	4,700,000	n	120,000,000	n			
Acenaphthylene		1,100,000	ND		ND				
Anthracene		19,000,000	23,000,000	n	610,000,000	n			
Benzo(a)anthracene		1,400	880	c	7,800	c	**34,000**		
Benzo(a)pyrene		100	88	c	780	c	**29,000**		13
Benzo(b)fluoranthene		1,400	880	c	7,800	c	**32,000**		8
Benzo(g,h,i)perylene		2,300,000	2,300,000		61,000,000		18,000		
Benzo(k)fluoranthene		15,000	8,800	c	78,000	c	**16,000**		5
Butylbenzylphthalate		15,000,000	16,000,000	n	410,000,000	n	NA	NA	NA
Carbazole		53,000	32,000	c	290,000	c	NA	NA	NA
Chrysene		140,000	88,000	c	780,000	c	33,000		
Dibenz(a,h)anthracene		100	88	c	780	c			
Dibenzofuran		270,000	310,000	n	82,000,000	n	NA	NA	NA
Fluoranthene		2,800,000	3,100,000	n	82,000,000	n	100,000		
Fluorene		2,100,000	3,100,000	n	82,000,000	n			
Indeno(1,2,3-cd)pyrene		1,500	880	c	7,800	c	**17,000**		7
Naphthalene		1,000,000	3,100,000	n	82,000,000	n			
Phenanthrene		1,900,000	2,300,000	n	61,000,000	n			
Pyrene		2,200,000	2,300,000	n	61,000,000	n	68,000		7
Pesticides, µg/kg									
4,4'-DDD		4,500	2,700	c	24,000	c	NA	NA	NA
4,4'-DDE		3,200	1,900	c	17,000	c	NA	NA	NA
4,4'-DDT		3,200	1,900	c	17,000	c	NA	NA	NA
alpha-Chlordane		3,000	490	c	4,400	c	NA	NA	NA
Dieldrin		70	40	c	360	c	NA	NA	NA

Appendix B

Table B-1 Summary of Positive Detections in Surface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background		SCTL for Residential Soil		RBC for Residential Soil		RBC for Industrial Soil		17S06401D		17S06501		17S06601	
Sampling Date									11/17/98		11/17/98		11/17/98	
Feet bls									0-1		0-1		0-1	
Endrin ketone			ND		23,000	n	610,000	n	NA		NA		NA	
gamma-Chlordane			3,000		490	c	4,400	c	NA		NA		NA	
Heptachlor			10		140	c	1,300	c	NA		NA		NA	
Inorganics, mg/kg														
Aluminum	4,890		72,000		78,000	n	1,000,000	n	NA		NA		NA	
Arsenic	1.9		0.8		0.43 /23	c/n	3.8 /610	c/	NA		NA		NA	
Barium	21.6		105		5,500	n	140,000	n	NA		NA		NA	
Beryllium	0.46		120.0		0.15	c	1.3	c	NA		NA		NA	
Cadmium	ND		75		39	n	1,000	n	NA		NA		NA	
Calcium	33,568		ND		1,000,000		1,000,000		NA		NA		NA	
Chromium	7.7		290		390	n	10,000	n	NA		NA		NA	
Cobalt	ND		4,700		4,700,000	n	120,000,000	n	NA		NA		NA	
Copper	2.6		105		3,100	n	82,000	n	NA		NA		NA	
Iron	843		23,000		23,000	n	610,000	n	NA		NA		NA	
Lead	21.3		500		400		400		NA		NA		NA	
Magnesium	381		ND		460,468		460,468		NA		NA		NA	
Manganese	10.8		1,600		1,800	n	47,000	n	NA		NA		NA	
Mercury	0.05		3.7		23	n	610	n	NA		NA		NA	
Silver	ND		390		390	n	10,000	n	NA		NA		NA	
Sodium	ND		ND		1,000,000		1,000,000		NA		NA		NA	
Thallium	ND		ND		6.3	n	160	n	NA		NA		NA	
Vanadium	4.9		15		550	n	14,000	n	NA		NA		NA	
Zinc	4.6		23,000		23,000	n	610,000	n	NA		NA		NA	
General chemistry, mg/kg														
Total Petroleum Hydrocarbons	ND		ND		ND		ND		NA		NA		NA	

Appendix B

Table B-1. Notes to Summary of Positive Detections in Surface Soil Analytical Results
Study Area 17

Naval Training Center, Orlando
Orlando, FL

NOTES:

The background screening value is twice the average of detected concentrations for inorganic analytes.

SCTL = Florida Department of Environmental Protection, Soil Cleanup Target Levels, Chapter 62-785 FAC, April 30, 1998
Values indicated are for direct exposure scenario Value for chromium is for chromium (IV)
Value for mercury is for inorganic mercury

RBC = Risk-Based Concentration Table, USEPA Region III, May 1996, R.L. Smith. RBC for chromium is based on chromium VI. RBC for lead is not available, value is Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites (OSWER directive 9355-4-12). For essential nutrients (calcium, magnesium, sodium) screening values were derived based on recommended daily allowances.

RBC for benzo(g,h,i)perylene and phenanthrene are not available, value is based on pyrene.

µg/kg = micrograms per DDE = dichlorodiphenyldichloroethene
mg/kg = milligrams per DDT = dichlorodiphenyltrichloroethane
n = noncarcinogenic eff DDD = dichlorodiphenyldichloroethane
c = carcinogenic effects
ND = Not determined
bls = below land surface

B = Reported concentration is between the instrument detection limit and Contract Required Detection Limit.
J = Reported concentration is an estimated quantity
D = Reported concentrations if from a dilution/reanalysis.
C = Confirmed by gas chromatography/mass spectroscopy.
PF = This laboratory qualifier indicates that the reported result is uncertain since the percent difference between the original and confirmation analysis is greater than 50%.
FDEP = Florida Department of Environmental Protection.
OSWER = Office of Solid Waste and Emergency Response
USEPA = U.S. Environmental Protection Agency
All inorganics results expressed in milligrams per kilogram (mg/kg) soil dry weight, organics in micrograms per kilogram (µg/kg) soil dry weight.

Appendix B

Table B-2. Summary of Positive Detections in Subsurface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background	SCG	RBC for Residential Soil	RBC for Industrial Soil	17B00101	17B00201	17B00301	17B00401	17B00502	17B00701	17B00901
Sampling Date					5/15/95	5/14/95	5/16/95	5/16/95	5/15/95	4/26/95	4/26/95
Feet bls					4	4	4	4	4	5	3.5
Volatile Organics, µg/kg											
2-Butanone		NA	47,000,000 n	1,000,000,000 n			3 J				
Acetone		NA	7,800,000 n	200,000,000 n	28		23		41	12 J	
Toluene		NA	16,000,000 n	410,000,000 n							
Xylene (total)		NA	16,000,000 n	1,000,000,000 n							
Semivolatile Organics, µg/kg											
2-Methylnaphthalene		NA	3,100,000 n	82,000,000 n							
Acenaphthene		NA	4,700,000 n	120,000,000 n							
Anthracene		NA	23,000,000 n	610,000,000 n							
Benzo(a)anthracene		NA	880 c	7,800 c							
Benzo(a)pyrene		NA	88 c	780 c							
Benzo(b)fluoranthene		NA	880 c	7,800 c							
Benzo(g,h,i)perylene		NA	2,300,000	61,000,000							
Benzo(k)fluoranthene		NA	8,800 c	78,000 c							
Butylbenzylphthalate		NA	16,000,000 n	410,000,000 n							
Carbazole		NA	32,000 c	290,000 c							
Chrysene		NA	88,000 c	780,000 c							
Dibenz(a,h)anthracene		NA	88 c	780 c							
Dibenzofuran		NA	310,000 n	82,000,000 n							
Fluoranthene		NA	3,100,000 n	82,000,000 n							
Fluorene		NA	3,100,000 n	82,000,000 n							
Indeno(1,2,3-cd)pyrene		NA	880 c	7,800 c							
Naphthalene		NA	3,100,000 n	82,000,000 n							
Phenanthrene		NA	2,300,000 n	61,000,000 n							
Pyrene		NA	2,300,000 n	61,000,000 n							
Pesticides, µg/kg											
4,4'-DDD		NA	2,700 c	24,000 c							
4,4'-DDE		NA	1,900 c	17,000 c						7.7 J	
4,4'-DDT		NA	1,900 c	17,000 c			2.9 J	1.6 J			
alpha-Chlordane		NA	490 c	4,400 c			1 J				
Dieldrin		NA	40	360						15	

Appendix B

Table B-2. Summary of Positive Detections in Subsurface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background	SCG	RBC for Residential Soil	RBC for Industrial Soil	17B00101	17B00201	17B00301	17B00401	17B00502	17B00701	17B00901
Sampling Date					5/15/95	5/14/95	5/16/95	5/16/95	5/15/95	4/26/95	4/26/95
Feet bls					4	4	4	4	4	5	3.5
Endrin ketone		NA	23,000	610,000						7.3 J	
gamma-Chlordane		NA	490 c	4,400 c			1.2 J				
Heptachlor		NA	140	1,300							
Inorganics, mg/kg											
Aluminum	11,130	NA	78,000 n	1,000,000 n	6,930	14,800	1,040	509	313	1,390	17,900
Arsenic	2.0	NA	0.43 /23 c/n	3.8 /610 c/n	0.69 B	0.95 J					
Barium	11.3	NA	5,500	140,000	7.2 J	16.7 J	4 J	2.7 J	2.7 J	3.9 B	17.6 B
Beryllium	0.18	NA	0.15 c	1.3 c	0.03 J	0.12 B					
Cadmium	ND	NA	39 n	1,000 n							
Calcium	321	NA	1,000,000	1,000,000	171 B	816 B	678 B	3,440	33.4 B	306 J	1,320 J
Chromium	11.3	NA	390 n	10,000 n	6	12.6	2.2 B	1.6 B		2.6	18.2
Cobalt	1.3	NA	4,700,000 n	120,000,000 n		0.97 B				0.81 B	1.7 B
Copper	2.8	NA	3,100 n	82,000 n						0.85 B	
Iron	829	NA	23,000 n	610,000 n	217	666	197	95.6	25.9	1,220 J	1,180 J
Lead	7.0	NA	400	400	4.9 J	11.2 J	2 J	2.1 J	1.8 J	1.8	4.1
Magnesium	38.9	NA	460,468	460,468	41.5 B	132 B	15.8 B	33.1 B		32.6 B	252 B
Manganese	0.69	NA	1800 n	47,000 n	0.55 B	1.6 B	1.2 B	1 B	0.35 B	0.81 B	3 B
Mercury	0.12	NA	23 n	610 n							0.05
Nickel	11.3	NA	1,600 n	41,000 n		4.3 B					5.9 B
Potassium	ND	NA	297,016	297,016							176 B
Selenium	1.4	NA	390 n	10,000 n							
Silver	1.1	NA	390 n	10,000 n							
Sodium	ND	NA	1,000,000	1,000,000		12.4 B					27.6 B
Thallium	ND	NA	6.3 n	160 n						1.8 J	
Vanadium	5.9	NA	550 n	14,000 n	10.1 B	19.9	0.77 B		0.67 B	5.7 B	35.8
Zinc	0.66	NA	23,000 n	610,000 n		0.95 B	0.91 B			0.51 B	1.1 B
General chemistry, mg/kg											
Total Petroleum Hydrocarbons	ND	NA	ND	ND		55.1					

Appendix B

Table B-2. Summary of Positive Detections in Subsurface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background	SCG	RBC for Residential Soil	RBC for Industrial Soil	17B01001	17B01101	17B01101D	17B01201	17B01301	17B01401	17B01501
Sampling Date					4/26/95	4/26/95	4/26/95	5/26/95	5/26/95	5/26/95	5/26/95
Feet bls					3.5	4.3	4.3	3	3	3	3
Volatile Organics, µg/kg											
2-Butanone		NA	47,000,000 n	1,000,000,000 n							
Acetone		NA	7,800,000 n	200,000,000 n	13		10 J	13	16	28	10 J
Toluene		NA	16,000,000 n	410,000,000 n							
Xylene (total)		NA	16,000,000 n	1,000,000,000 n							
Semivolatile Organics, µg/kg											
2-Methylnaphthalene		NA	3,100,000 n	82,000,000 n					140 J		
Acenaphthene		NA	4,700,000 n	120,000,000 n					1,300		
Anthracene		NA	23,000,000 n	610,000,000 n					2,100		
Benzo(a)anthracene		NA	880 c	7,800 c					**5,300** D	110 J	
Benzo(a)pyrene		NA	88 c	780 c					**4,500** D		
Benzo(b)fluoranthene		NA	880 c	7,800 c					**4,900** D		
Benzo(g,h,i)perylene		NA	2,300,000	61,000,000					3,300 D		
Benzo(k)fluoranthene		NA	8,800 c	78,000 c					2,500		
Butylbenzylphthalate		NA	16,000,000 n	410,000,000 n							
Carbazole		NA	32,000 c	290,000 c					1,700		
Chrysene		NA	88,000 c	780,000 c					5,300 D		
Dibenz(a,h)anthracene		NA	88 c	780 c					**1,200**		
Dibenzofuran		NA	310,000 n	82,000,000 n					700		
Fluoranthene		NA	3,100,000 n	82,000,000 n					12,000 D	190 J	
Fluorene		NA	3,100,000 n	82,000,000 n					1,400		
Indeno(1,2,3-cd)pyrene		NA	880 c	7,800 c					**3,100**		
Naphthalene		NA	3,100,000 n	82,000,000 n					170 J		
Phenanthrene		NA	2,300,000 n	61,000,000 n					10,000 D	120 J	
Pyrene		NA	2,300,000 n	61,000,000 n					9,700 D		
Pesticides, µg/kg											
4,4'-DDD		NA	2,700 c	24,000 c		3.4 J	55 D				
4,4'-DDE		NA	1,900 c	17,000 c		1.5 J	16				3.6 J
4,4'-DDT		NA	1,900 c	17,000 c		2.9 J	28				7.2
alpha-Chlordane		NA	490 c	4,400 c			0.86 J			33	0.87 J
Dieldrin		NA	40	360						**35**	2.2 J

Appendix B

Table B-2. Summary of Positive Detections in Subsurface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background	SCG	RBC for Residential Soil	RBC for Industrial Soil	17B01001	17B01101	17B01101D	17B01201	17B01301	17B01401	17B01501
Sampling Date					4/26/95	4/26/95	4/26/95	5/26/95	5/26/95	5/26/95	5/26/95
Feet bls					3.5	4.3	4.3	3	3	3	3
Endrin ketone		NA	23,000	610,000							
gamma-Chlordane		NA	490 c	4,400 c			1.4 J			69	1.4 J
Heptachlor		NA	140	1,300							
Inorganics, mg/kg											
Aluminum	11,130	NA	78,000 n	1,000,000 n	613	99.6	7,870	3,080	796	849	367
Arsenic	2.0	NA	0.43 /23 c/n	3.8 /610 c/n				**2.1** B	1.4 J	1.4 B	0.98 J
Barium	11.3	NA	5,500	140,000	1.7 B	0.34 B	9.8 B	3.8 B	2.1 B	1.2 B	1.1 B
Beryllium	0.18	NA	0.15 c	1.3 c							
Cadmium	ND	NA	39 n	1,000 n							
Calcium	321	NA	1,000,000	1,000,000	232 J	213 J	7,190 J	2,650	2,220	705 B	1,010 B
Chromium	11.3	NA	390 n	10,000 n	1.1 B		6.3	2.7	0.89 B	1.5 B	0.93 B
Cobalt	1.3	NA	4,700,000 n	120,000,000 n			0.91 B				
Copper	2.8	NA	3,100 n	82,000 n				1.7 B		1.6 B	0.33 B
Iron	829	NA	23,000 n	610,000 n	84.1 J	299 J	447 J	190	204	260	188
Lead	7.0	NA	400	400	0.88	0.47 B	3.1	1.5 J	0.98 J	0.99 J	0.43 J
Magnesium	38.9	NA	460,468	460,468	19.5 B	5.7 B	133 B	45.7 B	38.4 B	38.7 B	23.3 B
Manganese	0.69	NA	1800 n	47,000 n	0.38 B	0.28 B	1.8 B	0.61 B	1.5 B	0.89 B	0.61 B
Mercury	0.12	NA	23 n	610 n							
Nickel	11.3	NA	1,600 n	41,000 n							
Potassium	ND	NA	297,016	297,016							
Selenium	1.4	NA	390 n	10,000 n							
Silver	1.1	NA	390 n	10,000 n							
Sodium	ND	NA	1,000,000	1,000,000					5.7 B	4.9 B	6.1 B
Thallium	ND	NA	6.3 n	160 n	0.51 J	0.52 B	0.75 J				
Vanadium	5.9	NA	550 n	14,000 n	0.69 B		9.9 B	2.9 B	1.3 B	1.6 B	1.1 B
Zinc	0.66	NA	23,000 n	610,000 n	0.41 B	0.46 B	0.82 B	0.48 B	0.77 B	0.79 B	0.68 B
General chemistry, mg/kg											
Total Petroleum Hydrocarbons	ND	NA	ND	ND					34.6	18.3	15.2

Appendix B

Table B-2. Summary of Positive Detections in Subsurface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background	SCG	RBC for Residential Soil	RBC for Industrial Soil	17B01601	17B01701	17B01802	17B01902	17B02001	17B02101	17B02101D
Sampling Date					5/26/95	5/26/95	4/25/95	4/26/95	4/25/95	4/25/95	4/25/95
Feet bls					3	3	5.5	4.5	4.5	4	4
Volatile Organics, µg/kg											
2-Butanone		NA	47,000,000 n	1,000,000,000 n							
Acetone		NA	7,800,000 n	200,000,000 n	15	9 J		8 J	7 J	11 J	14
Toluene		NA	16,000,000 n	410,000,000 n							
Xylene (total)		NA	16,000,000 n	1,000,000,000 n							
Semivolatile Organics, µg/kg											
2-Methylnaphthalene		NA	3,100,000 n	82,000,000 n							
Acenaphthene		NA	4,700,000 n	120,000,000 n	410						
Anthracene		NA	23,000,000 n	610,000,000 n	540						
Benzo(a)anthracene		NA	880 c	7,800 c	**2,600**						
Benzo(a)pyrene		NA	88 c	780 c	**420**						
Benzo(b)fluoranthene		NA	880 c	7,800 c	**2,000**						
Benzo(g,h,i)perylene		NA	2,300,000	61,000,000							
Benzo(k)fluoranthene		NA	8,800 c	78,000 c	1,500						
Butylbenzylphthalate		NA	16,000,000 n	410,000,000 n							
Carbazole		NA	32,000 c	290,000 c	250 J						
Chrysene		NA	88,000 c	780,000 c	2,000						
Dibenz(a,h)anthracene		NA	88 c	780 c	**490**						
Dibenzofuran		NA	310,000 n	82,000,000 n	220 J						
Fluoranthene		NA	3,100,000 n	82,000,000 n	4,400 D						
Fluorene		NA	3,100,000 n	82,000,000 n	500						
Indeno(1,2,3-cd)pyrene		NA	880 c	7,800 c	360 J						
Naphthalene		NA	3,100,000 n	82,000,000 n							
Phenanthrene		NA	2,300,000 n	61,000,000 n	2,600						
Pyrene		NA	2,300,000 n	61,000,000 n	1,200						
Pesticides, µg/kg											
4,4'-DDD		NA	2,700 c	24,000 c	160						
4,4'-DDE		NA	1,900 c	17,000 c	55 N	1.9 J					
4,4'-DDT		NA	1,900 c	17,000 c	200 J	20					
alpha-Chlordane		NA	490 c	4,400 c	45	2.7					
Dieldrin		NA	40	360	28 J						

Appendix B

Table B-2. Summary of Positive Detections in Subsurface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background	SCG	RBC for Residential Soil	RBC for Industrial Soil	17B01601	17B01701	17B01802	17B01902	17B02001	17B02101	17B02101D
Sampling Date					5/26/95	5/26/95	4/25/95	4/26/95	4/25/95	4/25/95	4/25/95
Feet bls					3	3	5.5	4.5	4.5	4	4
Endrin ketone		NA	23,000	610,000							
gamma-Chlordane		NA	490 c	4,400 c	50 N	2.8					
Heptachlor		NA	140	1,300							
Inorganics, mg/kg											
Aluminum	11,130	NA	78,000 n	1,000,000 n	2,160	1,870	2,140 J	6,840	10,500 J	4,620 J	3,000 J
Arsenic	2.0	NA	0.43 /23 c/n	3.8 /610 c/n	**2.2** B	1.7 B	0.69 B		1.3 B	0.58 B	0.76 B
Barium	11.3	NA	5,500	140,000	9.5 B	3.6 B	4.1 B	9 B	10.6 J	6.1 B	4.1 B
Beryllium	0.18	NA	0.15 c	1.3 c	0.09 B	0.06 B			0.03 B	0.03 B	
Cadmium	ND	NA	39 n	1,000 n							
Calcium	321	NA	1,000,000	1,000,000	77,900	6,880	92.3 B	171 J	211 J	237 J	637 B
Chromium	11.3	NA	390 n	10,000 n	6	2.5	2.2 B	5.4	6.7 J	4.1 J	2.5 J
Cobalt	1.3	NA	4,700,000 n	120,000,000 n	0.71 B		0.73 B	0.78 B	0.82	0.7 B	
Copper	2.8	NA	3,100 n	82,000 n	2.6 B	0.88 B	4.3 B	0.96 B			
Iron	829	NA	23,000 n	610,000 n	691	1,150	69.4 J	260 J	473 J	331 J	208 J
Lead	7.0	NA	400	400	9.7 J	1.4 J	2	3	5.7	1.7	1.8
Magnesium	38.9	NA	460,468	460,468	636 B	92.6 B	15.3 B	55.3 B	87.9 J	68.2 J	45.1 B
Manganese	0.69	NA	1800 n	47,000 n	11.2	1.5 B	0.36 B	0.99 B	1.1 J	1.2 J	0.78 B
Mercury	0.12	NA	23 n	610 n	0.03 B				0.03 B	0.04 B	0.04 B
Nickel	11.3	NA	1,600 n	41,000 n					5.1 B		
Potassium	ND	NA	297,016	297,016				119 B			
Selenium	1.4	NA	390 n	10,000 n		0.7 B					
Silver	1.1	NA	390 n	10,000 n							
Sodium	ND	NA	1,000,000	1,000,000		5.7 B			10.4 B		
Thallium	ND	NA	6.3 n	160 n							
Vanadium	5.9	NA	550 n	14,000 n	9.6 B	5.5 B	1.7 B	5.5 B	8.1 B	3.5 B	2.6 B
Zinc	0.66	NA	23,000 n	610,000 n	43.9	0.77 B	0.4 J	1 B	0.51 J	0.61 J	0.92 B
General chemistry, mg/kg											
Total Petroleum Hydrocarbons	ND	NA	ND	ND	34.3	10	19.2		9.7	24.5	8.3

Appendix B

Table B-2. Summary of Positive Detections in Subsurface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background	SCG	RBC for Residential Soil	RBC for Industrial Soil	17B02201	17B02302	17B02402	17B02502	17B04801	17B05101
Sampling Date					4/25/95	5/26/95	5/26/95	5/26/95	11/25/97	11/25/97
Feet bls					5.5	3	3	3	2-3	2-3
Volatile Organics, µg/kg										
2-Butanone		NA	47,000,000 n	1,000,000,000 n			5 J		NA	NA
Acetone		NA	7,800,000 n	200,000,000 n		17	53		NA	NA
Toluene		NA	16,000,000 n	410,000,000 n				2 J	NA	NA
Xylene (total)		NA	16,000,000 n	1,000,000,000 n					NA	NA
Semivolatile Organics, µg/kg										
2-Methylnaphthalene		NA	3,100,000 n	82,000,000 n						
Acenaphthene		NA	4,700,000 n	120,000,000 n						
Anthracene		NA	23,000,000 n	610,000,000 n						
Benzo(a)anthracene		NA	880 c	7,800 c				170 J		7.4 PF
Benzo(a)pyrene		NA	88 c	780 c				**170** J		12
Benzo(b)fluoranthene		NA	880 c	7,800 c				220 J		12
Benzo(g,h,i)perylene		NA	2,300,000	61,000,000				130 J		7.8
Benzo(k)fluoranthene		NA	8,800 c	78,000 c				130 J		6.2
Butylbenzylphthalate		NA	16,000,000 n	410,000,000 n					NA	NA
Carbazole		NA	32,000 c	290,000 c						
Chrysene		NA	88,000 c	780,000 c				190 J		13
Dibenz(a,h)anthracene		NA	88 c	780 c						5.7
Dibenzofuran		NA	310,000 n	82,000,000 n						
Fluoranthene		NA	3,100,000 n	82,000,000 n				310 J		
Fluorene		NA	3,100,000 n	82,000,000 n						
Indeno(1,2,3-cd)pyrene		NA	880 c	7,800 c				110 J		7.8
Naphthalene		NA	3,100,000 n	82,000,000 n						
Phenanthrene		NA	2,300,000 n	61,000,000 n						
Pyrene		NA	2,300,000 n	61,000,000 n				250 J	21	30
Pesticides, µg/kg										
4,4'-DDD		NA	2,700 c	24,000 c					NA	NA
4,4'-DDE		NA	1,900 c	17,000 c				10 J	NA	NA
4,4'-DDT		NA	1,900 c	17,000 c				21 J	NA	NA
alpha-Chlordane		NA	490 c	4,400 c		6.8		12 P	NA	NA
Dieldrin		NA	40	360				12 J	NA	NA

Appendix B

Table B-2. Summary of Positive Detections in Subsurface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Background	SCG	RBC for Residential Soil	RBC for Industrial Soil	17B02201	17B02302	17B02402	17B02502	17B04801	17B05101
Sampling Date					4/25/95	5/26/95	5/26/95	5/26/95	11/25/97	11/25/97
Feet bls					5.5	3	3	3	2-3	2-3
Endrin ketone		NA	23,000	610,000					NA	NA
gamma-Chlordane		NA	490 c	4,400 c		7		14	NA	NA
Heptachlor		NA	140	1,300					NA	NA
Inorganics, mg/kg										
Aluminum	11,130	NA	78,000 n	1,000,000 n	1,310 J	2,680	5,270	1,640 J	NA	NA
Arsenic	2.0	NA	0.43 /23 c/n	3.8 /610 c/n		1.4 B	1 B	0.57 B	NA	NA
Barium	11.3	NA	5,500	140,000	3.6 B	6.6 B	12 B	8 B	NA	NA
Beryllium	0.18	NA	0.15 c	1.3 c	0.03 B	0.06 B	0.06 B		NA	NA
Cadmium	ND	NA	39 n	1,000 n					NA	NA
Calcium	321	NA	1,000,000	1,000,000	69.9 B	3,380	376 B	15,100	NA	NA
Chromium	11.3	NA	390 n	10,000 n	1.5 B	2.7	4.7	2.1 B	NA	NA
Cobalt	1.3	NA	4,700,000 n	120,000,000 n			0.77 B		NA	NA
Copper	2.8	NA	3,100 n	82,000 n		1.6 B	0.41 B		NA	NA
Iron	829	NA	23,000 n	610,000 n	46.2 J	314	817	710 J	NA	NA
Lead	7.0	NA	400	400	1.6	11.7 J	6.4 J	7.4 J	NA	NA
Magnesium	38.9	NA	460,468	460,468	12.6 B	81.4 B	23 B	210 B	NA	NA
Manganese	0.69	NA	1800 n	47,000 n	0.44 B	2.4 B	4	5	NA	NA
Mercury	0.12	NA	23 n	610 n	0.04 B		0.03 B		NA	NA
Nickel	11.3	NA	1,600 n	41,000 n					NA	NA
Potassium	ND	NA	297,016	297,016					NA	NA
Selenium	1.4	NA	390 n	10,000 n					NA	NA
Silver	1.1	NA	390 n	10,000 n					NA	NA
Sodium	ND	NA	1,000,000	1,000,000		7.5 B	5.9 B		NA	NA
Thallium	ND	NA	6.3 n	160 n					NA	NA
Vanadium	5.9	NA	550 n	14,000 n		2.7 B	4.5 B	3.1 B	NA	NA
Zinc	0.66	NA	23,000 n	610,000 n		2.6 B	0.71 B	5.2	NA	NA
General chemistry, mg/kg										
Total Petroleum Hydrocarbons	ND	NA	ND	ND	36.5	26.6		39.6	NA	NA

Appendix B

Table B-2 Notes to Summary of Positive Detections in Subsurface Soil Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

NOTES:

The background screening value is twice the average of detected concentrations for inorganic analytes

SCTL = Florida Department of Environmental Protection, Soil Cleanup Target Levels, Chapter 62-785 FAC, April 30, 1998
SCTL values are not applicable because there is no exceedance of groundwater cleanup target levels

RBC = Risk-Based Concentration Table, USEPA Region III, May 1996, R L Smith RBC for chromium is based on chromium VI. RBC for lead is not available, value is Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites (OSWER directive 9355-4-12) For essential nutrients (calcium, magnesium, sodium) screening values were derived based on recommended daily allowances.

RBC for benzo(g,h,i)perylene and phenanthrene are not available, value is based on pyrene

µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
n = noncarcinogenic effects
c = carcinogenic effects
ND = Not determined
NA = Not applicable
bls = below land surface

DDE = dichlorodiphenyldichloroethene.
DDT = dichlorodiphenyltrichloroethane.
DDD = dichlorodiphenyldichloroethane.

B = Reported concentration is between the instrument detection limit (IDL) and Contract Required Detection Limit (CRDL).
J = Reported concentration is an estimated quantity
D = Reported concentrations if from a dilution/reanalysis
PF = This laboratory qualifier indicates that the reported result is uncertain since the percent difference between the original and confirmation analysis is greater than 50%
FDEP = Florida Department of Environmental Protection
OSWER = Office of Solid Waste and Emergency Response
USEPA = U S Environmental Protection Agency
All inorganics results expressed in milligrams per kilogram (mg/kg) soil dry weight, organics in micrograms per kilogram (µg/kg) soil dry weight.
Bold/shaded values indicate exceedance of regulatory guidance and background.
Blank space indicates analyte/compound was not detected at the reporting limit

Appendix C

Table C-1. Summary of Soil Analytical Results

Study Area 17

Naval Training Center, Orlando

Orlando, FL

Sample ID	17B00101	17B00201	17B00301	17B00401	17B00502	17B00701	17B00801	17B00901	17B01001	17B01101	17B01101D	17B01201	17B01301
Lab ID	G7583004	G7562004	G7583007	G7583006	G7583005	G7427001	G7427002	G7427003	G7427004	G7427005	G7427006	G7678011	G7678012
Sampling Date	15-May-95	14-May-95	16-May-95	16-May-95	15-May-95	26-Apr-95	26-Apr-95	26-Apr-95	26-Apr-95	26-Apr-95	26-Apr-95	26-May-95	26-May-95
Volatile organics, µg/kg													
1,1,1-Trichloroethane	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
1,1,2,2-Tetrachloroethane	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
1,1,2-Trichloroethane	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
1,1-Dichloroethane	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
1,1-Dichloroethene	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
1,2-Dichloroethane	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
1,2-Dichloroethene (total)	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
1,2-Dichloropropane	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
2-Butanone	12 U	12 U	3 J	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
2-Hexanone	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
4-Methyl-2-pentanone	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Acetone	28	12 U	23	12 U	41	12 J	11 U	12 U	13	12 U	10 J	13	16
Benzene	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Bromodichloromethane	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Bromoform	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Bromomethane	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Carbon disulfide	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Carbon tetrachloride	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Chlorobenzene	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Chloroethane	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Chloroform	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Chloromethane	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
cis-1,3-Dichloropropene	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Dibromochloromethane	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Ethylbenzene	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Methylene chloride	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Styrene	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Tetrachloroethene	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Toluene	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
trans-1,3-Dichloropropene	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Trichloroethene	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Vinyl chloride	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Xylene (total)	12 U	12 U	12 U	12 U	12 U	12 U	11 U	12 U	13 U	12 U	12 U	12 U	12 U
Semivolatile organics, µg/kg													
1,2,4-Trichlorobenzene	540 U	400 U	0 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
1,2-Dichlorobenzene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
1,3-Dichlorobenzene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
1,4-Dichlorobenzene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
2,2'-oxybis(1-Chloropropane)	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U

Appendix C

Table C-1 Summary of Soil Analytical Results

Study Area 17

Naval Training Center, Orlando

Orlando, FL

Sample ID	17B00101	17B00201	17B00301	17B00401	17B00502	17B00701	17B00801	17B00901	17B01001	17B01101	17B01101D	17B01201	17B01301
Lab ID	G7583004	G7562004	G7583007	G7583006	G7583005	G7427001	G7427002	G7427003	G7427004	G7427005	G7427006	G7678011	G7678012
Sampling Date	15-May-95	14-May-95	16-May-95	16-May-95	15-May-95	26-Apr-95	26-Apr-95	26-Apr-95	26-Apr-95	26-Apr-95	26-Apr-95	26-May-95	26-May-95
2,4,5-Trichlorophenol	1300 U	1000 U	1000 U	1000 U	1000 U	1000 U	900 U	970 U	1000 U	1000 U	1000 U	990 U	970 U
2,4,6-Trichlorophenol	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
2,4-Dichlorophenol	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
2,4-Dimethylphenol	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
2,4-Dinitrophenol	1300 U	1000 U	1000 U	1000 U	1000 U	1000 U	900 U	970 U	1000 U	1000 U	1000 U	990 U	970 U
2,4-Dinitrotoluene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
2,6-Dinitrotoluene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
2-Chloronaphthalene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
2-Chlorophenol	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
2-Methylnaphthalene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	140 J
2-Methylphenol	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
2-Nitroaniline	1300 U	1000 U	1000 U	1000 U	1000 U	1000 U	900 U	970 U	1000 U	1000 U	1000 U	990 U	970 U
2-Nitrophenol	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
3,3'-Dichlorobenzidine	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
3-Nitroaniline	1300 U	1000 U	1000 U	1000 U	1000 U	1000 U	900 U	970 U	1000 U	1000 U	1000 U	990 U	970 U
4,6-Dinitro-2-methylphenol	1300 U	1000 U	1000 U	1000 U	1000 U	1000 U	900 U	970 U	1000 U	1000 U	1000 U	990 U	970 U
4-Bromophenyl-phenylether	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
4-Chloro-3-methylphenol	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
4-Chloroaniline	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
4-Chlorophenyl-phenylether	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
4-Methylphenol	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
4-Nitroaniline	1300 U	1000 U	1000 U	1000 U	1000 U	1000 U	900 U	970 U	1000 U	1000 U	1000 U	990 U	970 U
4-Nitrophenol	1300 U	1000 U	1000 U	1000 U	1000 U	1000 U	900 U	970 U	1000 U	1000 U	1000 U	990 U	970 U
Acenaphthene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	1300
Acenaphthylene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
Anthracene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	2100
Benzo(a)anthracene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	5300 D
Benzo(a)pyrene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	4500 D
Benzo(b)fluoranthene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	4900 D
Benzo(g,h,i)perylene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	3300 D
Benzo(k)fluoranthene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	2500
bis(2-Chloroethoxy)methane	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
bis(2-Chloroethyl)ether	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
bis(2-Ethylhexyl)phthalate	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
Butylbenzylphthalate	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
Carbazole	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	1700
Chrysene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	5300 D
Di-n-butylphthalate	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
Di-n-octylphthalate	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
Dibenz(a,h)anthracene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	1200

Appendix C
Table C-1. Summary of Soil Analytical Results
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Sample ID	17B00101	17B00201	17B00301	17B00401	17B00502	17B00701	17B00801	17B00901	17B01001	17B01101	17B01101D	17B01201	17B01301
Lab ID	G7583004	G7562004	G7583007	G7583006	G7583005	G7427001	G7427002	G7427003	G7427004	G7427005	G7427006	G7678011	G7678012
Sampling Date	15-May-95	14-May-95	16-May-95	16-May-95	15-May-95	26-Apr-95	26-Apr-95	26-Apr-95	26-Apr-95	26-Apr-95	26-Apr-95	26-May-95	26-May-95
Dibenzofuran	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	700
Diethylphthalate	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
Dimethylphthalate	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
Fluoranthene	540 U	400 U	400 U	400 U	410 U	420 U	130 J	390 U	410 U	410 U	410 U	400 U	12000 D
Fluorene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	1400
Hexachlorobenzene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
Hexachlorobutadiene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
Hexachlorocyclopentadiene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
Hexachloroethane	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
Indeno(1,2,3-cd)pyrene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	3100
Isophorone	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
N-Nitroso-di-n-propylamine	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
N-Nitrosodiphenylamine (1)	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
Naphthalene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	170 J
Nitrobenzene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
Pentachlorophenol	1300 U	1000 U	1000 U	1000 U	1000 U	1000 U	900 U	970 U	1000 U	1000 U	1000 U	990 U	970 U
Phenanthrene	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	10000 D
Phenol	540 U	400 U	400 U	400 U	410 U	420 U	360 U	390 U	410 U	410 U	410 U	400 U	390 U
Pyrene	540 U	400 U	400 U	400 U	410 U	420 U	140 J	390 U	410 U	410 U	410 U	400 U	9700 D
Pesticides/PCBs, µg/kg													
4,4'-DDD	4 U	3.9 U	4.1 U	4 U	4.2 U	8 U	9.1 U	3.8 U	4.1 U	3.4 J	55 D	4 U	38 U
4,4'-DDE	4 U	3.9 U	4.1 U	4 U	4.2 U	7.7 NJ	9.1 U	3.8 U	4.1 U	1.5 J	16	4 U	38 U
4,4'-DDT	4 U	3.9 U	2.9 J	1.6 J	4.2 U	8 U	9.1 U	3.8 U	4.1 U	2.9 J	28	4 U	38 U
Aldrin	2 U	2 U	2.1 U	2 U	2.2 U	4.1 U	4.7 U	2 U	2.1 U	2 U	2 U	2 U	20 U
alpha-BHC	2 U	2 U	2.1 U	2 U	2.2 U	4.1 U	4.7 U	2 U	2.1 U	2 U	2 U	2 U	20 U
alpha-Chlordane	2 U	2 U	1 J	2 U	2.2 U	4.1 U	4.7 U	2 U	2.1 U	2 U	0.86 J	2 U	20 U
Aroclor-1016	40 U	39 U	41 U	40 U	42 U	80 U	91 U	38 U	41 U	39 U	40 U	40 U	380 U
Aroclor-1221	81 U	79 U	83 U	81 U	85 U	160 U	180 U	77 U	83 U	80 U	81 U	81 U	780 U
Aroclor-1232	40 U	39 U	41 U	40 U	42 U	80 U	91 U	38 U	41 U	39 U	40 U	40 U	380 U
Aroclor-1242	40 U	39 U	41 U	40 U	42 U	80 U	91 U	38 U	41 U	39 U	40 U	40 U	380 U
Aroclor-1248	40 U	39 U	41 U	40 U	42 U	80 U	91 U	38 U	41 U	39 U	40 U	40 U	380 U
Aroclor-1254	40 U	39 U	41 U	40 U	42 U	80 U	91 U	38 U	41 U	39 U	40 U	40 U	380 U
Aroclor-1260	40 U	39 U	41 U	40 U	42 U	80 U	91 U	38 U	41 U	39 U	40 U	40 U	380 U
beta-BHC	2 U	2 U	2.1 U	2 U	2.2 U	4.1 U	4.7 U	2 U	2.1 U	2 U	2 U	2 U	20 U
delta-BHC	2 U	2 U	2.1 U	2 U	2.2 U	4.1 U	4.7 U	2 U	2.1 U	2 U	2 U	2 U	20 U
Dieldrin	4 U	3.9 U	4.1 U	4 U	4.2 U	15	9.1 U	3.8 U	4.1 U	3.9 U	4 U	4 U	38 U
Endosulfan I	2 U	2 U	2.1 U	2 U	2.2 U	4.1 U	4.7 U	2 U	2.1 U	2 U	2 U	2 U	20 U
Endosulfan II	4 U	3.9 U	4.1 U	4 U	4.2 U	8 U	9.1 U	3.8 U	4.1 U	3.9 U	4 U	4 U	38 U
Endosulfan sulfate	4 U	3.9 U	4.1 U	4 U	4.2 U	8 U	9.1 U	3.8 U	4.1 U	3.9 U	4 U	4 U	38 U
Endrin	4 U	3.9 U	4.1 U	4 U	4.2 U	8 U	9.1 U	3.8 U	4.1 U	3.9 U	4 U	4 U	38 U

Appendix C
Table C-1. Summary of Soil Analytical Results
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Sample ID	17B00101	17B00201	17B00301	17B00401	17B00502	17B00701	17B00801	17B00901	17B01001	17B01101	17B01101D	17B01201	17B01301
Lab ID	G7583004	G7562004	G7583007	G7583006	G7583005	G7427001	G7427002	G7427003	G7427004	G7427005	G7427006	G7678011	G7678012
Sampling Date	15-May-95	14-May-95	16-May-95	16-May-95	15-May-95	26-Apr-95	26-Apr-95	26-Apr-95	26-Apr-95	26-Apr-95	26-Apr-95	26-May-95	26-May-95
Endrin aldehyde	4 U	3.9 U	4.1 U	4 U	4.2 U	8 U	9.1 U	3.8 U	4.1 U	3.9 U	4 U	4 U	38 U
Endrin ketone	4 U	3.9 U	4.1 U	4 U	4.2 U	7.3 J	9.1 U	3.8 U	4.1 U	3.9 U	4 U	4 U	38 U
gamma-BHC (Lindane)	2 U	2 U	2.1 U	2 U	2.2 U	4.1 U	4.7 U	2 U	2.1 U	2 U	2 U	2 U	20 U
gamma-Chlordane	2 U	2 U	1.2 J	2 U	2.2 U	4.1 U	4.7 U	2 U	2.1 U	2 U	1.4 J	2 U	20 U
Heptachlor	2 U	2 U	2.1 U	2 U	2.2 U	4.1 U	4.7 U	2 U	2.1 U	2 U	2 U	2 U	20 U
Heptachlor epoxide	2 U	2 U	2.1 U	2 U	2.2 U	4.1 U	4.7 U	2 U	2.1 U	2 U	2 U	2 U	20 U
Methoxychlor	20 U	20 U	21 U	20 U	22 U	41 U	47 U	20 U	21 U	20 U	20 U	20 U	200 U
Toxaphene	200 U	200 U	210 U	200 U	220 U	410 U	470 U	200 U	210 U	200 U	200 U	200 U	2000 U
Inorganics, mg/kg													
Aluminum	6930	14800	1040	509	313	1390	1080	17900	613	99.6	7870	3080	796
Antimony	7.1 UJ	7 UJ	7.5 UJ	7.3 UJ	7.2 UJ	7.2 U	6.6 U	6.9 U	7.5 U	7 U	6.9 U	7.2 U	6.9 U
Arsenic	0.69 B	0.95 J	0.48 U	0.47 UJ	0.46 U	0.57 U	0.47 U	1.1 U	0.6 U	0.62 U	0.81 U	2.1 B	1.4 J
Barium	7.2 J	16.7 J	4 J	2.7 J	2.7 J	3.9 B	2.3 B	17.6 B	1.7 B	0.34 B	9.8 B	3.8 B	2.1 B
Beryllium	0.03 J	0.12 B	0.03 UJ		0.02 UJ	0.03 U	0.06 U	0.27 U	0.03 U	0.04 U	0.11 U	0.02 U	0.02 U
Cadmium	0.74 U	0.74 U	0.78 U	0.76 UJ	0.76 U	0.76 U	0.69 U	0.72 U	0.79 U	0.73 U	0.72 U	0.76 U	0.72 U
Calcium	171 B	816 B	678 B	3440	33.4 B	306 J	745 J	1320 J	232 J	213 J	7190 J	2650	2220
Chromium	6	12.6	2.2 B	1.6 B	0.76 U	2.6	1.6 B	18.2	1.1 B	0.73 U	6.3	2.7	0.89 B
Cobalt	0.69 U	0.97 B	0.73 U	0.71 U	0.71 U	0.81 B	0.65 U	1.7 B	0.74 U	0.68 U	0.91 B	0.71 U	0.67 U
Copper	0.34 U	0.33 U	0.38 U	0.34 U	0.4 U	0.85 B	0.69 B	0.32 U	0.35 U	0.33 U	0.33 U	1.7 B	0.33 U
Iron	217	666	197	95.6	25.9	1220 J	155 J	1180 J	84.1 J	299 J	447 J	190	204
Lead	4.9 J	11.2 J	2 J	2.1 J	1.8 J	1.8	2.1	4.1	0.88	0.47 B	3.1	1.5 J	0.98 J
Magnesium	41.5 B	132 B	15.8 B	33.1 B	4.9 U	32.6 B	19.5 B	252 B	19.5 B	5.7 B	133 B	45.7 B	38.4 B
Manganese	0.55 B	1.6 B	1.2 B	1 B	0.35 B	0.81 B	1.7 B	3 B	0.38 B	0.28 B	1.8 B	0.61 B	1.5 B
Mercury	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 B	0.05	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U
Nickel	3.4 U	4.3 B	3.6 U	3.5 U	3.5 U	3.5 U	3.2 U	5.9 B	3.6 U	3.4 U	3.3 U	3.5 U	3.3 U
Potassium	106 U	105 U	112 U	109 U	108 U	108 U	98.8 U	176 B	112 U	105 U	104 U	109 U	103 U
Selenium	0.55 U	0.54 U	0.58 U	0.56 U	0.56 UJ	0.56 U	0.51 UJ	0.53 U	0.58 UJ	0.54 UJ	0.54 UJ	0.56 U	0.53 U
Silver	0.62 U	0.62 U	0.66 U	0.64 U	0.63 U	0.63 U	0.58 U	0.6 U	0.66 U	0.61 U	0.61 U	0.64 U	0.6 U
Sodium	4 U	12.4 B	4.3 U	4.2 U	4.1 U	12 U	9.1 U	27.6 B	10.7 U	8.4 U	18.1 U	4.1 U	5.7 B
Thallium	0.43 U	0.43 U	0.46 UJ	0.45 U	0.44 U	1.8 J	0.42 U	0.43 U	0.51 J	0.52 B	0.75 J	0.44 U	0.42 U
Vanadium	10.1 B	19.9	0.77 B	0.62 U	0.67 B	5.7 B	0.89 B	35.8	0.69 B	0.59 U	9.9 B	2.9 B	1.3 B
Zinc	0.66 U	0.95 B	0.91 B	0.54 U	0.81 U	0.51 B	11.4	1.1 B	0.41 B	0.46 B	0.82 B	0.48 B	0.77 B
General Chemistry, mg/kg													
Total Petroleum Hydrocarbons	4.7 U	55.1	5 U	4.9 U	4.8 U	4.9 U	5.8	4.6 U	5.1 U	4.7 U	4.7 U	4.9 U	34.6

Appendix C
Table C-1. Summary of Soil Analytical Results
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Sample ID	17B01401	17B01501	17B01601	17B01701	17B01801	17B01802	17B01901	17B01902	17B02001	17B02101	17B02101D	17B02201	17B02301
Lab ID	G7678013	G7678010	G7678015	G7678014	G7415006	G7415004	G7427007	G7427008	G7415005	G7415003	G7415002	G7415007	G7678016
Sampling Date	26-May-95	26-May-95	26-May-95	26-May-95	25-Apr-95	25-Apr-95	26-Apr-95	26-Apr-95	25-Apr-95	25-Apr-95	25-Apr-95	25-Apr-95	26-May-95
Volatile organics, µg/kg													
1,1,1-Trichloroethane	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
1,1,2,2-Tetrachloroethane	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
1,1,2-Trichloroethane	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
1,1-Dichloroethane	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
1,1-Dichloroethene	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
1,2-Dichloroethane	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
1,2-Dichloroethene (total)	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
1,2-Dichloropropane	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
2-Butanone	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
2-Hexanone	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
4-Methyl-2-pentanone	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Acetone	28	10 J	15	9 J	11 U	12 U	10 U	8 J	7 J	11 J	14	13 U	7 J
Benzene	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Bromodichloromethane	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Bromoform	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Bromomethane	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Carbon disulfide	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Carbon tetrachloride	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Chlorobenzene	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Chloroethane	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Chloroform	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Chloromethane	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
cis-1,3-Dichloropropene	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Dibromochloromethane	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Ethylbenzene	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Methylene chloride	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Styrene	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Tetrachloroethene	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Toluene	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
trans-1,3-Dichloropropene	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Trichloroethene	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Vinyl chloride	12 U	11 U	12 U	12 U	11 U	12 U	10 U	12 U	12 U	11 U	11 U	13 U	11 U
Xylene (total)	12 U	11 U	12 U	12 U	11 U	12 U	53	12 U	12 U	11 U	11 U	13 U	11 U
Semivolatile organics, µg/kg													
1,2,4-Trichlorobenzene	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
1,2-Dichlorobenzene	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
1,3-Dichlorobenzene	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
1,4-Dichlorobenzene	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
2,2'-oxybis(1-Chloropropane)	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U

Appendix C

Table C-1. Summary of Soil Analytical Results
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Sample ID	17B01401	17B01501	17B01601	17B01701	17B01801	17B01802	17B01901	17B01902	17B02001	17B02101	17B02101D	17B02201	17B02301
Lab ID	G7678013	G7678010	G7678015	G7678014	G7415006	G7415004	G7427007	G7427008	G7415005	G7415003	G7415002	G7415007	G7678016
Sampling Date	26-May-95	26-May-95	26-May-95	26-May-95	25-Apr-95	25-Apr-95	26-Apr-95	26-Apr-95	25-Apr-95	25-Apr-95	25-Apr-95	25-Apr-95	26-May-95
2,4,5-Trichlorophenol	970 U	920 U	970 U	970 U	900 U	1000 U	880 U	1000 U	900 U	970 U	950 U	1000 U	900 U
2,4,6-Trichlorophenol	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
2,4-Dichlorophenol	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
2,4-Dimethylphenol	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
2,4-Dinitrophenol	970 U	920 U	970 U	970 U	900 U	1000 U	880 U	1000 U	900 U	970 U	950 U	1000 U	900 U
2,4-Dinitrotoluene	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
2,6-Dinitrotoluene	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
2-Chloronaphthalene	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
2-Chlorophenol	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
2-Methylnaphthalene	390 U	370 U	390 U	390 U	360 U	400 U	110 J	400 U	360 U	390 U	380 U	420 U	360 U
2-Methylphenol	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
2-Nitroaniline	970 U	920 U	970 U	970 U	900 U	1000 U	880 U	1000 U	900 U	970 U	950 U	1000 U	900 U
2-Nitrophenol	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
3,3'-Dichlorobenzidine	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
3-Nitroaniline	970 U	920 U	970 U	970 U	900 U	1000 U	880 U	1000 U	900 U	970 U	950 U	1000 U	900 U
4,6-Dinitro-2-methylphenol	970 U	920 U	970 U	970 U	900 U	1000 U	880 U	1000 U	900 U	970 U	950 U	1000 U	900 U
4-Bromophenyl-phenylether	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
4-Chloro-3-methylphenol	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
4-Chloroaniline	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
4-Chlorophenyl-phenylether	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
4-Methylphenol	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
4-Nitroaniline	970 U	920 U	970 U	970 U	900 U	1000 U	880 U	1000 U	900 U	970 U	950 U	1000 U	900 U
4-Nitrophenol	970 U	920 U	970 U	970 U	900 U	1000 U	880 U	1000 U	900 U	970 U	950 U	1000 U	900 U
Acenaphthene	390 U	370 U	410	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	150 J
Acenaphthylene	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Anthracene	390 U	370 U	540	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Benzo(a)anthracene	110 J	370 U	2600	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	240 J
Benzo(a)pyrene	390 U	370 U	420	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Benzo(b)fluoranthene	390 U	370 U	2000	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	180 J
Benzo(g,h,i)perylene	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Benzo(k)fluoranthene	390 U	370 U	1500	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	140 J
bis(2-Chloroethoxy)methane	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
bis(2-Chloroethyl)ether	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
bis(2-Ethylhexyl)phthalate	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Butylbenzylphthalate	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Carbazole	390 U	370 U	250 J	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Chrysene	390 U	370 U	2000	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	210 J
Di-n-butylphthalate	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Di-n-octylphthalate	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Dibenz(a,h)anthracene	390 U	370 U	490	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U

Appendix C
Table C-1. Summary of Soil Analytical Results
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Sample ID	17B01401	17B01501	17B01601	17B01701	17B01801	17B01802	17B01901	17B01902	17B02001	17B02101	17B02101D	17B02201	17B02301
Lab ID	G7678013	G7678010	G7678015	G7678014	G7415006	G7415004	G7427007	G7427008	G7415005	G7415003	G7415002	G7415007	G7678016
Sampling Date	26-May-95	26-May-95	26-May-95	26-May-95	25-Apr-95	25-Apr-95	26-Apr-95	26-Apr-95	25-Apr-95	25-Apr-95	25-Apr-95	25-Apr-95	26-May-95
Dibenzofuran	390 U	370 U	220 J	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Diethylphthalate	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Dimethylphthalate	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Fluoranthene	190 J	370 U	4400 D	390 U	170 J	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Fluorene	390 U	370 U	500	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	580
Hexachlorobenzene	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Hexachlorobutadiene	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Hexachlorocyclopentadiene	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Hexachloroethane	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Indeno(1,2,3-cd)pyrene	390 U	370 U	360 J	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Isophorone	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
N-Nitroso-di-n-propylamine	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
N-Nitrosodiphenylamine (1)	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Naphthalene	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Nitrobenzene	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Pentachlorophenol	970 U	920 U	970 U	970 U	900 U	1000 U	880 U	1000 U	900 U	970 U	950 U	1000 U	900 U
Phenanthrene	120 J	370 U	2600	390 U	110 J	400 U	350 U	400 U	360 U	390 U	380 U	420 U	290 J
Phenol	390 U	370 U	390 U	390 U	360 U	400 U	350 U	400 U	360 U	390 U	380 U	420 U	360 U
Pyrene	390 U	370 U	1200	390 U	110 J	400 U	350 U	400 U	360 U	390 U	380 U	420 U	120 J
Pesticides/PCBs, µg/kg													
4,4'-DDD	19 U	3.7 U	160	3.9 U	3.5 U	10 U	3.5 U	3.9 U	3.8 U	3.7 U	3.7 U	4.2 U	3.5 U
4,4'-DDE	19 U	3.6 J	55 NJ	1.9 J	3.5 U	10 U	4.5	3.9 U	3.8 U	3.7 U	3.7 U	4.2 U	8.7 J
4,4'-DDT	19 U	7.2	200 J	20	3.5 U	10 U	3.5 U	3.9 U	3.8 U	3.7 U	3.7 U	4.2 U	14 U
Aldrin	9.9 U	1.9 U	20 U	2 U	1.8 U	5.2 U	1.8 U	2 U	2 U	1.9 U	1.9 U	2.2 U	1.8 U
alpha-BHC	9.9 U	1.9 U	20 U	2 U	1.8 U	5.2 U	1.8 U	2 U	2 U	1.9 U	1.9 U	2.2 U	1.8 U
alpha-Chlordane	33	0.87 J	45	2.7	1.8 U	5.2 U	1.8 U	2 U	2 U	1.9 U	1.9 U	2.2 U	110 DJ
Aroclor-1016	190 U	37 U	390 U	39 U	35 U	100 U	35 U	39 U	38 U	37 U	37 U	42 U	35 U
Aroclor-1221	390 U	74 U	790 U	79 U	72 U	210 U	71 U	80 U	77 U	76 U	76 U	85 U	72 U
Aroclor-1232	190 U	37 U	390 U	39 U	35 U	100 U	35 U	39 U	38 U	37 U	37 U	42 U	35 U
Aroclor-1242	190 U	37 U	390 U	39 U	35 U	100 U	35 U	39 U	38 U	37 U	37 U	42 U	35 U
Aroclor-1248	190 U	37 U	390 U	39 U	35 U	100 U	35 U	39 U	38 U	37 U	37 U	42 U	35 U
Aroclor-1254	190 U	37 U	390 U	39 U	35 U	100 U	35 U	39 U	38 U	37 U	37 U	42 U	35 U
Aroclor-1260	190 U	37 U	390 U	39 U	35 U	100 U	35 U	39 U	38 U	37 U	37 U	42 U	35 U
beta-BHC	9.9 U	1.9 U	20 U	2 U	1.8 U	5.2 U	1.8 U	2 U	2 U	1.9 U	1.9 U	2.2 U	1.8 U
delta-BHC	9.9 U	1.9 U	20 U	2 U	1.8 U	5.2 U	1.8 U	2 U	2 U	1.9 U	1.9 U	2.2 U	1.8 U
Dieldrin	35	2.2 J	28 J	3.9 U	3.5 U	10 U	3.5 U	3.9 U	3.8 U	3.7 U	3.7 U	4.2 U	17
Endosulfan I	9.9 U	1.9 U	20 U	2 U	1.8 U	5.2 U	1.8 U	2 U	2 U	1.9 U	1.9 U	2.2 U	1.8 U
Endosulfan II	19 U	3.7 U	39 U	3.9 U	3.5 U	10 U	3.5 U	3.9 U	3.8 U	3.7 U	3.7 U	4.2 U	3.5 U
Endosulfan sulfate	19 U	3.7 U	39 U	3.9 U	3.5 U	10 U	3.5 U	3.9 U	3.8 U	3.7 U	3.7 U	4.2 U	3.5 U
Endrin	19 U	3.7 U	39 U	3.9 U	3.5 U	10 U	3.5 U	3.9 U	3.8 U	3.7 U	3.7 U	4.2 U	3.5 U

Appendix C
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Study Area 17

Naval Training Center, Orlando
Orlando, FL

Sample ID	17B01401	17B01501	17B01601	17B01701	17B01801	17B01802	17B01901	17B01902	17B02001	17B02101	17B02101D	17B02201	17B02301
Lab ID	G7678013	G7678010	G7678015	G7678014	G7415006	G7415004	G7427007	G7427008	G7415005	G7415003	G7415002	G7415007	G7678016
Sampling Date	26-May-95	26-May-95	26-May-95	26-May-95	25-Apr-95	25-Apr-95	26-Apr-95	26-Apr-95	25-Apr-95	25-Apr-95	25-Apr-95	25-Apr-95	26-May-95
Endrin aldehyde	19 U	3.7 U	39 U	3.9 U	3.5 U	10 U	3.5 U	3.9 U	3.8 U	3.7 U	3.7 U	4.2 U	3.5 U
Endrin ketone	19 U	3.7 U	39 U	3.9 U	3.5 U	10 U	3.5 U	3.9 U	3.8 U	3.7 U	3.7 U	4.2 U	3.5 U
gamma-BHC (Lindane)	9.9 U	1.9 U	20 U	2 U	1.8 U	5.2 U	1.8 U	2 U	2 U	1.9 U	1.9 U	2.2 U	1.8 U
gamma-Chlordane	69	1.4 J	50 NJ	2.8	1.8 U	5.2 U	1.8 U	2 U	2 U	1.9 U	1.9 U	2.2 U	120 DJ
Heptachlor	9.9 U	1.9 U	20 U	2 U	1.8 U	5.2 U	1.8 U	2 U	2 U	1.9 U	1.9 U	2.2 U	7.8
Heptachlor epoxide	9.9 U	1.9 U	20 U	2 U	1.8 U	5.2 U	1.8 U	2 U	2 U	1.9 U	1.9 U	2.2 U	1.8 U
Methoxychlor	99 U	19 U	200 U	20 U	18 U	52 U	18 U	20 U	20 U	19 U	19 U	22 U	18 U
Toxaphene	990 U	190 U	2000 U	200 U	180 U	520 U	180 U	200 U	200 U	190 U	190 U	220 U	180 U
Inorganics, mg/kg													
Aluminum	849	367	2160	1870	5400 J	2140 J	538	6840	10500 J	4620 J	3000 J	1310 J	2280
Antimony	6.9 U	6.7 U	6.9 U	6.9 U	6.4 U	7.1 U	6.3 U	7.2 U	6.8 U	6.6 U	6.4 U	7.6 U	6.3 U
Arsenic	1.4 B	0.98 J	2.2 B	1.7 B	0.65 BJ	0.69 B	0.4 U	0.74 U	1.3 B	0.58 B	0.76 B	0.49 U	2 J
Barium	1.2 B	1.1 B	9.5 B	3.6 B	6.6 BJ	4.1 BJ	0.57 B	9 B	10.6 J	6.1 BJ	4.1 BJ	3.6 BJ	6.6 B
Beryllium	0.02 U	0.02 U	0.09 B	0.06 B	0.08 B	0.02 U	0.03 U	0.11 U	0.03 B	0.03 B	0.02 U	0.03 B	0.02 B
Cadmium	0.72 U	0.7 U	0.73 U	0.72 U	0.67 U	0.74 U	0.66 U	0.75 U	0.72 U	0.69 U	0.67 U	0.8 U	0.66 U
Calcium	705 B	1010 B	77900	6880	3200 J	92.3 BJ	226 J	171 J	211 J	237 J	637 BJ	69.9 BJ	21400
Chromium	1.5 B	0.93 B	6	2.5	5.2 J	2.2 BJ	0.79 B	5.4	6.7 J	4.1 J	2.5 J	1.5 BJ	5.1
Cobalt	0.67 U	0.65 U	0.71 B	0.68 U	0.63 U	0.73 B	0.61 U	0.78 B	0.82	0.7 B	0.63 U	0.75 U	0.62 U
Copper	1.6 B	0.33 B	2.6 B	0.88 B	2.2 U	4.3 B	0.46 B	0.96 B	0.32 U	0.35 U	0.3 U	0.46 U	6.1
Iron	260	188	691	1150	312 J	69.4 J	800 J	260 J	473 J	331 J	208 J	46.2 J	497
Lead	0.99 J	0.43 J	9.7 J	1.4 J	6.6	2	0.8	3	5.7	1.7	1.8	1.6	23.6 J
Magnesium	38.7 B	23.3 B	636 B	92.6 B	66.6 J	15.3 BJ	11.7 B	55.3 B	87.9 J	68.2 J	45.1 BJ	12.6 BJ	190 B
Manganese	0.89 B	0.61 B	11.2	1.5 B	2.4 J	0.36 BJ	0.58 B	0.99 B	1.1 J	1.2 J	0.78 BJ	0.44 BJ	7.4
Mercury	0.03 U	0.03 U	0.03 B	0.03 U	0.14	0.03 U	0.02 U	0.03 U	0.03 B	0.04 B	0.04 B	0.04 B	0.03 B
Nickel	3.3 U	3.2 U	3.3 U	3.3 U	3.1 U	3.4 U	3 U	3.4 U	5.1 B	3.2 U	3.1 U	3.7 U	3 U
Potassium	103 U	99.7 U	104 U	103 U	95.7 U	107 U	94 U	119 B	103 U	98.9 U	96.5 U	114 U	95 U
Selenium	0.53 U	0.51 U	0.54 U	0.7 B	0.49 U	0.55 UJ	0.49 UJ	0.56 UJ	0.53 U	0.51 U	0.5 U	0.59 UJ	0.49 U
Silver	0.6 U	0.58 U	0.61 U	0.61 U	57.5	1.7 U	0.55 U	0.63 U	0.6 U	0.64 U	0.57 U	0.67 U	0.56 U
Sodium	4.9 B	6.1 B	28.7 U	5.7 B	3.6 U	4.1 U	6.4 U	11.4 U	10.4 B	3.8 U	3.7 U	4.3 U	9.8 B
Thallium	0.42 U	0.41 U	0.42 U	0.42 U	0.39 UJ	0.43 U	0.74 B	0.45 U	0.42 U	0.4 U	0.39 U	0.47 U	0.39 U
Vanadium	1.6 B	1.1 B	9.6 B	5.5 B	2.1 B	1.7 B	1.2 B	5.5 B	8.1 B	3.5 B	2.6 B	0.64 U	3.7 B
Zinc	0.79 B	0.68 B	43.9	0.77 B	4 J	0.4 J	1.7 B	1 B	0.51 J	0.61 J	0.92 BJ	0.28 UJ	11.1
General Chemistry, mg/kg													
Total Petroleum Hydrocarbons	18.3	15.2	34.3	10	23.3	19.2	4.2 U	4.8 U	9.7	24.5	8.3	36.5	110

Appendix C

Table C-1. Summary of Soil Analytical Results

Study Area 17

Naval Training Center, Orlando

Orlando, FL

Sample ID	17B02301D		17B02302		17B02401		17B02402		17B02501		17B02502		17B03401		17B03501		17B03601		17B05601		17B06601	
Lab ID	G7678017		G7678018		G7678019		G7678020		G7679001		G7679002		G7679003		G7679004		G7679005		A8D170144001		A8D170144002	
Sampling Date	26-May-95		26-May-95		26-May-95		26-May-95		26-May-95		26-May-95		26-May-95		26-May-95		26-May-95		16-Apr-98		16-Apr-98	
Volatile organics, µg/kg																						
1,1,1-Trichloroethane	11	U	12	U	11	U	12	U	11	U	11	U	11	U	13	U	11	U	5.7	U	5.7	U
1,1,2,2-Tetrachloroethane	11	U	12	U	11	U	12	U	11	U	11	UJ	11	U	13	U	11	U	5.7	U	5.7	U
1,1,2-Trichloroethane	11	U	12	U	11	U	12	U	11	U	11	UJ	11	U	13	U	11	U	5.7	U	5.7	U
1,1-Dichloroethane	11	U	12	U	11	U	12	U	11	U	11	U	11	U	13	U	11	U	5.7	U	5.7	U
1,1-Dichloroethene	11	U	12	U	11	U	12	U	11	U	11	U	11	U	13	U	11	U	5.7	U	5.7	U
1,2-Dichloroethane	11	U	12	U	11	U	12	U	11	U	11	U	11	U	13	U	11	U	5.7	U	5.7	U
1,2-Dichloroethene (total)	11	U	12	U	11	U	12	U	11	U	11	U	11	U	13	U	11	U	5.7	U	5.7	U
1,2-Dichloropropane	11	U	12	U	11	U	12	U	11	U	11	U	11	U	13	U	11	U	5.7	U	5.7	U
2-Butanone	11	U	12	U	11	U	5	J	11	U	11	U	11	U	13	U	11	U	23	U	23	U
2-Hexanone	11	U	12	U	11	U	12	U	11	U	11	UJ	11	U	13	U	11	U	23	U	23	U
4-Methyl-2-pentanone	11	U	12	U	11	U	12	U	11	U	11	UJ	11	U	13	U	11	U	23	U	23	U
Acetone	11	U	17		11	U	53		9	J	11	U	11	U	13	J	8	J	23	U	23	U
Benzene	11	U	12	U	11	U	12	U	11	U	11	U	11	U	13	U	11	U	5.7	U	5.7	U
Bromodichloromethane	11	U	12	U	11	U	12	U	11	U	11	U	11	U	13	U	11	U	5.7	U	5.7	U
Bromoform	11	U	12	U	11	U	12	U	11	U	11	UJ	11	U	13	U	11	U	5.7	U	5.7	U
Bromomethane	11	U	12	U	11	U	12	U	11	U	11	U	11	U	13	U	11	U	11	U	11	U
Carbon disulfide	11	U	12	U	11	U	12	U	11	U	11	U	11	U	13	U	11	U	5.7	U	5.7	U
Carbon tetrachloride	11	U	12	U	11	U	12	U	11	U	11	U	11	U	13	U	11	U	5.7	U	5.7	U
Chlorobenzene	11	U	12	U	11	U	12	U	11	U	11	UJ	11	U	13	U	11	U	5.7	U	5.7	U
Chloroethane	11	U	12	U	11	U	12	U	11	U	11	U	11	U	13	U	11	U	11	U	11	U
Chloroform	11	U	12	U	11	U	12	U	11	U	11	U	11	U	13	U	11	U	5.7	U	5.7	U
Chloromethane	11	U	12	U	11	U	12	U	11	U	11	U	11	U	13	U	11	U	11	U	11	U
cis-1,3-Dichloropropene	11	U	12	U	11	U	12	U	11	U	11	UJ	11	U	13	U	11	U	5.7	U	5.7	U
Dibromochloromethane	11	U	12	U	11	U	12	U	11	U	11	UJ	11	U	13	U	11	U	5.7	U	5.7	U
Ethylbenzene	11	U	12	U	11	U	12	U	11	U	11	UJ	11	U	13	U	11	U	5.7	U	5.7	U
Methylene chloride	11	U	12	U	11	U	12	U	11	U	11	U	11	U	13	U	11	U	5.7	U	5.7	U
Styrene	11	U	12	U	11	U	12	U	11	U	11	UJ	11	U	13	U	11	U	5.7	U	5.7	U
Tetrachloroethene	11	U	12	U	11	U	12	U	11	U	11	U	11	U	13	U	11	U	5.7	U	5.7	U
Toluene	11	U	12	U	11	U	12	U	11	U	2	J	11	U	13	U	11	U	5.7	U	5.7	U
trans-1,3-Dichloropropene	11	U	12	U	11	U	12	U	11	U	11	UJ	11	U	13	U	11	U	5.7	U	5.7	U
Trichloroethene	11	U	12	U	11	U	12	U	11	U	11	UJ	11	U	13	U	11	U	5.7	U	5.7	U
Vinyl chloride	11	U	12	U	11	U	12	U	11	U	11	U	11	U	13	U	11	U	11	U	11	U
Xylene (total)	11	U	12	U	11	U	12	U	11	U	11	UJ	11	U	13	U	11	U	5.7	U	5.7	U
Semivolatile organics, µg/kg																						
1,2,4-Trichlorobenzene	360	U	390	U	370	U	390	U	380	U	370	U	360	U	440	U	350	U	NA		NA	
1,2-Dichlorobenzene	360	U	390	U	370	U	390	U	380	U	370	U	360	U	440	U	350	U	NA		NA	
1,3-Dichlorobenzene	360	U	390	U	370	U	390	U	380	U	370	U	360	U	440	U	350	U	NA		NA	
1,4-Dichlorobenzene	360	U	390	U	370	U	390	U	380	U	370	U	360	U	440	U	350	U	NA		NA	
2,2'-oxybis(1-Chloropropane)	360	U	390	U	370	U	390	U	380	U	370	U	360	U	440	U	350	U	NA		NA	

Appendix C
Table C-1. Summary of Soil Analytical Results
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Sample ID	17B02301D	17B02302	17B02401	17B02402	17B02501	17B02502	17B03401	17B03501	17B03601	17B05601	17B06601
Lab ID	G7678017	G7678018	G7678019	G7678020	G7679001	G7679002	G7679003	G7679004	G7679005	A8D170144001	A8D170144002
Sampling Date	26-May-95	26-May-95	26-May-95	26-May-95	26-May-95	26-May-95	26-May-95	26-May-95	26-May-95	16-Apr-98	16-Apr-98
2,4,5-Trichlorophenol	900 U	970 U	920 U	980 U	950 U	920 U	900 U	1100 U	880 U	NA	NA
2,4,6-Trichlorophenol	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
2,4-Dichlorophenol	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
2,4-Dimethylphenol	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
2,4-Dinitrophenol	900 U	970 U	920 U	980 U	950 U	920 U	900 U	1100 U	880 U	NA	NA
2,4-Dinitrotoluene	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
2,6-Dinitrotoluene	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
2-Chloronaphthalene	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
2-Chlorophenol	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
2-Methylnaphthalene	360 U	390 U	370 U	390 U	380 U	370 U	360 U	140 J	350 U	NA	NA
2-Methylphenol	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
2-Nitroaniline	900 U	970 U	920 U	980 U	950 U	920 U	900 U	1100 U	880 U	NA	NA
2-Nitrophenol	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
3,3'-Dichlorobenzidine	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
3-Nitroaniline	900 U	970 U	920 U	980 U	950 U	920 U	900 U	1100 U	880 U	NA	NA
4,6-Dinitro-2-methylphenol	900 U	970 U	920 U	980 U	950 U	920 U	900 U	1100 U	880 U	NA	NA
4-Bromophenyl-phenylether	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
4-Chloro-3-methylphenol	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
4-Chloroaniline	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
4-Chlorophenyl-phenylether	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
4-Methylphenol	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
4-Nitroaniline	900 U	970 U	920 U	980 U	950 U	920 U	900 U	1100 U	880 U	NA	NA
4-Nitrophenol	900 U	970 U	920 U	980 U	950 U	920 U	900 U	1100 U	880 U	NA	NA
Acenaphthene	360 U	390 U	370 U	390 U	380 U	370 U	360 U	1500	350 U	NA	NA
Acenaphthylene	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
Anthracene	360 U	390 U	370 U	390 U	380 U	370 U	360 U	2600	90 J	NA	NA
Benzo(a)anthracene	360 U	390 U	370 U	390 U	380 U	170 J	360 U	9000 D	340 J	NA	NA
Benzo(a)pyrene	360 U	390 U	370 U	390 U	380 U	170 J	360 U	8100 D	300 J	NA	NA
Benzo(b)fluoranthene	360 U	390 U	370 U	390 U	380 U	220 J	360 U	7200 D	320 J	NA	NA
Benzo(g,h,i)perylene	360 U	390 U	370 U	390 U	380 U	130 J	360 U	6400 D	220 J	NA	NA
Benzo(k)fluoranthene	360 U	390 U	370 U	390 U	380 U	130 J	360 U	2400	250 J	NA	NA
bis(2-Chloroethoxy)methane	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
bis(2-Chloroethyl)ether	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
bis(2-Ethylhexyl)phthalate	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
Butylbenzylphthalate	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	460	NA	NA
Carbazole	360 U	390 U	370 U	390 U	380 U	370 U	360 U	1700	350 U	NA	NA
Chrysene	360 U	390 U	370 U	390 U	380 U	190 J	360 U	9300 D	380	NA	NA
Di-n-butylphthalate	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
Di-n-octylphthalate	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
Dibenz(a,h)anthracene	360 U	390 U	370 U	390 U	380 U	370 U	360 U	2500	98 J	NA	NA

Appendix C
Table C-1. Summary of Soil Analytical Results
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Sample ID	17B02301D	17B02302	17B02401	17B02402	17B02501	17B02502	17B03401	17B03501	17B03601	17B05601	17B06601
Lab ID	G7678017	G7678018	G7678019	G7678020	G7679001	G7679002	G7679003	G7679004	G7679005	A8D170144001	A8D170144002
Sampling Date	26-May-95	26-May-95	26-May-95	26-May-95	26-May-95	26-May-95	26-May-95	26-May-95	26-May-95	16-Apr-98	16-Apr-98
Dibenzofuran	360 U	390 U	370 U	390 U	380 U	370 U	360 U	630	350 U	NA	NA
Diethylphthalate	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
Dimethylphthalate	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
Fluoranthene	360 U	390 U	370 U	390 U	380 U	310 J	360 U	13000 D	710	NA	NA
Fluorene	360 U	390 U	370 U	390 U	380 U	370 U	360 U	1400	350 U	NA	NA
Hexachlorobenzene	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
Hexachlorobutadiene	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
Hexachlorocyclopentadiene	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
Hexachloroethane	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
Indeno(1,2,3-cd)pyrene	360 U	390 U	370 U	390 U	380 U	110 J	360 U	5900 D	170 J	NA	NA
Isophorone	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
N-Nitroso-di-n-propylamine	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
N-Nitrosodiphenylamine (1)	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
Naphthalene	360 U	390 U	370 U	390 U	380 U	370 U	360 U	210 J	350 U	NA	NA
Nitrobenzene	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
Pentachlorophenol	900 U	970 U	920 U	980 U	950 U	920 U	900 U	1100 U	880 U	NA	NA
Phenanthrene	360 U	390 U	370 U	390 U	380 U	370 U	360 U	11000 D	440	NA	NA
Phenol	360 U	390 U	370 U	390 U	380 U	370 U	360 U	440 U	350 U	NA	NA
Pyrene	360 U	390 U	370 U	390 U	380 U	250 J	360 U	16000 D	640	NA	NA
Pesticides/PCBs, µg/kg											
4,4'-DDD	3.5 U	3.8 U	3.7 U	3.8 U	3.7 U	19 U	3.7 U	2600 C	8.4	NA	NA
4,4'-DDE	7.9 J	3.8 U	6.5 J	3.8 U	3.7 U	10 J	3.7 U	430	5.8 J	NA	NA
4,4'-DDT	7 U	3.8 U	12 J	3.8 U	3.7 U	21 J	3.7 U	1700 C	13	NA	NA
Aldrin	1.8 U	2 U	1.9 U	2 U	1.9 U	9.6 U	1.9 U	110 U	3.7 U	NA	NA
alpha-BHC	1.8 U	2 U	1.9 U	2 U	1.9 U	9.6 U	1.9 U	110 U	3.7 U	NA	NA
alpha-Chlordane	95 D	6.8	7.1	2 U	1.9 U	12 P	1.9 U	260	3.6 J	NA	NA
Aroclor-1016	35 U	38 U	37 U	38 U	37 U	190 U	37 U	2200 U	73 U	NA	NA
Aroclor-1221	72 U	77 U	75 U	78 U	76 U	380 U	74 U	4500 U	150 U	NA	NA
Aroclor-1232	35 U	38 U	37 U	38 U	37 U	190 U	37 U	2200 U	73 U	NA	NA
Aroclor-1242	35 U	38 U	37 U	38 U	37 U	190 U	37 U	2200 U	73 U	NA	NA
Aroclor-1248	35 U	38 U	37 U	38 U	37 U	190 U	37 U	2200 U	73 U	NA	NA
Aroclor-1254	35 U	38 U	37 U	38 U	37 U	190 U	37 U	2200 U	73 U	NA	NA
Aroclor-1260	35 U	38 U	37 U	38 U	37 U	190 U	37 U	2200 U	73 U	NA	NA
beta-BHC	1.8 U	2 U	1.9 U	2 U	1.9 U	9.6 U	1.9 U	110 U	3.7 U	NA	NA
delta-BHC	1.8 U	2 U	1.9 U	2 U	1.9 U	9.6 U	1.9 U	110 U	3.7 U	NA	NA
Dieldrin	18	3.8 U	2.3 J	3.8 U	3.7 U	12 J	3.7 U	220 U	5.1 J	NA	NA
Endosulfan I	1.8 U	2 U	1.9 U	2 U	1.9 U	9.6 U	1.9 U	110 U	3.7 U	NA	NA
Endosulfan II	3.5 U	3.8 U	3.7 U	3.8 U	3.7 U	19 U	3.7 U	220 U	7.3 U	NA	NA
Endosulfan sulfate	3.5 U	3.8 U	3.7 U	3.8 U	3.7 U	19 U	3.7 U	220 U	7.3 U	NA	NA
Endrin	3.5 U	3.8 U	3.7 U	3.8 U	3.7 U	19 U	3.7 U	220 U	7.3 U	NA	NA

Appendix C

Table C-1. Summary of Soil Analytical Results
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Sample ID	17B02301D		17B02302		17B02401		17B02402		17B02501		17B02502		17B03401		17B03501		17B03601		17B05601		17B06601	
Lab ID	G7678017		G7678018		G7678019		G7678020		G7679001		G7679002		G7679003		G7679004		G7679005		A8D170144001		A8D170144002	
Sampling Date	26-May-95		26-May-95		26-May-95		26-May-95		26-May-95		26-May-95		26-May-95		26-May-95		26-May-95		16-Apr-98		16-Apr-98	
Endrin aldehyde	3.5	U	3.8	U	3.7	U	3.8	U	3.7	U	19	U	3.7	U	220	U	7.3	U	NA		NA	
Endrin ketone	3.5	U	3.8	U	3.7	U	3.8	U	3.7	U	19	U	3.7	U	220	U	7.3	U	NA		NA	
gamma-BHC (Lindane)	1.8	U	2	U	1.9	U	2	U	1.9	U	9.6	U	1.9	U	110	U	3.7	U	NA		NA	
gamma-Chlordane	100	D	7		5.8	J	2	U	1.9	U	14		1.9	U	320		4.6		NA		NA	
Heptachlor	8.9		2	U	1.9	U	2	U	1.9	U	9.6	U	1.9	U	110	U	3.7	U	NA		NA	
Heptachlor epoxide	1.8	U	2	U	3.7	U	2	U	1.9	U	9.6	U	1.9	U	110	U	3.7	U	NA		NA	
Methoxychlor	18	U	20	U	19	U	20	U	19	U	96	U	19	U	1100	U	37	U	NA		NA	
Toxaphene	180	U	200	U	190	U	200	U	190	U	960	U	190	U	11000	U	370	U	NA		NA	
Inorganics, mg/kg																						
Aluminum	2460		2680		1040		5270		1550	J	1640	J	1200	J	1580	J	1980	J	NA		NA	
Antimony	6.3	U	6.8	U	6.6	U	6.9	U	6.7	U	6.6	U	6.4	U	7.7	U	6.4	U	NA		NA	
Arsenic	0.73	B	1.4	B	1.4	B	1	B	0.43	U	0.57	B	0.53	B	0.68	B	0.46	B	NA		NA	
Barium	7.3	B	6.6	B	7.5	B	12	B	3.3	B	8	B	5.2	B	16.3	B	6.1	B	NA		NA	
Beryllium	0.02	B	0.06	B	0.1	B	0.06	B	0.02	U	0.08	U	0.06	U	0.15	B	0.05	U	NA		NA	
Cadmium	0.66	U	0.72	U	1.3		0.72	U	0.7	U	0.69	U	0.67	U	0.81	U	0.68	U	NA		NA	
Calcium	19600		3380		235000		376	B	629	B	15100		3910		88200		5270		NA		NA	
Chromium	6.2		2.7		7.7		4.7		1.8	B	2.1	B	1.6	B	22.7		2.8		NA		NA	
Cobalt	0.62	U	0.67	U	0.93	B	0.77	B	0.65	U	0.65	U	0.63	U	0.76	U	0.63	U	NA		NA	
Copper	5	B	1.6	B	9		0.41	B	0.5	U	2.7	U	1	U	7.9		2.1	U	NA		NA	
Iron	477		314		632		817		236	J	710	J	332	J	10400	J	563	J	NA		NA	
Lead	25.4	J	11.7	J	39.7	J	6.4	J	0.9	J	7.4	J	3.6	J	50.2	J	16.5	J	NA		NA	
Magnesium	179	B	81.4	B	1700		23	B	51.4	B	210	B	96.6	B	1020	B	80.6	B	NA		NA	
Manganese	8.4		2.4	B	18.8		4		1.1	B	5		5.5		47.7		2.6	B	NA		NA	
Mercury	0.03	B	0.03	U	0.07		0.03	B	0.03	U	0.03	U	0.02	U	0.08		0.03	B	NA		NA	
Nickel	3	U	3.3	U	3.2	U	3.3	U	3.2	U	3.2	U	3.1	U	3.7	U	3.1	U	NA		NA	
Potassium	95.1	U	102	U	98.9	U	103	U	99.9	U	98.8	U	96.1	U	116	U	96.6	U	NA		NA	
Selenium	0.49	U	0.53	U	0.51	UJ	0.53	U	0.52	U	0.51	U	0.5	U	0.6	UJ	0.5	U	NA		NA	
Silver	0.56	U	0.6	U	0.58	U	0.6	U	0.59	U	0.58	U	0.56	U	0.68	U	0.57	U	NA		NA	
Sodium	10.2	B	7.5	B	75	B	5.9	B	15.5	U	15.1	U	8.2	U	47.7	B	11.6	U	NA		NA	
Thallium	0.39	U	0.42	U	0.4	U	0.42	U	0.41	U	0.4	U	0.39	U	0.47	U	0.39	U	NA		NA	
Vanadium	3.4	B	2.7	B	15.4		4.5	B	2.5	B	3.1	B	3.1	B	8.4	B	4.8	B	NA		NA	
Zinc	15.4		2.6	B	20.1		0.71	B	0.89	B	5.2		2.7	B	32.7		6.2		NA		NA	
General Chemistry, mg/kg																						
Total Petroleum Hydrocarbons	95.3		26.6		28.3		4.6	U	28.5		39.6		57.8		98.5		9.4		NA		NA	

Appendix C

Table C-2. Summary of Soil Analytical Results, PAH Confirmation Samples

Study Area 17

Naval Training Center, Orlando

Orlando, FL

SampleID	17B04801		17B04901		17B04901D		17B05001		17B05101		17B05201		17B05301		17B05401		17S04801		17S04901	
LabID	A7K260160007		A7K220128004		A7K220128005		A7K220128008		A7K260160005		A7K260160006		A7K250140002		A7K250138014		A7K220128001		A7K220128003	
Sampling Date	11/25/97		11/21/97		11/21/97		11/21/97		11/25/97		11/25/97		11/24/97		11/24/97		11/21/97		11/21/97	
1-Methylnaphthalene	38	U	38	U	38	U	38	U	39	U	39	U	41	U	200	U	350	U	37	U
2-Methylnaphthalene	38	U	38	U	38	U	38	U	39	U	39	U	41	U	200	U	350	U	37	U
Acenaphthene	38	U	38	U	38	U	42		39	U	39	U	41	U	200	U	350	U	38	
Acenaphthylene	38	U	38	U	38	U	38	U	39	U	39	U	41	U	200	U	350	U	37	U
Anthracene	38	U	38	U	38	U	38	U	39	U	39	U	41	U	200	U	350	U	37	U
Benzo(a)anthracene	3.8	U	3.7	U	3.7	U	27		7.4	PF	3.8	U	12		32		35	U	3.8	PF
Benzo(a)pyrene	3.8	U	3.7	U	3.7	U	26		12		3.8	U	23		29		35	U	8.2	
Benzo(b)fluoranthene	3.8	U	3.7	U	3.7	U	54		12		3.8	U	42		34		35	U	9.7	
Benzo(ghi)perylene	3.8	U	3.7	U	3.7	U	56		7.8		3.8	U	44		43		35	U	11	
Benzo(k)fluoranthene	2	U	1.9	U	1.9	U	13	PF	6.2		2	U	18		15		18	U	4.5	
Chrysene	3.8	U	3.7	U	3.7	U	42		13		3.8	U	22		29		35	U	12	
Dibenz(a,h)anthracene	3.8	U	3.7	U	3.7	U	3.8	U	5.7		3.8	U	9.8	PF	19	U	35	U	3.7	U
Fluoranthene	3.8	U	3.7	U	3.7	U	64		3.8	U	3.8	U	22		35		35	U	17	
Fluorene	38	U	38	U	38	U	38	U	39	U	39	U	41	U	200	U	350	U	37	U
Indeno(1,2,3-cd)pyrene	3.8	U	3.7	U	3.7	U	3.8	U	7.8		3.8	U	20	PF	19	U	35	U	3.7	U
Naphthalene	38	U	38	U	38	U	39		39	U	39	U	41	U	200	U	350	U	37	U
Phenanthrene	38	U	38	U	38	U	38	U	39	U	39	U	41	U	200	U	350	U	37	U
Pyrene	21		3.7	U	3.7	U	74		30		3.8	U	24		52		56		23	

Appendix C

Table C-2. Summary of Soil Analytical Results, PAH Confirmation Samples

Study Area 17

Naval Training Center, Orlando

Orlando, FL

SampleID	17S05001		17S05001D		17S05101		17S05201		17S05301		17S05401		17S05501		17S05601		17S05701		17S05801		17S05901	
LabID	A7K220128006		A7K220128007		A7K220128009		A7K220128011		A7K250140001		A7K250138013											
Sampling Date	11/21/97		11/21/97		11/21/97		11/21/97		11/24/97		11/24/97		11/17/98		11/17/98		11/17/98		11/17/98		11/17/98	
1-Methylnaphthalene	1800	U	1800	U	75000	U	370	U	90	U	190	U	100	U	1100	U	8200	U	110	U	1200	U
2-Methylnaphthalene	1800	U	1800	U	75000	U	370	U	90	U	190	U	100	U	1100	U	8200	U	110	U	1200	U
Acenaphthene	1800	U	3000		190000		1200		260		770		100	U	1100	U	8200	U	110	U	1200	U
Acenaphthylene	1800	U	1800	U	75000	U	370	U	90	U	190	U	100	U	1100	U	8200	U	110	U	1200	U
Anthracene	1800	U	1800	U	75000	U	370	U	90	U	190	U	100	U	1100	U	8200	U	110	U	1200	U
Benzo(a)anthracene	1700		980		57000		410		83		270		5.1	U	330		2200		14		210	
Benzo(a)pyrene	1700		1100		48000		420		120		62	PF	5.1	U	430		2500		55		580	
Benzo(b)fluoranthene	1700		1200		47000		500		140		270		5.1	U	430		2200		24		610	
Benzo(ghi)perylene	1000		1000		24000		400		110		19	U	10	U	330		1600		36		610	
Benzo(k)fluoranthene	820		510		21000		240		57		67	PF	1.7	U	220		1200		17		300	
Chrysene	1600		930		50000		390		100		250		5.1	U	340		2100		16		240	
Dibenz(a,h)anthracene	270	PF	180	U	7900	PF	54	PF	26	PF	57	PF	5.1	U	55	U	410	U	5.7	U	58	U
Fluoranthene	3700		2100		160000		900		210		530		10	U	780		6000		15		230	
Fluorene	1800	U	1800	U	75000	U	370	U	90	U	190	U	100	U	1100	U	8200	U	110	U	1200	U
Indeno(1,2,3-cd)pyrene	280	PF	180	U	7400	U	360		58		35	PF	5.1	U	290		410	U	5.7	U	570	
Naphthalene	1800	U	1800	U	75000	U	370	U	98		190	U	100	U	1100	U	8200	U	110	U	1200	U
Phenanthrene	3300	PF	1800	U	120000		370	U	90	U	390		100	U	1100	U	8200	U	110	U	1200	U
Pyrene	3900		1800		100000		630		160		630		5.1	U	550		4300		17		370	

Appendix C

Table C-2 Summary of Soil Analytical Results, PAH Confirmation Samples

Study Area 17

Naval Training Center, Orlando

Orlando, FL

SampleID	17S06001		17S06101		17S06201		17S06301		17S06401		17S06401D		17S06501		17S06601	
LabID																
Sampling Date	11/17/98		11/17/98		11/17/98		11/17/98		11/17/98		11/17/98		11/17/98		11/17/98	
1-Methylnaphthalene	140	U	27000	U	11000	U	53000	U	21000	U	160000	U	1100	U	120	U
2-Methylnaphthalene	140	U	27000	U	11000	U	53000	U	21000	U	160000	U	1100	U	120	U
Acenaphthene	140	U	27000	U	11000	U	53000	U	21000	U	160000	U	1100	U	120	U
Acenaphthylene	140	U	27000	U	11000	U	53000	U	21000	U	160000	U	1100	U	120	U
Anthracene	140	U	27000	U	11000	U	53000	U	21000	U	160000	U	1100	U	120	U
Benzo(a)anthracene	7	U	10000		3000		16000		6700		34000		170		6	U
Benzo(a)pyrene	28		14000		4000		20000		6600		29000		240		13	
Benzo(b)fluoranthene	17		12000		3700		20000		7400		32000		270		7.9	
Benzo(ghi)perylene	15		8700		2700		13000		4100		18000		220		12	U
Benzo(k)fluoranthene	7.1		6100		1900		9500		3400		16000		140		4.5	
Chrysene	8.3		11000		3100		17000		6700		33000		200		6	U
Dibenz(a,h)anthracene	7	U	1300	U	550	U	2700	U	1100	U	7900	U	55	U	6	U
Fluoranthene	14	U	27000		7400		46000		19000		100000		400		12	U
Fluorene	140	U	2700	U	11000	U	5300	U	21000	U	16000	U	1100	U	120	U
Indeno(1,2,3-cd)pyrene	7	U	7700		550	U	12000		4100		17000		55	U	6.9	
Naphthalene	140	U	27000	U	11000	U	53000	U	21000	U	160000	U	1100	U	120	U
Phenanthrene	140	U	27000	U	11000	U	53000	U	21000	U	160000	U	1100	U	120	U
Pyrene	13		19000		5100		29000		12000		68000		280		6.9	

Appendix B
Table B-3.1. Summary of Positive Detections in Groundwater Analytical Results
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Well ID						OLD-17-01		OLD-17-02		OLD-17-03		OLD-17-04					
Identifier	Background	FDEPGCTL		FEDMCL	RBC for Tap Water	17G00101		17G00201		17G00301		17G00401		17G00402		17G00403	
Sampling Date						5/31/95		5/31/95		5/31/95		5/31/95		6/17/96		2/12/97	
Volatile Organics, µg/L																	
1,1-Dichloroethane		70	mc/st	ND	810 n												
1,1-Dichloroethene		7	p/c	7	0.044 c							3	J	21	J	16	
Carbon disulfide		700	mc/st	ND	1000 n												
Chloroform		5.7	mc/c	100	0.15 c			5									
Chloromethane		2.7	mc/c	ND	1.4 c												
cis-1,2-Dichloroethene		70	p/st	70	61 n							200		600		460	D
m-Dichlorobenzene		10	mc/o	ND	540 n												
n-Butylbenzene		ND		ND	61 n												
n-Propylbenzene		ND		ND	61 n												
Tetrachloroethene		3	p/c	5	1.1 c	0.4	J										
Toluene		40	s/st	1000	750 n												
trans-1,2-Dichloroethene		100	p/st	100	120 n							5	J	10	J	6.9	
Trichloroethene		3	p/c	5	1.6 c							42		100		120	D
Vinyl chloride		1	p/c	2	0.019 c							190		610	D	450	D
Semivolatile Organics, µg/L																	
bis(2-Ethylhexyl)phthalate		6	p/c	6	4.8 c							1				NA	

Appendix B

Table B-3.1. Summary of Positive Detections in Groundwater Analytical Results
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Well ID						OLD-17-01		OLD-17-02		OLD-17-03		OLD-17-04					
Identifier	Background	FDEPGCTL		FEDMCL	RBC for Tap Water		17G00101		17G00201		17G00301		17G00401		17G00402		17G00403
Sampling Date							5/31/95		5/31/95		5/31/95		5/31/95		6/17/96		2/12/97
Inorganics, µg/L																	
Aluminum	4,067	200	s	ND	37,000	n	910		**4800**		**6650**		1,050		155	BJ	NA
Antimony	4.1	6	p/st	6	15	n	2.7	J									NA
Arsenic	5	50	p/c	50	0.045 /11	c/n							2.1	J	1.7	BJ	NA
Barium	31.4	2,000	p/st	2,000	2,600	n	66.9	J	40.9	J	53.2	J	41.2	J	51	B	NA
Beryllium	--	4	p/c	4	0.016	c	0.12	J	0.15	J	0.17	J					NA
Calcium	36,830	ND		ND	1,000,000		136,000		67,600		17,800		36,400		26000		NA
Chromium	7.8	100	p	100	180	n					6.1	B					NA
Copper	5.4	1,000	s/st	ND	1500	n											NA
Iron	1,227	300	s	ND	11000	n	108		**1310**		**14800**		**6760**		**10400**		NA
Lead	4	15	p/st	15	15				2.4	B	3.4						NA
Magnesium	4,560	ND		ND	118,807		14,700		7,240		5,470		10,400		10500		NA
Manganese	17	50	s/st	ND	180	n	10.5	B	21		28.3		38.5		33.9		NA
Nickel	--	100	p/st	100	730	n											NA
Potassium	5,400	ND		ND	297,016				1,460	J	747	J	1,690	J	1560	B	NA
Silver		100	s/st	ND	180	n									3.1	BJ	NA
Selenium	9.7	50	p/st	50	180	n					2.3	J					NA
Sodium	18,222	160,000	p	ND	396,022		16,100		7,960		3,670	B	9,690		8520	J	NA
Thallium	3.8	2	p	2	2.9	n			**4.8**	J							NA
Vanadium	20.6	49	mc/st	ND	260	n	**81.5**		19.7	B	12.6	B	5.9	B	3.6	B	NA
Zinc	4	5,000	s/st	ND	11000	n	2.1	B	3.9	B	2.5	B	3.8	B			NA
General chemistry, mg/L																	
Total Suspended Solids	ND	ND		ND	ND		5		3		90		3				NA

Appendix B

Table B-3.1. Summary of Positive Detections in Groundwater Analytical Results

Study Area 17

Naval Training Center, Orlando
Orlando, FL

Well ID							OLD-17-05				OLD-17-T24		OLD-17-06	
Identifier	Background	FDEPGCTL		FEDMCL	RBC for Tap Water		17G00404		17G00501	17G00501D	17G00502		17G024T1		17G00601	
Sampling Date							19-Jun-98		5/31/95	5/31/95	8-Jun-98		6/2/95		2/12/97	
Volatile Organics, µg/L																
1,1-Dichloroethane		70	mc/st	ND	810	n										
1,1-Dichloroethene		7	p/c	7	0.044	c	**26**									
Carbon disulfide		700	mc/st	ND	1000 n				1							
Chloroform		5.7	mc/c	100	0.15	c					0.69	J				
Chloromethane		2.7	mc/c	ND	1.4	c					1.2	J				
cis-1,2-Dichloroethene		70	p/st	70	61	n	**420**								11	
m-Dichlorobenzene		10	mc/o	ND	540	n					0.67	J				
n-Butylbenzene		ND		ND	61	n										
n-Propylbenzene		ND		ND	61	n										
Tetrachloroethene		3	p/c	5	1.1	c										
Toluene		40	s/st	1000	750	n										
trans-1,2-Dichloroethene		100	p/st	100	120	n	4.1	J								
Trichloroethene		3	p/c	5	1.6	c	**260**									
Vinyl chloride		1	p/c	2	0.019	c	**350**								**15**	
Semivolatile Organics, µg/L																
bis(2-Ethylhexyl)phthalate		6	p/c	6	4.8	c	NA			1	NA		1		NA	

Appendix B
Table B-3.1. Summary of Positive Detections in Groundwater Analytical Results
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Well ID							OLD-17-05						OLD-17-T24		OLD-17-06	
Identifier	Background		FDEPGCTL		FEDMCL	RBC for Tap Water		17G00404		17G00501		17G00501D		17G00502	17G024T1		17G00601	
Sampling Date								19-Jun-98		5/31/95		5/31/95		8-Jun-98	6/2/95		2/12/97	
Inorganics, µg/L																		
Aluminum	4,067		200	s	ND	37,000	n	NA		473		1,340		NA	551		NA	
Antimony	4.1		6	p/st	6	15	n	NA						NA			NA	
Arsenic	5		50	p/c	50	0.045 /11	c/n	NA		2.7	J	2.4	J	NA			NA	
Barium	31.4		2,000	p/st	2,000	2,600	n	NA		33.2	J	34.4	J	NA	115	J	NA	
Beryllium	--		4	p/c	4	0.016	c	NA						NA			NA	
Calcium	36,830		ND		ND	1,000,000		NA		34,700		34,000		NA	44,700		NA	
Chromium	7.8		100	p	100	180	n	NA						NA	5.2	B	NA	
Copper	5.4		1,000	s/st	ND	1500	n	NA		23.8	B			NA			NA	
Iron	1,227		300	s	ND	11000	n	NA		**7650**		**6460**		NA	**100000**		NA	
Lead	4		15	p/st	15	15		NA						NA			NA	
Magnesium	4,560		ND		ND	118,807		NA		6,130		5,670		NA	3,730	B	NA	
Manganese	17		50	s/st	ND	180	n	NA		20.2		18.9		NA	**265**		NA	
Nickel	--		100	p/st	100	730	n	NA						NA	25.6	B	NA	
Potassium	5,400		ND		ND	297,016		NA		2,090	J	2,140	J	NA	3,330	J	NA	
Silver			100	s/st	ND	180	n	NA						NA			NA	
Selenium	9.7		50	p/st	50	180	n	NA						NA			NA	
Sodium	18,222		160,000	p	ND	396,022		NA		7,090		6,790		NA	4,660	B	NA	
Thallium	3.8		2	p	2	2.9	n	NA						NA			NA	
Vanadium	20.6		49	mc/st	ND	260	n	NA		6.4	B	7.6	B	NA	4.4	B	NA	
Zinc	4		5,000	s/st	ND	11000	n	NA		5.1	B	2.5	B	NA	226		NA	
General chemistry, mg/L																		
Total Suspended Solids	ND		ND		ND	ND		NA				3		NA	76		NA	

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Table B-3.1 Summary of Positive Detections in Groundwater Analytical Results

Study Area 17

Naval Training Center, Orlando

Orlando, FL

Well ID							OLD-17-07	OLD-17-08	OLD-17-09	OLD-17-10		
Identifier	Background	FDEPGCTL		FEDMCL	RBC for Tap Water		17G00701	17G00801	17G00901	17G01001	17G01001D	17G01003
Sampling Date							2/12/97	2/12/97	2/12/97	2/12/97	2/12/97	19-Jun-98
Volatile Organics, µg/L												
1,1-Dichloroethane		70	mc/st	ND	810	n						
1,1-Dichloroethene		7	p/c	7	0.044	c						
Carbon disulfide		700	mc/st	ND	1000	n						
Chloroform		5.7	mc/c	100	0.15	c						
Chloromethane		2.7	mc/c	ND	1.4	c						
cis-1,2-Dichloroethene		70	p/st	70	61	n	7.2	40	3.6	3.4	3.2	30
m-Dichlorobenzene		10	mc/o	ND	540	n						
n-Butylbenzene		ND		ND	61	n						
n-Propylbenzene		ND		ND	61	n						
Tetrachloroethene		3	p/c	5	1.1	c						
Toluene		40	s/st	1000	750	n						
trans-1,2-Dichloroethene		100	p/st	100	120	n						
Trichloroethene		3	p/c	5	1.6	c				2.3	2.2	**6.9**
Vinyl chloride		1	p/c	2	0.019	c	**67**	**2.9**	**2.6**	**1.4**	**1.6**	**10**
Semivolatile Organics, µg/L												
bis(2-Ethylhexyl)phthalate		6	p/c	6	4.8	c	NA	NA	NA	NA	NA	NA

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Table B-3.1. Summary of Positive Detections in Groundwater Analytical Results
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Well ID						OLD-17-07	OLD-17-08	OLD-17-09	OLD-17-10		
Identifier	Background	FDEPGCTL		FEDMCL	RBC for Tap Water	17G00701	17G00801	17G00901	17G01001	17G01001D	17G01003
Sampling Date						2/12/97	2/12/97	2/12/97	2/12/97	2/12/97	19-Jun-98
Inorganics, µg/L											
Aluminum	4,067	200	s	ND	37,000 n	NA	NA	NA	NA	NA	NA
Antimony	4.1	6	p/st	6	15 n	NA	NA	NA	NA	NA	NA
Arsenic	5	50	p/c	50	0.045 /11 c/n	NA	NA	NA	NA	NA	NA
Barium	31.4	2,000	p/st	2,000	2,600 n	NA	NA	NA	NA	NA	NA
Beryllium	--	4	p/c	4	0.016 c	NA	NA	NA	NA	NA	NA
Calcium	36,830	ND		ND	1,000,000	NA	NA	NA	NA	NA	NA
Chromium	7.8	100	p	100	180 n	NA	NA	NA	NA	NA	NA
Copper	5.4	1,000	s/st	ND	1500 n	NA	NA	NA	NA	NA	NA
Iron	1,227	300	s	ND	11000 n	NA	NA	NA	NA	NA	NA
Lead	4	15	p/st	15	15	NA	NA	NA	NA	NA	NA
Magnesium	4,560	ND		ND	118,807	NA	NA	NA	NA	NA	NA
Manganese	17	50	s/st	ND	180 n	NA	NA	NA	NA	NA	NA
Nickel	--	100	p/st	100	730 n	NA	NA	NA	NA	NA	NA
Potassium	5,400	ND		ND	297,016	NA	NA	NA	NA	NA	NA
Silver		100	s/st	ND	180 n	NA	NA	NA	NA	NA	NA
Selenium	9.7	50	p/st	50	180 n	NA	NA	NA	NA	NA	NA
Sodium	18,222	160,000	p	ND	396,022	NA	NA	NA	NA	NA	NA
Thallium	3.8	2	p	2	2.9 n	NA	NA	NA	NA	NA	NA
Vanadium	20.6	49	mc/st	ND	260 n	NA	NA	NA	NA	NA	NA
Zinc	4	5,000	s/st	ND	11000 n	NA	NA	NA	NA	NA	NA
General chemistry, mg/L											
Total Suspended Solids	ND	ND		ND	ND	NA	NA	NA	NA	NA	NA

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Table B-3 1 Summary of Positive Detections in Groundwater Analytical Results

Study Area 17

Naval Training Center, Orlando

Orlando, FL

Well ID							OLD-17-20		OLD-17-22		OLD-17-23				OLD-17-24			
Identifier	Background	FDEPGCTL		FEDMCL	RBC for Tap Water		17G02001		17G02201		17G02301		17G02301D		17G02401		17G02401D	
Sampling Date							11-Jun-98		16-Jun-98		18-Jun-98		18-Jun-98		18-Jun-98		18-Jun-98	
Volatile Organics, µg/L																		
1,1-Dichloroethane		70	mc/st	ND	810	n	3.4	J										
1,1-Dichloroethene		7	p/c	7	0.044	c	1	J										
Carbon disulfide		700	mc/st	ND	1000	n												
Chloroform		5 7	mc/c	100	0.15	c			0.89	J								
Chloromethane		2.7	mc/c	ND	1.4	c			1.6	J								
cis-1,2-Dichloroethene		70	p/st	70	61	n	**98**		1.7	J	8.8		9.9					
m-Dichlorobenzene		10	mc/o	ND	540	n												
n-Butylbenzene		ND		ND	61	n												
n-Propylbenzene		ND		ND	61	n												
Tetrachloroethene		3	p/c	5	1.1	c												
Toluene		40	s/st	1000	750	n												
trans-1,2-Dichloroethene		100	p/st	100	120	n	0.76	J										
Trichloroethene		3	p/c	5	1.6	c					**20**		**25**		**65000**		**72000**	
Vinyl chloride		1	p/c	2	0.019	c	**140**											
Semivolatile Organics, µg/L																		
bis(2-Ethylhexyl)phthalate		6	p/c	6	4.8	c	NA		NA		NA		NA		NA		NA	

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Table B-3.1 Summary of Positive Detections in Groundwater Analytical Results
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Well ID							OLD-17-20	OLD-17-22	OLD-17-23		OLD-17-24	
Identifier	Background	FDEPGCTL		FEDMCL	RBC for Tap Water		17G02001	17G02201	17G02301	17G02301D	17G02401	17G02401D
Sampling Date							11-Jun-98	16-Jun-98	18-Jun-98	18-Jun-98	18-Jun-98	18-Jun-98
Inorganics, µg/L												
Aluminum	4,067	200	s	ND	37,000	n	NA	NA	NA	NA	NA	NA
Antimony	4.1	6	p/st	6	15	n	NA	NA	NA	NA	NA	NA
Arsenic	5	50	p/c	50	0.045 /11	c/n	NA	NA	NA	NA	NA	NA
Barium	31.4	2,000	p/st	2,000	2,600	n	NA	NA	NA	NA	NA	NA
Beryllium	--	4	p/c	4	0.016	c	NA	NA	NA	NA	NA	NA
Calcium	36,830	ND		ND	1,000,000		NA	NA	NA	NA	NA	NA
Chromium	7.8	100	p	100	180	n	NA	NA	NA	NA	NA	NA
Copper	5.4	1,000	s/st	ND	1500	n	NA	NA	NA	NA	NA	NA
Iron	1,227	300	s	ND	11000	n	NA	NA	NA	NA	NA	NA
Lead	4	15	p/st	15	15		NA	NA	NA	NA	NA	NA
Magnesium	4,560	ND		ND	118,807		NA	NA	NA	NA	NA	NA
Manganese	17	50	s/st	ND	180	n	NA	NA	NA	NA	NA	NA
Nickel	--	100	p/st	100	730	n	NA	NA	NA	NA	NA	NA
Potassium	5,400	ND		ND	297,016		NA	NA	NA	NA	NA	NA
Silver		100	s/st	ND	180	n	NA	NA	NA	NA	NA	NA
Selenium	9.7	50	p/st	50	180	n	NA	NA	NA	NA	NA	NA
Sodium	18,222	160,000	p	ND	396,022		NA	NA	NA	NA	NA	NA
Thallium	3.8	2	p	2	2.9	n	NA	NA	NA	NA	NA	NA
Vanadium	20.6	49	mc/st	ND	260	n	NA	NA	NA	NA	NA	NA
Zinc	4	5,000	s/st	ND	11000	n	NA	NA	NA	NA	NA	NA
General chemistry, mg/L												
Total Suspended Solids	ND	ND		ND	ND		NA	NA	NA	NA	NA	NA

Appendix B
Table B-3.1. Summary of Positive Detections in Groundwater Analytical Results
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Well ID						OLD-17-25		OLD-17-26		OLD-17-27		OLD-17-28		OLD-17-29		OLD-17-30	
Identifier	Background	FDEPGCTL		FEDMCL	RBC for Tap Water	17G02501		17G02601		17G02701		17G02801		17G02901		17G03001	
Sampling Date						18-Jun-98		17-Jun-98		17-Jun-98		17-Jun-98		23-Jun-98		23-Jun-98	
Volatile Organics, µg/L																	
1,1-Dichloroethane		70	mc/st	ND	810 n												
1,1-Dichloroethene		7	p/c	7	0.044 c					6.1	J						
Carbon disulfide		700	mc/st	ND	1000 n												
Chloroform		5.7	mc/c	100	0.15 c												
Chloromethane		2.7	mc/c	ND	1.4 c												
cis-1,2-Dichloroethene		70	p/st	70	61 n	0.78	J	1.9	J	**360**		2.3	J			1.1	J
m-Dichlorobenzene		10	mc/o	ND	540 n												
n-Butylbenzene		ND		ND	61 n											1.5	J
n-Propylbenzene		ND		ND	61 n											0.81	J
Tetrachloroethene		3	p/c	5	1.1 c	0.49	J										
Toluene		40	s/st	1000	750 n					1.8	J						
trans-1,2-Dichloroethene		100	p/st	100	120 n					12							
Trichloroethene		3	p/c	5	1.6 c	**39**				**60**		1.4	J	2.5	J		
Vinyl chloride		1	p/c	2	0.019 c			**13**		**360**						**1**	J
Semivolatile Organics, µg/L																	
bis(2-Ethylhexyl)phthalate		6	p/c	6	4.8 c	NA		NA		NA		NA		NA		NA	

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Table B-3 1 Summary of Positive Detections in Groundwater Analytical Results

Study Area 17

Naval Training Center, Orlando

Orlando, FL

Well ID							OLD-17-25		OLD-17-26		OLD-17-27		OLD-17-28		OLD-17-29		OLD-17-30	
Identifier	Background	FDEPGCTL		FEDMCL	RBC for Tap Water		17G02501		17G02601		17G02701		17G02801		17G02901		17G03001	
Sampling Date							18-Jun-98		17-Jun-98		17-Jun-98		17-Jun-98		23-Jun-98		23-Jun-98	
Inorganics, µg/L																		
Aluminum	4,067	200	s	ND	37,000	n	NA		NA		NA		NA		NA		NA	
Antimony	4.1	6	p/st	6	15	n	NA		NA		NA		NA		NA		NA	
Arsenic	5	50	p/c	50	0.045 /11	c/n	NA		NA		NA		NA		NA		NA	
Barium	31.4	2,000	p/st	2,000	2,600	n	NA		NA		NA		NA		NA		NA	
Beryllium	--	4	p/c	4	0.016	c	NA		NA		NA		NA		NA		NA	
Calcium	36,830	ND		ND	1,000,000		NA		NA		NA		NA		NA		NA	
Chromium	7.8	100	p	100	180	n	NA		NA		NA		NA		NA		NA	
Copper	5.4	1,000	s/st	ND	1500	n	NA		NA		NA		NA		NA		NA	
Iron	1,227	300	s	ND	11000	n	NA		NA		NA		NA		NA		NA	
Lead	4	15	p/st	15	15		NA		NA		NA		NA		NA		NA	
Magnesium	4,560	ND		ND	118,807		NA		NA		NA		NA		NA		NA	
Manganese	17	50	s/st	ND	180	n	NA		NA		NA		NA		NA		NA	
Nickel	--	100	p/st	100	730	n	NA		NA		NA		NA		NA		NA	
Potassium	5,400	ND		ND	297,016		NA		NA		NA		NA		NA		NA	
Silver		100	s/st	ND	180	n	NA		NA		NA		NA		NA		NA	
Selenium	9.7	50	p/st	50	180	n	NA		NA		NA		NA		NA		NA	
Sodium	18,222	160,000	p	ND	396,022		NA		NA		NA		NA		NA		NA	
Thallium	3.8	2	p	2	2.9	n	NA		NA		NA		NA		NA		NA	
Vanadium	20.6	49	mc/st	ND	260	n	NA		NA		NA		NA		NA		NA	
Zinc	4	5,000	s/st	ND	11000	n	NA		NA		NA		NA		NA		NA	
General chemistry, mg/L																		
Total Suspended Solids	ND	ND		ND	ND		NA		NA		NA		NA		NA		NA	

Appendix B
Table B-3.1. Summary of Positive Detections in Groundwater Analytical Results
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Well ID								OLD-17-31		OLD-17-32	
Identifier	Background	FDEPGCTL		FEDMCL		RBC for Tap Water		17G03101		17G03201	
Sampling Date								23-Jun-98		23-Jun-98	
Volatile Organics, µg/L											
1,1-Dichloroethane		70	mc/st	ND		810	n				
1,1-Dichloroethene		7	p/c	7		0.044	c				
Carbon disulfide		700	mc/st	ND		1000	n				
Chloroform		5.7	mc/c	100		0.15	c				
Chloromethane		2.7	mc/c	ND		1.4	c				
cis-1,2-Dichloroethene		70	p/st	70		61	n	**220**		**81**	
m-Dichlorobenzene		10	mc/o	ND		540	n				
n-Butylbenzene		ND		ND		61	n				
n-Propylbenzene		ND		ND		61	n				
Tetrachloroethene		3	p/c	5		1.1	c				
Toluene		40	s/st	1000		750	n	1	J		
trans-1,2-Dichloroethene		100	p/st	100		120	n	2.2	J	1.9	J
Trichloroethene		3	p/c	5		1.6	c				
Vinyl chloride		1	p/c	2		0.019	c	**130**		**82**	
Semivolatile Organics, µg/L											
bis(2-Ethylhexyl)phthalate		6	p/c	6		4.8	c	NA		NA	

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Table B-3.1. Summary of Positive Detections in Groundwater Analytical Results
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Well ID							OLD-17-31		OLD-17-32	
Identifier	Background	FDEPGCTL		FEDMCL		RBC for Tap Water		17G03101		17G03201
Sampling Date								23-Jun-98		23-Jun-98
Inorganics, µg/L										
Aluminum	4,067	200	s	ND		37,000	n	NA		NA
Antimony	4.1	6	p/st	6		15	n	NA		NA
Arsenic	5	50	p/c	50		0.045 /11	c/n	NA		NA
Barium	31.4	2,000	p/st	2,000		2,600	n	NA		NA
Beryllium	--	4	p/c	4		0.016	c	NA		NA
Calcium	36,830	ND		ND		1,000,000		NA		NA
Chromium	7.8	100	p	100		180	n	NA		NA
Copper	5.4	1,000	s/st	ND		1500	n	NA		NA
Iron	1,227	300	s	ND		11000	n	NA		NA
Lead	4	15	p/st	15		15		NA		NA
Magnesium	4,560	ND		ND		118,807		NA		NA
Manganese	17	50	s/st	ND		180	n	NA		NA
Nickel	--	100	p/st	100		730	n	NA		NA
Potassium	5,400	ND		ND		297,016		NA		NA
Silver		100	s/st	ND		180	n	NA		NA
Selenium	9.7	50	p/st	50		180	n	NA		NA
Sodium	18,222	160,000	p	ND		396,022		NA		NA
Thallium	3.8	2	p	2		2.9	n	NA		NA
Vanadium	20.6	49	mc/st	ND		260	n	NA		NA
Zinc	4	5,000	s/st	ND		11000	n	NA		NA
General chemistry, mg/L										
Total Suspended Solids	ND	ND		ND		ND		NA		NA

Appendix B

Table B-3.1 Notes to Summary of Positive Detections in Groundwater Analytical Results

Study Area 17

Naval Training Center, Orlando
Orlando, FL

NOTES:

Groundwater background screening value is twice the average of detected concentrations for inorganic analytes.

FDEPGCTL = Florida Department of Environmental Protection, Groundwater Cleanup Target Levels, Chapter 62-785 FAC, April 30, 1998.

FEDMCL = Federal Maximum Contaminant Levels, Primary Drinking Water Regulations and Health Advisories, February 1996.

RBC = Risk-Based Concentration Table, USEPA Region III, May 1996, R.L. Smith. RBC for chromium is based on chromium VI. RBC for lead is not available; value is treatment technology action limit for lead in drinking water distribution system identified in Drinking Water Standards and Health Advisories (USEPA, 1995). For essential nutrients (calcium, magnesium, potassium, and sodium) screening values were derived based on recommended daily allowances.

OLD-17-F24 is a temporary well installed during initial site screening. Sample collected from this well on 6/2/95 renamed to 17G024 I1 to resolve conflict with sample taken at OLD-17-24 on 6/18/98.

s = secondary groundwater standard
st = systemic toxicant
mc = based on minimum criteria
p = primary standard
o = organoleptic
n = noncarcinogenic effects
c = carcinogen (GCTLs) or carcinogenic effects (RBCs)
ND = Not determined
NA = Not analyzed
USEPA = U.S. Environmental Protection Agency
B = Reported concentration is between the instrument detection limit and the contract required detection limit
J = Reported concentration is an estimated quantity
D = Reported concentrations if from a dilution/reanalysis
µg/L = micrograms per liter
mg/L = miligrams per liter
Bold/shaded numbers indicate exceedance of groundwater guidance and background
Blank space indicates analyte/compound was not detected at the reporting limit.

Appendix B

Table B-3.2. Summary of Positive Detections in DPT Groundwater Analytical Results, Groundwater Evaluation, Phase II
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	FDEPGCTL		FEDMCL	RBC for Tap Water		17Q00104		17Q00202		17Q00305		17Q00308		17Q00403		17Q00703		17Q01005	
Sampling Date						18-Mar-98		17-Mar-98		17-Mar-98		4-Apr-98		17-Mar-98		18-Mar-98		21-Mar-98	
Volatile Organics, µg/L																			
1,1,2-Trichloroethane	5	p/c	5	0.19	c							0.51	J B						
1,1-Dichloroethene	7	p/c	7	0.044	c	2.8	J	**78**	J									3.3	J
1,2-Dichloroethene (total)	63	mc/st	70	61	n														
Acetone	700	mc/st	ND	3700	n														
Bromoform	4.4	mc/c	100	2.4	c							0.58	J B						
Carbon disulfide	700	mc/st	ND	1000	n														
Chloromethane	2.7	mc/c	ND	1.4	c											1.1	J		
cis-1,2-Dichloroethene	70	p/st	70	61	n	**480**		**5900**		8.6		8.7		**1300**				**720**	
Hexachlorobutadiene	0.5	mc/c	ND	0.14	c					**2.1**	J								
m-Dichlorobenzene	600	p/st	ND	540	n							0.65	J B						
Naphthalene	20	o/st	ND	ND		**9.3**	J			4.2	J								
o-Dichlorobenzene	600	p/st	600	64	n							0.89	J						
p-Dichlorobenzene	75	p/c	75	0.44	c							0.86	J B						
Toluene	40	s/st	1000	750	n	1.9	J							21	J				
trans-1,2-Dichloroethene	100	p/st	100	120	n			69	J									11	J
Trichloroethene	3	p/c	5	1.6	c	**380**		**1300**		0.82	J	1.1	J	**5700**				**640**	
Vinyl chloride	1	p/c	2	0.019	c	**90**		**2300**		**2**	J	**9.5**	J	**230**	J			**16**	J

Appendix B

Table B-3.2 Summary of Positive Detections in DPT Groundwater Analytical Results, Groundwater Evaluation, Phase II
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	FDEPGCTL		FEDMCL	RBC for Tap Water		17Q01203		17Q01303		17Q01306		17Q01607		17Q01704		17Q02002		17Q02102	
Sampling Date						20-Mar-98		20-Mar-98		4-Apr-98		4-Apr-98		25-Mar-98		7-Apr-98		7-Apr-98	
Volatile Organics, µg/L																			
1,1,2-Trichloroethane	5	p/c	5	0 19	c														
1,1-Dichloroethene	7	p/c	7	0 044	c	17	J	14	J										
1,2-Dichloroethene (total)	63	mc/st	70	61	n											3400		73	
Acetone	700	mc/st	ND	3700	n														
Bromoform	4 4	mc/c	100	2 4	c														
Carbon disulfide	700	mc/st	ND	1000	n														
Chloromethane	2 7	mc/c	ND	1 4	c														
cis-1,2-Dichloroethene	70	p/st	70	61	n	1900		790		5.6									
Hexachlorobutadiene	0 5	mc/c	ND	0 14	c														
m-Dichlorobenzene	600	p/st	ND	540	n														
Naphthalene	20	o/st	ND	ND															
o-Dichlorobenzene	600	p/st	600	64	n														
p-Dichlorobenzene	75	p/c	75	0.44	c														
Toluene	40	s/st	1000	750	n														
trans-1,2-Dichloroethene	100	p/st	100	120	n	54		45											
Trichloroethene	3	p/c	5	1.6	c	75		1300		8.7		1.9	J	340000				1.5	J
Vinyl chloride	1	p/c	2	0.019	c	140		98	J										

Appendix B

Table B-3 2 Summary of Positive Detections in DPT Groundwater Analytical Results, Groundwater Evaluation, Phase II
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	FDEPGCTL		FEDMCL	RBC for Tap Water		17Q02404		17Q02703		17Q02805		17Q03001	
Sampling Date						8-Apr-98		9-Apr-98		8-Apr-98		9-Apr-98	
Volatile Organics, µg/L													
1,1,2-Trichloroethane	5	p/c	5	0.19	c								
1,1-Dichloroethene	7	p/c	7	0.044	c					0.17	J	0.12	J
1,2-Dichloroethene (total)	63	mc/st	70	61	n			31		12		9.4	
Acetone	700	mc/st	ND	3700	n	38				20			
Bromoform	4.4	mc/c	100	2.4	c								
Carbon disulfide	700	mc/st	ND	1000	n	4		4.8		1.4			
Chloromethane	2.7	mc/c	ND	1.4	c	0.15	J			0.12	J		
cis-1,2-Dichloroethene	70	p/st	70	61	n								
Hexachlorobutadiene	0.5	mc/c	ND	0.14	c								
m-Dichlorobenzene	600	p/st	ND	540	n								
Naphthalene	20	o/st	ND	ND									
o-Dichlorobenzene	600	p/st	600	64	n								
p-Dichlorobenzene	75	p/c	75	0.44	c								
Toluene	40	s/st	1000	750	n							0.09	J
trans-1,2-Dichloroethene	100	p/st	100	120	n								
Trichloroethene	3	p/c	5	1.6	c					2.3			
Vinyl chloride	1	p/c	2	0.019	c					5.7		1.2	J

Appendix B

Table B-3.2 Notes to Summary of Positive Detections in DPT Groundwater Analytical Results, Groundwater Evaluation, Phase II Study Area 17

Naval Training Center, Orlando
Orlando, FL

NOTES:

FDEPGCTL = Florida Department of Environmental Protection, Groundwater Cleanup Target Levels, Chapter 62-785 FAC, April 30, 1998
FEDMCL= Federal Maximum Contaminant Levels, Primary Drinking Water Regulations and Health Advisories, February 1996.
RBC = Risk-Based Concentration Table, USEPA Region III, May 1996, R L Smith

s = secondary groundwater standard
st = systemic toxicant
mc = based on minimum criteria
p = primary standard
n = noncarcinogenic effects
c = carcinogen (GCTLs) or carcinogenic effects (RBCs)
ND = Not determined
USEPA = U S Environmental Protection Agency
J = Reported concentration is an estimated quantity
B = Compound also found in associated laboratory blank
µg/L = micrograms per liter
mg/L = miligrams per liter
Bold/shaded numbers indicate exceedance of groundwater guidance and background
Blank space indicates analyte/compound was not detected at the reporting limit

Appendix B

Table B-4. Summary of Positive Detections in Surface Water Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

Identifier	Surface Water Screening Value	17W02600	17W02700	17W02800	17W02900	17W03001	17W03101	17W03201	17W03301	17W03401
Sampling Date		5/16/95	5/16/95	5/16/95	5/16/95	6/23/98	6/23/98	6/23/98	6/23/98	6/23/98
Volatile Organics, µg/L										
Acetone	700 (6)	13	9 J		7 J					
Chloroform	289 (2)						0.92 J			
Toluene	40 (6)	8 J				5.2	20	17	18	25
Trichloroethene	3 (6)					1.2 J				
Vinyl chloride	1 (6)						0.78 J			
Semivolatile Organics, µg/L										
4-Methylphenol	35 (6)	2				NA	NA	NA	NA	NA
Phenol	256 (2)	4				NA	NA	NA	NA	NA
Inorganics, µg/L										
Aluminum	87 (1.4)	**1050**	**944**	**418**	**173** B	NA	NA	NA	NA	NA
Barium	2,000 (8)	31.7 B	26.4 B	367	122 B	NA	NA	NA	NA	NA
Beryllium	0.13 (3)	0.13 B	**0.25** B		0.1 B	NA	NA	NA	NA	NA
Calcium	1,055,398 (7)	22,100	19,300	29,500	34,800	NA	NA	NA	NA	NA
Iron	1,000 (1.3)	**9400**	**4000**	**2140**	**1790**	NA	NA	NA	NA	NA
Lead	1.7 (1.5)	**4.9**		**2.4** B		NA	NA	NA	NA	NA
Magnesium	118,807 (7)	2020 B	2,520 B	4,350 B	6,230	NA	NA	NA	NA	NA
Manganese	50 (6)	**73.8**	30.9	22	16.2	NA	NA	NA	NA	NA
Potassium	297,016 (7)	1930 B	3,220 B	1,420 B	1,140 B	NA	NA	NA	NA	NA
Silver	0.012 (3)	**2.6** B				NA	NA	NA	NA	NA
Sodium	396,022 (7)	2,180 B	2,730 B	7,580	14,600	NA	NA	NA	NA	NA
Zinc	67 (1.5)	37.5	52.1	23.5		NA	NA	NA	NA	NA
General chemistry, mg/L										
Alkalinity as CaCO3	NA	47	39	71	97	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons	NA	1	2.8	2.4	2	NA	NA	NA	NA	NA

Appendix B

Table B-4. Notes to Summary of Positive Detections in Surface Water Analytical Results, Study Area 17

Naval Training Center, Orlando
Orlando, FL

NOTES:

[1] Federal Ambient Water Criteria, chronic values (USEPA, 1991; 1988)

[2] USEPA Region IV Waste Management Division Chronic Freshwater Quality Screening Values based on the Water Quality Standards Units Screening List (USEPA, 1992).

[3] Chapter 62-302, Florida Administrative Code Surface Water Quality Standards; 1995

[4] Criterion is based on pH of 6.5 - 9 (USEPA, 1988)

[5] Hardness dependent criterion. Values shown are for SA 16/SA 17/SA 22. Average water hardnesses of 30, 63.5, and 19.3 mg/L CaCO3 were used to calculate criteria for Study Areas 16, 17, and 22, respectively. The average water hardness of 19.3 mg/L for Study Area 22 is below the range of water hardnesses to be used in calculating AWQC (i.e., 25 to 400 mg/L). Therefore, a hardness of 25 mg/L (the lowest usable hardness value) was used to calculate criteria for Study Area 22.

[6] Florida Department of Environmental Protection Groundwater Guidance Concentration, June 1994, Systemic Toxicant.

[7] Risk-Based Concentration Table, USEPA Region III, October, 1995, R.L. Smith. For essential nutrients (calcium, magnesium, potassium, and sodium) screening values were based on recommended daily allowances (RDAs)

[8] Florida Department of Environmental Protection Guidance Concentration, June 1994, Primary Standard.

J = Reported concentration is an estimated quantity

µg/L = micrograms per liter mg/L = milligrams per liter.

B = Reported concentration is between the instrument detection limit and Contract Required Detection Limit.

Blank space indicates analyte/compound was not detected at the reporting limit.

Appendix C

Table C-3.1. Summary of Groundwater Analytical Results, Initial Screening
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Sample ID	17G00101		17G00201		17G00301		17G00401		17G00501		17G00501D		17G02401	
Lab ID	G7716001		G7716002		G7716003		G7716004		G7716005		G7716006		G7731005	
Sampling Date	31-May-95		31-May-95		31-May-95		31-May-95		31-May-95		31-May-95		2-Jun-95	
Volatile organics, µg/L														
1,1,1-Trichloroethane	1	U	1	U	1	U	10	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	1	U	1	U	1	U	10	U	1	U	1	U	1	U
1,1,2-Trichloroethane	1	U	1	U	1	U	10	U	1	U	1	U	1	U
1,1-Dichloroethane	1	U	1	U	1	U	10	U	1	U	1	U	1	U
1,1-Dichloroethene	1	U	1	U	1	U	3	J	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	1	UR	1	UR	1	UR	10	UR	1	UR	1	UR	1	U
1,2-Dibromoethane	1	U	1	U	1	U	10	U	1	U	1	U	1	U
1,2-Dichloroethane	1	U	1	U	1	U	10	U	1	U	1	U	1	U
1,2-Dichloropropane	1	U	1	U	1	U	10	U	1	U	1	U	1	U
2-Butanone	5	UR	5	UR	5	UR	50	UR	5	UR	5	UR	5	UR
2-Hexanone	5	UJ	5	UJ	5	UJ	50	UJ	5	UJ	5	UJ	5	U
4-Methyl-2-pentanone	5	U	5	U	5	U	50	U	5	U	5	U	5	U
Acetone	5	UR	4	UR	5	UR	50	UR	5	UR	5	UR	2	UR
Benzene	1	U	1	U	1	U	10	U	1	U	1	U	1	U
Bromochloromethane	1	U	1	U	1	U	10	U	1	U	1	U	1	U
Bromodichloromethane	1	U	1	U	1	U	10	U	1	U	1	U	1	U
Bromoform	1	U	1	U	1	U	10	U	1	U	1	U	1	U
Bromomethane	1	U	1	U	1	U	10	U	1	U	1	U	1	U
Carbon disulfide	1	U	1	U	1	U	10	U	1		1	U	1	U
Carbon tetrachloride	1	U	1	U	1	U	10	U	1	U	1	U	1	U
Chlorobenzene	1	U	1	U	1	U	10	U	1	U	1	U	1	U
Chloroethane	1	U	1	U	1	U	10	U	1	U	1	U	1	U
Chloroform	1	U	5		1	U	10	U	1	U	1	U	1	U
Chloromethane	1	U	1	U	1	U	10	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	1	U	1	U	1	U	200		1	U	1	U	1	U
cis-1,3-Dichloropropene	1	U	1	U	1	U	10	U	1	U	1	U	1	U
Dibromochloromethane	1	U	1	U	1	U	10	U	1	U	1	U	1	U
Ethylbenzene	1	U	1	U	1	U	10	U	1	U	1	U	1	U
Methylene chloride	2	U	2	U	2	U	20	U	2	U	2	U	2	U
Styrene	1	U	1	U	1	U	10	U	1	U	1	U	1	U
Tetrachloroethene	0.4	J	1	U	1	U	10	U	1	U	1	U	1	U
Toluene	1	U	1	U	1	U	10	U	1	U	1	U	1	U

Appendix C

Table C-3 1 Summary of Groundwater Analytical Results, Initial Screening

Study Area 17

Naval Training Center, Orlando

Orlando, FL

Sample ID	17G00101		17G00201		17G00301		17G00401		17G00501		17G00501D		17G02401	
Lab ID	G7716001		G7716002		G7716003		G7716004		G7716005		G7716006		G7731005	
Sampling Date	31-May-95		31-May-95		31-May-95		31-May-95		31-May-95		31-May-95		2-Jun-95	
trans-1,2-Dichloroethene	1	U	1	U	1	U	5	J	1	U	1	U	1	U
trans-1,3-Dichloropropene	1	U	1	U	1	U	10	U	1	U	1	U	1	U
Trichloroethene	1	U	1	U	1	U	42		1	U	1	U	1	U
Vinyl chloride	1	U	1	U	1	U	190		1	U	1	U	1	U
Xylene (total)	1	U	1	U	1	U	10	U	1	U	1	U	1	U
Semivolatile organics, µg/L														
1,2,4-Trichlorobenzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichlorobenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2,2'-oxybis(1-Chloropropane)	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2,4,5-Trichlorophenol	25	U	25	U	25	U	25	U	25	U	25	U	25	U
2,4,6-Trichlorophenol	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2,4-Dichlorophenol	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2,4-Dimethylphenol	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2,4-Dinitrophenol	25	UJ	25	UJ	25	UJ	25	U	25	UJ	25	UJ	25	UJ
2,4-Dinitrotoluene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2,6-Dinitrotoluene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Chloronaphthalene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Chlorophenol	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Methylnaphthalene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Methylphenol	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Nitroaniline	25	U	25	U	25	U	25	U	25	U	25	U	25	U
2-Nitrophenol	10	U	10	U	10	U	10	U	10	U	10	U	10	U
3,3'-Dichlorobenzidine	10	U	10	U	10	U	10	U	10	U	10	U	10	U
3-Nitroaniline	25	U	25	U	25	U	25	U	25	U	25	U	25	U
4,6-Dinitro-2-methylphenol	25	UJ	25	UJ	25	UJ	25	U	25	UJ	25	UJ	25	U
4-Bromophenyl-phenylether	10	U	10	U	10	U	10	U	10	U	10	U	10	U
4-Chloro-3-methylphenol	10	U	10	U	10	U	10	U	10	U	10	U	10	U
4-Chloroaniline	10	U	10	U	10	U	10	U	10	U	10	U	10	U
4-Chlorophenyl-phenylether	10	U	10	U	10	U	10	U	10	U	10	U	10	U
4-Methylphenol	10	U	10	U	10	U	10	U	10	U	10	U	10	U
4-Nitroaniline	25	U	25	U	25	U	25	U	25	U	25	U	25	U

Appendix C

Table C-3.1 Summary of Groundwater Analytical Results, Initial Screening

Study Area 17

Naval Training Center, Orlando

Orlando, FL

Sample ID	17G00101		17G00201		17G00301		17G00401		17G00501		17G00501D		17G02401	
Lab ID	G7716001		G7716002		G7716003		G7716004		G7716005		G7716006		G7731005	
Sampling Date	31-May-95		31-May-95		31-May-95		31-May-95		31-May-95		31-May-95		2-Jun-95	
4-Nitrophenol	25	UJ	25	UJ	25	UJ	25	U	25	UJ	25	UJ	25	U
Acenaphthene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Acenaphthylene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Anthracene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Benzo(a)anthracene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Benzo(a)pyrene	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Benzo(b)fluoranthene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Benzo(g,h,i)perylene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Benzo(k)fluoranthene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
bis(2-Chloroethoxy)methane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
bis(2-Chloroethyl)ether	10	U	10	U	10	U	10	U	10	U	10	U	10	U
bis(2-Ethylhexyl)phthalate	1	U	1	U	1	U	1		1	U	1		1	
Butylbenzylphthalate	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Carbazole	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chrysene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Di-n-butylphthalate	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Di-n-octylphthalate	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Dibenz(a,h)anthracene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Dibenzofuran	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Diethylphthalate	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Dimethylphthalate	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Fluoranthene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Fluorene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Hexachlorobenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Hexachlorobutadiene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Hexachlorocyclopentadiene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Hexachloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Indeno(1,2,3-cd)pyrene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Isophorone	10	U	10	U	10	U	10	U	10	U	10	U	10	U
N-Nitroso-di-n-propylamine	10	U	10	U	10	U	10	U	10	U	10	U	10	U
N-Nitrosodiphenylamine (1)	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Naphthalene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Nitrobenzene	10	U	10	U	10	U	10	U	10	U	10	U	10	U

Appendix C

Table C-3.1. Summary of Groundwater Analytical Results, Initial Screening
Study Area 17

Naval Training Center, Orlando
Orlando, FL

Sample ID	17G00101		17G00201		17G00301		17G00401		17G00501		17G00501D		17G02401	
Lab ID	G7716001		G7716002		G7716003		G7716004		G7716005		G7716006		G7731005	
Sampling Date	31-May-95		31-May-95		31-May-95		31-May-95		31-May-95		31-May-95		2-Jun-95	
Pentachlorophenol	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Phenanthrene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Phenol	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Pyrene	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Pesticides/PCBs, µg/L														
4,4'-DDD	0.1	U	0.1	U	0.1	U	0.1	U	0.1	UJ	0.1	U	0.1	UJ
4,4'-DDE	0.1	U	0.1	U	0.1	U	0.1	U	0.1	UJ	0.1	U	0.1	UJ
4,4'-DDT	0.1	U	0.1	U	0.1	U	0.1	U	0.1	UJ	0.1	U	0.1	UJ
Aldrin	0.05	U	0.05	U	0.05	U	0.05	U	0.05	UJ	0.05	U	0.05	UJ
alpha-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	UJ	0.05	U	0.05	UJ
alpha-Chlordane	0.05	U	0.05	U	0.05	U	0.05	U	0.05	UJ	0.05	U	0.05	UJ
Aroclor-1016	0.5	U	0.5	U	0.5	U	0.5	U	0.5	UJ	0.5	U	0.5	UJ
Aroclor-1221	0.5	U	0.5	U	0.5	U	0.5	U	0.5	UJ	0.5	U	0.5	UJ
Aroclor-1232	0.5	U	0.5	U	0.5	U	0.5	U	0.5	UJ	0.5	U	0.5	UJ
Aroclor-1242	0.5	U	0.5	U	0.5	U	0.5	U	0.5	UJ	0.5	U	0.5	UJ
Aroclor-1248	0.5	U	0.5	U	0.5	U	0.5	U	0.5	UJ	0.5	U	0.5	UJ
Aroclor-1254	0.5	U	0.5	U	0.5	U	0.5	U	0.5	UJ	0.5	U	0.5	UJ
Aroclor-1260	0.5	U	0.5	U	0.5	U	0.5	U	0.5	UJ	0.5	U	0.5	UJ
beta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	UJ	0.05	U	0.05	UJ
delta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	UJ	0.05	U	0.05	UJ
Dieldrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	UJ	0.1	U	0.1	UJ
Endosulfan I	0.05	U	0.05	U	0.05	U	0.05	U	0.05	UJ	0.05	U	0.05	UJ
Endosulfan II	0.1	U	0.1	U	0.1	U	0.1	U	0.1	UJ	0.1	U	0.1	UJ
Endosulfan sulfate	0.1	U	0.1	U	0.1	U	0.1	U	0.1	UJ	0.1	U	0.1	UJ
Endrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	UJ	0.1	U	0.1	UJ
Endrin aldehyde	0.1	U	0.1	U	0.1	U	0.1	U	0.1	UJ	0.1	U	0.1	UJ
Endrin ketone	0.1	U	0.1	U	0.1	U	0.1	U	0.1	UJ	0.1	U	0.1	UJ
gamma-BHC (Lindane)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	UJ	0.05	U	0.05	UJ
gamma-Chlordane	0.05	U	0.05	U	0.05	U	0.05	U	0.05	UJ	0.05	U	0.05	UJ
Heptachlor	0.05	U	0.05	U	0.05	U	0.05	U	0.05	UJ	0.05	U	0.05	UJ
Heptachlor epoxide	0.05	U	0.05	U	0.05	U	0.05	U	0.05	UJ	0.05	U	0.05	UJ
Methoxychlor	0.5	U	0.5	U	0.5	U	0.5	U	0.5	UJ	0.5	U	0.5	UJ
Toxaphene	5	U	5	U	5	U	5	U	5	UJ	5	U	5	UJ

Appendix C

Table C-3.1. Summary of Groundwater Analytical Results, Initial Screening

Study Area 17

Naval Training Center, Orlando

Orlando, FL

Sample ID	17G00101		17G00201		17G00301		17G00401		17G00501		17G00501D		17G02401	
Lab ID	G7716001		G7716002		G7716003		G7716004		G7716005		G7716006		G7731005	
Sampling Date	31-May-95		31-May-95		31-May-95		31-May-95		31-May-95		31-May-95		2-Jun-95	
Inorganics, µg/L														
Aluminum	910		4800		6650		1050		473		1340		551	
Antimony	2.7	J	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	UJ
Arsenic	1.9	UJ	1.9	UJ	1.9	UJ	2.1	J	2.7	J	2.4	J	1.9	UJ
Barium	66.9	J	40.9	J	53.2	J	41.2	J	33.2	J	34.4	J	115	J
Beryllium	0.12	J	0.15	J	0.17	J	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ
Cadmium	3.5	U	3.1	U	3.1	U	3.1	U	3.1	U	3.1	U	3.5	U
Calcium	136000		67600		17800		36400		34700		34000		44700	
Chromium	3.1	U	3.1	U	6.1	B	3.1	U	3.1	U	3.1	U	5.2	B
Cobalt	2.9	UJ	2.9	UJ	2.9	UJ	2.9	UJ	2.9	UJ	2.9	UJ	2.9	UJ
Copper	3.2	U	4.4	U	1.7	U	1.4	U	23.8	B	2.2	U	2.7	U
Iron	108		1310		14800		6760		7650		6460		100000	
Lead	1.5	UJ	2.4	B	3.4		1.5	U	1.5	U	1.5	U	1.5	U
Magnesium	14700		7240		5470		10400		6130		5670		3730	B
Manganese	10.5	B	21		28.3		38.5		20.2		18.9		265	
Mercury	0.12	U	0.12	U	0.12	U	0.12	U	0.12	U	0.12	U	0.12	U
Nickel	14.2	U	14.2	U	14.2	U	14.2	U	14.2	U	14.2	U	25.6	B
Potassium	15100	U	1460	J	747	J	1690	J	2090	J	2140	J	3330	J
Selenium	2.3	UJ	2.3	UJ	2.3	J	2.3	U	2.3	U	2.3	U	2.3	U
Silver	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U
Sodium	16100		7960		3670	B	9690		7090		6790		4660	B
Thallium	1.8	U	4.8	J	1.8	UJ	1.8	U	1.8	U	1.8	U	1.8	UJ
Vanadium	81.5		19.7	B	12.6	B	5.9	B	6.4	B	7.6	B	4.4	B
Zinc	2.1	B	3.9	B	2.5	B	3.8	B	5.1	B	2.5	B	226	
General Chemistry, mg/L														
Total Petroleum Hydrocarbons	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Total Suspended Solids	5		3		90		3		1	U	3		76	

Appendix C

Table C-3.2. Summary of Groundwater Analytical Results, Volatile Organics
Groundwater Evaluation, Phase I
Study Area 17

Naval Training Center
Orlando, FL

Sample ID	17G00403		17G00601		17G00701		17G00801		17G00901		17G01001		17G01001D	
Lab ID	C7B130145008		C7B130145003		C7B130145005		C7B130145004		C7B130145009		C7B130145006		C7B130145007	
Sampling Date	12-Feb-97		12-Feb-97		12-Feb-97		12-Feb-97		12-Feb-97		12-Feb-97		12-Feb-97	
Volatile organics, µg/L														
1,1,1,2-Tetrachloroethane	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,1-Trichloroethane	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethene	16		0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloropropene	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichloropropane	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trimethylbenzene	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromo-3-chloropropane	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromoethane	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichlorobenzene	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3,5-Trimethylbenzene	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichlorobenzene	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichloropropane	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
2,2-Dichloropropane	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
2-Chlorotoluene	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
4-Chlorotoluene	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
Benzene	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromobenzene	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromochloromethane	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromodichloromethane	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromomethane	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon tetrachloride	0.5	U	0.5	U	0.84	U	0.5	U	0.5	U	0.5	U	0.5	U

Appendix C

Table C-3.2. Summary of Groundwater Analytical Results, Volatile Organics
Groundwater Evaluation, Phase I
Study Area 17

Naval Training Center
Orlando, FL

Sample ID	17G00403	17G00601	17G00701	17G00801	17G00901	17G01001	17G01001D
Lab ID	C7B130145008	C7B130145003	C7B130145005	C7B130145004	C7B130145009	C7B130145006	C7B130145007
Sampling Date	12-Feb-97	12-Feb-97	12-Feb-97	12-Feb-97	12-Feb-97	12-Feb-97	12-Feb-97
Chlorobenzene	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	1 U	1 U
Chloromethane	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	460 D	11	7.2	40	3.6	3.4	3.2
cis-1,3-Dichloropropene	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Butylbenzene	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Propylbenzene	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Isopropyltoluene	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
sec-Butylbenzene	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
tert-Butylbenzene	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	0.5 U	0.5 U	1.1 U	1.1 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	6.9	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,3-Dichloropropene	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	120 D	0.5 U	0.84 U	0.5 U	0.5 U	2.3	2.2
Trichlorofluoromethane	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride	450 D	15	67	2.9	2.6	1.4	1.6
Xylenes (total)	0.5 U	0.5 U	0.84 U	0.5 U	0.5 U	0.5 U	0.5 U

Appendix C
Table C-3 3 Summary of Groundwater Analytical Results, Volatile Organics
Groundwater Evaluation, Phase II
Study Area 17

Naval Training Center
Orlando, FL

Sample ID	17G00202		17G00302		17G00404		17G00502		17G01003		17G01101		17G01201		17G01301		17G01401		17G01501	
Lab ID	A8F180155007		A8F120181005		A8F200131002		A8F100162005		A8F200131003		A8F100162004		A8F100162006		A8F120181006		A8F120181007		A8F100162001	
Sampling Date	16-Jun-98		10-Jun-98		19-Jun-98		8-Jun-98		19-Jun-98		8-Jun-98		8-Jun-98		10-Jun-98		10-Jun-98		9-Jun-98	
Volatile organics, µg/L																				
1,1,1,2-Tetrachloroethane	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,1,1-Trichloroethane	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,1,2-Trichloroethane	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,1-Dichloroethane	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,1-Dichloroethene	5	U	5	U	26		5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,1-Dichloropropene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2,3-Trichlorobenzene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2,3-Trichloropropane	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2,4-Trichlorobenzene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2,4-Trimethylbenzene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dibromo-3-chloropropane	10	U	10	U	33	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
1,2-Dibromoethane (EDB)	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloroethane	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloropropane	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,3,5-Trimethylbenzene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,3-Dichloropropane	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2,2-Dichloropropane	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2-Chlorotoluene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Chlorotoluene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Benzene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Bromobenzene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Bromochloromethane	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Bromodichloromethane	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Bromoform	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Bromomethane	10	U	10	U	33	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Carbon tetrachloride	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Chlorobenzene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Chlorodibromomethane	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Chloroethane	10	U	10	U	33	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Chloroform	5	U	5	U	17	U	0.69	J	5	U	5	U	5	U	5	U	5	U	5	U
Chloromethane	10	U	10	U	33	U	1.2	J	10	U	10	U	10	U	10	U	10	U	10	U

Appendix C
Table C-3.3. Summary of Groundwater Analytical Results, Volatile Organics
Groundwater Evaluation, Phase II
Study Area 17

Naval Training Center
Orlando, FL

Sample ID	17G00202		17G00302		17G00404		17G00502		17G01003		17G01101		17G01201		17G01301		17G01401		17G01501	
Lab ID	A8F180155007		A8F120181005		A8F200131002		A8F100162005		A8F200131003		A8F100162004		A8F100162006		A8F120181006		A8F120181007		A8F100162001	
Sampling Date	16-Jun-98		10-Jun-98		19-Jun-98		8-Jun-98		19-Jun-98		8-Jun-98		8-Jun-98		10-Jun-98		10-Jun-98		9-Jun-98	
Volatile organics, µg/L																				
cis-1,2-Dichloroethene	2.5	U	2.5	U	420		2.5	U	30		2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
cis-1,3-Dichloropropene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Dibromomethane	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Dichlorodifluoromethane	10	U	10	U	33	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Ethylbenzene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Hexachlorobutadiene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Isopropylbenzene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
m-Dichlorobenzene	5	U	5	U	17	U	0.67	J	5	U	5	U	5	U	5	U	5	U	5	U
m-Xylene & p-Xylene	2.5	U	2.5	U	8.3	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Methylene chloride	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
n-Butylbenzene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
n-Propylbenzene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Naphthalene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
o-Dichlorobenzene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
o-Xylene	2.5	U	2.5	U	8.3	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
p-Dichlorobenzene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
p-Isopropyltoluene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
sec-Butylbenzene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Styrene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
tert-Butylbenzene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Tetrachloroethene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Toluene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
trans-1,2-Dichloroethene	2.5	U	2.5	U	4.1	J	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
trans-1,3-Dichloropropene	5	U	5	U	17	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Trichloroethene	5	U	5	U	260		5	U	6.9		5	U	5	U	5	U	5	U	5	U
Trichlorofluoromethane	10	U	10	U	33	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Vinyl chloride	10	U	10	U	350		10	U	10		10	U	10	U	10	U	10	U	10	U

Appendix C
Table C-3.3. Summary of Groundwater Analytical Results, Volatile Organics
Groundwater Evaluation, Phase II
Study Area 17

Naval Training Center
Orlando, FL

Sample ID	17G01601		17G01701		17G01801		17G01901		17G02001		17G02101		17G02201		17G02301		17G02301D		17G02401	
Lab ID	A8F100162002		A8F100162003		A8F120181003		A8F120181002		A8F120181004		A8F180155006		A8F180155005		A8F200131008		A8F200131007		A8F200131006	
Sampling Date	9-Jun-98		9-Jun-98		11-Jun-98		11-Jun-98		11-Jun-98		16-Jun-98		16-Jun-98		18-Jun-98		18-Jun-98		18-Jun-98	
Volatile organics, µg/L																				
1,1,1,2-Tetrachloroethane	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
1,1,1-Trichloroethane	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
1,1,2,2-Tetrachloroethane	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
1,1,2-Trichloroethane	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
1,1-Dichloroethane	5	U	5	U	5	U	5	U	3.4	J	5	U	5	U	5	U	5	U	2500	U
1,1-Dichloroethene	5	U	5	U	5	U	5	U	1	J	5	U	5	U	5	U	5	U	2500	U
1,1-Dichloropropene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
1,2,3-Trichlorobenzene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
1,2,3-Trichloropropane	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
1,2,4-Trichlorobenzene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
1,2,4-Trimethylbenzene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
1,2-Dibromo-3-chloropropane	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	5000	U
1,2-Dibromoethane (EDB)	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
1,2-Dichloroethane	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
1,2-Dichloropropane	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
1,3,5-Trimethylbenzene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
1,3-Dichloropropane	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
2,2-Dichloropropane	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
2-Chlorotoluene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
4-Chlorotoluene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
Benzene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
Bromobenzene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
Bromochloromethane	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
Bromodichloromethane	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
Bromoform	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
Bromomethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	5000	U
Carbon tetrachloride	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
Chlorobenzene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
Chlorodibromomethane	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
Chloroethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	5000	U
Chloroform	5	U	5	U	5	U	5	U	5	U	5	U	0.89	J	5	U	5	U	2500	U
Chloromethane	10	U	10	U	10	U	10	U	10	U	10	U	1.6	J	10	U	10	U	5000	U

Appendix C
Table C-3 3 Summary of Groundwater Analytical Results, Volatile Organics
Groundwater Evaluation, Phase II
Study Area 17

Naval Training Center
Orlando, FL

Sample ID	17G01601		17G01701		17G01801		17G01901		17G02001		17G02101		17G02201		17G02301		17G02301D		17G02401	
Lab ID	A8F100162002		A8F100162003		A8F120181003		A8F120181002		A8F120181004		A8F180155006		A8F180155005		A8F200131008		A8F200131007		A8F200131006	
Sampling Date	9-Jun-98		9-Jun-98		11-Jun-98		11-Jun-98		11-Jun-98		16-Jun-98		16-Jun-98		18-Jun-98		18-Jun-98		18-Jun-98	
Volatile organics, µg/L																				
cis-1,2-Dichloroethene	2.5	U	2.5	U	2.5	U	2.5	U	98		2.5	U	1.7	J	8.8		9.9		1200	U
cis-1,3-Dichloropropene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
Dibromomethane	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
Dichlorodifluoromethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	5000	U
Ethylbenzene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
Hexachlorobutadiene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
Isopropylbenzene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
m-Dichlorobenzene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
m-Xylene & p-Xylene	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	1200	U
Methylene chloride	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
n-Butylbenzene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
n-Propylbenzene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
Naphthalene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
o-Dichlorobenzene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
o-Xylene	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	1200	U
p-Dichlorobenzene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
p-Isopropyltoluene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
sec-Butylbenzene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
Styrene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
tert-Butylbenzene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
Tetrachloroethene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
Toluene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
trans-1,2-Dichloroethene	2.5	U	2.5	U	2.5	U	2.5	U	0.76	J	2.5	U	2.5	U	2.5	U	2.5	U	1200	U
trans-1,3-Dichloropropene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	2500	U
Trichloroethene	5	U	5	U	5	U	5	U	5	U	5	U	5	U	20		25		65000	
Trichlorofluoromethane	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	5000	U
Vinyl chloride	10	U	10	U	10	U	10	U	140		10	U	10	U	10	U	10	U	5000	U

Appendix C
Table C-3.3. Summary of Groundwater Analytical Results, Volatile Organics
Groundwater Evaluation, Phase II
Study Area 17

Naval Training Center
Orlando, FL

Sample ID	17G02401D	17G02501	17G02601	17G02701	17G02801	17G02901	17G03001	17G03101	17G03201	17G03301
Lab ID	A8F200131005	A8F200131004	A8F180155002	A8F180155003	A8F180155004	A8F240177002	A8F240177005	A8F240177006	A8F240177007	A8F240177008
Sampling Date	18-Jun-98	18-Jun-98	17-Jun-98	17-Jun-98	17-Jun-98	23-Jun-98	23-Jun-98	23-Jun-98	23-Jun-98	23-Jun-98
Volatile organics, µg/L										
1,1,1,2-Tetrachloroethane	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
1,1,1-Trichloroethane	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
1,1,2,2-Tetrachloroethane	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
1,1,2-Trichloroethane	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
1,1-Dichloroethane	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
1,1-Dichloroethene	2500 U	5 U	5 U	6.1 J	5 U	5 U	5 U	10 U	5 U	5 U
1,1-Dichloropropene	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
1,2,3-Trichlorobenzene	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
1,2,3-Trichloropropane	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
1,2,4-Trichlorobenzene	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
1,2,4-Trimethylbenzene	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
1,2-Dibromo-3-chloropropane	5000 U	10 U	10 U	20 U	10 U	10 U	10 U	20 U	10 U	10 U
1,2-Dibromoethane (EDB)	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
1,2-Dichloroethane	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
1,2-Dichloropropane	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
1,3,5-Trimethylbenzene	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
1,3-Dichloropropane	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
2,2-Dichloropropane	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
2-Chlorotoluene	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
4-Chlorotoluene	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
Benzene	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
Bromobenzene	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
Bromochloromethane	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
Bromodichloromethane	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
Bromoform	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
Bromomethane	5000 U	10 U	10 U	20 U	10 U	10 U	10 U	20 U	10 U	10 U
Carbon tetrachloride	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
Chlorobenzene	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
Chlorodibromomethane	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
Chloroethane	5000 U	10 U	10 U	20 U	10 U	10 U	10 U	20 U	10 U	10 U
Chloroform	2500 U	5 U	5 U	10 U	5 U	5 U	5 U	10 U	5 U	5 U
Chloromethane	5000 U	10 U	10 U	20 U	10 U	10 U	10 U	20 U	10 U	10 U

Appendix C
Table C-3.3. Summary of Groundwater Analytical Results, Volatile Organics
Groundwater Evaluation, Phase II
Study Area 17

Naval Training Center
Orlando, FL

Sample ID	17G02401D		17G02501		17G02601		17G02701		17G02801		17G02901		17G03001		17G03101		17G03201		17G03301	
Lab ID	A8F200131005		A8F200131004		A8F180155002		A8F180155003		A8F180155004		A8F240177002		A8F240177005		A8F240177006		A8F240177007		A8F240177008	
Sampling Date	18-Jun-98		18-Jun-98		17-Jun-98		17-Jun-98		17-Jun-98		23-Jun-98		23-Jun-98		23-Jun-98		23-Jun-98		23-Jun-98	
Volatile organics, µg/L																				
cis-1,2-Dichloroethene	1200	U	0.78	J	1.9	J	360		2.3	J	2.5	U	1.1	J	220		81		2.5	U
cis-1,3-Dichloropropene	2500	U	5	U	5	U	10	U	5	U	5	U	5	U	10	U	5	U	5	U
Dibromomethane	2500	U	5	U	5	U	10	U	5	U	5	U	5	U	10	U	5	U	5	U
Dichlorodifluoromethane	5000	U	10	U	10	U	20	U	10	U	10	U	10	U	20	U	10	U	10	U
Ethylbenzene	2500	U	5	U	5	U	10	U	5	U	5	U	5	U	10	U	5	U	5	U
Hexachlorobutadiene	2500	U	5	U	5	U	10	U	5	U	5	U	5	U	10	U	5	U	5	U
Isopropylbenzene	2500	U	5	U	5	U	10	U	5	U	5	U	5	U	10	U	5	U	5	U
m-Dichlorobenzene	2500	U	5	U	5	U	10	U	5	U	5	U	5	U	10	U	5	U	5	U
m-Xylene & p-Xylene	1200	U	2.5	U	2.5	U	5	U	2.5	U	2.5	U	2.5	U	5	U	2.5	U	2.5	U
Methylene chloride	2500	U	5	U	5	U	10	U	5	U	5	U	5	U	10	U	5	U	5	U
n-Butylbenzene	2500	U	5	U	5	U	10	U	5	U	5	U	1.5	J	10	U	5	U	5	U
n-Propylbenzene	2500	U	5	U	5	U	10	U	5	U	5	U	0.81	J	10	U	5	U	5	U
Naphthalene	2500	U	5	U	5	U	10	U	5	U	5	U	5	U	10	U	5	U	5	U
o-Dichlorobenzene	2500	U	5	U	5	U	10	U	5	U	5	U	5	U	10	U	5	U	5	U
o-Xylene	1200	U	2.5	U	2.5	U	5	U	2.5	U	2.5	U	2.5	U	5	U	2.5	U	2.5	U
p-Dichlorobenzene	2500	U	5	U	5	U	10	U	5	U	5	U	5	U	10	U	5	U	5	U
p-Isopropyltoluene	2500	U	5	U	5	U	10	U	5	U	5	U	5	U	10	U	5	U	5	U
sec-Butylbenzene	2500	U	5	U	5	U	10	U	5	U	5	U	5	U	10	U	5	U	5	U
Styrene	2500	U	5	U	5	U	10	U	5	U	5	U	5	U	10	U	5	U	5	U
tert-Butylbenzene	2500	U	5	U	5	U	10	U	5	U	5	U	5	U	10	U	5	U	5	U
Tetrachloroethene	2500	U	0.49	J	5	U	10	U	5	U	5	U	5	U	10	U	5	U	5	U
Toluene	2500	U	5	U	5	U	1.8	J	5	U	5	U	5	U	1	J	5	U	5	U
trans-1,2-Dichloroethene	1200	U	2.5	U	2.5	U	12		2.5	U	2.5	U	2.5	U	2.2	J	1.9	J	2.5	U
trans-1,3-Dichloropropene	2500	U	5	U	5	U	10	U	5	U	5	U	5	U	10	U	5	U	5	U
Trichloroethene	72000		39		5	U	60		1.4	J	2.5	J	5	U	10	U	5	U	5	U
Trichlorofluoromethane	5000	U	10	U	10	U	20	U	10	U	10	U	10	U	20	U	10	U	10	U
Vinyl chloride	5000	U	10	U	13		360		10	U	10	U	1	J	130		82		10	U

Appendix C

Table C-3.4 Summary of DPT Groundwater Analytical Results, Volatile Organics
Groundwater Evaluation, Phase II, Study Area 17

Naval Training Center
Orlando, FL

Sample ID	17Q00104		17Q00202		17Q00305		17Q00308		17Q00403		17Q00703		17Q01005		17Q01203	
Lab ID	A8C200122003		A8C200122002		A8C210123001		A8D070152005		A8C210123002		A8C240156001		A8C240156002		A8C240156004	
Sampling Date	18-Mar-98		17-Mar-98		17-Mar-98		4-Apr-98		17-Mar-98		18-Mar-98		21-Mar-98		20-Mar-98	
Volatile organics, µg/L																
1,1,1,2-Tetrachloroethane	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
1,1,1-Trichloroethane	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
1,1,2,2-Tetrachloroethane	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
1,1,2-Trichloroethane	17	U	250	U	5	U	0.51	J B	170	U	5	U	25	U	50	U
1,1-Dichloroethane	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
1,1-Dichloroethene	2.8	J	78	J	5	U	5	U	170	U	5	U	3.3	J	17	J
1,1-Dichloropropene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
1,2,3-Trichlorobenzene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
1,2,3-Trichloropropane	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
1,2,4-Trichlorobenzene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
1,2,4-Trimethylbenzene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
1,2-Dibromo-3-chloropropane	33	U	500	U	10	U	10	U	330	U	10	U	50	U	100	U
1,2-Dibromoethane (EDB)	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
1,2-Dichloroethane	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
1,2-Dichloropropane	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
1,3,5-Trimethylbenzene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
1,3-Dichloropropane	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
2,2-Dichloropropane	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
2-Chlorotoluene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
4-Chlorotoluene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
Benzene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
Bromobenzene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
Bromochloromethane	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
Bromodichloromethane	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
Bromoform	17	U	250	U	5	U	0.58	J B	170	U	5	U	25	U	50	U
Bromomethane	33	U	500	U	10	U	10	U	330	U	10	U	50	U	100	U
Carbon tetrachloride	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
Chlorobenzene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
Chlorodibromomethane	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
Chloroethane	33	U	500	U	10	U	10	U	330	U	10	U	50	U	100	U
Chloroform	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U

Appendix C

Table C-3.4 Summary of DPT Groundwater Analytical Results, Volatile Organics
Groundwater Evaluation, Phase II, Study Area 17

Naval Training Center
Orlando, FL

Sample ID	17Q00104		17Q00202		17Q00305		17Q00308		17Q00403		17Q00703		17Q01005		17Q01203	
Lab ID	A8C200122003		A8C200122002		A8C210123001		A8D070152005		A8C210123002		A8C240156001		A8C240156002		A8C240156004	
Sampling Date	18-Mar-98		17-Mar-98		17-Mar-98		4-Apr-98		17-Mar-98		18-Mar-98		21-Mar-98		20-Mar-98	
Volatile organics, µg/L																
Chloromethane	33	U	500	U	10	U	10	U	330	U	1.1	J	50	U	100	U
cis-1,2-Dichloroethene	480		5900		8.6		8.7		1300		2.5	U	720		1900	
cis-1,3-Dichloropropene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
Dibromomethane	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
Dichlorodifluoromethane	33	U	500	U	10	U	10	U	330	U	10	U	50	U	100	U
Ethylbenzene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
Hexachlorobutadiene	17	U	250	U	2.1	J	5	U	170	U	5	U	25	U	50	U
Isopropylbenzene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
m-Dichlorobenzene	17	U	250	U	5	U	0.65	J B	170	U	5	U	25	U	50	U
m-Xylene & p-Xylene	8.3	U	120	U	2.5	U	2.5	U	83	U	2.5	U	12	U	25	U
Methylene chloride	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
n-Butylbenzene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
n-Propylbenzene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
Naphthalene	9.3	J	250	U	4.2	J	5	U	170	U	5	U	25	U	50	U
o-Dichlorobenzene	17	U	250	U	5	U	0.89	J	170	U	5	U	25	U	50	U
o-Xylene	8.3	U	120	U	2.5	U	2.5	U	83	U	2.5	U	12	U	25	U
p-Dichlorobenzene	17	U	250	U	5	U	0.86	J B	170	U	5	U	25	U	50	U
p-Isopropyltoluene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
sec-Butylbenzene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
Styrene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
tert-Butylbenzene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
Tetrachloroethene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
Toluene	1.9	J	250	U	5	U	5	U	21	J	5	U	25	U	50	U
trans-1,2-Dichloroethene	8.3	U	69	J	2.5	U	2.5	U	83	U	2.5	U	11	J	54	
trans-1,3-Dichloropropene	17	U	250	U	5	U	5	U	170	U	5	U	25	U	50	U
Trichloroethene	380		1300		0.82	J	1.1	J	5700		5	U	640		75	
Trichlorofluoromethane	33	U	500	U	10	U	10	U	330	U	10	U	50	U	100	U
Vinyl chloride	90		2300		2	J	9.5	J	230	J	10	U	16	J	140	

Appendix C

Table C-3 4 Summary of DPT Groundwater Analytical Results, Volatile Organics
Groundwater Evaluation, Phase II, Study Area 17

Naval Training Center
Orlando, FL

Sample ID	17Q01303		17Q01306		17Q01607		17Q01704	
Lab ID	A8C240156003		A8D070152006		A8D070152007		A8D070152008	
Sampling Date	20-Mar-98		4-Apr-98		4-Apr-98		25-Mar-98	
Volatile organics, µg/L								
1,1,1,2-Tetrachloroethane	50	U	5	U	5	U	17000	U
1,1,1-Trichloroethane	50	U	5	U	5	U	17000	U
1,1,2,2-Tetrachloroethane	50	U	5	U	5	U	17000	U
1,1,2-Trichloroethane	50	U	5	U	5	U	17000	U
1,1-Dichloroethane	50	U	5	U	5	U	17000	U
1,1-Dichloroethene	14	J	5	U	5	U	17000	U
1,1-Dichloropropene	50	U	5	U	5	U	17000	U
1,2,3-Trichlorobenzene	50	U	5	U	5	U	17000	U
1,2,3-Trichloropropane	50	U	5	U	5	U	17000	U
1,2,4-Trichlorobenzene	50	U	5	U	5	U	17000	U
1,2,4-Trimethylbenzene	50	U	5	U	5	U	17000	U
1,2-Dibromo-3-chloropropane	100	U	10	U	10	U	33000	U
1,2-Dibromoethane (EDB)	50	U	5	U	5	U	17000	U
1,2-Dichloroethane	50	U	5	U	5	U	17000	U
1,2-Dichloropropane	50	U	5	U	5	U	17000	U
1,3,5-Trimethylbenzene	50	U	5	U	5	U	17000	U
1,3-Dichloropropane	50	U	5	U	5	U	17000	U
2,2-Dichloropropane	50	U	5	U	5	U	17000	U
2-Chlorotoluene	50	U	5	U	5	U	17000	U
4-Chlorotoluene	50	U	5	U	5	U	17000	U
Benzene	50	U	5	U	5	U	17000	U
Bromobenzene	50	U	5	U	5	U	17000	U
Bromochloromethane	50	U	5	U	5	U	17000	U
Bromodichloromethane	50	U	5	U	5	U	17000	U
Bromoform	50	U	5	U	5	U	17000	U
Bromomethane	100	U	10	U	10	U	33000	U
Carbon tetrachloride	50	U	5	U	5	U	17000	U
Chlorobenzene	50	U	5	U	5	U	17000	U
Chlorodibromomethane	50	U	5	U	5	U	17000	U
Chloroethane	100	U	10	U	10	U	33000	U
Chloroform	50	U	5	U	5	U	17000	U

Appendix C

Table C-3 4. Summary of DPT Groundwater Analytical Results, Volatile Organics
Groundwater Evaluation, Phase II, Study Area 17

Naval Training Center
Orlando, FL

Sample ID	17Q01303		17Q01306		17Q01607		17Q01704	
Lab ID	A8C240156003		A8D070152006		A8D070152007		A8D070152008	
Sampling Date	20-Mar-98		4-Apr-98		4-Apr-98		25-Mar-98	
Volatile organics, µg/L								
Chloromethane	100	U	10	U	10	U	33000	U
cis-1,2-Dichloroethene	790		5.6		2.5	U	8300	U
cis-1,3-Dichloropropene	50	U	5	U	5	U	17000	U
Dibromomethane	50	U	5	U	5	U	17000	U
Dichlorodifluoromethane	100	U	10	U	10	U	33000	U
Ethylbenzene	50	U	5	U	5	U	17000	U
Hexachlorobutadiene	50	U	5	U	5	U	17000	U
Isopropylbenzene	50	U	5	U	5	U	17000	U
m-Dichlorobenzene	50	U	5	U	5	U	17000	U
m-Xylene & p-Xylene	25	U	2.5	U	2.5	U	8300	U
Methylene chloride	50	U	5	U	5	U	17000	U
n-Butylbenzene	50	U	5	U	5	U	17000	U
n-Propylbenzene	50	U	5	U	5	U	17000	U
Naphthalene	50	U	5	U	5	U	17000	U
o-Dichlorobenzene	50	U	5	U	5	U	17000	U
o-Xylene	25	U	2.5	U	2.5	U	8300	U
p-Dichlorobenzene	50	U	5	U	5	U	17000	U
p-Isopropyltoluene	50	U	5	U	5	U	17000	U
sec-Butylbenzene	50	U	5	U	5	U	17000	U
Styrene	50	U	5	U	5	U	17000	U
tert-Butylbenzene	50	U	5	U	5	U	17000	U
Tetrachloroethene	50	U	5	U	5	U	17000	U
Toluene	50	U	5	U	5	U	17000	U
trans-1,2-Dichloroethene	45		2.5	U	2.5	U	8300	U
trans-1,3-Dichloropropene	50	U	5	U	5	U	17000	U
Trichloroethene	1300		8.7		1.9	J	340000	
Trichlorofluoromethane	100	U	10	U	10	U	33000	U
Vinyl chloride	98	J	10	U	10	U	33000	U

Appendix C

Table C-3.4. Summary of DPT Groundwater Analytical Results, Volatile Organics
Groundwater Evaluation, Phase II, Study Area 17

Naval Training Center
Orlando, FL

Sample ID	17Q02002		17Q02102		17Q02404		17Q02703		17Q02805		17Q03001	
Lab ID	A8D110116002		A8D110116007		A8D110116008		A8D110116004		A8D110116006		A8D110116003	
Sampling Date	7-Apr-98		7-Apr-98		8-Apr-98		9-Apr-98		8-Apr-98		9-Apr-98	
Volatile organics, µg/L												
1,1,1-Trichloroethane	170	U	5	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	170	U	5	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	170	U	5	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	170	U	5	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	170	U	5	U	1	U	1	U	0.17	J	0.12	J
1,2-Dichloroethane	170	U	5	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (total)	3400		73		1	U	31		12		9.4	
1,2-Dichloropropane	170	U	5	U	1	U	1	U	1	U	1	U
2-Butanone	1700	U	50	U	10	U	10	U	10	U	10	U
2-Hexanone	1700	U	50	U	10	U	10	U	10	U	10	U
4-Methyl-2-pentanone	1700	U	50	U	10	U	10	U	10	U	10	U
Acetone	1700	U	50	U	38		10	U	20		10	U
Benzene	170	U	5	U	1	U	1	U	1	U	1	U
Bromodichloromethane	170	U	5	U	1	U	1	U	1	U	1	U
Bromoform	170	U	5	U	1	U	1	U	1	U	1	U
Bromomethane	330	U	10	U	2	U	2	U	2	U	2	U
Carbon disulfide	170	U	5	U	4		4.8		1.4		1	U
Carbon tetrachloride	170	U	5	U	1	U	1	U	1	U	1	U
Chlorobenzene	170	U	5	U	1	U	1	U	1	U	1	U
Chloroethane	330	U	10	U	2	U	2	U	2	U	2	U
Chloroform	170	U	5	U	1	U	1	U	1	U	1	U
Chloromethane	330	U	10	U	0.15	J	2	U	0.12	J	2	U
cis-1,3-Dichloropropene	170	U	5	U	1	U	1	U	1	U	1	U
Dibromochloromethane	170	U	5	U	1	U	1	U	1	U	1	U
Ethylbenzene	170	U	5	U	1	U	1	U	1	U	1	U
Methylene chloride	170	U	5	U	1	U	1	U	1	U	1	U
Styrene	170	U	5	U	1	U	1	U	1	U	1	U
Tetrachloroethene	170	U	5	U	1	U	1	U	1	U	1	U
Toluene	170	U	5	U	1	U	1	U	1	U	0.09	J
trans-1,3-Dichloropropene	170	U	5	U	1	U	1	U	1	U	1	U
Trichloroethene	170	U	1.5	J	1	U	1	U	2.3		1	U
Vinyl chloride	330	U	10	U	2	U	2	U	5.7		1.2	J
Xylenes (total)	170	U	5	U	1	U	1	U	1	U	1	U

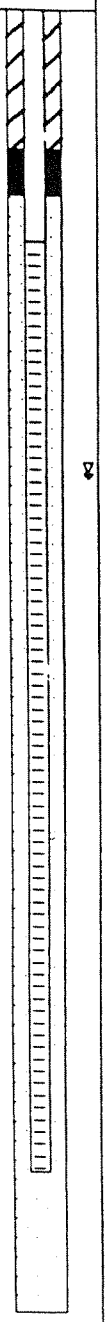
APPENDIX B

BORING LOGS, MONITORING WELL CONSTRUCTION DIAGRAMS, AND MONITORING WELL DEVELOPMENT FORMS

Rev. 1
01/05/04

Project: BRAC NTC Orlando	**Site:** S.A. 17	**Boring No.:** OLD-17-01A
Client: SOUTHDIVNAVFACENGCOM		**Job No.:** CTO-107
Contractor: GEOTEK	**Date started:** 05/15/95	**Completd:** 05/15/95
Method: Hollow stem auger	**Casing Size:** 2 in.	**Screen Int.:** 10 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** Porta FID	**Total depth:** 14Ft.	**Dpth to ⊽** 5 Ft.
Logged by: M. Hawes	**Well Development Date:**	**Well ID:** OLD-17-01A

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					QUARTZ SAND: Gray, fine, silty		SM	
					QUARTZ SAND: Tan, silty, good to moderate rounding			
	17B00101 (4-6')			0				10,15
5			90%					16,32
	17B00101MS 17B00101MSD (8-10')			0	SAND: Lenses of coarse white sand interlayered with fine, brown, clayey-silty sand			8,12
			90%					10,10
				0				10,13
			90%					9,12
10				0				8,8
			90%		SILTY SAND: Light brown, fine, good sorting, good to moderate rounding			12,10
				0				8,8
			90%					11,10
					TD			
15								



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HLA-ES

Project: BRAC NTC Orlando	**Site:** S.A. 17		**Boring No.:** OLD-17-02A
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO-107
Contractor: GEOTEK		**Date started:** 05/14/95	**Compltd:** 05/14/95
Method: Hollow stem auger	**Casing Size:** 2 in.	**Screen Int.:** 10 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** Porta FID	**Total depth:** 14Ft.	**Dpth to ∇** 5 Ft.
Logged by: M. Hawes	**Well Development Date:**		**Well ID:** OLD-17-02A

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Asphalt			
					QUARTZ SAND: Brown, fine, silty		SM	
	17B00201 (4-6')			0	QUARTZ SAND: Tan, fine, silty, good to moderate rounding			5,5
5			75%					8,14
				0				2,5
			85%					7,9
				0				4,8
			90%		QUARTZ SAND: Oil-white, fine, silty, good to moderate rounding			5,8
10				0				5,7
			90%					13,22
				0				4,4
			80%					5,7
					TD			
15								

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HLA-ES

Project: BRAC NTC Orlando	**Site:** S.A. 17		**Boring No.:** OLD-17-03A
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO-107
Contractor: GEOTEK		**Date started:** 05/18/95	**Compltd:** 05/18/95
Method: Hollow stem auger	**Casing Size:** 2 in.	**Screen Int.:** 10 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** Porta FID	**Total depth:** 14Ft.	**Dpth to ∇** 8 Ft.
Logged by: M. Hawes	**Well Development Date:**		**Well ID:** OLD-17-03A

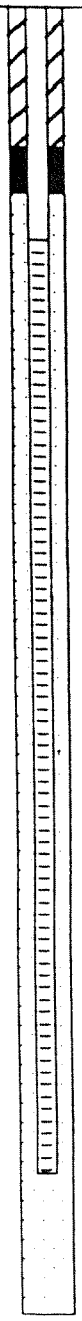
Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Asphalt			
				0	QUARTZ SAND: Dark brown, fine		SP	
				0				
	17B00301 (4-8')				QUARTZ SAND: Tan, fine, silty, good to moderate rounding		SM	18,18
5			80%	0				20,22
								5,8
			90%	0				10,11
								4,5
			90%	0				5,7
10								5,8
			90%	0				11,12
								4,5
			90%	0				5,7
					TD			
15								

PAGE 1 of OLD1703

HLA-ES

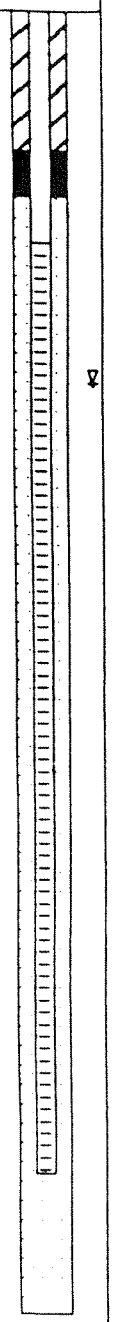
Project: BRAC NTC Orlando		**Site:** S.A. 17	**Boring No.:** OLD-17-04A
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO-107
Contractor: GEOTEK		**Date started:** 05/18/95	**Completd:** 05/18/95
Method: Hollow stem auger	**Casing Size:** 2 in.	**Screen Int.:** 10 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** Porta FID	**Total depth:** 14Ft.	**Dpth to ∇** 5 Ft.
Logged by: M. Hawes	**Well Development Data:**		**Well ID:** OLD-17-04A

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Limestone rock			
					QUARTZ SAND: Dark brown, fine		SP	
					QUARTZ SAND: Tan, fine, silty, good to moderate rounding		SM	
	17B00401 (4-6')							12,20
5			70%	0				24,22
								5,8
			80%	0				7,13
								4,4
			80%	0				8,9
10								4,7
			90%	0				6,7
								5,7
			90%	10				9,0
					TD			
15								



Project: BRAC NTC Orlando	**Site:** S.A. 17		**Boring No.:** OLD-17-05A
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO-107
Contractor: GEOTEK		**Date started:** 05/15/95	**Compltd:** 05/15/95
Method: Hollow stem auger	**Casing Size:** 2 in.	**Screen Int.:** 10 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** Porta FID	**Total depth:** 14Ft.	**Dpth to ∇** 4 Ft.
Logged by: M. Hawes	**Well Development Date:**		**Well ID:** OLD-17-05A

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					QUARTZ SAND: Gray, silty, fine		SM	
				0	QUARTZ SAND: Tan, silty, fine, good to moderate rounding			
				0				
	17B00502 (4-6')							6,9
5			100%	0				11,13
					SAND: Interlayered lenses of coarse, white sand and fine, brown to dark brown, fine, silty-clayey sand			5,10
			100%	0				12,14
								6,8
			75%	0				9,10
10								5,7
			100%	0	SAND: Interlayered lenses of coarse, white sand and fine, brown, silty-clayey sand			8,10
								4,8
			100%	5				5,7
					TD			
15								



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HLA-ES

Project: BRAC NTC Orlando	**Site:** S.A. 17		**Boring No.:** OLD-17-06A
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO-107
Contractor: ABB-ES		**Date started:** 01/23/97	**Compltd:** 01/23/97
Method: Terra Probe	**Casing Size:** 0.5 in.	**Screen Int.:** 9 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM:**	**Total depth:** 11Ft.	**Dpth to ∇** Ft.
Logged by:	**Well Development Date:**		**Well ID:** OLD-17-06A

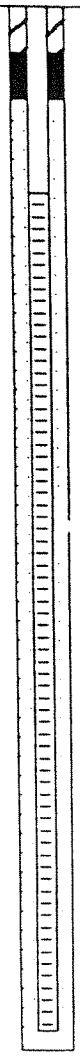
Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					1/2-in. ID microwell was installed using TerraProbe.			
5								
10					TD			
15								

Project: BRAC NTC Orlando		**Site:** S.A. 17	**Boring No.:** OLD-17-07A
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO-107
Contractor: ABB-ES		**Date started:** 01/23/97	**Completd:** 01/23/97
Method: Terra Probe	**Casing Size:** 0.5 in.	**Screen Int.:** 8 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:**	**Total depth:** 11Ft.	**Dpth to ▽** Ft.
Logged by:	**Well Development Date:**		**Well ID:** OLD-17-07A

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					1/2-in. ID microwell was installed using TerraProbe.			
5								
10								
					TD			
15								

Project: BRAC NTC Orlando		**Site:** S.A. 17	**Boring No.:** OLD-17-08A
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO-107
Contractor: ABB-ES		**Date started:** 01/23/87	**Completd:** 01/23/87
Method: Terra Probe	**Casing Size:** 0.5 in.	**Screen Int.:** 8 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:**	**Total depth:** 11Ft.	**Dpth to ∇** Ft.
Logged by:	**Well Development Date:**		**Well ID:** OLD-17-08A

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					1/2-in. ID microwell was installed using TerraProbe.			
5								
10								
					TD			
15								

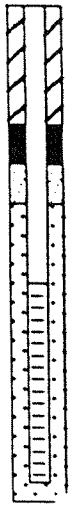


Project: BRAC NTC Orlando		**Site:** S.A. 17	**Boring No.:** OLD-17-09A
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO-107
Contractor: ABB-ES		**Date started:** 01/23/97	**Compltd:** 01/23/97
Method: Terra Probe	**Casing Size:** 0.5 in.	**Screen Int.:** 8 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:**	**Total depth:** 11Ft.	**Dpth to ∇** Ft.
Logged by:	**Well Development Date:**		**Well ID:** OLD-17-09A

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					1/2-in. ID microwell was installed using TerraProbe.			
5								
10					TD			
15								

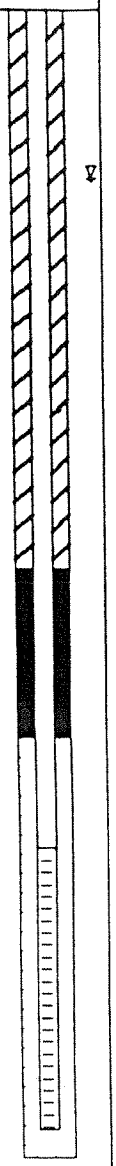
Project: BRAC NTC Orlando		**Site:** S.A. 17	**Boring No.:** OLD-17-10C
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO 107
Contractor: Custom		**Date started:** 02/04/97	**Completd:** 02/04/97
Method: SPT	**Casing Size:** 2 in.	**Screen Int.:** 5 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID	**Total depth:** 80Ft.	**Dpth to ∇** 6 Ft.
Logged by: JN	**Well Development Date:**		**Well ID:** OLD-17-10C

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Continued from PAGE 1			
			45%	0			SP	8,10,14,13
			80%	0				5,4,2,4
			70%	0				5,4,5,5
40			70%	0				8,8,7,4
			80%	0				NS
45			0	0				1,2,2,4
			100%	0	Dark gray wandy clay, soft, low plasticity, hard brown nodules after 3".		SC	1,0,0,1
			100%	0				NS
50			0					0,0,0,0
			100%					3,2,2,1
55			100%		Green silty clay, stiff, low plasticity (Hawthorne).		CL	8,10,13,13
			100%					2,3,4,8
			100%		Green silty clay.		CL/SC	
60					TD			
65								
70								



Project: BRAC NTC Orlando		**Site:** S.A. 17	**Boring No.:** OLD-17-11B
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO 107
Contractor: GP		**Date started:** 04/28/98	**Completd:** 04/28/98
Method: HSA	**Casing Size:** 2 in.	**Screen Int.:** 5 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID	**Total depth:** 20Ft.	**Dpth to ∇** 3 Ft.
Logged by: MCT	**Well Development Date:**		**Well ID:** OLD-17-11B

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Posthole to 4 feet bls.			
				0	Brown, tan, gray, silty fine sand. Soft, loose.		SP	10,12,12,14
5			80%					
				0				5,12,12,14
			100%					
				0				10,18,20,20
			100%					
10				0				8,8,10,10
			80%					
				0				10,10,12,17
			60%					
				0				8,17,12,12
15			80%					
				0				5,5,8,7
			90%					
				0				5,7,7,8
			100%					
20					TD			
25								



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HLA-ES

Project: BRAC NTC Orlando		**Site:** S.A. 17	**Boring No.:** OLD-17-12C
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO 107
Contractor: GP		**Date started:** 04/28/98	**Completd:** 04/28/98
Method: HSA/MUD	**Casing Size:** 2 in.	**Screen Int.:** 5 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID	**Total depth:** 84Ft.	**Dpth to ∇** 3 Ft.
Logged by: MCT	**Well Development Date:**		**Well ID:** OLD-17-12C

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Posthole to 4 feet bls.			
				0	Brown, tan, gray, silty fine sand. Soft, loose.		SP	10,12,12,14
5			80%	0				5,12,12,14
			100%	0				10,18,20,20
			100%	0				8,8,10,10
10			80%	0				10,10,12,17
			80%	0				8,17,12,12
			80%	0				5,5,8,7
15			90%	0				5,7,7,8
			100%	0				8,8,7,7
20			100%	0				4,4,3,3
			100%	0	Light gray silty, clayey fine sand.		SP/SC	3,3,8,8
25			100%	0				3,3,5,5
			100%	0				4,5,5,7
			100%	0	Light gray silty fine sand. Stiff, partially cemented in places.		SP	3,3,4,4
30			100%	0				4,5,8,8
			100%	0				2,12,12,14
35			100%					

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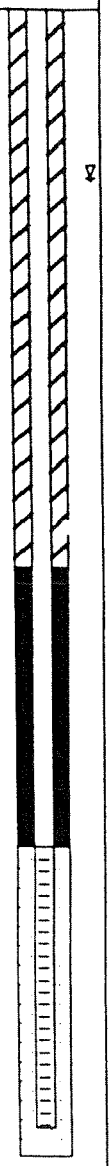
HLA-ES

Project: BRAC NTC Orlando	**Site:** S.A. 17	**Boring No.:** OLD-17-13B
Client: SOUTHDIVNAVFACENGCOM		**Job No.:** CTO 107
Contractor: GP	**Date started:** 04/28/98	**Completd:** 04/28/98
Method: HSA	**Casing Size:** 2 in.	**Screen Int.:** 5 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID	**Total depth:** 20Ft.	**Dpth to ∇** 3 Ft.
Logged by: MCT	**Well Development Date:**	**Well ID:** OLD-17-13B

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Posthole to 4 feet bls.			
				0	Gray to brown silty, fine-grained sand, Soft, loose, poorly sorted.		SP	28,32,20,21
5			50%					
				0				28,24,28,28
			100%					
				0				12,12,14,14
			50%					
10				0				8,8,8,8
			90%					
				0				8,8,5,5
			90%					
				0				5,4,5,6
15			80%					
				0				5,5,5,5
			80%					
				0				4,4,3,3
			60%					
20					TD			
25								



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HLA-ES

Project: BRAC NTC Orlando	**Site:** S.A. 17		**Boring No.:** OLD-17-14C
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO 107
Contractor: GP		**Date started:** 04/28/98	**Completd:** 04/28/98
Method: HSA/MUD	**Casing Size:** 2 in.	**Screen Int.:** 5 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID	**Total depth:** 80Ft.	**Dpth to ∇** 3 Ft.
Logged by: MCT	**Well Development Date:**		**Well ID:** OLD-17-14C

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Posthole to 4 feet bls.			
				0	Brown, tan, gray, silty fine sand. Soft, loose.		SP	28,32,20,21
5			50%	0				28,24,28,28
			100%	0				12,12,14,14
			50%	0				8,8,8,8
10			90%	0				8,8,5,5
			90%	0				5,4,5,6
			80%	0				5,5,5,5
15			80%	0				4,4,3,3
			60%	0				3,3,3,3
			60%	0				3,3,2,2
20			70%	0				1,1,2,2
			80%	0				3,3,3,2
			70%	0				4,3,10,10
			70%	0				3,3,3,3
25			50%	0	Olive green clayey, silty sand.		SC	5,8,20,20
			80%	0	Light brown silty fine sand with stringers of olive green silty fine- to coarse sand.		SP	8,10,10,11
30			40%					
35								

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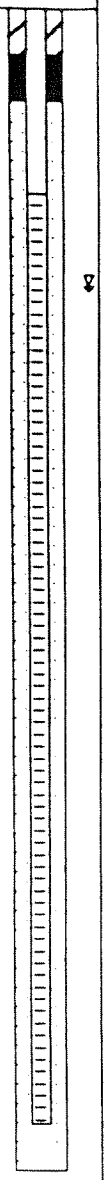
HLA-ES

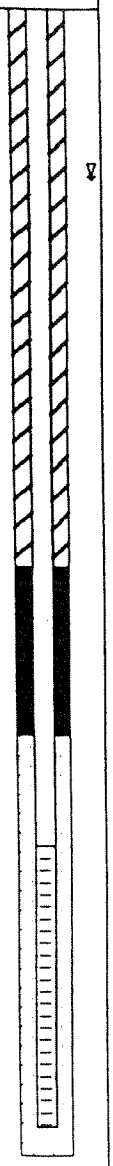
Project: BRAC NTC Orlando	**Site:** S.A. 17	**Boring No.:** OLD-17-15A
Client: SOUTHDIVNAVFACENGCOM		**Job No.:** CTO 107
Contractor: GP	**Date started:** 04/28/98	**Completed:** 04/28/98
Method: HSA	**Casing Size:** 2 in. / **Screen Int.:** 10 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID / **Total depth:** 12.5Ft.	**Dpth to ∇** 3 Ft.
Logged by: MCT	**Well Development Date:**	**Well ID:** OLD-17-15A

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Posthole to 4 feet bls.			
			80%	0	Light brown, silty, fine-grained sand. Soft, loose, poorly sorted.		SP	12,12,12,14
5			80%	0				10,10,8,8
			100%	0				10,10,10,10
10			90%	0				3,3,3,3
					TD			
15								



Project: BRAC NTC Orlando		**Site:** S.A. 17	**Boring No.:** OLD-17-16B
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO 107
Contractor: GP		**Date started:** 04/29/98	**Compltd:** 04/29/98
Method: HSA	**Casing Size:** 2 in.	**Screen Int.:** 5 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID	**Total depth:** 20.5Ft.	**Dpth to ∇** 3 Ft.
Logged by: MCT	**Well Development Date:**		**Well ID:** OLD-17-16b

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Posthole to 4 feet bls.			
				0	Light brown, silty, fine-grained sand. Soft, loose, poorly sorted.		SP	12,12,12,14
5			80%	0				10,10,8,8
			80%	0				10,10,10,10
			100%	0				3,3,3,3
10			90%	0				3,3,3,3
			80%	0				1,1,3,3
15			90%	0				4,6,4,5
			100%	0				5,5,5,5
20			90%		TD			
25								



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HLA-ES

Project: BRAC NTC Orlando		**Site:** S.A. 17	**Boring No.:** OLD-17-17C
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO 107
Contractor: GP		**Date started:** 04/29/98	**Compltd:** 04/29/98
Method: HSA/MUD	**Casing Size:** 2 in.	**Screen Int.:** 5 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID	**Total depth:** 58Ft.	**Dpth to ∇** 3 Ft.
Logged by: MCT	**Well Development Date:**		**Well ID:** OLD-17-17C

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Posthole to 4 feet bls.			
				0	Light brown, silty, fine-grained sand. Soft, loose, poorly sorted.		SP	12,12,12,14
5			80%	0				10,10,8,8
			80%	0				10,10,10,10
			100%	0				3,3,3,3
10			90%	0				3,3,3,3
			80%	0				1,1,3,3
15			90%	0				4,6,4,5
			100%	0				5,5,5,5
			90%	0				3,3,1,1
20			100%	0				1,1,1,1
			100%	0				1,1,1,2
25			100%	0	As above, with interbedded layers of light green sandy silt.		SP/SC	6,6,7,7
			80%	0				7,8,9,8
			90%	0			SP	2,2,7,8
30								

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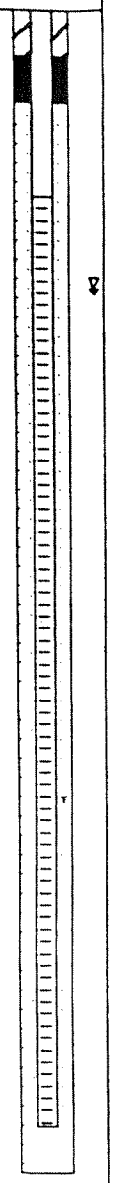
HLA-ES

Project: BRAC NTC Orlando		**Site:** S.A. 17	**Boring No.:** OLD-17-18A
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO 107
Contractor: GP		**Date started:** 04/30/98	**Completd:** 04/30/98
Method: HSA	**Casing Size:** 2 in.	**Screen Int.:** 10 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID	**Total depth:** 12Ft.	**Dpth to ∇** 3 Ft.
Logged by: MCT	**Well Development Date:**		**Well ID:** OLD-17-18A

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Posthole to 4 feet bls.			
				NA*	Light brown, gray, silty fine-grained sand. Soft, loose, poorly sorted.		SP	8,8,10,10
5			30%					
				NA				7,7,7,7
			100%					
				NA				10,11,18,20
			100%					
10				NA				8,10,12,18
			70%					
					TD			
15					* FID out of order			



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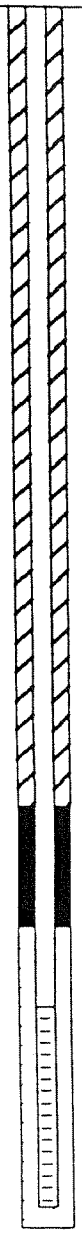
HLA-ES

Project: BRAC NTC Orlando		**Site:** S.A. 17	**Boring No.:** OLD-17-19B
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO 107
Contractor: GP		**Date started:** 05/01/98	**Completd:** 05/01/98
Method: HSA	**Casing Size:** 2 in.	**Screen Int.:** 5 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID	**Total depth:** 30Ft.	**Dpth to ∇** 3 Ft.
Logged by: MCT	**Well Development Date:**		**Well ID:** OLD-17-19B

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Posthole to 4 feet bls.			
				NA*	Light brown, gray, silty fine-grained sand. Soft, loose, poorly sorted.		SP	8,8,10,10
5			30%					
				NA				7,7,7,7
			100%					
				NA				10,11,18,20
			100%					
10				NA				8,10,12,18
			70%					
				NA				10,7,8,10
			80%					
				NA				10,8,8,10
15			100%					
				NA				8,3,3,4
			100%					
				NA				8,3,5,4
			100%					
20				NA	Brown sandy silt, soft.		SC	8,5,5,4
			100%					
				NA				2,3,8,8
			80%					
				NA	Light brown silty sand.		SP	7,7,10,12
25			90%					
				NA				8,8,7,8
			100%					
				0	Brown sandy silt.		SC	7,5,8,8
			100%					
30					TD			
					* FID out of order			
35								



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HLA-ES

Project: BRAC NTC Orlando		**Site:** S.A. 17	**Boring No.:** OLD-17-20C
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO 107
Contractor: GP		**Date started:** 05/01/98	**Completd:** 05/01/98
Method: HSA/MUD	**Casing Size:** 2 in.	**Screen Int.:** 5 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID	**Total depth:** 62Ft.	**Dpth to ∇** 3 Ft.
Logged by: MCT	**Well Development Date:**		**Well ID:** OLD-17-20C

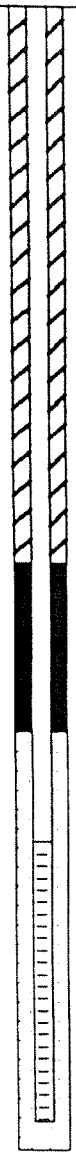
Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Posthole to 4 feet bls.			
				NA*	Light brown, gray, silty fine-grained sand. Soft, loose, poorly sorted.		SP	8,8,10,10
5			30%	NA				7,7,7,7
			100%	NA				10,11,18,20
			100%	NA				8,10,12,18
10			70%	NA				10,7,8,10
			80%	NA				10,8,8,10
15			100%	NA				8,3,3,4
			100%	NA				8,3,5,4
			100%	NA				8,5,5,4
20			100%	NA	Brown sandy silt, soft.		SC	2,3,8,8
			80%	NA	Light brown silty sand.		SP	7,7,10,12
25			90%	NA				8,8,7,8
			100%	0	Brown sandy silt.		SC	7,5,8,8
30			100%	1.1				2,1,1,2
			100%	0.8	Light brown silty, fine-grained sand with interbedded olive green silty sand, soft, stiff in places.		SP	1,4,8,8
			100%	0.8				8,10,10,14
35								

PAGE 1 of OLD1720C

HLA-ES

Project: BRAC NTC Orlando		**Site:** S.A. 17	**Boring No.:** OLD-17-21B
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO 107
Contractor: GP		**Date started:** 05/05/98	**Completd:** 05/05/98
Method: HSA	**Casing Size:** 2 in.	**Screen Int.:** 5 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID	**Total depth:** 20.5Ft.	**Dpth to ∇** 3 Ft.
Logged by: MCT	**Well Development Date:**		**Well ID:** OLD-17-21B

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Posthole to 4 feet bls.			
				0	Brown, gray, silty, fine-grained sand. Soft, loose, poorly sorted.		SP	8,10,10,12
5			90%					
				0				7,10,12,12
			90%					
				0				8,10,12,14
			90%					
10				0				6,8,8,8
			90%					
				0				8,5,4,4
			90%					
				0				4,8,4,5
15			100%					
				0				3,5,4,5
			90%					
				0				3,8,8,9
			90%					
20					TD			
25								



PAGE 1 of OLD1721B

HLA-ES

Project: BRAC NTC Orlando	**Site:** S.A. 17		**Boring No.:** OLD-17-22C
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO 107
Contractor: GP		**Date started:** 05/04/98	**Completd:** 05/04/98
Method: HSA/MUD	**Casing Size:** 2 in.	**Screen Int.:** 5 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID	**Total depth:** 60Ft.	**Dpth to ∇** 3 Ft.
Logged by: MCT	**Well Development Data:**		**Well ID:** OLD-17-22C

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Posthole to 4 feet bls.			
				0	Brown, gray, silty, fine-grained sand. Soft, loose, poorly sorted.		SP	8,10,10,12
5			90%	0				7,10,12,12
			90%	0				8,10,12,14
			90%	0				8,8,8,8
10			90%	0				8,5,4,4
			90%	0				4,8,4,5
			100%	0				3,5,4,5
15			90%	0				3,8,8,9
			90%	0				3,5,4,4
20			90%	0				2,2,2,2
			90%	0				1,1,2,2
25			90%	0	As above, with interbedded layers of light green sandy silt.		SP/SC	1,2,2,3
			90%	0				2,2,2,3
			60%	0	Light brown silty, fine-grained sand, slightly cemented with iron staining.		SP	1,3,4,8
30			60%	0				1,3,4,8
			60%	0				4,8,8,9
35			60%					

PAGE 1 of OLD1722C

HLA-ES

Project: BRAC NTC Orlando		**Site:** S.A. 17	**Boring No.:** OLD-17-23A
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO 107
Contractor: GP		**Date started:** 05/05/98	**Compltd:** 05/05/98
Method: HSA	**Casing Size:** 2 in.	**Screen Int.:** 10 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID	**Total depth:** 12.5Ft.	**Dpth to ∇** 3 Ft.
Logged by: MCT	**Well Development Date:**		**Well ID:** OLD-17-23A

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Refer to CPT log for 17Q018.			
					Log used to determine well construction.			
5								
10								
					TD			
15								

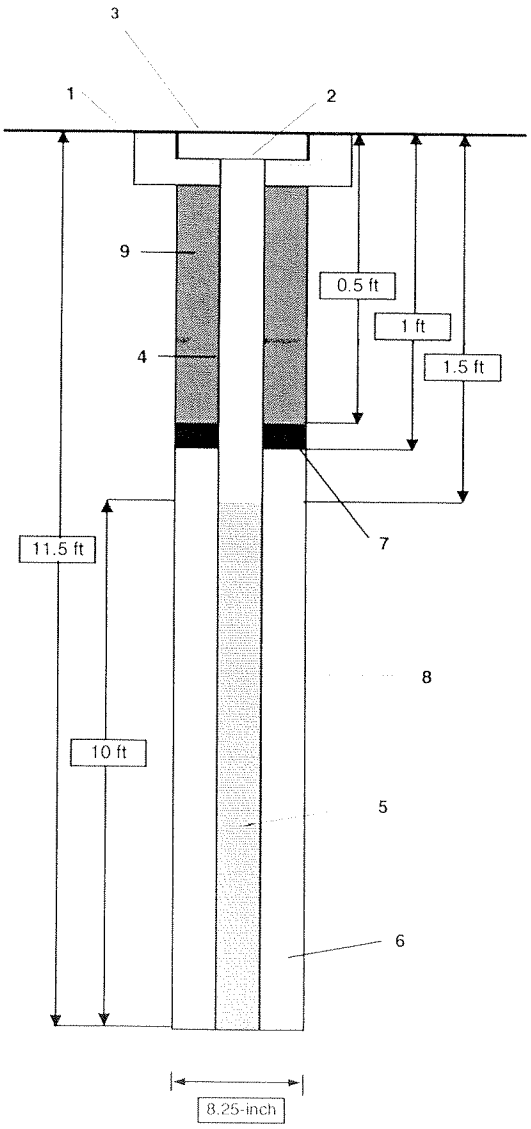
CH2MHILL

PROJECT NUMBER	WELL NUMBER	
177311	OLD-17-23A-R	SHEET 1 OF 1

WELL COMPLETION DIAGRAM

PROJECT : NTC - SA17
DRILLING CONTRACTOR : Precision Drilling
DRILLING METHOD AND EQUIPMENT USED : Hollow Stem Augering (4.25-inch I.D. and 8.25-inch O.D.)
WATER LEVELS : NA START : 9/26/2000 END: 9/26/2000

LOCATION: Orlando, Florida
NORTHING 1490404.06
EASTING: 546847.00
LOGGER : F. Ferreira

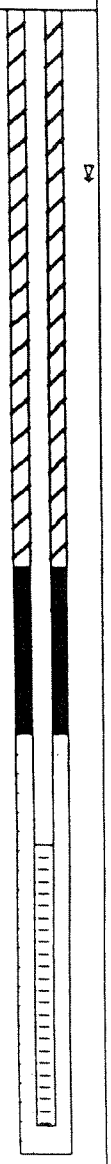


1- Ground elevation at well	89.60	ft above msl
2- Top of casing elevation	89.38	ft above msl
3- Protective cover type	8-inch manhole	
a) concrete pad dimensions	3 ft x 3 ft x 4-inches deep	
4- Dia./type of well casing	2-inch inside diameter schedule 40 PVC	
5- Type/slot size of screen	0.010-inch dia. machine slotted PVC	
6- Type filter pack	20/30 sieve size silica sand	
7- Type of seal	3/8-inch bentonite pellets	
8- Borehole diameter	8.25-inch	
9- Grout	Portland cement	

Note: Diagram not to scale.

Project: BRAC NTC Orlando	**Site:** S.A. 17		**Boring No.:** OLD-17-24B
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO 107
Contractor: GP		**Date started:** 05/05/98	**Compltd:** 05/05/98
Method: HSA	**Casing Size:** 2 in.	**Screen Int.:** 5 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID	**Total depth:** 20Ft.	**Dpth to ∇** 3 Ft.
Logged by: MCT	**Well Development Date:**		**Well ID:** OLD-17-24B

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Refer to CPT log for 17Q016.			
					Log used to determine well construction.			
5								
10								
15								
20					TD			
25								



PAGE 1 of OLD1724B

HLA-ES

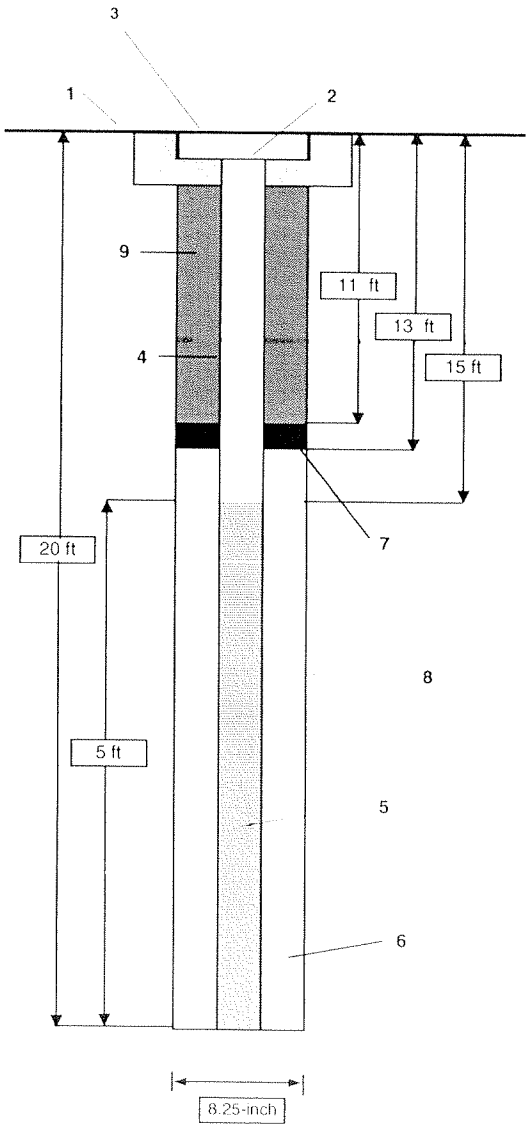
CH2MHILL

PROJECT NUMBER	WELL NUMBER	
177311	OLD-17-24B-R	SHEET 1 OF 1

WELL COMPLETION DIAGRAM

PROJECT : NTC - SA17
DRILLING CONTRACTOR : Precision Drilling
DRILLING METHOD AND EQUIPMENT USED : Hollow Stem Augering (4.25-inch I.D. and 8.25-inch O.D.)
WATER LEVELS : NA START : 9/26/2000 END: 9/26/2000

LOCATION: Orlando, Florida
NORTHING 1490400.23
EASTING: 546851.06
LOGGER : F. Ferreira

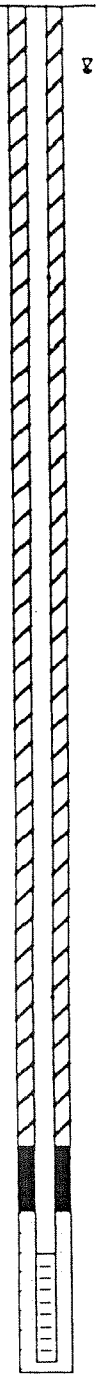


1- Ground elevation at well	89.80	ft above msl
2- Top of casing elevation	89.56	ft above msl
3- Protective cover type	8-inch manhole	
a) concrete pad dimensions	3 ft x 3 ft x 4-inches deep	
4- Dia./type of well casing	2-inch inside diameter schedule 40 PVC	
5- Type/slot size of screen	0.010-inch dia. machine slotted PVC	
6- Type filter pack	20/30 sieve size silica sand	
7- Type of seal	3/8-inch bentonite pellets	
8- Borehole diameter	8.25-inch	
9- Grout	Portland cement	

Note: Diagram not to scale.

Project: BRAC NTC Orlando		**Site:** S.A. 17	**Boring No.:** OLD-17-25C
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO 107
Contractor: GP		**Date started:** 05/07/98	**Completd:** 05/07/98
Method: HSA/MUD	**Casing Size:** 2 in.	**Screen Int.:** 5 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID	**Total depth:** 83Ft.	**Dpth to ∇** 3 Ft.
Logged by: MCT	**Well Development Date:**		**Well ID:** OLD-17-25c

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Refer to CPT log for 17G018.			
					Log used to determine well construction.			
5								
10								
15								
20								
25								
30								
35								
40								
45								
50								
55								
60								
65					TD			



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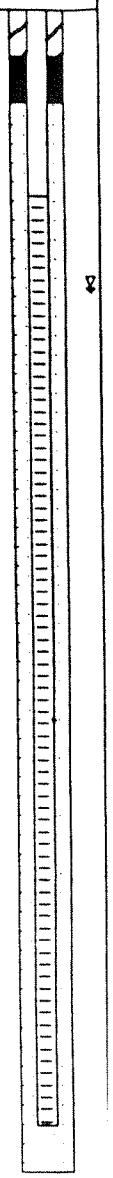
HLA-ES

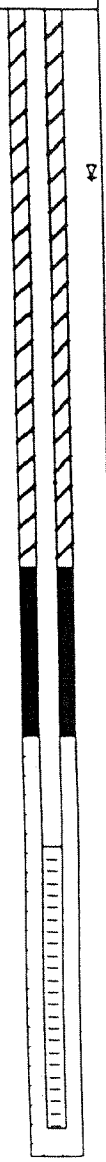
Project: BRAC NTC Orlando		**Site:** S.A. 17	**Boring No.:** OLD-17-28A
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO 107
Contractor: GP		**Date started:** 05/05/88	**Completd:** 05/05/88
Method: HSA	**Casing Size:** 2 in.	**Screen Int.:** 10 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID	**Total depth:** 12.5Ft.	**Dpth to ∇** 3 Ft.
Logged by: MCT	**Well Development Date:**		**Well ID:** OLD-17-28A

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/8-in.
					Refer to CPT log for 17Q003.			
					Log used to determine well construction.			
5								
10								
					TD			
15								



Project: BRAC NTC Orlando		**Site:** S.A. 17	**Boring No.:** OLD-17-27B
Client: SOUTHDIVNAVFACENGCOM			**Job No.:** CTO 107
Contractor: GP		**Date started:** 05/05/88	**Completd:** 05/05/88
Method: HSA	**Casing Size:** 2 in.	**Screen Int.:** 5 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID	**Total depth:** 20.5Ft.	**Dpth to ∇** 3 Ft.
Logged by: MCT	**Well Development Date:**		**Well ID:** OLD-17-27B

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Refer to CPT log for 17Q003.			
					Log used to determine well construction.			
5								
10								
15								
20					TD			
25								



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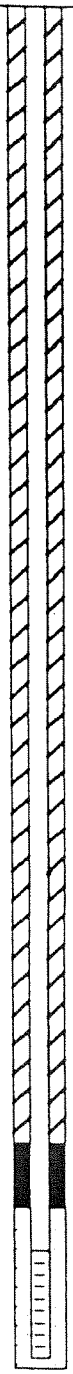
HLA-ES

Project: BRAC NTC Orlando	**Site:** S.A. 17	**Boring No.:** OLD-17-28C
Client: SOUTHDIVNAVFACENGCOM		**Job No.:** CTO 107
Contractor: GP	**Date started:** 05/07/98	**Compltd:** 05/07/98
Method: HSA/MUD	**Casing Size:** 2 in. / **Screen Int.:** 5 ft.	**Protection level:** D
Ground Elev.:	**Type of OVM.:** FID / **Total depth:** 83Ft.	**Dpth to ∇** 3 Ft.
Logged by: MCT	**Well Development Date:**	**Well ID:** OLD-17-28C

Depth Ft.	Sample ID (Depth) (Type)	Split Spoon	Recovery	Headspace (ppm)	Soil/Rock Description and comments	Lithologic symbol	Soil class.	Blows/6-in.
					Refer to CPT log for 17G003.			
					Log used to determine well construction.			
5								
10								
15								
20								
25								
30								
35								
40								
45								
50								
55								
60								
65					TD			



PAGE 1 of OLD1728C

HLA-ES

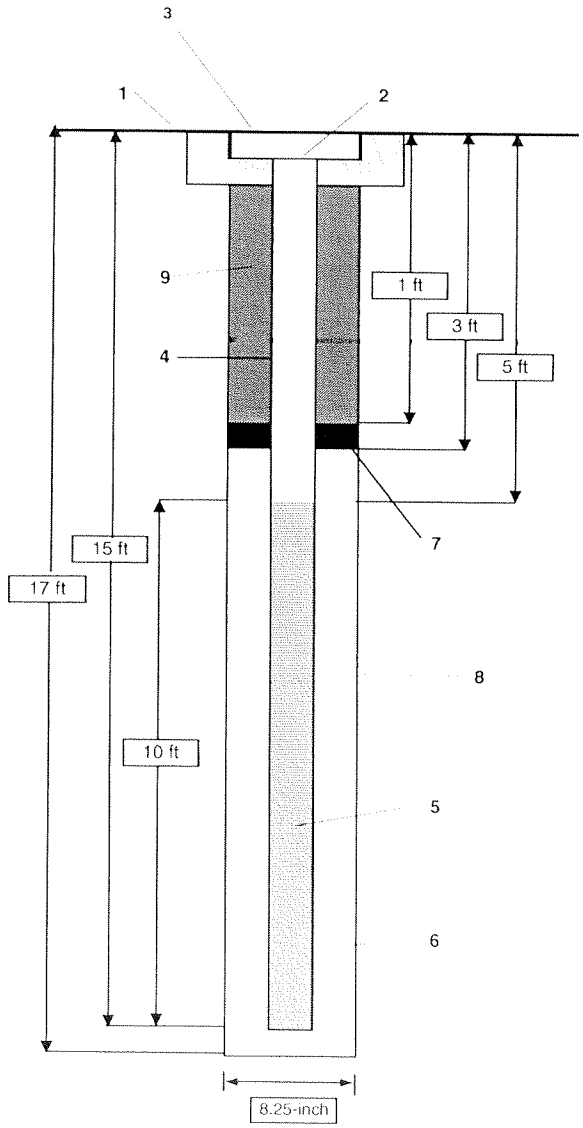
CH2MHILL

PROJECT NUMBER	WELL NUMBER	
177311	OLD-17-34A	SHEET 1 OF 1

WELL COMPLETION DIAGRAM

PROJECT : NTC - SA17
DRILLING CONTRACTOR : Precision Drilling
DRILLING METHOD AND EQUIPMENT USED : Hollow Stem Augering (4.25-inch I.D. and 8.25-inch O.D.)
WATER LEVELS : 6.55 feet below TOC START : 3/27/2000 END: 3/27/2000

LOCATION: Orlando, Florida
NORTHING 1490546.61
EASTING: 546933.56
LOGGER : J. Ottoson



1- Ground elevation at well	90.70	ft above msl
2- Top of casing elevation	90.44	ft above msl
3- Protective cover type	8-inch manhole	
a) concrete pad dimensions	3 ft x 3 ft x 4-inches deep	
4- Dia./type of well casing	2-inch inside diameter schedule 40 PVC	
5- Type/slot size of screen	0.010-inch dia. machine slotted PVC	
6- Type filter pack	20/30 sieve size silica sand (7 bags)	
7- Type of seal	3/8-inch bentonite pellets	
8- Borehole diameter	8.25-inch	
9- Grout	Portland cement	

Note: Diagram not to scale.

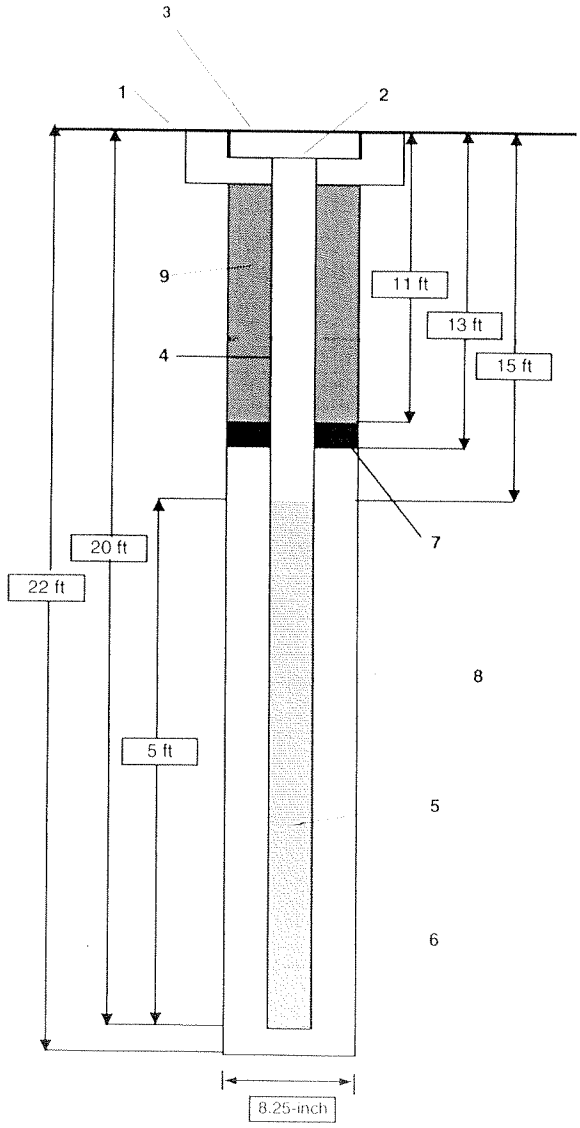
CH2MHILL

PROJECT NUMBER	WELL NUMBER
177311	OLD-17-35B SHEET 1 OF 1

WELL COMPLETION DIAGRAM

PROJECT : NTC - SA17
DRILLING CONTRACTOR : Precision Drilling
DRILLING METHOD AND EQUIPMENT USED : Hollow Stem Augering (4.25-inch I.D. and 8.25-inch O.D.)
WATER LEVELS : 6.32 feet below TOC START : 3/27/2000 END: 3/27/2000

LOCATION: Orlando, Florida
NORTHING 1490543.09
EASTING: 546938.11
LOGGER : J. Ottoson



1- Ground elevation at well	90.6	ft above msl
2- Top of casing elevation	90.20	ft above msl
3- Protective cover type	8-inch manhole	
a) concrete pad dimensions	3 ft x 3 ft x 4-inches deep	
4- Dia./type of well casing	2-inch inside diameter schedule 40 PVC	
5- Type/slot size of screen	0.010-inch dia. machine slotted PVC	
6- Type filter pack	20/30 sieve size silica sand (7 bags)	
7- Type of seal	3/8-inch bentonite pellets	
8- Borehole diameter	8.25-inch	
9- Grout	Portland cement	

Note: Diagram not to scale.

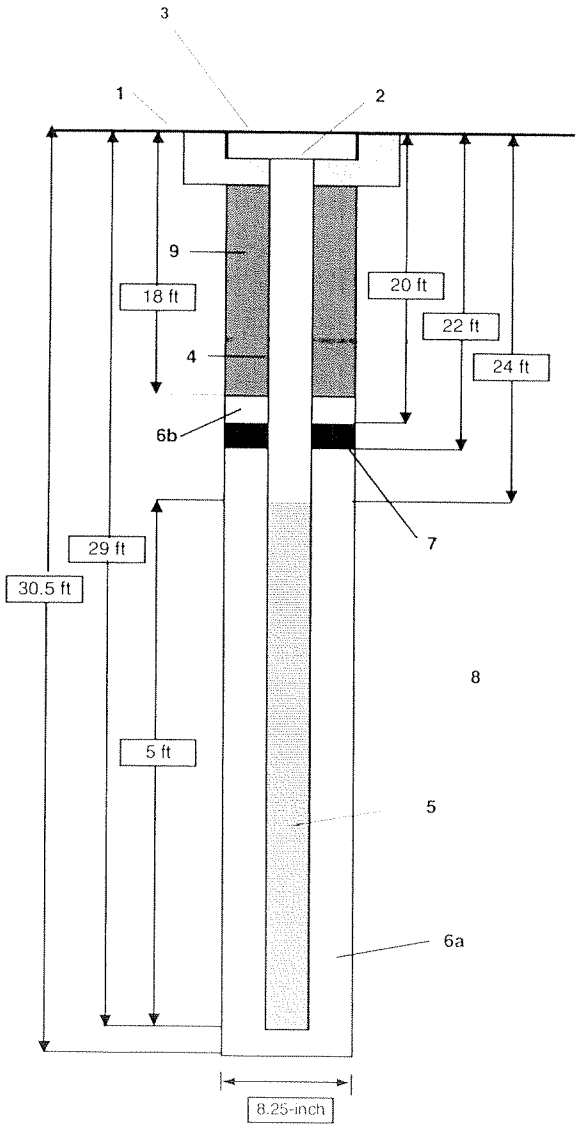
CH2MHILL

PROJECT NUMBER	WELL NUMBER	
177311	OLD-17-36B	SHEET 1 OF 1

WELL COMPLETION DIAGRAM

PROJECT : NTC - SA17
DRILLING CONTRACTOR : Precision Drilling
DRILLING METHOD AND EQUIPMENT USED : Hollow Stem Augering (4.25-inch I.D. and 8.25-inch O.D.)
WATER LEVELS : 5.93 feet below TOC START : 3/28/2000 END: 3/28/2000

LOCATION: Orlando, Florida
NORTHING 1490208.37
EASTING: 547281.25
LOGGER : J. Ottoson



1- Ground elevation at well	89.6	ft above msl
2- Top of casing elevation	89.18	ft above msl
3- Protective cover type	8-inch manhole	
a) concrete pad dimensions	3 ft x 3 ft x 4-inches deep	
4- Dia./type of well casing	2-inch inside diameter schedule 40 PVC	
5- Type/slot size of screen	0.010-inch dia. machine slotted PVC	
6- Type filter pack	a) 20/30 sieve size silica sand (7 bags) b) 30/65 sieve size silica sand (1 bag)	
7- Type of seal	3/8-inch bentonite pellets	
8- Borehole diameter	8.25-inch	
9- Grout	Portland cement	

Note: Diagram not to scale.

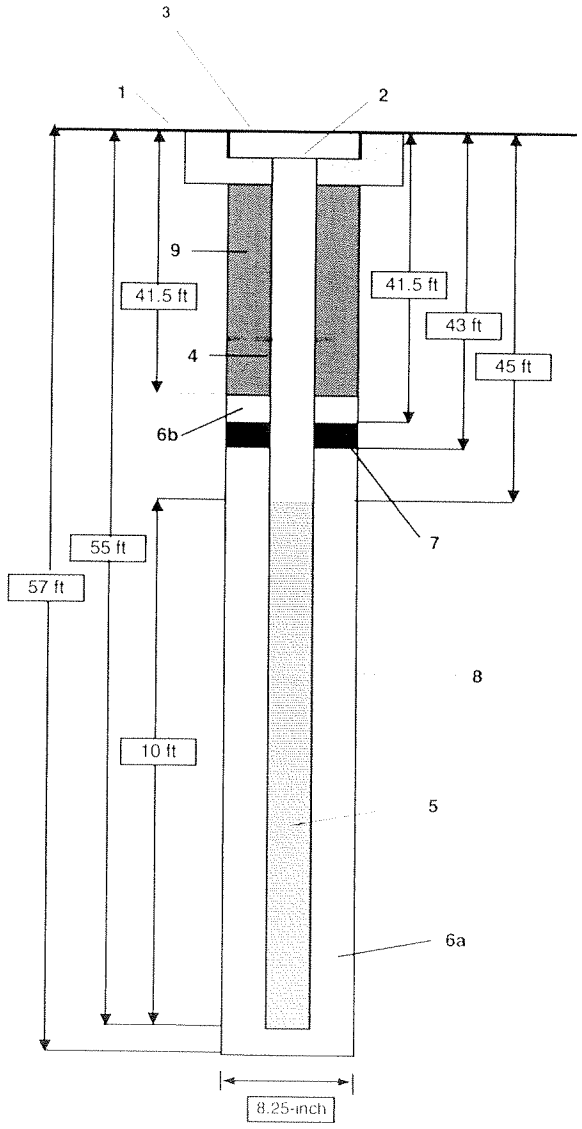
CH2MHILL

PROJECT NUMBER	WELL NUMBER	
177311	OLD-17-37C	SHEET 1 OF 1

WELL COMPLETION DIAGRAM

PROJECT : NTC - SA17
DRILLING CONTRACTOR : Precision Drilling
DRILLING METHOD AND EQUIPMENT USED : Hollow Stem Augering (4.25-inch I.D. and 8.25-inch O.D.)
WATER LEVELS : 6.57 feet below TOC START : 3/28/2000 END: 3/28/2000

LOCATION: Orlando, Florida
NORTHING 1490214.22
EASTING: 547283.66
LOGGER : J. Ottoson



1- Ground elevation at well	89.6	ft above msl
2- Top of casing elevation	89.24	ft above msl
3- Protective cover type	8-inch manhole	
a) concrete pad dimensions	3 ft x 3 ft x 4-inches deep	
4- Dia./type of well casing	2-inch inside diameter schedule 40 PVC	
5- Type/slot size of screen	0.010-inch dia. machine slotted PVC	
6- Type filter pack	a) 20/30 sieve size silica sand (7 bags)	
	b) 30/65 sieve size silica sand (1 bag)	
7- Type of seal	3/8-inch bentonite pellets	
8- Borehole diameter	8.25-inch	
9- Grout	Portland cement	

Note: Diagram not to scale.

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page 1 of ____

Well: OLD-17-38D
Site: 17
Date Installed: ____
Date Developed: 7- -02
Dev. Method: ____
Pump Type: ____

Depth to Bottom (ft.): 74.8
Static Water Level Before (ft.): 34.75
Static Water Level After (ft.): ____
Screen Length (ft.): ____
Specific Capacity: ____
Casing ID (in.): 2"

Responsible Personnel: Scott McGuire, Gary Braganza
Drilling Co.: ____
Project Name: ____
Project Number: ____

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.) Pumping @ 500 ml/min
1035		10 2.64	39.41	29.6	10.94	1.74	990	start 1025 1st recording 1035
1045		20 5.28	41.30	29.0	9.68	1.02	990	slowed to 400 ml/min
1055		24 6.34	39.31	30.4	9.05	0.755	990	
1105		28 7.39	39.34	31.0	9.28	0.982	990	
1115		32 8.45	39.35	32.1	9.61	0.998	990	
1125		36 9.51	39.35	33.6	9.98	1.09	990	
1135		40 10.50	39.37	33.7	10.59	1.24	990	
1145		44 11.62	39.38	36.1	9.86	0.906	990	
1155		48 12.68	39.38	39.0	8.95	0.718	180	
1205		52 13.73	39.40	39.4	7.20	0.621	230	
1215		56 14.79	39.40	39.6	7.04	0.625	230	
1225		60 15.85	39.40	39.6	7.14	0.594	220	
1235		64 16.90	39.40	39.9	7.698	0.596	220	
1245		68 17.96	39.40	40.1	6.71	0.599	220	Parameters stabilizing
1255		72 19.02	39.41	30.6	6.36	0.488	220	
1300		74 19.54	39.41	31.2	6.41	0.493	220	
1305		76 20.07	39.40	31.6	6.40	0.486	220	
1310		78 20.60	39.40	31.7	6.37	0.479	220	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of ___

Well: OLD-17-42B
Site: SA 17
Date Installed:
Date Developed: 12- -02
Dev. Method:
Pump Type:

Depth to Bottom (ft.): 30.80/
Static Water Level Before (ft.): 5.24'
Static Water Level After (ft.): 5.48
Screen Length (ft.): 5
Specific Capacity:
Casing ID (in.): 1"

Responsible Personnel: J. Fournier
Drilling Co.:
Project Name: NTC Orlando
Project Number: N4206

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.)
1050	1 ft	Ø	5.24	22.67	9.27	60.8	>999	Milky Gray/Brown
1120		4		22.17	8.02	40.5	>999	as above
1150		10		24.07	7.73	38.9	>999	as above
1245	Ø ft	18		23.45	7.24	32.4	>999	As Above
1300		20		23.72	7.13	30.7	>999	As Above
1315		22		22.07	6.93	29.2	>999	As Above
1330		25		21.99	6.78	28.85	>999	As Above

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of ___

Well: OLD-17-43C
Site: SA17
Date Installed:
Date Developed: 12- -02
Dev. Method:
Pump Type:

Depth to Bottom (ft.): 51.2
Static Water Level Before (ft.): 6.15
Static Water Level After (ft.): ~~5.48~~
Screen Length (ft.): 5'
Specific Capacity:
Casing ID (in.): 1"

Responsible Personnel: JFourrier
Drilling Co.:
Project Name:
Project Number: 4206

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.)
1335	~~1~~ Ft	1	6.15	21.17	7.90	67.5	>999	milky gray/Brown
1435	Ø ~~ft~~	12		21.14	6.78	46.1	>999	As Above
1535	Ø	20		20.48	6.67	42.0	>999	As Above
1550	Ø	23		20.65	6.72	42.2	>999	As Above
1605	Ø	25		20.90	6.76	43.0	>999	As Above

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of ___

Well: OLD-17-44 A
Site: SA 17
Date Installed:
Date Developed: 9-[illegible]-02
Dev. Method:
Pump Type:

Depth to Bottom (ft.): 18.06
Static Water Level Before (ft.): 6
Static Water Level After (ft.):
Screen Length (ft.):
Specific Capacity:
Casing ID (in.):

Responsible Personnel: Gary Bragg + Scott McGuire
Drilling Co.:
Project Name: NTC Orlando.
Project Number:

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~) Liters	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units ____)	Turbidity (NTU)	Remarks (odor, color, etc.) pumping rate = 500 ml/min
13:30		0.5	6.52	29.5	5.32	0.205	>999	
13:35		1	6.48	29.6	5.33	0.206	>999	
13:40		1.5	6.45	29.6	5.34	0.206	820	
13:45		2.0	6.45	29.7	5.33	0.207	761	
13:50		2.5	6.45	29.6	5.33	0.207	520	
13:55		3.0	6.43	29.7	5.34	0.207	240	
14:00		3.5	6.42	29.6	5.34	0.208	200	
14:05		4.0	6.42	29.7	5.34	0.208	110	
14:10		4.5	6.42	29.7	5.34	0.208	71	
14:15		5.0	6.42	29.7	5.34	0.208	52	
14:20		5.5	6.42	29.7	5.34	0.208	48	
14:25		6.0	6.42	29.7	5.34	0.206	45	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page 1 of 1

Well: SA17-46C
Site: SA17
Date Installed: Nov 2002
Date Developed: 121502
Dev. Method: Peristolt:-
Pump Type: Geo pump

Depth to Bottom (ft.): 49.7
Static Water Level Before (ft.): 1.60
Static Water Level After (ft.):
Screen Length (ft.):
Specific Capacity:
Casing ID (In.): 1"

Responsible Personnel: Clar Morrison
Drilling Co.:
Project Name: NTC Orlando
Project Number: N4206

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units S/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1125				24.29	8.43	0.678	+999	
1135				24.37	7.44	0.635	+999	
1145				24.43	6.94	0.582	+999	
1155				24.39	6.57	0.546	+999	
1205				24.47	6.30	0.530	+999	
1215				24.43	6.15	0.509	+999	
1225				24.48	6.15	0.486	+999	
1235				24.37	6.10	0.474	+999	
1245				24.42	6.06	0.464	+999	
1255				24.37	5.99	0.455	+999	
1305				24.32	5.95	0.443	+999	
1315				24.41	5.78	0.436	+999	
1325				24.39	5.92	0.433	+999	

1123 start purge

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Page ___ of ___

Well: SI17-47D
Site:
Date Installed:
Date Developed: 12-
Dev. Method:
Pump Type:

Depth to Bottom (ft.): 56.9
Static Water Level Before (ft.): 1.65
Static Water Level After (ft.):
Screen Length (ft.):
Specific Capacity:
Casing ID (In.):

Responsible Personnel: K. Plangle
Drilling Co.:
Project Name:
Project Number:

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units µS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1123	—		—	24.61	6.37	.581	+999	Chocolate M/L.
1135				24.46	6.97	.886	+999	
1145				24.40	7.80	.898	+999	
1155				24.44	7.27	.863	+999	
1205				24.57	7.70	.827	+999	
1215				24.55	7.51	.703	+999	
1225				24.61	7.30	.778	+999	
1235				24.49	7.34	.757	+999	
1245				24.57	7.04	.735	+999	
1255				24.51	6.97	.708	+999	
1305				24.48	6.74	.675	+999	
1315				24.56	6.76	.663	+999	
1325	Stopping Develop			24.57	6.74	.661	+999	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: OLD-17-48C
Site: SA17
Date Installed: 11- -02
Date Developed: 12-15-02
Dev. Method: over pump
Pump Type: Geo Pump (Peristaltic)

Depth to Bottom (ft.): 50.51
Static Water Level Before (ft.): 4.6'
Static Water Level After (ft.): 4.8
Screen Length (ft.): 5'
Specific Capacity:
Casing ID (in.): 1"

Responsible Personnel: Janice Johnson
Drilling Co.: GPI
Project Name: NTC Orlando
Project Number: N4206 MF0050240

Begin Pump 11:20 Rate - 700ml/min ~1gal/5

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.)
11:45		0.2	5.3	24.85	5.75	13.6	>999	"Rotten Egg" odor
12:00		3.2	5.3	24.74	5.68	13.0	>999	Grey to Brown "Milk"
12:20	X	7.2	5.4	24.84	5.59	11.7	>999	
12:45	2"	12.2	5.4	24.87	5.54	11.2	>999	
13:10		17.2	5.3	24.77	5.56	11.0	>999	
13:30	2"	21.2	5.2	24.75	5.50	10.7	>999	
14:00	5"	27.2	5.2	24.75	5.50	10.4	>999	
	Note:	Depth of well after pumping was 50.21. (More shallow after pumping?)						Difference between water level at last reading and final water level is volume of tubing removed from well. Tubing had to be removed to get TD w/ larger probe to "feel" bottom of well better.

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: OLD-17-~~49D~~ 49D
Site: SA 17
Date Installed: 11 - -02
Date Developed: 12-15-02
Dev. Method: Over pump
Pump Type: Geo pump (Peristaltic)

Depth to Bottom (ft.): 56.1'
Static Water Level Before (ft.): 4.59'
Static Water Level After (ft.): 4.60
Screen Length (ft.): 5'
Specific Capacity:
Casing ID (in.): 1"

Responsible Personnel: Janice Johnson
Drilling Co.: MPE
Project Name: NTC Orlando
Project Number: N4206 MF 0250240

Begin Pumping 14:10

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		4.0	4.67	24.81	5.83	25.6	>999	
14:45	No change	7.0	4.69	24.75	5.79	24.3	>999	
15:00		10.0	4.67	24.62	5.71	23.2	>999	
15:30		16.0	4.62	24.53	5.65	19.4	>999	
15:45		19.0	4.60	24.56	5.57	17.8	>999	
16:00		22.0	4.59	24.55	5.57	17.4	>999	
16:15		25.0	4.60	24.54	5.58	17.0	>999	

APPENDIX C

FIELD SAMPLING FORMS

470803001

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: NTC Orlando
Site: Sta 17
Weather Conditions: mostly cloudy, hot, breezy
Tidally Influenced: Yes ____ No X
Project No:
Personnel: Skip Barton
Measuring Device: Solinst WLI
Remarks:

Well or Piezometer Number	Date	Time Well Cap Removed	Total Well Depth (feet)*	First Water Level Reading Time	First Water Level Reading Depth to Water (feet)*	Second Water Level Reading Time	Second Water Level Reading Depth to Water (feet)*	Final Water Level Reading Time	Final Water Level Reading Depth to Water (feet)*	Comments
										all WLs recorded on 5-18
OU17-01A	5-17-03	1632	12.58	1024	4.61					flush, hard
02A		1548	12.61	1023	4.09					flush, hard, tubing
03A		1754	12.22	~~1.7~~ 0847	4.30					flush, hard
04A		1737	12.43	0907	3.75					flush, hard, tubing
05A		1703	12.21	0957	4.00					flush, very soft, gray silt on probe
07A										could not locate, fence interfered w/ locator, did not locate
10C		1738	45.32	0903	4.10					flush, very soft, tubing in well.
11B		1658	11.75	0959	4.20	15-20				flush, very soft, ≈ 1.5 ft gray silt/mud in bottom, probe went into it & gave
12C		1656	49.62	1003	4.14					flush, hard
13B		1753	19.68	0852	4.54					flush, soft
14C		1752	48.14	0856	4.70					flush, soft
15A		1853	11.72	1235	3.33					flush, hard, tubing
16B		1850	19.60	1236	3.46					flush, hard, tubing
17C	5-18-03	0802	48.24	1237	3.57					could not locate, located on 5-18, flush hard tubing
18A		1540	11.61	1037	4.68					flush, hard, tubing
19B		1807	29.61	1052	5.90					flush, fad soft
20C		1806	51.96	1054	10.41					flush, hard, tubing
21B		1547	19.72	1021	4.30					flush, hard, tubing in well
22C		1545	47.35	1020	5.04					flush, soft, tubing
23A		1744	11.47	0927	4.17					flush, hard, black inside casing
24B		1745	19.61	0928	4.45					flush, hard, black inside, tubing
25C		1744	43.08	0931	30.58	58-63				flush, a little soft, bailer in well
26A		1724	11.44	0912	3.91					flush, hard
27B		1723	19.48	0914	4.17					flush, mod. hard, tubing

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CTO 0234

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: NTC Orlando
Project No:
Site: SA17
Personnel: Skip Barton
Weather Conditions: 5-18 clear, strong wind mid 70s
Measuring Device: Solinst WLI
Tidally Influenced: Yes ___ No X
Remarks:

Well or Piezometer Number	Date	Time Well Cap Removed	Total Well Depth (feet)*	First Water Level Reading Time	First Water Level Reading Depth to Water (feet)*	Second Water Level Reading Time	Second Water Level Reading Depth to Water (feet)*	Final Water Level Reading Time	Final Water Level Reading Depth to Water (feet)*	Comments
										All ~~wt~~ water levels recorded on 5-18, wells opened on 5-17
OLD-17 28 C	5-17-03	1722	61.93	0920	29.28					flush, very soft
34 A		1820	14.72	1110	4.90					flush, screen 5'-15' per tag, hard
35 B		1822	19.43	1112	4.69					flush, screen 15'-20' per tag, v. soft 1' of gray s
36 B		1843	28.52	1214	4.71					flush, screen 23.5-28.5' per tag, hard
37 C		1845	54.27	1211	5.17					flush, screen 45'-55' per tag, soft 3-6" of stuff
38 D		1808	73.50	1157	36.58					above grade, hard
39 C		1847	49.05	1222	5.44					flush, hard
40 C		1840	49.18	1204	7.71					flush, hard
41 C		1824	48.47	1120	6.54					flush, hard
42 B		1538	28.16	1038	7.49					above grade, soft, 6"-8" of gray silt/mud on prob
43 C		1531	49.81	1042	8.75					above grade, soft, ~12" of above on probe
44 A		1749	18.07	~~7.54~~ 0944	7.59					above grade, hard
45 C		1838	49.31	1200	7.05					flush, hard
46 C		1836	48.07	1149	5.05					flush, soft
47 D		1834	54.52	1148	4.92					flush, soft, gray stuff on end of pr
48 C		1832	50.03	1139	8.17					flush, hard
49 D		1830	55.71	1138	8.04					flush, hard
50 C		1828	52.67	1130	9.22					above grade, hard
51 D		1827	56.80	1127	9.23					above grade, soft, gray clay/silt on end of pr

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Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

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Project Site Name: NTC Orlando 17
Project No.:

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

Sample ID No.: NTC 17 G38D 01
Sample Location: OID-17-38D
Sampled By: SRM
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: 9/17/02								
Time: 1430								
Method:	~~Lt Brn~~	6.39	0.478	30.8	258	0.47	0	-182

Clear, slightly Turbid

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 9/17/02								
Method: Peristaltic Pump	.5	6.98	0.599	29.4	990	2.40	0	
Monitor Reading (ppm): N/A	1.0	6.71	0.578	29.7	990	1.76	0	
Well Casing Diameter & Material Type: 2" PVC	1.5	6.59	0.462	29.1	608	0.71	0	
	2.0	6.48	0.481	29.9	402	0.68	0	
Total Well Depth (TD): 74.8	2.5	6.46	0.499	29.9	258	0.65	0	
Static Water Level (WL): 34.75	3.0	6.42	0.495	30.6	258	0.60	0	
One Casing Volume (~~gal~~/L): 24.8	3.5	6.41	0.492	30.6	258	0.58	0	
Start Purge (hrs): ~~1230~~ 1340	4.0	6.39	0.478	30.8	258	0.47	0	
End Purge (hrs): 1420								
Total Purge Time (min): 40								
Total Vol. Purged (~~gal~~/L): 4.0								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs 8260 D	HCl	3 - 40 ml vials	✓

OBSERVATIONS / NOTES:

Purging Rate @ 100 ml/min Tried to purge clean
Flow Thru Cell = 300 ml
Tubing = 3.8 ml/Ft

Circle if Applicable:

MS/MSD	Duplicate ID No.:	Signature(s):
		Scott R. McGraie

Tetra Tech NUS, Inc.

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GROUNDWATER SAMPLE LOG SHEET

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Project Site Name: NTC Orlando - SA 17
Project No.:

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

Sample ID No.: NTC17GT39C01
Sample Location: OLD-17-39C
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 ORP
Date: 9/16/02								
Time: 11:00								
Method: Peristaltic	Brown	5.08	0.235	32.5	926	4.49	0.0	-17

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 9/16/02								
Method: Peristaltic	2000	5.10	0.221	32.6	830	5.29	0.0	3.43
Monitor Reading (ppm): N/A	300	5.08	0.220	32.5	932	5.13	0.0	3.43
Well Casing Diameter & Material	300	5.07	0.218	32.4	942	5.07	0.0	
Type: 0.75" PVC	300	5.09	0.215	32.4	975	4.82	0.0	
Total Well Depth (TD): 27.05	300	5.09	0.220	32.4	939	4.51	0.0	
Static Water Level (WL): 3.43	300	5.08	0.225	32.5	952	4.42	0.0	
One Casing Volume(gal/L): 1.7L	300	5.09	0.229	32.5	973	4.36	0.0	
Start Purge (hrs): 9:30	300	5.09	0.232	32.6	964	4.41	0.0	
End Purge (hrs): 10:55	300	5.08	0.235	32.5	926	4.49	0.0	
Total Purge Time (min): 85								
Total Vol. Purged (gal/L): 4.4 Liters								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
8260B	HCl	3/40 ml vials	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

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

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

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Project Site Name: NTC Orlando SA 17
Project No.:

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

Sample ID No.: OLD-17-40C
Sample Location: NTC17G40C01
Sampled By: KB
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 ORP
Date: 9/16/02								
Time: 12:05								
Method: Peristaltic	[illegible]	5.80	0.216	31.6	131	1.64	0.0	-25

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other DTW
Date: 9/16/02								
Method: Peristaltic	1000	5.27	0.211	28.8	320	5.17	0.0	5.32
Monitor Reading (ppm): N/A	300	5.19	0.209	29.4	>999	5.94	0.0	5.33
Well Casing Diameter & Material Type: 0.75" PVC	300	5.18	0.209	30.8	>999	1.46	0.0	5.33
	300	5.31	0.214	31.4	370	4.47	0.0	
Total Well Depth (TD): 49.20	300	5.32	0.215	31.6	110	2.70	0.0	
Static Water Level (WL): 5.32	300	5.30	0.211	31.3	100	1.82	0.0	
One Casing Volume(gal/L): 4.2 L	300	5.32	0.213	31.5	120	1.74	0.0	
Start Purge (hrs) 11:15	300	5.31	0.215	31.5	125	1.70	0.0	
End Purge (hrs) 12:00	300	5.30	0.216	31.6	131	1.64	0.0	
Total Purge Time (min): 45								
Total Vol Purged (gal/L): 3 4L								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
8260B	HCl	3/40 ml vials	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:	Signature(s): Gary Bregange

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

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Project Site Name: NTC Orlando - SA 17
Project No.:

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

Sample ID No.: NTC17G41C01
Sample Location: OLD-17-41C
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 ORP
Date: 9/16/02								
Time: 16:00								
Method: Peristaltic pump	opaque	4.77	0.080	27.6	33	0.00	0.0	-25

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other DTW
Date: 9/16/02								
Method: Peristaltic	1000	4.80	0.081	28.4	85	13.25	0.0	4.50
Monitor Reading (ppm): N/A	300	4.75	0.075	27.9	95	5.04	0.0	4.50
Well Casing Diameter & Material	300	4.73	0.074	27.8	90	1.70	0.0	
Type: 0.75" PVC	300	4.75	0.076	27.5	65	0.06	0.0	
Total Well Depth (TD): 50.46	300	4.77	0.080	27.5	40	0.00	0.0	
Static Water Level (WL): 4.48	300	4.77	0.080	27.6	34	0.00	0.0	
One Casing Volume(gal/L): 4.4 liters	300	4.77	0.080	27.6	31	0.00	0.0	
Start Purge (hrs): 15:00	300	4.77	0.080	27.6	33	0.00	0.0	
End Purge (hrs): 15:55								
Total Purge Time (min): 55								
Total Vol. Purged (gal/L): 2.1 Liters								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
8260B	HCl	3/40 ml vials	

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD | Duplicate ID No.:

Signature(s): Gary Bruzenge

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

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Project Site Name: NTC Orlando SA17
Project No.:

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

Sample ID No.: NTC 17 642B 01
Sample Location: OLD-17-42B
Sampled By: SRM
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 ORP
Date: 9/17/02								
Time: 1300								
Method:	LI BRN	9.14	0.694	27.0	990	0.26	0	-404

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 9/17/02								
Method: Peristaltic	.5	7.01	0.652	26.9	990	2.47	0	
Monitor Reading (ppm): 0	1.0	6.58	0.439	28.6	990	2.72	0	
Well Casing Diameter & Material Type: 1" PVC	1.5	6.57	0.433	28.4	990	2.24	0	
	2.0	8.71	0.580	26.5	990	0.46	0	
Total Well Depth (TD): 30.40	2.5	9.17	0.692	25.9	990	0.31	0	
Static Water Level (WL): 5.54	3.0	9.16	0.701	26.1	990	0.29	0	
One Casing Volume(gal/L): 1.70	3.5	9.15	0.707	26.7	990	0.28	0	
Start Purge (hrs): 1210	4.0	9.14	0.694	27.0	990	0.26	0	
End Purge (hrs): 1255								
Total Purge Time (min): 45								
Total Vol Purged (~~gal~~/L) 4.0								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's 8260B	HCl	3 - 40 ml vials	✓

OBSERVATIONS / NOTES:

Purging Rate @ 100 ml/min Tried to purge clean
Flow Thru Cell = 300 ml
Tubing = 38 ml/ft

Chocolate milk color

Circle if Applicable:

MS/MSD	Duplicate ID No.:	Signature(s):
		Scott R. McGuire

Tetra Tech NUS
Groundwater Purging and Sampling Log

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Project Site Name:
Project No 4206

[ ] Domestic Well Data

[X] Monitoring Well Data

[ ] Other Well Type:

Flow-Thru Cell
Make/Model: Horiba U-22DX

Serial Nos.:

Sample Location: OLD-17-42.

Sample ID No.: NTC17G04201

Sampled By: GB

C-O-C No.:

PURGING DATA

Casing Size (in.)	Gals / Liters per ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
0.5	0.01 / 0.038	12:10	8.87	28.6	23.86	>999	0.39	-308	8.03	100
1	0.041 / 0.155	12:15	8.70	28.1	24.10	>999	0.36	-317	8.03	100
2	0.163 / 0.617	12:20	8.69	28.9	24.18	>999	0.36	-324	8.03	100
4	0.653 / 2.47	12:25	8.69	29.1	24.50	>999	0.35	-328	8.03	100
6	1.469 / 5.56	12:30	8.68	29.1	24.24	>999	0.35	-331	8.03	100
8	2.611 / 9.88	12:35	8.66	29.0	23.97	>999	0.35	-337	8.03	100
10	4.08 / 15.44	12:40	8.65	28.9	24.03	>999	0.34	-337	8.03	100
	(1 gal. = 3.785 L)	12:45	8.63	28.9	23.95	>999	0.34	-338	8.03	100
		12:50	8.60	28.9	24.02	>999	0.34	-337	8.03	100
PID Reading (ppm)		12:55	8.60	28.9	24.10	>999	0.35	-338	8.03	100

Well Casing Diameter 1"
Total Well Depth 30.81
Static Water Level 5.31
Tube Intake Depth 28.81
Well Volume 3950 ml
Tubing/Cell Volume 604 ml

Start Purge (hr) 12:00
End Purge (hr) 12:55
Total Purge Time (min) 55
Total Vol Purged 5500 ml

WATER QUALITY SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date 12/17/02									
Time 13:00	Brown	8.60	28.9	24.15	>999	0.36	-336	8.03	100

ANALYSES INFORMATION

Analysis		Preservative	Container Requirements			Collected
TCL VOCs	8260B	HCl	3	40 ml	glass vials	✓
SVOCs/PAHs	8270C/8310	None	2	1-liter	amber glass	
Pesticides	8081A	None	2	1-liter	amber glass	
Herbicides	8151	None	2	1-liter	amber glass	
TAL Metals	6000/7000	HNO_3	1	1-liter	HDPE	

ADDITIONAL INFORMATION

Comments:

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

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

QA/QC SAMPLES

MS/MSD:

Duplicate ID No.:

Signature(s): Gary Bragg

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

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Project Site Name: NTC Orlando SA17
Project No.:

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

Sample ID No.: NTC 17 G 43C 01
Sample Location: OLD-17-43C
Sampled By:
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: 9/17/02								
Time: 1100								
Method:	Lt BRN	7.60	0.751	27.4	990	0.36	0	ORP -244

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 9/17/02								
Method: Peristaltic	.5	7.44	0.807	26.8	990	3.97	0	
Monitor Reading (ppm): 0	1.0	7.44	0.798	25.9	990	0.32	0	
Well Casing Diameter & Material Type: 1" PVC	1.5	8.05	0.782	25.9	990	0.28	0	
	2.0	7.91	0.777	26.1	990	0.29	0	
Total Well Depth (TD): 52.40	2.5	7.79	0.770	26.4	990	0.31	0	
Static Water Level (WL): 6.16	3.0	7.68	0.761	26.6	990	0.32	0	
One Casing Volume(gal/L): ~~2.56~~ 1.43	3.5	7.65	0.758	27.1	990	0.33	0	
Start Purge (hrs): ~~0830~~ 1000	4.0	7.60	0.751	27.4	990	0.36	0	
End Purge (hrs): 1050								
Total Purge Time (min): 50								
Total Vol Purged (gal/L): 4.0								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's 8260 B	HCl	3 40 ml Vials	✓

OBSERVATIONS / NOTES:

Purging Rate @ 100 ml/min
Flow Thru Cell = 300 ml
Tubing = 3.8 ml/FT

Tried to purge clear but to no avail.

Duplicate collected

Chocolate milk color

Circle if Applicable:

MS/MSD	Duplicate ID No.:	Signature(s):
	NTC 17 D1000	Scott R. McGuire

Tetra Tech NUS
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Project Site Name:
Project No 4206

[ ] Domestic Well Data

[X] Monitoring Well Data

[ ] Other Well Type:

Flow-Thru Cell
Make\Model: Horiba \U-22XD

Serial Nos.:

Sample Location: OLD-17-43

Sample ID No.: NTC17G04301

Sampled By: GB

C-O-C No.:

PURGING DATA

Casing Size (in.)	Gals. / Liters per ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
0.5	0.01 / 0.038	13:45	7.36	37.4	24.21	>999	0.36	-221	10.25	100
1	0.041 / 0.155	13:50	7.36	37.0	24.35	>999	0.35	-234	10.25	100
2	0.163 / 0.617	14:00	7.38	37.6	24.12	>999	0.35	-249	10.25	100
4	0.653 / 2.47	14:05	8.99	51.1	24.44	>999	0.54	-328	10.25	100
6	1.469 / 5.56	14:10	9.04	52.1	24.38	>999	0.35	-337	10.25	100
8	2.611 / 9.88	14:15	9.04	54.2	24.33	>999	0.33	-339	10.25	100
10	4.08 / 15.44	14:20	9.03	54.6	24.28	>999	0.31	-342	10.25	100
	(1 gal. = 3.785 L)									

PID Reading (ppm)

Well Casing Diameter: 1"
Total Well Depth: 52.81
Static Water Level: 5.58
Tube Intake Depth: 50.81
Well Volume: 7320 ml
Tubing/Cell Volume: 730 ml

Start Purge (hr): 13:35
End Purge (hr): 14:25
Total Purge Time (min): 45
Total Vol. Purged: 4500 ml

WATER QUALITY SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date 12/17/02 Time 14:25	grey	9.03	54.7	24.30	>999	0.30	-345	10.25	100

ANALYSES INFORMATION

Analysis		Preservative	Container Requirements			Collected
TCL VOCs	8260B	HCl	3	40 ml	glass vials	✓
SVOCs&PAHs	8270C/8310	None	2	1-liter	amber glass	
Pesticides	8081A	None	2	1-liter	amber glass	
Herbicides	8151	None	2	1-liter	amber glass	
TAL Metals	6000/7000	HNO_3	1	1-liter	HDPE	

ADDITIONAL INFORMATION

Comments:

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

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

QA\QC SAMPLES

MS/MSD

Duplicate ID No.:

Signature(s): Gary Bragonza

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

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Project Site Name: NTC Orlando - SA 17
Project No.: 4206

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

Sample ID No.: OLD-17-44A
Sample Location: NTC17G44A01
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 ORP
Date: 9/17/02								
Time: 11:00								
Method: Peristaltic pump	clear	5.44	0.191	29.1	7.0	1.37	0.0	-25

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other DTW
Date: 9/17/02								
Method: Peristaltic	1000	5.38	0.183	28.8	800	4.35	0.0	6.12
Monitor Reading (ppm): N/A	300	5.38	0.165	29.1	700	2.87	0.0	6.12
Well Casing Diameter & Material Type: 0.75" PVC	300	5.37	0.169	29.2	130	2.42	0.0	
	300	5.39	0.171	29.3	85	2.03	0.0	
Total Well Depth (TD): 18.06	300	5.40	0.174	29.3	45	1.86	0.0	
Static Water Level (WL): 6.12	300	5.41	0.180	29.3	40	1.71	0.0	
One Casing Volume(gal/L): 1.14 liter	300	5.41	0.186	29.2	28	1.55	0.0	
Start Purge (hrs): 9.55	300	5.42	0.191	29.1	23	1.44	0.0	
End Purge (hrs): 10:55	300	5.44	0.192	29.1	22	1.36	0.0	
Total Purge Time (min): 60 ml	300	5.44	0.193	29.1	15	1.31	0.0	
Total Vol. Purged (gal/L): 4.3 Liters	300	5.43	0.191	29.1	7.2	1.37	0.0	
	300	5.44	0.191	29.1	7.0	1.37	0.0	

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
8260 B	HCl	3/40 ml vials	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Gary Bragonza

Tetra Tech NUS
Groundwater Purging and Sampling Log

Date 9/17/02

Project Site Name:
Project No.: 4206

[ ] Domestic Well Data

[X] Monitoring Well Data

[ ] Other Well Type _____

Flow-Thru Cell
Make/Model: Horiba U-22
Serial Nos: 922001

Sample Location: OLD-17-45C
Sample ID No.: NTC17G45C01
Sampled By: GB
C-O-C No.: _____

PURGING DATA

Casing Size (in.)	Gals. per ft. of Water	Liters per ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
0.5	0.01	0.038	9:10	4.43	0.091	27.1	20	5.86	71	4.08	300
1	0.041	0.155	9:15	4.42	0.090	27.0	21	4.25	66	4.08	300
2	0.163	0.617	9:20	4.40	0.092	26.9	23	3.32	61	4.08	300
4	0.653	2.47	9:25	4.39	0.090	26.9	27	2.82	53	4.08	300
6	1.469	5.56	9:30	4.37	0.089	26.9	32	2.71	50	4.08	300
8	2.611	9.88									
10	4.08	15.44									
	[1 gal = 3.785 L]										

PID Reading (ppm): N/A

Well Casing Diameter: 0.75
Total Well Depth: 49.30
Static Water Level: 3.78
Tube Intake Depth: 38.0
Well Volume: 4.35
Tubing/Cell Volume: ~500 ml

Start Purge (hr): 9:00
End Purge (hr): 9:30
Total Purge Time (min): 30
Total Vol. Purged: 2000 ml

WATER QUALITY SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date: 9/17/02									
Time: 9:35	opaque	4.37	0.089	26.9	32	2.71	50	4.08	300

ANALYSES INFORMATION

Analysis		Preservative	Container Requirements			Collected
TCL VOCs	8260B	HCl	3	40 ml	glass vials	✓
SVOCs/PAHs	8270C/8310	None	2	1-liter	amber glass	
Pesticides	8081A	None	2	1-liter	amber glass	
Herbicides	8151	None	2	1-liter	amber glass	
TAL Metals	6000/7000	HNO_3	1	1-liter	HDPE	

ADDITIONAL INFORMATION

Comments:

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

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

QA\QC SAMPLES

MS/MSD:

Duplicate ID No.:

Signature(s): Gary Bragaye

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Groundwater Purging and Sampling Log

Date 121702

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Project Site Name: 4204
Project No.:

Sample Location: SA17-46C

[ ] Domestic Well Data

[X] Monitoring Well Data

[ ] Other Well Type:

Flow-Thru Cell Make\Model: Horiba

Serial Nos.:

Sample ID No.: ~~NTCSA17~~ NTC17G-46L01

Sampled By:

C-O-C No.:

PURGING DATA

Casing Size (in.)	Gals. / Liters per ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
0.5	0.01 / 0.038	1420	7.88	.736	24.05	150	1.33	-213	1.62	100
1	0.041 / 0.155	1425	7.35	.690	24.30	200	0.56	-216	1.67	100
2	0.163 / 0.617	1430	7.14	.607	24.57	+999	0.34	-276	1.62	100
4	0.653 / 2.47	1435	7.31	.600	24.72	+999	0.24	-296	1.62	100
6	1.469 / 5.56	1440	7.19	.577	24.53	+999	0.25	-300	1.62	100
8	2.611 / 9.88	1445	7.05	.564	24.45	+999	0.24	-298	1.67	100
10	4.08 / 15.44	1450	7.04	.564	24.46	+999	0.23	-298	1.62	100
	[1 gal. = 3.785 L]	1455	6.93	.557	24.61	+999	0.25	-297	1.62	100
		1500	6.93	.558	24.60	+999	0.24	-294	1.67	100
PID Reading (ppm):		1505	6.94	.556	24.57	+999	0.24	-295	1.62	100
		1510	6.94	.548	24.62	+999	0.24	-293	1.62	100
		1515	6.94	0.546	24.66	+999	0.24	-291	1.62	100
Well Casing Diameter: 2"		1520	6.81	0.546	24.52	+999	0.24	-289	1.62	100
Total Well Depth: 49.70										
Static Water Level: 1.60										
Tube Intake Depth: 46.7										
Well Volume:										
Tubing/Cell Volume: 655 ml										
Start Purge (hr): 1415										
End Purge (hr): 1530										
Total Purge Time (min):										
Total Vol. Purged:										

WATER QUALITY SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date: 121702									
Time: 1530	V. Turbid	6.81	0.546	24.52	+999	0.24	-289	1.62	100

ANALYSES INFORMATION

Analysis		Preservative	Container Requirements			Collected
TCL VOCs	8260B	HCl	3	40 ml	glass vials	✓
SVOCs/PAHs	8270C/8310	None	2	1-liter	amber glass	✗
Pesticides	8081A	None	2	1-liter	amber glass	✗
Herbicides	8151	None	2	1-liter	amber glass	✗
TAL Metals	6000/7000	HNO_3	1	1-liter	HDPE	✗

ADDITIONAL INFORMATION

Comments:
375 cell
280 Tubing
655

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

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

QA\QC SAMPLES

MS/MSD:

Duplicate ID No.:

Signature(s):

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Groundwater Purging and Sampling Log

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Project Site Name: SAIM NTC Orlando
Project No.: 4206

Sample Location: OLD-17-47D47

[ ] Domestic Well Data

[X] Monitoring Well Data

[ ] Other Well Type: _____

Flow-Thru Cell Make\Model: HORIBA U-22

Serial Nos.: T2062026

Sample ID No.: NTC17G03001

Sampled By: C. Morrison

C-O-C No.: _____

PURGING DATA

Casing Size (in.)	Gals. per ft. of Water	Liters per ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
0.5	0.01	0.038	1420	6.45	0.579	24.87	+999	1.43	-123	1.65	100
1	0.041	0.155	1425	6.55	0.555	24.91	+999	0.88	-226	1.65	100
2	0.163	0.617	1430	7.87	0.875	25.11	+999	0.66	-304	1.65	100
4	0.653	2.47	1435	7.91	0.779	24.96	+999	0.57	-320	1.65	100
6	1.469	5.56	1440	7.92	0.768	24.85	+999	0.64	-330	1.65	100
8	2.611	9.88	1445	7.92	0.702	24.99	+999	0.75	-335	1.65	100
10	4.08	15.44	1450	9.10	0.737	25.01	+999	0.69	-379	1.65	100
	[1 gal. = 3.785 L]		1455	9.06	0.746	24.88	+999	0.61	-380	1.65	100
			1500	8.94	0.742	25.25	+999	0.62	-380	1.65	100
PID Reading (ppm)			1505	8.90	0.754	25.54	+999	0.45	-382	1.65	100
			1510	8.84	0.760	25.43	+999	0.49	-381	1.65	100
			1515	8.82	0.753	25.14	+999	0.47	-379	1.65	100

Well Casing Diameter: 1"
Total Well Depth: 56.9'
Static Water Level: 1.65
Tube Intake Depth: 53.9'
Well Volume: 8.7(6)
Tubing/Cell Volume: 6.55

Start Purge (hr): 1415
End Purge (hr): 1515
Total Purge Time (min): 60
Total Vol. Purged: Gal L

WATER QUALITY SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date 12/17/02 Time 1520	Cloudy gray	8.82	0.753	25.14	+99	0.47	-379	1.65	100

ANALYSES INFORMATION

Analysis		Preservative	Container Requirements			Collected
TCL VOCs	8260B	HCl	3	40 ml	glass vials	3
~~SVOCs~~ PAHs	8270C/8310	None	2	1-liter	amber glass	
Pesticides	8081A	None	2	1-liter	amber glass	
Herbicides	8151	None	2	1-liter	amber glass	
TAL Metals	6000/7000	HNO_3	1	1-liter	HDPE	

ADDITIONAL INFORMATION

Comments: 375 cell
280 Tubing
655

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

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

QA\QC SAMPLES

MS/MSD: N/A

Duplicate ID No.: N/A

Signature(s): Chris Morrison

Tetra Tech NUS
Groundwater Purging and Sampling Log

Date 12/17/02

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Project Site Name: NTC Orlando/17
Project No.: 4206

Sample Location: 17-48C

[ ] Domestic Well Data

[X] Monitoring Well Data

[ ] Other Well Type: _____

Flow-Thru Cell Make\Model: Horiba U-22

Serial Nos.: T2062022

Sample ID No.: NTC1704801

Sampled By: KJM

C-O-C No.: _____

PURGING DATA

Casing Size (in.)	Gals. per ft. of Water	Liters per ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
0.5	0.01	0.038	1625	5.84	.154	24.47	174.0	2.98		5.27	100
1	0.041	0.155	1630	5.75	.149	24.68	228.0	0.51		"	"
2	0.163	0.617	1635	5.73	.149	24.71	999.0	0.48		"	"
4	0.653	2.47	1645	6.24	.291	24.66	999.0	0.38		"	"
6	1.469	5.56	1655	6.32	.390	24.54	999.0	0.32		"	"
8	2.611	9.88	1705	6.28	.370	24.57	999.0	0.31		"	"
10	4.08	15.44	1715	6.22	.349	24.49	999.0	0.31		"	"
	[1 gal. = 3.785 L]		1725	6.19	.337	24.47	999.0	0.30		"	"

PID Reading (ppm): 0.0

Well Casing Diameter: 1"

Total Well Depth:

Static Water Level:

Tube Intake Depth:

Well Volume:

Tubing/Cell Volume: ~600 ml

Start Purge (hr): 1620

End Purge (hr):

Total Purge Time (min):

Total Vol. Purged:

WATER QUALITY SAMPLE PARAMETERS

	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	DTW	Flow Rate
Date: 12/16/02 ~~1620~~	Description	pH units	mS/cm	°C	NTU	mg/L	mV	ft BTOC	ml/min
Time: 1730	cloudy	6.19	.337	24.47	999.0	0.30	-242	5.27	100

ANALYSES INFORMATION

Analysis		Preservative	Container Requirements			Collected
TCL VOCs	8260B	HCl	3	40 ml	glass vials	✓
SVOCs/PAHs	8270C/8310	None	2	1-liter	amber glass	
Pesticides	8081A	None	2	1-liter	amber glass	
Herbicides	8151	None	2	1-liter	amber glass	
TAL Metals	6000/7000	HNO_3	1	1-liter	HDPE	

ADDITIONAL INFORMATION

Comments:

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

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

QA\QC SAMPLES

MS/MSD:

Duplicate ID No.:

Signature(s):

Rev. 1
01/05/04

Tetra Tech NUS
Groundwater Purging and Sampling Log

Date 12/7/02

Page 1 of 1

Project Site Name:
Project No.: 7206

Sample Location: NTC SA 17-99D

[ ] Domestic Well Data

Flow-Thru Cell Make\Model: Horiba

Sample ID No.: NTC176 ~~[illegible]~~ 04901

[X] Monitoring Well Data

Sampled By: KJM

Serial Nos.:

[ ] Other Well Type:

C-O-C No.:

PURGING DATA

Casing Size (in.)	Gals. per ft. of Water	Liters per ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
0.5	0.01	0.038	1625	5.78	.159	24.66	+999	2.88	-158	5.20	100
1	0.041	0.155	1630	5.45	.100	24.63	+999	0.80	-165	5.20	100
2	0.163	0.617	1635	5.38	.098	24.49	+999	0.73	-172	5.20	100
4	0.653	2.47	1645	5.35	.098	24.50	+999	0.58	-180	5.20	100
6	1.469	5.56	1705	5.48	.100	24.42	+999	0.54	-193	5.20	100
8	2.611	9.88	1715	5.52	.101	24.40	+999	0.55	-198	5.20	100
10	4.08	15.44	1725	5.53	.101	24.28	+999	0.56	-201	5.20	100
	[1 gal. = 3.785 L]										

PID Reading (ppm):

Well Casing Diameter: 4"

Total Well Depth: 58.8

Static Water Level: 5.20

Tube Intake Depth: 55.8

Well Volume: 9.1 (L)

Tubing/Cell Volume: 605

Start Purge (hr): ~~1623~~ 1623

End Purge (hr): 1725

Total Purge Time (min): 62

Total Vol. Purged: 6.2 Lt

WATER QUALITY SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date 12/7/02									
Time 1730	V Turbid	5.53	.101	24.28	+999	0.56	-201	5.20	100

ANALYSES INFORMATION

Analysis		Preservative	Container Requirements			Collected
TCL VOCs	8260B	HCl	3	40 ml	glass vials	✓
SVOCs/PAHs	8270C/8310	None	2	1-liter	amber glass	
Pesticides	8081A	None	2	1-liter	amber glass	
Herbicides	8151	None	2	1-liter	amber glass	
TAL Metals	6000/7000	HNO_3	1	1-liter	HDPE	

ADDITIONAL INFORMATION

Comments:
375
230
605

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

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

QA/QC SAMPLES

MS/MSD:

Duplicate ID No.:

Signature(s): Kim Mary M

Tetra Tech NUS
Groundwater Purging and Sampling Log

Date 12/17/02

Project Site Name:
Project No 4206

Sample Location: OLD-17-50

[ ] Domestic Well Data

[X] Monitoring Well Data

[ ] Other Well Type:

Flow-Thru Cell Make\Model: Horiba

Serial Nos.:

Sample ID No.: NTC17G0500

Sampled By: GB

C-O-C No.:

PURGING DATA

Casing Size (in.)	Gals / Liters per ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
0.5	0.01 / 0.038	16:15	5.25	8.5	23.22	500	0.66	-159	6.34	100
1	0.041 / 0.155	16:20	5.55	9.8	23.15	>999	0.46	-160	6.34	100
2	0.163 / 0.617	16:25	5.59	9.8	23.13	>999	0.45	-176	6.34	100
4	0.653 / 2.47	16:30	5.63	9.9	23.08	>999	0.43	-186	6.34	100
6	1.469 / 5.56	16:35	5.69	10.7	23.01	>999	0.42	-202	6.34	100
8	2.611 / 9.88	16:40	5.72	10.7	23.02	>999	0.40	-210	6.34	100
10	4.08 / 15.44	16:45	5.71	10.6	23.01	>999	0.41	-212	6.34	100
	(1 gal. = 3.785 L)									

PID Reading (ppm)

Well Casing Diameter: 1"
Total Well Depth: 52.78
Static Water Level: 6.15
Tube Intake Depth: 50.78
Well Volume: 7220 ml
Tubing/Cell Volume: 725 ml

Start Purge (hr): 16:05
End Purge (hr): 16:50
Total Purge Time (min): 45
Total Vol. Purged: 4500 ml

WATER QUALITY SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date 12/17/02 Time 16:50	Brown.	5.71	10.6	23.00	>999	0.40	-209	6.34	100

ANALYSES INFORMATION

Analysis		Preservative	Container Requirements			Collected
TCL VOCs	8260B	HCl	6	40 ml	glass vials	✓
SVOCs&PAHs	8270C/8310	None	2	1-liter	amber glass	
Pesticides	8081A	None	2	1-liter	amber glass	
Herbicides	8151	None	2	1-liter	amber glass	
TAL Metals	6000/7000	HNO_3	1	1-liter	HDPE	

ADDITIONAL INFORMATION

Comments:

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

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

QA/QC SAMPLES

MS/MSD:

Duplicate ID No.: NTC17D1000

Signature(s): Gary Bragaza

Rev. 1
01/05/04

Tetra Tech NUS
Groundwater Purging and Sampling Log

Date 12/17/02

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Project Site Name:
Project No 4206

Sample Location: OTD-17-51

[ ] Domestic Well Data

[X] Monitoring Well Data

[ ] Other Well Type:

Flow-Thru Cell
Make/Model: Horiba U-22XD

Serial Nos.:

Sample ID No.: NTC17G0510

Sampled By: GB

C-O-C No.:

PURGING DATA

Casing Size (in.)	Gals / Liters per ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
0.5	0.01 / 0.038	15:10	6.95	41.6	23.38	>999	0.45	-224	7.31	100
1	0.041 / 0.155	15:15	6.95	40.3	23.44	>999	0.40	-238	7.31	100
2	0.163 / 0.617	15:20	6.97	38.7	23.44	>999	0.39	-249	7.31	100
4	0.653 / 2.47	15:25	6.97	38.5	23.40	>999	0.37	-256	7.31	100
6	1.469 / 5.56	15:30	6.97	37.0	23.33	>999	0.36	-261	7.31	100
8	2.611 / 9.88	15:35	6.97	37.1	23.34	>999	0.36	-261	7.31	100
10	4.08 / 15.44	15:40	6.97	37.3	23.37	>999	0.36	-264	7.31	100
	[1 gal = 3.785 L]									

PID Reading (ppm):

Well Casing Diameter: 1"
Total Well Depth: 60.45
Static Water Level: 7.02
Tube Intake Depth: 58.45
Well Volume: 828 ml
Tubing/Cell Volume: 774 ml

Start Purge (hr): 15:00
End Purge (hr): 15:40
Total Purge Time (min): 40
Total Vol. Purged: 4000 ml.

WATER QUALITY SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date 12/17/02									
Time 15:45	Brown/Grey	6.97	37.4	23.38	>999	0.36	-265	7.31	100

ANALYSES INFORMATION

Analysis		Preservative	Container Requirements			Collected
TCL VOCs	8260B	HCl	3	40 ml	glass vials	✓
SVOCs/PAHs	8270C/8310	None	2	1-liter	amber glass	
Pesticides	8081A	None	2	1-liter	amber glass	
Herbicides	8151	None	2	1-liter	amber glass	
TAL Metals	6000/7000	HNO_3	1	1-liter	HDPE	

ADDITIONAL INFORMATION

Comments:

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

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

QA/QC SAMPLES

MS/MSD

Duplicate ID No.:

Signature(s): Gary Bragg

APPENDIX D

SITE INVESTIGATION ANALYTICAL DATA

TABLE D-1

VALIDATED DPT GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

DPT Location	CAS. No.	Screening Criteria	P100 @ 15 ft	P100 @ 25 ft	P100 @ 32 ft	P100 @ 40 ft	P100 @ 50 ft	P101 @ 15 ft	P101 @ 25 ft
Sample Number			NTC17P10015	NTC17P10025	NTC17P10032	NTC17P10040	NTC17P10050	NTC17P10115	NTC17P10125
Sample Date		Florida GCTL	8/8/02	8/8/02	8/8/02	8/8/02	8/8/02	8/8/02	8/8/02
Volatiles (µg/L)									
1,1,1-Trichloroethane	71-55-6	200	1 U	10 U	1 U	1 U	1 U	1 U	10 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	1 U	10 U	1 U	1 U	1 U	1 U	10 U
1,1,2-Trichloroethane	79-00-5	5	1 U	10 U	1 U	1 U	1 U	1 U	10 U
1,1-Dichloroethane	75-34-3	70	1 U	10 U	1 U	1 U	1 U	1 U	10 U
1,1-Dichloroethene	75-35-4	7	1 U	10 U	1 U	1 U	1 U	1 U	10 U
1,2-Dichloroethane	107-06-2	3	1 U	10 U	1 U	1 U	1 U	1 U	10 U
1,2-Dichloropropane	78-87-5	5	1 U	10 U	1 U	1 U	1 U	1 U	10 U
2-Butanone	78-93-3	4200	5 U	50 U	5 U	5 U	5 U	5 U	50 U
2-Hexanone	591-78-6	280	5 U	50 U	5 U	5 U	5 U	5 U	50 U
4-Methyl-2-Pentanone	108-10-1	560	5 U	50 U	5 U	5 U	5 U	5 U	50 U
Acetone	67-64-1	700	5.2 J	50 U	9 J	5.3 J	5 U	5 U	50 U
Benzene	71-43-2	1	1 U	10 U	1 U	1 U	1 U	1 U	10 U
Bromodichloromethane	75-27-4	0.6	1 U	10 U	1 U	1 U	1 U	1 U	10 U
Bromoform	75-25-2	4.4	1 U	10 U	1 U	1 U	1 U	1 U	10 U
Bromomethane	74-83-9	9.8	1 U	10 U	1 U	1 U	1 U	1 U	10 U
Carbon Disulfide	75-15-0	700	3.2 J	50 U	7.5	1.6 J	3.4 J	5 U	50 U
Carbon Tetrachloride	56-23-5	3	1 U	10 U	1 U	1 U	1 U	1 U	10 U
Chlorobenzene	108-90-7	100	1 U	10 U	1 U	1 U	1 U	1 U	10 U
Chlorodibromomethane	124-48-1	0.4	1 U	10 U	1 U	1 U	1 U	1 U	10 U
Chloroethane	75-00-3	12	1 U	10 U	1 U	1 U	1 U	1 U	10 U
Chloroform	67-66-3	5.7	1 U	10 U	1 U	1 U	1 U	1 U	10 U
Chloromethane	74-87-3	2.7	1 U	10 U	1 U	1 U	1 U	1 U	10 U
cis-1,2-Dichloroethene	156-59-2	70	1 U	10 U	1 U	1.8	1 U	1 U	10 U
cis-1,3-Dichloropropene	10061-01-5	0.2	1 U	10 U	1 U	1 U	1 U	1 U	10 U
Ethylbenzene	100-41-4	30	1 U	10 U	1 U	1 U	1 U	1 U	10 U
Methyl Tert-Butyl Ether	1634-04-4	50	1 U	10 U	1 U	1 U	1 U	1 U	10 U
Methylene Chloride	75-09-2	5	5 U	15 J	5 U	5 U	5 U	5 U	50 U
Styrene	100-42-5	100	1 U	10 U	1 U	1 U	1 U	1 U	10 U
Tetrachloroethene	127-18-4	3	1 U	10 U	1 U	1 U	1 U	1 U	10 U
Toluene	108-88-3	40	1 U	10 U	0.94 J	1 U	1 U	1 U	10 U
Total Xylenes	1330-20-7	20	3 U	30 U	3 U	3 U	3 U	3 U	30 U
trans-1,2-Dichloroethene	156-60-5	100	1 U	10 U	1 U	1 U	1 U	1 U	10 U
trans-1,3-Dichloropropene	10061-02-6	0.2	1 U	10 U	1 U	1 U	1 U	1 U	10 U
Trichloroethene	79-01-6	3	1 U	10 U	1 U	1 U	1 U	1 U	10 U
Vinyl Chloride	75-01-4	1	1 U	10 U	1 U	1 U	1 U	1 U	10 U

TABLE D-1

VALIDATED DPT GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

DPT Location	CAS. No.	Screening Criteria	P101 @ 32 ft	P101 @ 40 ft	P101 @ 50 ft		P102 @ 10 ft	P102 @ 15 ft	P102 @ 25 ft
Sample Number			NTC17P10132	NTC17P10140	NTC17P10150	NTC17P10150-D	NTC17P10210	NTC17P10215	NTC17P10225
Sample Date		Florida GCTL	8/8/02	8/8/02	8/8/02	8/8/02	8/8/02	8/8/02	8/8/02
Volatiles (µg/L)									
1,1,1-Trichloroethane	71-55-6	200	10 U	100 U	10 U	10 U	1 U	1 U	10 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	10 U	100 U	10 U	10 U	1 U	1 U	10 U
1,1,2-Trichloroethane	79-00-5	5	10 U	100 U	10 U	10 U	1 U	1 U	10 U
1,1-Dichloroethane	75-34-3	70	5.6 J	100 U	10 U	10 U	1 U	1 U	10 U
1,1-Dichloroethene	75-35-4	7	**18.3**	**88.9 J**	6.9 J	6.6 J	1 U	1 U	10 U
1,2-Dichloroethane	107-06-2	3	10 U	100 U	10 U	10 U	1 U	1 U	10 U
1,2-Dichloropropane	78-87-5	5	10 U	100 U	10 U	10 U	1 U	1 U	10 U
2-Butanone	78-93-3	4200	50 U	500 U	50 U	50 U	5 U	5 U	50 U
2-Hexanone	591-78-6	280	50 U	500 U	50 U	50 U	5 U	5 U	50 U
4-Methyl-2-Pentanone	108-10-1	560	50 U	500 U	50 U	50 U	5 U	5 U	50 U
Acetone	67-64-1	700	50 U	500 U	50 U	50 U	5 U	5 U	50 U
Benzene	71-43-2	1	10 U	100 U	10 U	10 U	1 U	1 U	10 U
Bromodichloromethane	75-27-4	0.6	10 U	100 U	10 U	10 U	1 U	1 U	10 U
Bromoform	75-25-2	4.4	10 U	100 U	10 U	10 U	1 U	1 U	10 U
Bromomethane	74-83-9	9.8	10 U	100 U	10 U	10 U	1 U	1 U	10 U
Carbon Disulfide	75-15-0	700	50 U	500 U	50 U	50 U	1.1 J	1.3 J	50 U
Carbon Tetrachloride	56-23-5	3	10 U	100 U	10 U	10 U	1 U	1 U	10 U
Chlorobenzene	108-90-7	100	10 U	100 U	10 U	10 U	1 U	1 U	10 U
Chlorodibromomethane	124-48-1	0.4	10 U	100 U	10 U	10 U	1 U	1 U	10 U
Chloroethane	75-00-3	12	10 U	100 U	10 U	10 U	1 U	1 U	10 U
Chloroform	67-66-3	5.7	10 U	100 U	10 U	10 U	1 U	1 U	10 U
Chloromethane	74-87-3	2.7	10 U	100 U	10 U	10 U	1 U	1 U	10 U
cis-1,2-Dichloroethene	156-59-2	70	**764**	**3490**	**678**	**702**	1 U	1 U	10 U
cis-1,3-Dichloropropene	10061-01-5	0.2	10 U	100 U	10 U	10 U	1 U	1 U	10 U
Ethylbenzene	100-41-4	30	10 U	100 U	10 U	10 U	1 U	1 U	10 U
Methyl Tert-Butyl Ether	1634-04-4	50	10 U	100 U	10 U	10 U	1 U	1 U	10 U
Methylene Chloride	75-09-2	5	50 U	500 U	50 U	50 U	5 U	5 U	50 U
Styrene	100-42-5	100	10 U	100 U	10 U	10 U	1 U	1 U	10 U
Tetrachloroethene	127-18-4	3	10 U	100 U	10 U	10 U	1 U	1 U	10 U
Toluene	108-88-3	40	10 U	100 U	10 U	10 U	1 U	1 U	10 U
Total Xylenes	1330-20-7	20	30 U	300 U	30 U	30 U	3 U	3 U	30 U
trans-1,2-Dichloroethene	156-60-5	100	45.2	**302**	45.6	44.6	1 U	1 U	10 U
trans-1,3-Dichloropropene	10061-02-6	0.2	10 U	100 U	10 U	10 U	1 U	1 U	10 U
Trichloroethene	79-01-6	3	10 U	**150**	10 U	10 U	1 U	1 U	10 U
Vinyl Chloride	75-01-4	1	**39.8**	**306**	**92**	**102**	1 U	1 U	10 U

TABLE D-1

VALIDATED DPT GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

DPT Location	CAS. No.	Screening Criteria	P102 @ 34 ft	P102 @ 40 ft	P102 @ 50 ft	P103 @ 15 ft	P103 @ 25 ft	P103 @ 34 ft	P103 @ 40 ft
Sample Number			NTC17P10234	NTC17P10240	NTC17P10250	NTC17P10315	NTC17P10325	NTC17P10334	NTC17P10340
Sample Date		Florida GCTL	8/9/02	8/9/02	8/9/02	8/9/02	8/9/02	8/9/02	8/9/02
Volatiles (µg/L)									
1,1,1-Trichloroethane	71-55-6	200	10 U	20 U	5 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	10 U	20 U	5 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	5	10 U	20 U	5 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	70	6.7 J	20 U	5 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	7	10 U	**16.2 J**	5 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	3	10 U	20 U	5 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	5	10 U	20 U	5 U	1 U	1 U	1 U	1 U
2-Butanone	78-93-3	4200	50 U	100 U	25 U	5 U	5 U	5 U	5 U
2-Hexanone	591-78-6	280	50 U	100 U	25 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	108-10-1	560	50 U	100 U	25 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	700	50 U	100 U	25 U	5 U	9.9 J	5 U	5 U
Benzene	71-43-2	1	10 U	20 U	5 U	1 U	1 U	1 U	1 U
Bromodichloromethane	75-27-4	0.6	10 U	20 U	5 U	1 U	1 U	1 U	1 U
Bromoform	75-25-2	4.4	10 U	20 U	5 U	1 U	1 U	1 U	1 U
Bromomethane	74-83-9	9.8	10 U	20 U	5 U	1 U	1 U	1 U	1 U
Carbon Disulfide	75-15-0	700	50 U	100 U	25 U	5 U	16.9	1.7 J	2.1 J
Carbon Tetrachloride	56-23-5	3	10 U	20 U	5 U	1 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	100	10 U	20 U	5 U	1 U	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	0.4	10 U	20 U	5 U	1 U	1 U	1 U	1 U
Chloroethane	75-00-3	12	10 U	20 U	5 U	1 U	1 U	1 U	1 U
Chloroform	67-66-3	5.7	10 U	20 U	5 U	1 U	1 U	1 U	1 U
Chloromethane	74-87-3	2.7	10 U	20 U	5 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	70	44.1	**644**	9.5	1 U	1 U	49.3	16.3
cis-1,3-Dichloropropene	10061-01-5	0.2	10 U	20 U	5 U	1 U	1 U	1 U	1 U
Ethylbenzene	100-41-4	30	10 U	20 U	5 U	1 U	1 U	1 U	1 U
Methyl Tert-Butyl Ether	1634-04-4	50	10 U	20 U	5 U	1 U	1 U	1 U	1 U
Methylene Chloride	75-09-2	5	50 U	100 U	25 U	5 U	5 U	5 U	5 U
Styrene	100-42-5	100	10 U	20 U	5 U	1 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	3	10 U	20 U	5 U	1 U	1 U	1 U	1 U
Toluene	108-88-3	40	10 U	20 U	5 U	1 U	1 U	1 U	1 U
Total Xylenes	1330-20-7	20	30 U	60 U	15 U	3 U	3 U	3 U	3 U
trans-1,2-Dichloroethene	156-60-5	100	9.3 J	58.2	5 U	1 U	1 U	4.7	1.7
trans-1,3-Dichloropropene	10061-02-6	0.2	10 U	20 U	5 U	1 U	1 U	1 U	1 U
Trichloroethene	79-01-6	3	10 U	20 U	5 U	1 U	1 U	0.73 J	1.1
Vinyl Chloride	75-01-4	1	**465**	**603**	**219**	1 U	1 U	**6.4**	0.78 J

TABLE D-1

VALIDATED DPT GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

DPT Location	CAS. No.	Screening Criteria	P103 @ 50 ft	P104 @ 15 ft	P104 @ 25 ft	P104 @ 34 ft		P104 @ 40 ft	P104 @ 50 ft
Sample Number			NTC17P10350	NTC17P10415	NTC17P10425	NTC17P10434	NTC17P10434-D	NTC17P10440	NTC17P10450
Sample Date		Florida GCTL	8/9/02	8/12/02	8/12/02	8/12/02	8/12/02	8/12/02	8/12/02
Volatiles (µg/L)									
1,1,1-Trichloroethane	71-55-6	200	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	5	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	70	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	7	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	3	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	5	5 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	78-93-3	4200	25 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	591-78-6	280	25 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	108-10-1	560	25 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	700	25 U	5 UR	5.9 J	5 UR	5 UR	5 UR	5 UR
Benzene	71-43-2	1	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	75-27-4	0.6	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	75-25-2	4.4	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	74-83-9	9.8	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Disulfide	75-15-0	700	25 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	56-23-5	3	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	100	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	0.4	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	75-00-3	12	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	67-66-3	5.7	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	74-87-3	2.7	5 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	70	**199**	1 U	1 U	1 U	1 U	7.5	10.8
cis-1,3-Dichloropropene	10061-01-5	0.2	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	100-41-4	30	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl Tert-Butyl Ether	1634-04-4	50	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	75-09-2	5	25 U	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	100-42-5	100	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	3	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	108-88-3	40	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Total Xylenes	1330-20-7	20	15 U	3 U	3 U	3 U	3 U	3 U	3 U
trans-1,2-Dichloroethene	156-60-5	100	19.9	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	10061-02-6	0.2	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	79-01-6	3	5 U	1 U	1 U	1 U	1 U	0.7 J	1 U
Vinyl Chloride	75-01-4	1	5 U	1 U	1 U	1 U	1 U	1 U	1 U

TABLE D-1

VALIDATED DPT GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

DPT Location	CAS. No.	Screening Criteria	P105 @ 15 ft	P105 @ 25 ft	P105 @ 34 ft	P105 @ 40 ft	P105 @ 50 ft	P106 @ 25 ft	P106 @ 36 ft
Sample Number			NTC17P10515	NTC17P10525	NTC17P10534	NTC17P10540	NTC17P10615	NTC17P10625	NTC17P10636
Sample Date		Florida GCTL	8/12/02	8/12/02	8/12/02	8/12/02	8/12/02	8/12/02	8/13/02
Volatiles (µg/L)									
1,1,1-Trichloroethane	71-55-6	200	1 U	10 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	1 U	10 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	5	1 U	10 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	70	1 U	10 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	7	1 U	10 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	3	1 U	10 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	5	1 U	10 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	78-93-3	4200	5 U	50 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	591-78-6	280	5 U	50 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	108-10-1	560	5 U	50 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	700	5 UR	50 UR	5 UR	5 UR	5 UR	5 UR	5 UR
Benzene	71-43-2	1	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	75-27-4	0.6	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Bromoform	75-25-2	4.4	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	74-83-9	9.8	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Carbon Disulfide	75-15-0	700	5 U	50 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	56-23-5	3	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	100	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	0.4	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	75-00-3	12	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Chloroform	67-66-3	5.7	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	74-87-3	2.7	1 U	10 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	70	1 U	10 U	1 U	3.3	1 U	1 U	0.83 J
cis-1,3-Dichloropropene	10061-01-5	0.2	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	100-41-4	30	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Methyl Tert-Butyl Ether	1634-04-4	50	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	75-09-2	5	5 U	50 U	5 U	5 U	5 U	5 U	5 U
Styrene	100-42-5	100	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	3	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Toluene	108-88-3	40	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Total Xylenes	1330-20-7	20	3 U	30 U	3 U	3 U	3 U	3 U	3 U
trans-1,2-Dichloroethene	156-60-5	100	1 U	10 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	10061-02-6	0.2	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	79-01-6	3	1 U	10 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	75-01-4	1	1 U	10 U	1 U	1 U	1 U	1 U	1 U

TABLE D-1

VALIDATED DPT GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

DPT Location	CAS. No.	Screening Criteria	P106 @ 42 ft	P106 @ 52 ft	P107 @ 34 ft	P107 @ 40 ft	P107 @ 50 ft	P108 @ 34 ft	P108 @ 40 ft
Sample Number			NTC17P10642	NTC17P10652	NTC17P10734	NTC17P10740	NTC17P10750	NTC17P10834	NTC17P10840
Sample Date		Florida GCTL	8/13/02	8/13/02	8/13/02	8/13/02	8/13/02	8/13/02	8/13/02
Volatiles (µg/L)									
1,1,1-Trichloroethane	71-55-6	200	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	70	1 U	1 U	1 U	2.4	15.1	1 U	2.4
1,1-Dichloroethene	75-35-4	7	1 U	1 U	1 U	**7.1**	**65.7**	1 U	**9.2**
1,2-Dichloroethane	107-06-2	3	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	78-93-3	4200	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	591-78-6	280	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	108-10-1	560	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	700	5 UR	5 UR	5 UR	5 UR	5 UR	5.1 J	5 UR
Benzene	71-43-2	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	75-27-4	0.6	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	75-25-2	4.4	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	74-83-9	9.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Disulfide	75-15-0	700	5 U	5 U	5 U	5 U	5 U	2.2 J	5 U
Carbon Tetrachloride	56-23-5	3	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	0.4	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	75-00-3	12	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	67-66-3	5.7	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	74-87-3	2.7	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	70	**115**	**193**	11	**210**	**2960**	1 U	**329**
cis-1,3-Dichloropropene	10061-01-5	0.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	100-41-4	30	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl Tert-Butyl Ether	1634-04-4	50	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	75-09-2	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	100-42-5	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	3	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	108-88-3	40	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Total Xylenes	1330-20-7	20	3 U	3 U	3 U	3 U	3 U	3 U	3 U
trans-1,2-Dichloroethene	156-60-5	100	1.1	0.86 J	1 U	1.3	16.4	1 U	1.9
trans-1,3-Dichloropropene	10061-02-6	0.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	79-01-6	3	1 U	1 U	1 U	1 U	0.98 J	1 U	1 U
Vinyl Chloride	75-01-4	1	1 U	1 U	1 U	**7**	**49.6**	1 U	0.75 J

TABLE D-1

VALIDATED DPT GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

DPT Location	CAS. No.	Screening Criteria	P108 @ 50 ft	P109 @ 35 ft	P109 @ 42 ft	P109 @ 52 ft	P110 @ 34 ft	P110 @ 40 ft	P110 @ 50 ft
Sample Number			NTC17P10850	NTC17P10935	NTC17P10942	NTC17P10952	NTC17P11034	NTC17P11040	NTC17P11050
Sample Date		Florida GCTL	8/13/02	8/14/02	8/14/02	8/14/02	8/14/02	8/14/02	8/14/02
Volatiles (µg/L)									
1,1,1-Trichloroethane	71-55-6	200	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	70	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	3	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	78-93-3	4200	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	591-78-6	280	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	108-10-1	560	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	700	5 U	5.6 J	5 U	8.4 J	5 U	5 U	7.4 J
Benzene	71-43-2	1	1.8	1 U	0.93 J	1 U	1 U	1 U	1 U
Bromodichloromethane	75-27-4	0.6	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	75-25-2	4.4	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	74-83-9	9.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Disulfide	75-15-0	700	5 U	10.3	5 U	4.3 J	1.4 J	5 U	1.8 J
Carbon Tetrachloride	56-23-5	3	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	0.4	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	75-00-3	12	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	67-66-3	5.7	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	74-87-3	2.7	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	70	**0.58 J**	1 U	1 U	3.7	1 U	1 U	1 U
cis-1,3-Dichloropropene	10061-01-5	0.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	100-41-4	30	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl Tert-Butyl Ether	1634-04-4	50	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	75-09-2	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	100-42-5	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	3	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	108-88-3	40	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Total Xylenes	1330-20-7	20	3 U	3 U	3 U	3 U	3 U	3 U	3 U
trans-1,2-Dichloroethene	156-60-5	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	10061-02-6	0.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	79-01-6	3	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	75-01-4	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U

TABLE D-1

VALIDATED DPT GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

DPT Location	CAS. No.	Screening Criteria	P111 @ 34 ft	P111 @ 40 ft	P111 @ 50 ft	P112 @ 15 ft	P112 @ 25 ft	P112 @ 34 ft	P112 @ 40 ft
Sample Number			NTC17P11134	NTC17P11140	NTC17P11150	NTC17P11215	NTC17P11225	NTC17P11234	NTC17P11240
Sample Date		Florida GCTL	8/14/02	8/14/02	8/14/02	8/15/02	8/15/02	8/15/02	8/15/02
Volatiles (µg/L)									
1,1,1-Trichloroethane	71-55-6	200	1 U	1 U	1 U	5 U	5 U	1 U	10 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	1 U	1 U	1 U	5 U	5 U	1 U	10 U
1,1,2-Trichloroethane	79-00-5	5	1 U	1 U	1 U	5 U	5 U	1 U	10 U
1,1-Dichloroethane	75-34-3	70	1 U	1 U	1 U	5 U	5 U	1 U	10 U
1,1-Dichloroethene	75-35-4	7	1 U	1 U	1 U	5 U	5 U	1 U	10 U
1,2-Dichloroethane	107-06-2	3	1 U	1 U	1 U	5 U	5 U	1 U	10 U
1,2-Dichloropropane	78-87-5	5	1 U	1 U	1 U	5 U	5 U	1 U	10 U
2-Butanone	78-93-3	4200	5 U	5 U	5 U	25 U	25 U	5 U	50 UR
2-Hexanone	591-78-6	280	5 U	5 U	5 U	25 U	25 U	5 U	50 U
4-Methyl-2-Pentanone	108-10-1	560	5 U	5 U	5 U	25 U	25 U	5 U	50 U
Acetone	67-64-1	700	5 U	5 U	8.8 J	25 U	25 U	5 U	50 UR
Benzene	71-43-2	1	1 U	1 U	1 U	5 U	5 U	1 U	10 U
Bromodichloromethane	75-27-4	0.6	1 U	1 U	1 U	5 U	5 U	1 U	10 U
Bromoform	75-25-2	4.4	1 U	1 U	1 U	5 U	5 U	1 U	10 U
Bromomethane	74-83-9	9.8	1 U	1 U	1 U	5 U	5 U	1 U	10 U
Carbon Disulfide	75-15-0	700	3.6 J	5 U	2.2 J	25 U	25 U	5 U	50 U
Carbon Tetrachloride	56-23-5	3	1 U	1 U	1 U	5 U	5 U	1 U	10 U
Chlorobenzene	108-90-7	100	1 U	1 U	1 U	5 U	5 U	1 U	10 U
Chlorodibromomethane	124-48-1	0.4	1 U	1 U	1 U	5 U	5 U	1 U	10 U
Chloroethane	75-00-3	12	1 U	1 U	1 U	5 U	5 U	1 U	10 U
Chloroform	67-66-3	5.7	1 U	1 U	1 U	5 U	5 U	1 U	10 U
Chloromethane	74-87-3	2.7	1 U	1 U	1 U	5 U	5 U	1 U	10 U
cis-1,2-Dichloroethene	156-59-2	70	1 U	1 U	1 U	5 U	5 U	5.7	19.6
cis-1,3-Dichloropropene	10061-01-5	0.2	1 U	1 U	1 U	5 U	5 U	1 U	10 U
Ethylbenzene	100-41-4	30	1 U	1 U	1 U	5 U	5 U	1 U	10 U
Methyl Tert-Butyl Ether	1634-04-4	50	1 U	1 U	1 U	5 U	5 U	1 U	10 U
Methylene Chloride	75-09-2	5	5 U	5 U	5 U	25 U	25 U	5 U	50 U
Styrene	100-42-5	100	1 U	1 U	1 U	5 U	5 U	1 U	10 U
Tetrachloroethene	127-18-4	3	1 U	1 U	1 U	5 U	5 U	1 U	10 U
Toluene	108-88-3	40	1 U	1 U	1 U	5 U	5 U	1 U	10 U
Total Xylenes	1330-20-7	20	3 U	3 U	3 U	15 U	15 U	3 U	30 U
trans-1,2-Dichloroethene	156-60-5	100	1 U	1 U	1 U	5 U	5 U	1 U	10 U
trans-1,3-Dichloropropene	10061-02-6	0.2	1 U	1 U	1 U	5 U	5 U	1 U	10 U
Trichloroethene	79-01-6	3	1 U	1 U	1 U	5 U	5 U	1 U	10 U
Vinyl Chloride	75-01-4	1	1 U	1 U	1 U	5 U	5 U	1 U	10 U

TABLE D-1

VALIDATED DPT GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

DPT Location	CAS. No.	Screening Criteria	P112 @ 50 ft	P113 @ 34 ft	P113 @ 41 ft	P113 @ 50 ft	P114 @ 10 ft	P114 @ 15 ft	P114 @ 25 ft
Sample Number			NTC17P11250	NTC17P11334	NTC17P11341	NTC17P11350	NTC17P11410	NTC17P11415	NTC17P11425
Sample Date		Florida GCTL	8/15/02	8/15/02	8/15/02	8/15/02	8/15/02	8/15/02	8/15/02
Volatiles (µg/L)									
1,1,1-Trichloroethane	71-55-6	200	10 U	2 U	5 U	1 U	1 U	1 U	50 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	10 U	2 U	5 U	1 U	1 U	1 U	50 U
1,1,2-Trichloroethane	79-00-5	5	10 U	2 U	5 U	1 U	1 U	1 U	50 U
1,1-Dichloroethane	75-34-3	70	10 U	1.1 J	5 U	0.82 J	1 U	1 U	50 U
1,1-Dichloroethene	75-35-4	7	10 U	4.3	5 U	1.7	1 U	1 U	50 U
1,2-Dichloroethane	107-06-2	3	10 U	2 U	5 U	1 U	1 U	1 U	50 U
1,2-Dichloropropane	78-87-5	5	10 U	2 U	5 U	1 U	1 U	1 U	50 U
2-Butanone	78-93-3	4200	50 UR	10 U	25 U	5 U	5 U	5 U	250 U
2-Hexanone	591-78-6	280	50 U	10 U	25 U	5 U	5 U	5 U	250 U
4-Methyl-2-Pentanone	108-10-1	560	50 U	10 U	25 U	5 U	5 U	5 U	250 U
Acetone	67-64-1	700	50 UR	10 U	25 U	5 U	5 U	5 U	250 U
Benzene	71-43-2	1	10 U	2 U	5 U	1 U	1 U	1 U	50 U
Bromodichloromethane	75-27-4	0.6	10 U	2 U	5 U	1 U	1 U	1 U	50 U
Bromoform	75-25-2	4.4	10 U	2 U	5 U	1 U	1 U	1 U	50 U
Bromomethane	74-83-9	9.8	10 U	2 U	5 U	1 U	1 U	1 U	50 U
Carbon Disulfide	75-15-0	700	50 U	10 U	25 U	5 U	5 U	5 U	250 U
Carbon Tetrachloride	56-23-5	3	10 U	2 U	5 U	1 U	1 U	1 U	50 U
Chlorobenzene	108-90-7	100	10 U	2 U	5 U	1 U	1 U	1 U	50 U
Chlorodibromomethane	124-48-1	0.4	10 U	2 U	5 U	1 U	1 U	1 U	50 U
Chloroethane	75-00-3	12	10 U	2 U	5 U	1 U	1 U	1 U	50 U
Chloroform	67-66-3	5.7	10 U	2 U	5 U	1 U	1 U	1 U	50 U
Chloromethane	74-87-3	2.7	10 U	2 U	5 U	1 U	1 U	1 U	50 U
cis-1,2-Dichloroethene	156-59-2	70	**445**	**82.8**	38.7	29	1 U	0.59 J	50 U
cis-1,3-Dichloropropene	10061-01-5	0.2	10 U	2 U	5 U	1 U	1 U	1 U	50 U
Ethylbenzene	100-41-4	30	10 U	2 U	5 U	1 U	1 U	1 U	50 U
Methyl Tert-Butyl Ether	1634-04-4	50	10 U	2 U	5 U	1 U	1 U	1 U	50 U
Methylene Chloride	75-09-2	5	50 U	10 U	25 U	5 U	5 U	5 U	250 U
Styrene	100-42-5	100	10 U	2 U	5 U	1 U	1 U	1 U	50 U
Tetrachloroethene	127-18-4	3	10 U	2 U	5 U	1 U	1 U	1 U	50 U
Toluene	108-88-3	40	10 U	2 U	5 U	1 U	1 U	1 U	50 U
Total Xylenes	1330-20-7	20	30 U	6 U	15 U	3 U	3 U	3 U	150 U
trans-1,2-Dichloroethene	156-60-5	100	10 U	2 U	5 U	0.55 J	1 U	1 U	50 U
trans-1,3-Dichloropropene	10061-02-6	0.2	10 U	2 U	5 U	1 U	1 U	1 U	50 U
Trichloroethene	79-01-6	3	10 U	2 U	5 U	1 U	1 U	1 U	50 U
Vinyl Chloride	75-01-4	1	**165**	**29.7**	5 U	**136**	1 U	1 U	50 U

TABLE D-1

VALIDATED DPT GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

DPT Location	CAS. No.	Screening Criteria	P114 @ 34 ft	P115 @ 10 ft	P115 @ 15 ft	P115 @ 25 ft	P115 @ 34 ft	P116 @ 10 ft	P116 @ 15 ft
Sample Number			NTC17P11434	NTC17P11510	NTC17P11515	NTC17P11525	NTC17P11534	NTC17P11610	NTC17P11615
Sample Date		Florida GCTL	8/15/02	8/16/02	8/16/02	8/16/02	8/16/02	8/16/02	8/16/02
Volatiles (µg/L)									
1,1,1-Trichloroethane	71-55-6	200	1 U	1 U	1 U	5 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	1 U	1 U	1 U	5 U	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	5	1 U	1 U	1 U	5 U	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	70	1 U	1 U	1 U	5 U	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	7	1 U	1 U	1 U	5 U	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	3	1 U	1 U	1 U	5 U	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	5	1 U	1 U	1 U	5 U	1 U	1 U	1 U
2-Butanone	78-93-3	4200	5 U	5 U	5 U	25 U	5 U	5 U	5 U
2-Hexanone	591-78-6	280	5 U	5 U	5 U	25 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	108-10-1	560	5 U	5 U	5 U	25 U	5 U	5 U	5 U
Acetone	67-64-1	700	5 U	5 U	5 U	25 U	5 U	5 U	5 U
Benzene	71-43-2	1	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Bromodichloromethane	75-27-4	0.6	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Bromoform	75-25-2	4.4	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Bromomethane	74-83-9	9.8	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Carbon Disulfide	75-15-0	700	5 U	5 U	5 U	25 U	5 U	5 U	5 U
Carbon Tetrachloride	56-23-5	3	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	100	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	0.4	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Chloroethane	75-00-3	12	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Chloroform	67-66-3	5.7	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Chloromethane	74-87-3	2.7	1 U	1 U	1 U	5 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	70	1 U	1 U	0.7 J	5 U	1 U	0.51 J	1.6
cis-1,3-Dichloropropene	10061-01-5	0.2	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Ethylbenzene	100-41-4	30	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Methyl Tert-Butyl Ether	1634-04-4	50	1 U	1 U	0.66 J	5 U	1 U	1 U	1 U
Methylene Chloride	75-09-2	5	5 U	5 U	5 U	25 U	5 U	5 U	5 U
Styrene	100-42-5	100	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	3	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Toluene	108-88-3	40	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Total Xylenes	1330-20-7	20	3 U	3 U	3 U	15 U	3 U	3 U	3 U
trans-1,2-Dichloroethene	156-60-5	100	1 U	1 U	1 U	5 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	10061-02-6	0.2	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Trichloroethene	79-01-6	3	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Vinyl Chloride	75-01-4	1	1 U	1 U	1 U	5 U	1 U	1 U	1 U

TABLE D-1

VALIDATED DPT GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

DPT Location	CAS. No.	Screening Criteria	P116 @ 25 ft	P116 @ 34 ft	P117 @ 15 ft	P117 @ 25 ft	P117 @ 34 ft	P117 @ 40 ft	P117 @ 50 ft
Sample Number			NTC17P11625	NTC17P11634	NTC17P11715	NTC17P11725	NTC17P11734	NTC17P11740	NTC17P11750
Sample Date		Florida GCTL	8/16/02	8/16/02	8/16/02	8/16/02	8/16/02	8/16/02	8/16/02
Volatiles (µg/L)									
1,1,1-Trichloroethane	71-55-6	200	1 U	1 U	1 U	5 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	1 U	1 U	1 U	5 U	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	5	1 U	1 U	1 U	5 U	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	70	1 U	1 U	1 U	5 U	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	7	1 U	1 U	1 U	5 U	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	3	1 U	1 U	1 U	5 U	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	5	1 U	1 U	1 U	5 U	1 U	1 U	1 U
2-Butanone	78-93-3	4200	5 U	5 U	5 U	25 U	5 U	5 U	5 UR
2-Hexanone	591-78-6	280	5 U	5 U	5 U	25 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	108-10-1	560	5 U	5 U	5 U	25 U	5 U	5 U	5 U
Acetone	67-64-1	700	5 U	5 U	5 U	25 U	5 U	5 U	5 UR
Benzene	71-43-2	1	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Bromodichloromethane	75-27-4	0.6	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Bromoform	75-25-2	4.4	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Bromomethane	74-83-9	9.8	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Carbon Disulfide	75-15-0	700	5 U	5 U	5 U	25 U	5 U	5 U	5 U
Carbon Tetrachloride	56-23-5	3	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	100	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	0.4	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Chloroethane	75-00-3	12	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Chloroform	67-66-3	5.7	1 U	1 U	1 U	5 U	1 U	1 U	0.53 J
Chloromethane	74-87-3	2.7	1 U	1 U	1 U	5 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	70	1 U	1 U	1 U	5 U	3.8	5.8	1 U
cis-1,3-Dichloropropene	10061-01-5	0.2	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Ethylbenzene	100-41-4	30	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Methyl Tert-Butyl Ether	1634-04-4	50	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Methylene Chloride	75-09-2	5	5 U	5 U	5 U	25 U	5 U	5 U	5 U
Styrene	100-42-5	100	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	3	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Toluene	108-88-3	40	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Total Xylenes	1330-20-7	20	3 U	3 U	3 U	15 U	3 U	3 U	3 U
trans-1,2-Dichloroethene	156-60-5	100	1 U	1 U	1 U	5 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	10061-02-6	0.2	1 U	1 U	1 U	5 U	1 U	1 U	1 U
Trichloroethene	79-01-6	3	1 U	0.76 J	1 U	5 U	1 U	1 U	1 U
Vinyl Chloride	75-01-4	1	1 U	1 U	1 U	5 U	1 U	1 U	1 U

TABLE D-1

VALIDATED DPT GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

DPT Location	CAS. No.	Screening Criteria	P118 @ 42 ft	P118 @ 52 ft	P119 @ 42 ft	P119 @ 52 ft		P120 @ 10 ft	P120 @ 15 ft
Sample Number			NTC17P11842	NTC17P11852	NTC17P11942	NTC17P11952	NTC17P11952-D	NTC17P12010	NTC17P12015
Sample Date		Florida GCTL	8/17/02	8/17/02	8/17/02	8/17/02	8/17/02	8/17/02	8/17/02
Volatiles (µg/L)									
1,1,1-Trichloroethane	71-55-6	200	1 U	5 U	1 U	2 U	2 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	1 U	5 U	1 U	2 U	2 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	5	1 U	5 U	1 U	2 U	2 U	1 U	1 U
1,1-Dichloroethane	75-34-3	70	1 U	5 U	1 U	2 U	2 U	1 U	1 U
1,1-Dichloroethene	75-35-4	7	1 U	5 U	1 U	2 U	2 U	1 U	1 U
1,2-Dichloroethane	107-06-2	3	1 U	5 U	1 U	2 U	2 U	1 U	1 U
1,2-Dichloropropane	78-87-5	5	1 U	5 U	1 U	2 U	2 U	1 U	1 U
2-Butanone	78-93-3	4200	5 U	25 U	5 U	10 U	10 U	5 U	5 U
2-Hexanone	591-78-6	280	5 U	25 U	5 U	10 U	10 U	5 U	5 U
4-Methyl-2-Pentanone	108-10-1	560	5 U	25 U	5 U	10 U	10 U	5 U	5 U
Acetone	67-64-1	700	65.1	25 U	5 U	10 U	10 U	5 U	5 U
Benzene	71-43-2	1	1 U	5 U	1 U	2 U	2 U	1 U	1 U
Bromodichloromethane	75-27-4	0.6	1 U	5 U	1 U	2 U	2 U	1 U	1 U
Bromoform	75-25-2	4.4	1 U	5 U	1 U	2 U	2 U	1 U	1 U
Bromomethane	74-83-9	9.8	1 U	5 U	1 U	2 U	2 U	1 U	1 U
Carbon Disulfide	75-15-0	700	5 U	25 U	5 U	10 U	10 U	5 U	5 U
Carbon Tetrachloride	56-23-5	3	1 U	5 U	1 U	2 U	2 U	1 U	1 U
Chlorobenzene	108-90-7	100	1 U	5 U	1 U	2 U	2 U	1 U	1 U
Chlorodibromomethane	124-48-1	0.4	1 U	5 U	1 U	2 U	2 U	1 U	1 U
Chloroethane	75-00-3	12	1 U	5 U	1 U	2 U	2 U	1 U	1 U
Chloroform	67-66-3	5.7	1 U	5 U	1 U	2 U	2 U	1 U	1 U
Chloromethane	74-87-3	2.7	1 U	5 U	1 U	2 U	2 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	70	19.9	**314**	7.9	**122**	**115**	1 U	1 U
cis-1,3-Dichloropropene	10061-01-5	0.2	1 U	5 U	1 U	2 U	2 U	1 U	1 U
Ethylbenzene	100-41-4	30	1 U	5 U	1 U	2 U	2 U	1 U	1 U
Methyl Tert-Butyl Ether	1634-04-4	50	1 U	5 U	1 U	2 U	2 U	1 U	1 U
Methylene Chloride	75-09-2	5	5 U	25 U	5 U	10 U	10 U	5 U	5 U
Styrene	100-42-5	100	1 U	5 U	1 U	2 U	2 U	1 U	1 U
Tetrachloroethene	127-18-4	3	1 U	5 U	1 U	2 U	2 U	1 U	1 U
Toluene	108-88-3	40	1 U	5 U	1 U	2 U	2 U	1 U	1 U
Total Xylenes	1330-20-7	20	3 U	15 U	3 U	6 U	6 U	3 U	3 U
trans-1,2-Dichloroethene	156-60-5	100	2	31.5	1 U	1.1 J	1 J	1 U	1 U
trans-1,3-Dichloropropene	10061-02-6	0.2	1 U	5 U	1 U	2 U	2 U	1 U	1 U
Trichloroethene	79-01-6	3	1 U	5 U	1 U	2 U	2 U	1 U	1 U
Vinyl Chloride	75-01-4	1	1 U	5 U	1 U	2 U	2 U	1 U	1 U

TABLE D-1

VALIDATED DPT GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

DPT Location	CAS. No.	Screening Criteria	P 120 @ 25 ft	P120 @ 34 ft	P121 @ 10 ft	P121 @ 15 ft	P121 @ 25 ft	P 121 @ 34 ft	
Sample Number			NTC17P12025	NTC17P12034	NTC17P12110	NTC17P12115	NTC17P12125	NTC17P12134	NTC17P12134-D
Sample Date		Florida GCTL	8/17/02	8/17/02	8/19/02	8/19/02	8/19/02	8/19/02	8/19/02
Volatiles (µg/L)									
1,1,1-Trichloroethane	71-55-6	200	1 U	1 U	1 U	1 U	5 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	1 U	1 U	1 U	1 U	5 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	5	1 U	1 U	1 U	1 U	5 U	1 U	1 U
1,1-Dichloroethane	75-34-3	70	1 U	1 U	1 U	1 U	5 U	1 U	1 U
1,1-Dichloroethene	75-35-4	7	1 U	1 U	1 U	1 U	5 U	1 U	1 U
1,2-Dichloroethane	107-06-2	3	1 U	1 U	1 U	1 U	5 U	1 U	1 U
1,2-Dichloropropane	78-87-5	5	1 U	1 U	1 U	1 U	5 U	1 U	1 U
2-Butanone	78-93-3	4200	5 U	5 U	5 U	5 U	25 U	5 U	5 U
2-Hexanone	591-78-6	280	5 U	5 U	5 U	5 U	25 U	5 U	5 U
4-Methyl-2-Pentanone	108-10-1	560	5 U	5 U	5 U	5 U	25 U	5 U	5 U
Acetone	67-64-1	700	5 U	5 U	5 U	5 U	25 U	5 U	5 U
Benzene	71-43-2	1	1 U	1 U	1 U	1 U	5 U	1 U	1 U
Bromodichloromethane	75-27-4	0.6	1 U	1 U	1 U	1 U	5 U	1 U	1 U
Bromoform	75-25-2	4.4	1 U	1 U	1 U	1 U	5 U	1 U	1 U
Bromomethane	74-83-9	9.8	1 U	1 U	1 U	1 U	5 U	1 U	1 U
Carbon Disulfide	75-15-0	700	3.1 J	1 J	5 U	5 U	5.7 J	47.7	39.4
Carbon Tetrachloride	56-23-5	3	1 U	1 U	1 U	1 U	5 U	1 U	1 U
Chlorobenzene	108-90-7	100	1 U	1 U	1 U	1 U	5 U	1 U	1 U
Chlorodibromomethane	124-48-1	0.4	1 U	1 U	1 U	1 U	5 U	1 U	1 U
Chloroethane	75-00-3	12	1 U	1 U	1 U	1 U	5 U	1 U	1 U
Chloroform	67-66-3	5.7	1 U	1 U	1 U	1 U	5 U	1 U	1 U
Chloromethane	74-87-3	2.7	1 U	1 U	1 U	1 U	5 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	70	1 U	28	1 U	1 U	5 U	1 U	1 U
cis-1,3-Dichloropropene	10061-01-5	0.2	1 U	1 U	1 U	1 U	5 U	1 U	1 U
Ethylbenzene	100-41-4	30	1 U	1 U	1 U	1 U	5 U	1 U	1 U
Methyl Tert-Butyl Ether	1634-04-4	50	1 U	1 U	1 U	1 U	5 U	1 U	1 U
Methylene Chloride	75-09-2	5	5 U	5 U	5 U	5 U	**6.4 J**	5 U	5 U
Styrene	100-42-5	100	1 U	1 U	1 U	1 U	5 U	1 U	1 U
Tetrachloroethene	127-18-4	3	1 U	1 U	1 U	1 U	5 U	1 U	1 U
Toluene	108-88-3	40	1 U	1 U	1 U	1 U	5 U	1 U	1 U
Total Xylenes	1330-20-7	20	3 U	3 U	3 U	3 U	15 U	3 U	3 U
trans-1,2-Dichloroethene	156-60-5	100	1 U	2.9	1 U	1 U	5 U	1 U	1 U
trans-1,3-Dichloropropene	10061-02-6	0.2	1 U	1 U	1 U	1 U	5 U	1 U	1 U
Trichloroethene	79-01-6	3	1 U	1 U	1 U	1 U	5 U	1 U	1 U
Vinyl Chloride	75-01-4	1	1 U	1 U	1 U	1 U	5 U	1 U	1 U

TABLE D-1

VALIDATED DPT GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

DPT Location	CAS. No.	Screening Criteria	P122 @ 45 ft		P122 @ 50 ft	P122 @ 57 ft	P123 @ 45ft	P123 @ 50 ft	P123 @ 55 ft
Sample Number			NTC17P12245	NTC17P12245-D	NTC17P12250	NTC17P12257	NTC17P12345	NTC17P12350	NTC17P12355
Sample Date		Florida GCTL	11/19/02	11/19/02	11/19/02	11/19/02	11/18/02	11/18/02	11/18/02
Volatiles (µg/L)									
1,1,1-Trichloroethane	71-55-6	200	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	79-00-5	5	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	75-34-3	70	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	75-35-4	7	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	107-06-2	3	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	78-87-5	5	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
2-Butanone	78-93-3	4200	2.5 U	2.5 U	2.5 U	25 U	2.5 U	2.5 U	2.5 U
2-Hexanone	591-78-6	280	2.5 U	2.5 U	2.5 U	25 U	2.5 U	2.5 U	2.5 U
4-Methyl-2-Pentanone	108-10-1	560	2.5 U	2.5 U	2.5 U	25 U	2.5 U	2.5 U	2.5 U
Acetone	67-64-1	700	5 U	5 U	5 U	50 U	5 U	5 U	5 U
Benzene	71-43-2	1	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	75-27-4	0.6	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
Bromoform	75-25-2	4.4	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
Bromomethane	74-83-9	9.8	1 U	1 U	1 U	10 U	1 U	1 U	1 U
Carbon Disulfide	75-15-0	700	1.6 J	2 J	12.1	10 U	9.3	4.3 J	2.9 J
Carbon Tetrachloride	56-23-5	3	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	108-90-7	100	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	124-48-1	0.4	0.4 U	0.4 U	0.4 U	4 U	0.4 U	0.4 U	0.4 U
Chloroethane	75-00-3	12	1 U	1 U	1 U	10 U	1 U	1 U	1 U
Chloroform	67-66-3	5.7	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
Chloromethane	74-87-3	2.7	1 U	1 U	1 U	10 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	70	26.2	25.2	32.3	7 J	3	11.6	0.5 U
cis-1,3-Dichloropropene	10061-01-5	0.2	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	30	0.7 U	0.7 U	0.7 U	7 U	0.7 U	0.7 U	0.7 U
Methyl Tert-Butyl Ether	1634-04-4	50	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	75-09-2	5	1 U	1 U	1 U	10 U	1 U	1 U	1 U
Styrene	100-42-5	100	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	127-18-4	3	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
Toluene	108-88-3	40	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
Total Xylenes	1330-20-7	20	1 U	1 U	1 U	10 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	156-60-5	100	0.5 U	0.5 U	0.5 U	5 U	0.5 U	2.1	0.5 U
trans-1,3-Dichloropropene	10061-02-6	0.2	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	79-01-6	3	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	75-01-4	1	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U

TABLE D-1

VALIDATED DPT GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

DPT Location	CAS. No.	Screening Criteria	P126 @ 45 ft	P126 @ 50 ft	P126 @ 60 ft	P128 @ 45 ft	P128 @ 50 ft	P128 @ 55 ft	P129 @ 57 ft
Sample Number			NTC17P12645	NTC17P12650	NTC17P12660	NTC17P12845	NTC17P12850	NTC17P12855	NTC17P12957
Sample Date		Florida GCTL	11/18/02	11/18/02	11/18/02	11/18/02	11/18/02	11/18/02	11/19/02
Volatiles (µg/L)									
1,1,1-Trichloroethane	71-55-6	200	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	79-00-5	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	75-34-3	70	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	75-35-4	7	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	107-06-2	3	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	78-87-5	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone	78-93-3	4200	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Hexanone	591-78-6	280	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4-Methyl-2-Pentanone	108-10-1	560	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acetone	67-64-1	700	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Benzene	71-43-2	1	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	75-27-4	0.6	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform	75-25-2	4.4	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	74-83-9	9.8	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide	75-15-0	700	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	56-23-5	3	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	108-90-7	100	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorodibromomethane	124-48-1	0.4	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Chloroethane	75-00-3	12	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	67-66-3	5.7	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloromethane	74-87-3	2.7	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	156-59-2	70	5 U	12.3	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	10061-01-5	0.2	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	100-41-4	30	7 U	7 U	7 U	7 U	7 U	7 U	7 U
Methyl Tert-Butyl Ether	1634-04-4	50	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methylene Chloride	75-09-2	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	100-42-5	100	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	127-18-4	3	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Toluene	108-88-3	40	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Total Xylenes	1330-20-7	20	10 U	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	156-60-5	100	5 U	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	10061-02-6	0.2	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene	79-01-6	3	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl Chloride	75-01-4	1	5 U	5 U	5 U	5 U	5 U	5 U	5 U

TABLE D-1

VALIDATED DPT GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

DPT Location	CAS. No.	Screening Criteria	P130 @ 45 ft	P130 @ 50 ft	P130 @ 57 ft
Sample Number			NTC17P13045	NTC17P13050	NTC17P13057
Sample Date		Florida GCTL	11/19/02	11/19/02	11/19/02
Volatiles (µg/L)					
1,1,1-Trichloroethane	71-55-6	200	0.5 U	5 U	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	0.5 U	5 U	0.5 U
1,1,2-Trichloroethane	79-00-5	5	0.5 U	5 U	0.5 U
1,1-Dichloroethane	75-34-3	70	0.5 U	5 U	0.5 U
1,1-Dichloroethene	75-35-4	7	0.5 U	5 U	0.5 U
1,2-Dichloroethane	107-06-2	3	0.5 U	5 U	0.5 U
1,2-Dichloropropane	78-87-5	5	0.5 U	5 U	0.5 U
2-Butanone	78-93-3	4200	2.5 U	25 U	2.5 U
2-Hexanone	591-78-6	280	2.5 U	25 U	2.5 U
4-Methyl-2-Pentanone	108-10-1	560	2.5 U	25 U	2.5 U
Acetone	67-64-1	700	5 U	50 U	5 U
Benzene	71-43-2	1	0.5 U	5 U	0.5 U
Bromodichloromethane	75-27-4	0.6	0.5 U	5 U	0.5 U
Bromoform	75-25-2	4.4	0.5 U	5 U	0.5 U
Bromomethane	74-83-9	9.8	1 U	10 U	1 U
Carbon Disulfide	75-15-0	700	2.8 J	10 U	4.2 J
Carbon Tetrachloride	56-23-5	3	0.5 U	5 U	0.5 U
Chlorobenzene	108-90-7	100	0.5 U	5 U	0.5 U
Chlorodibromomethane	124-48-1	0.4	0.4 U	4 U	0.4 U
Chloroethane	75-00-3	12	1 U	10 U	1 U
Chloroform	67-66-3	5.7	0.5 U	5 U	0.5 U
Chloromethane	74-87-3	2.7	1 U	10 U	1 U
cis-1,2-Dichloroethene	156-59-2	70	0.5 U	5 U	0.5 U
cis-1,3-Dichloropropene	10061-01-5	0.2	0.5 U	5 U	0.5 U
Ethylbenzene	100-41-4	30	0.7 U	7 U	0.7 U
Methyl Tert-Butyl Ether	1634-04-4	50	0.5 U	5 U	0.5 U
Methylene Chloride	75-09-2	5	1 U	10 U	1 U
Styrene	100-42-5	100	0.5 U	5 U	0.5 U
Tetrachloroethene	127-18-4	3	0.5 U	5 U	0.5 U
Toluene	108-88-3	40	0.5 U	5 U	0.5 U
Total Xylenes	1330-20-7	20	1 U	10 U	1 U
trans-1,2-Dichloroethene	156-60-5	100	0.5 U	5 U	0.5 U
trans-1,3-Dichloropropene	10061-02-6	0.2	0.5 U	5 U	0.5 U
Trichloroethene	79-01-6	3	0.5 U	5 U	0.5 U
Vinyl Chloride	75-01-4	1	0.5 U	5 U	0.5 U

TABLE D-2

VALIDATED MONITORING WELL GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Location	CAS. No.	Screening Criteria	OLD-17-38D	OLD-17-39C	OLD-17-40C	OLD-17-41C	OLD-17-42B	OLD-17-43C
Sample Number			NTC17G38D01	NTC17G39C01	NTC17G40C01	NTC17G41C01	NTC17G04201	NTC17G04301
Sample Date		Florida GCTL	9/17/02	9/16/02	9/16/02	9/16/02	12/17/02	12/17/02
Volatiles (µg/L)								
1,1,1-Trichloroethane	71-55-6	200	1 U	1 U	1 U	1 U	1 U	2 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	1 U	1 U	1 U	1 U	1 U	2 U
1,1,2-Trichloroethane	79-00-5	5	1 U	1 U	1 U	1 U	1 U	2 U
1,1-Dichloroethane	75-34-3	70	1 U	1 U	1 U	1 U	1 U	2 U
1,1-Dichloroethene	75-35-4	7	1 U	1 U	1 U	1 U	1 U	2 U
1,2-Dichloroethane	107-06-2	3	1 U	1 U	1 U	1 U	1 U	2 U
1,2-Dichloropropane	78-87-5	5	1 U	1 U	1 U	1 U	1 U	2 U
2-Butanone	78-93-3	4200	5 U	5 U	5 U	5 U	5 UR	10 UR
2-Hexanone	591-78-6	280	5 U	5 U	5 U	5 U	5 U	10 U
4-Methyl-2-Pentanone	108-10-1	560	5 U	5 U	5 U	5 U	5 U	10 U
Acetone	67-64-1	700	18 U	5 U	5 U	5 U	9.9 U	18 U
Benzene	71-43-2	1	1 U	1 U	1 U	1 U	1 U	2 U
Bromodichloromethane	75-27-4	0.6	1 U	1 U	**5**	1 U	1 U	2 U
Bromoform	75-25-2	4.4	1 U	1 U	1 U	1 U	1 U	2 U
Bromomethane	74-83-9	9.8	2 U	2 U	2 U	2 U	1 U	2 U
Carbon Disulfide	75-15-0	700	25	0.7 J	0.6 J	0.4 J	1.1	2 U
Carbon Tetrachloride	56-23-5	3	1 U	1 U	1 U	1 U	1 U	2 U
Chlorobenzene	108-90-7	100	1 U	1 U	1 U	1 U	1 U	2 U
Chlorodibromomethane	124-48-1	0.4	1 U	1 U	1 J	1 U	1 U	2 U
Chloroethane	75-00-3	12	2 U	2 U	2 U	2 U	1 U	2 U
Chloroform	67-66-3	5.7	1 U	1 U	**30**	1 U	1 U	2 U
Chloromethane	74-87-3	2.7	2 U	2 U	2 U	2 U	1 U	2 U
cis-1,2-Dichloroethene	156-59-2	70	4	1 U	1 U	8	1.1	**80**
cis-1,3-Dichloropropene	10061-01-5	0.2	1 U	1 U	1 U	1 U	1 U	2 U
Ethylbenzene	100-41-4	30	1 U	1 U	1 U	1 U	1 U	2 U
Methyl Tert-Butyl Ether	1634-04-4	50	2 U	2 U	2 U	2 U	1 U	2 U
Methylene Chloride	75-09-2	5	1 U	1 U	1 U	1 U	1.6 U	6.4 U
Styrene	100-42-5	100	1 U	1 U	1 U	1 U	1 U	2 U
Tetrachloroethene	127-18-4	3	1 U	1 U	1 U	1 U	1 U	2 U
Toluene	108-88-3	40	1 U	1 U	1 U	1 U	1 U	2 U
Total Xylenes	1330-20-7	20	3 U	3 U	3 U	3 U	1 U	2 U
trans-1,2-Dichloroethene	156-60-5	100	1 U	1 U	1 U	1 U	1 U	2 U
trans-1,3-Dichloropropene	10061-02-6	0.2	1 U	1 U	1 U	1 U	1 U	2 U
Trichloroethene	79-01-6	3	1 U	1 U	1 U	1 U	1 U	2 U
Vinyl Chloride	75-01-4	1	2 U	2 U	2 U	0.3 J	1 U	2 U

TABLE D-2

VALIDATED MONITORING WELL GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Location	CAS. No.	Screening Criteria	OLD-17-44A	OLD-17-45C	OLD-17-46C	OLD-17-47D	OLD-17-48C	OLD-17-49D
Sample Number			NTC17G44A01	NTC17G45C01	NTC17G46C01	NTC17G47D01	NTC17G04801	NTC17G04901
Sample Date		Florida GCTL	9/17/02	9/17/02	12/17/02	12/17/02	12/17/02	12/17/02
Volatiles (µg/L)								
1,1,1-Trichloroethane	71-55-6	200	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	5	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	70	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	7	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	3	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	5	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	78-93-3	4200	5 U	5 U	5 UR	5 U	5 UR	5 UR
2-Hexanone	591-78-6	280	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	108-10-1	560	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	700	5 U	5 U	19 U	38 U	6.3 U	17 U
Benzene	71-43-2	1	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	75-27-4	0.6	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	75-25-2	4.4	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	74-83-9	9.8	2 U	2 U	1 U	1 U	1 U	1 U
Carbon Disulfide	75-15-0	700	1 U	0.4 J	4.3	1 U	0.92 J	2.6
Carbon Tetrachloride	56-23-5	3	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	100	1 U	1 U	1 U	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	0.4	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	75-00-3	12	2 U	2 U	1 U	1 U	1 U	1 U
Chloroform	67-66-3	5.7	1 U	1 U	2.8	0.92 J	1 U	2.1
Chloromethane	74-87-3	2.7	2 U	2 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	70	1 U	**100**	1 U	1 U	1.8	21
cis-1,3-Dichloropropene	10061-01-5	0.2	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	100-41-4	30	1 U	1 U	1 U	1 U	1 U	1 U
Methyl Tert-Butyl Ether	1634-04-4	50	2 U	2 U	1 U	1 U	1 U	1 U
Methylene Chloride	75-09-2	5	1 U	1 U	1.5 U	1 U	1.6 U	1.5 U
Styrene	100-42-5	100	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	3	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	108-88-3	40	1 U	1 U	1 U	1 U	1 U	1 U
Total Xylenes	1330-20-7	20	3 U	3 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	156-60-5	100	1 U	1 J	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	10061-02-6	0.2	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	79-01-6	3	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	75-01-4	1	2 U	2 U	1 U	1 U	1 U	1 U

TABLE D-2

VALIDATED MONITORING WELL GROUNDWATER ANALYTICAL DATA
STUDY AREA 17

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Location	CAS. No.	Screening Criteria	OLD-17-50C		OLD-17-51D
Sample Number			NTC17G05001	NTC17G05001-D	NTC17G05101
Sample Date		Florida GCTL	12/17/02	12/17/02	12/17/02
Volatiles (µg/L)					
1,1,1-Trichloroethane	71-55-6	200	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	0.2	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	5	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	70	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	7	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	3	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	5	1 U	1 U	1 U
2-Butanone	78-93-3	4200	5 UR	5 UR	5 UR
2-Hexanone	591-78-6	280	5 U	5 U	5 U
4-Methyl-2-Pentanone	108-10-1	560	5 U	5 U	5 U
Acetone	67-64-1	700	5 U	5 U	23 U
Benzene	71-43-2	1	1 U	1 U	1 U
Bromodichloromethane	75-27-4	0.6	1 U	1 U	1 U
Bromoform	75-25-2	4.4	1 U	1 U	1 U
Bromomethane	74-83-9	9.8	1 U	1 U	1 U
Carbon Disulfide	75-15-0	700	2.3	3.3	3.6
Carbon Tetrachloride	56-23-5	3	1 U	1 U	1 U
Chlorobenzene	108-90-7	100	1 U	1 U	1 U
Chlorodibromomethane	124-48-1	0.4	1 U	1 U	1 U
Chloroethane	75-00-3	12	1 U	1 U	1 U
Chloroform	67-66-3	5.7	2.6	2	2.4
Chloromethane	74-87-3	2.7	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	70	6.3	5.7	4.9
cis-1,3-Dichloropropene	10061-01-5	0.2	1 U	1 U	1 U
Ethylbenzene	100-41-4	30	1 U	1 U	1 U
Methyl Tert-Butyl Ether	1634-04-4	50	1 U	1 U	1 U
Methylene Chloride	75-09-2	5	1.7 U	1 U	2.7 U
Styrene	100-42-5	100	1 U	1 U	1 U
Tetrachloroethene	127-18-4	3	1 U	1 U	1 U
Toluene	108-88-3	40	1 U	1 U	1 U
Total Xylenes	1330-20-7	20	1 U	1 U	1 U
trans-1,2-Dichloroethene	156-60-5	100	1.1	1.1	0.82 J
trans-1,3-Dichloropropene	10061-02-6	0.2	1 U	1 U	1 U
Trichloroethene	79-01-6	3	1 U	1 U	1 U
Vinyl Chloride	75-01-4	1	1 U	1 U	1 U

APPENDIX E

IRA DATA

Table 1
Phase I and II Confirmatory Sampling Analytical Results (UNVALIDATED)
Study Area 17

	StationID:	OLD-17-03A	OLD-17-05A	OLD-17-11B	OLD-17-12C	OLD-17-13B	OLD-17-14C
	Client Sample ID:	017-OLD-17-03A-Q1-00	017-OLD-17-05A-Q1-00	017-OLD-17-11B-Q1-00	017-OLD-17-12C-Q1-00	017-OLD-17-13B-Q1-00	017-OLD-17-14C-Q1-00
	Lab Sample ID:	F5963-1	F5933-2	F5925-2	F5925-1	F5963-2	F5963-3
	Date Collected:	02/29/2000	02/24/2000	02/23/2000	02/23/2000	02/29/2000	02/29/2000
Parameter	Units						
Natural Attenuation Parameters							
Iron	ug/l	14300 =	7790 =	70700 =	6100 =	10900 =	5670 =
Iron, dissolved	ug/l	12600 =	4110 =	74400 =	4830 =	4740 =	5450 =
Turbidity	NTUs	84.6	>1000	>1000	817	84.2	7
Observations		Light grey color	Brown	Brown	Brown	Tan	Clear
Magnesium	ug/l			20200 =	2170 B		
Magnesium, dissolved	ug/l			21000 =			
Manganese	ug/l	22.9 =	24.8 =	121 =	17.7 =	23.2 =	38.2 =
Manganese, dissolved	ug/l			130 =			
Alkalinity, Total	mg/l	87.9 =	72.2 =	111 =	8.6 =	53.2 =	21.8 =
BOD, 5 Day	mg/l	2 U	3 U	9.1 =	3 U	2 U	5.6 =
Chloride	mg/l	3.6 =	8.3 =	7.2 =	5.8 =	2.9 =	33.7 =
Hydrogen Sulfide	mg/l	2.2 =	2 U	40 U	5.4 =	2.7 =	2 U
Nitrogen, Nitrate	mg/l	0.1 U	0.1 U	0.13 =	0.1 U	0.1 U	0.1 U
Nitrogen, Nitrate + Nitrite	mg/l	0.11 U				0.11 U	0.11 U
Nitrogen, Nitrite	mg/l	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Sulfate	mg/l	22.1 =	7.8 =	50 U	5 U	8.6 =	5 U
Dissolved Oxygen	mg/l	0.67	1.09	0.84	1.19	0.67	0.78
Dissolved Hydrogen	nM	0.92	0.96	0.58	4.24	11.8	1.71
ORP	mV	-61.8	-20.2	-68.1	-84.9	-57.7	-97.2
Total Organic Carbon	mg/l	11.4 =	21.2 =	427 =	50 U	11.7 =	21.1 =
VOCs							
Methane	ug/l	83.8 =	157.1 =	1204 =	450.3 =	340.4 =	4828 =
Ethane	ng/l	5 U	5	38 =	5 U	5 U	5 U
Ethene	ng/l	5 U	5 U	17 =	16 =	11 U	69 =
1,1,1-Trichloroethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2,2-Tetrachloroethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2-Trichloroethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethylene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
2-Hexanone	ug/l	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	ug/l	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	ug/l	50 U	50 U	50 U	50 U	50 U	50 U
Benzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Carbon disulfide	ug/l	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Chlorobenzene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Chloroethane	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethylene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,3-Dichloropropene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Dibromochloromethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Methyl bromide	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
Methyl chloride	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
Methyl ethyl ketone	ug/l	10 U	10 U	10 U	10 U	10 U	10 U
Methyl Tert Butyl Ether	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Methylene chloride	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Tetrachloroethylene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Toluene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
trans-1,2-Dichloroethylene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
trans-1,3-Dichloropropene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethylene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Vinyl chloride	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Xylene (total)	ug/l	6 U	6 U	6 U	6 U	6 U	6 U

Table 1
Phase I and II Confirmatory Sampling Analytical Results (UNVALIDATED)
Study Area 17

	StationID:	OLD-17-19B	OLD-17-20C	OLD-17-23A	OLD-17-24B	OLD-17-25C	OLD-17-26A
	Client Sample ID:	017-OLD-17-19B-Q1-00	017-OLD-17-20C-Q1-00	017-OLD-17-23A-Q1-00	017-OLD-17-24B-Q1-00	017-OLD-17-25C-Q1-00	017-OLD-17-26A-Q1-00
	Lab Sample ID:	F5963-4	F5963-5	F5942-3	F5942-2	F5942-1	F5933-3
	Date Collected:	02/29/2000	02/29/2000	02/25/2000	02/25/2000	02/25/2000	02/24/2000
Parameter	Units						
Natural Attenuation Parameters							
Iron	ug/l	9530 =	2360 =	2670 =	14300 =	10900 =	1000 =
Iron, dissolved	ug/l	6110 =	1690 =	3040 =	12600 =	405 =	414 =
Turbidity	NTUs	37.2	88	11.6	40	65	12.5
Observations		Clear	Clear	Clear	Clear	Clear	Clear
Magnesium	ug/l						
Magnesium, dissolved	ug/l						
Manganese	ug/l	55.3 =	20.7 =	3.4 B	137 =	84.5 =	9.4 B
Manganese, dissolved	ug/l						
Alkalinity, Total	mg/l	44.2 =	20.9 =	84.1 =	24.2 =	80.8 =	71.7 =
BOD, 5 Day	mg/l	2 U	2 U	3 U	3 U	3 U	3 U
Chloride	mg/l	3.2 =	22.5 =	13.1 =	30.3 =	23.1 =	6 =
Hydrogen Sulfide	mg/l	2 U	2 U	2 U	2 U	2.9 =	2 U
Nitrogen, Nitrate	mg/l	0.1 U	0.1 U	1.3 =	0.1 U	0.1 U	0.1 U
Nitrogen, Nitrate + Nitrite	mg/l	0.11 U	0.11 U				
Nitrogen, Nitrite	mg/l	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Sulfate	mg/l	6.2 =	5 U	31.5 =	9 =	5 U	5 U
Dissolved Oxygen	mg/l	0.70	0.89	1.70	1.05	1.18	0.59
Dissolved Hydrogen	nM	3.49	1.59	1.06	2.3	1.27	1.06
ORP	mV	-20.5	-12.6	43.8	34.7	-13.2	-43.8
Total Organic Carbon	mg/l	8.7 =	17.8 =	6.3 =	6.7 =	14.7 =	2.5 =
VOCs							
Methane	ug/l	104.7 =	2524 =	104.7 =	17.46 =	759.3 =	188.5 =
Ethane	ug/l	17 =	5 U	5 U	16 =	5 U	1048 =
Ethene	ug/l	25 =	6810 =	22 =	260 =	102 =	1069 =
1,1,1-Trichloroethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2,2-Tetrachloroethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2-Trichloroethane	ug/l	2 U	2 U	2 U	6.2 =	2 U	2 U
1,1-Dichloroethane	ug/l	2 U	2.2 =	2 U	2 U	2 U	2 U
1,1-Dichloroethylene	ug/l	2 U	1.4 J	2 U	2 U	2 U	2 U
1,2-Dichloroethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
2-Hexanone	ug/l	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	ug/l	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	ug/l	50 U	50 U	50 U	50 U	50 U	50 U
Benzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Carbon disulfide	ug/l	10 U	10 U	10 U	10 U	7.7 J	10 U
Carbon tetrachloride	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Chlorobenzene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Chloroethane	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform	ug/l	2 U	2 U	2 U	0.87 J	2 U	2 U
cis-1,2-Dichloroethylene	ug/l	2 U	43.8 =	169 =	108 E	1 J	2 U
cis-1,3-Dichloropropene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Dibromochloromethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Methyl bromide	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
Methyl chloride	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
Methyl ethyl ketone	ug/l	10 U	10 U	10 U	10 U	10 U	10 U
Methyl Tert Butyl Ether	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Methylene chloride	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Tetrachloroethylene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Toluene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
trans-1,2-Dichloroethylene	ug/l	2 U	0.95 J	2 =	2 =	2 U	2 U
trans-1,3-Dichloropropene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethylene	ug/l	2 U	2 U	1190 =	28900 E	2 U	2 U
Vinyl chloride	ug/l	1 U	252 =	1 U	1 U	0.8 J	3.5 =
Xylene (total)	ug/l	6 U	6 U	6 U	6 U	6 U	6 U

Table 1
Phase I and II Confirmatory Sampling Analytical Results (UNVALIDATED)
Study Area 17

	StationID:	OLD-17-27B	OLD-17-28C	OLD-17-34A	OLD-17-35B	OLD-17-36B	OLD-17-37C
	Client Sample ID:	017-OLD-17-27B-Q1-00	017-OLD-17-28C-Q1-00	017-OLD-17-34A-Q1-00	017-OLD-17-35B-Q1-00	017-OLD-17-36B-Q1-00	017-OLD-17-37C-Q1-00
	Lab Sample ID:	F5933-4	F5933-5	F6201-1	F6201-2	F6201-3	F6201-4
	Date Collected:	02/24/2000	02/24/2000	4/4/2000	4/4/2000	4/4/2000	4/4/2000
Parameter	Units						
Natural Attenuation Parameters							
Iron	ug/l	9740 =	2500 =	17300	32900	25900	7920
Iron, dissolved	ug/l	2580 =	1200 =				
Turbidity	NTUs	65.1	20.7	7.5	301	>1000	29.9
Observations		Clear	Clear	Clear	Light Brown	Brown	Clear
Magnesium	ug/l						
Magnesium, dissolved	ug/l						
Manganese	ug/l	28.5 =	16.5 =				
Manganese, dissolved	ug/l						
Alkalinity, Total	mg/l	67.9 =	35.6 =				
BOD, 5 Day	mg/l	3 U	3 U				
Chloride	mg/l	24.5 =	15.6 =				
Hydrogen Sulfide	mg/l	2 U	2 U				
Nitrogen, Nitrate	mg/l	0.1 U	0.1 U				
Nitrogen, Nitrate + Nitrite	mg/l						
Nitrogen, Nitrite	mg/l	0.01 U	0.01 U				
Sulfate	mg/l	50 U	5 U				
Dissolved Oxygen	mg/l	0.71	1.27	0.59	0.80	0.50	0.40
Dissolved Hydrogen	nM	0.71	3.07				
ORP	mV	-97.1	30.6	178	81	-95	-63
Total Organic Carbon	mg/l	6 =	9.9 =				
VOCs							
Methane	ug/l	141.4 =	539.3 =				
Ethane	ug/l	2042 =	5 U				
Ethene	ug/l	14951 =	151 =				
1,1,1-Trichloroethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2,2-Tetrachloroethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2-Trichloroethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethylene	ug/l	2.7 =	2 U	2 U	2 U	2 U	2 U
1,2-Dichloroethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
1,2-Dichloropropane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
2-Hexanone	ug/l	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	ug/l	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	ug/l	50 U	9.9 J	50 U	50 U	50 U	43 J
Benzene	ug/l	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Bromoform	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Carbon disulfide	ug/l	10 U	10 U	10 U	10 U	10 U	2.4 J
Carbon tetrachloride	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Chlorobenzene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Chloroethane	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform	ug/l	2 U	2 U	2.3 =	2.1 =	2 U	7.8 =
cis-1,2-Dichloroethylene	ug/l	140 =	2 U	2 U	2 U	2 U	2 U
cis-1,3-Dichloropropene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Dibromochloromethane	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Methyl bromide	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
Methyl chloride	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
Methyl ethyl ketone	ug/l	10 U	10 U	10 U	10 U	10 U	10 U
Methyl Tert Butyl Ether	ug/l		2 U				
Methylene chloride	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Tetrachloroethylene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Toluene	ug/l	2 U	2 U	2 U	2 U	2 U	2.9 =
trans-1,2-Dichloroethylene	ug/l	9.4 =	2 U	2 U	2 U	2 U	2 U
trans-1,3-Dichloropropene	ug/l	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethylene	ug/l	12.4 =	2 U	2 U	2 U	2 U	2 U
Vinyl chloride	ug/l	160 =	1 U	1 U	1 U	1 U	1 U
Xylene (total)	ug/l	6 U	6 U	6 U	6 U	6 U	6 U

Figure 2-1
Injector, Monitoring Well, and DPT Locations
Study Area 17, Naval Training Center
Orlando, Florida

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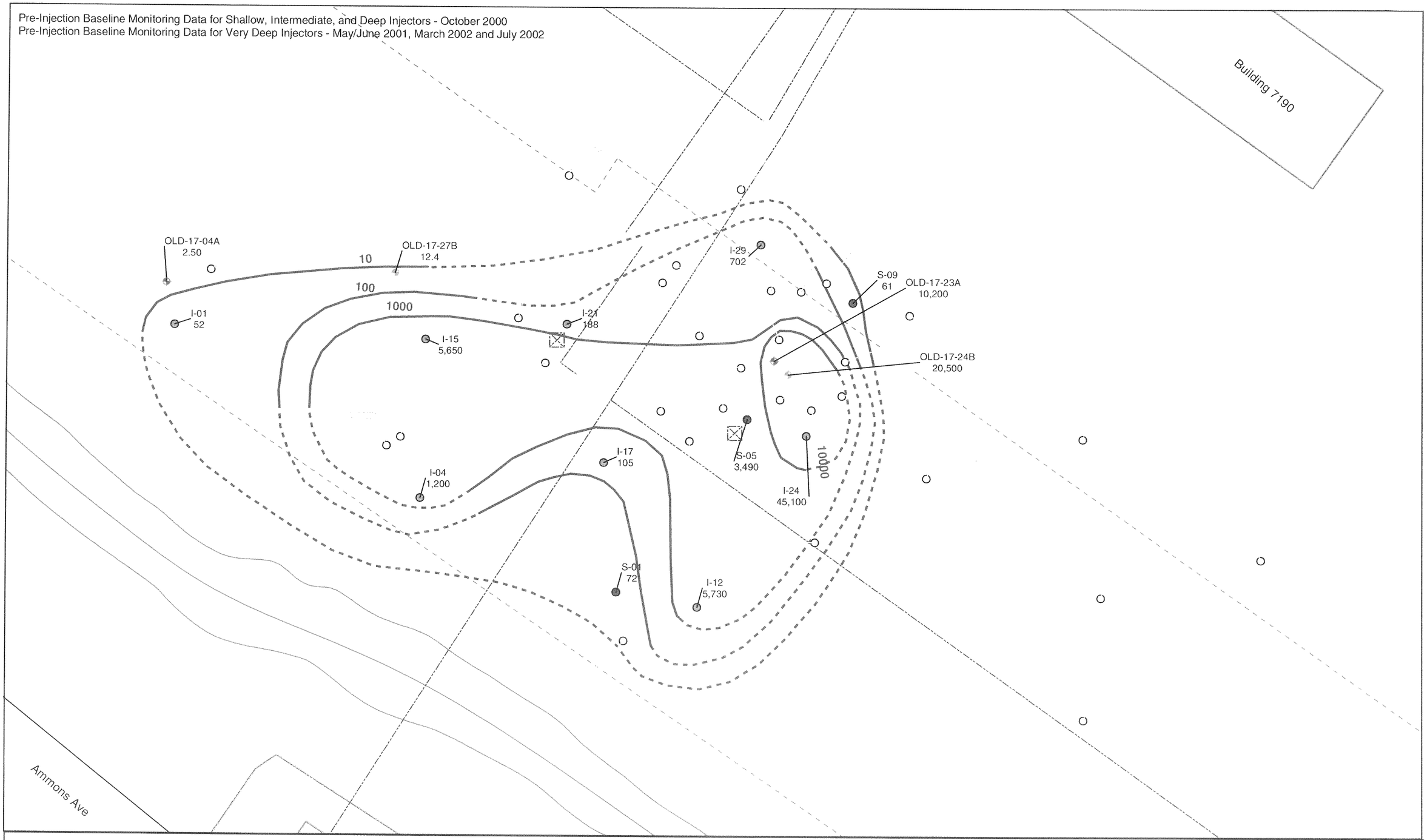
Pre-Injection Baseline Monitoring Data for Shallow, Intermediate, and Deep Injectors - October 2000
Pre-Injection Baseline Monitoring Data for Very Deep Injectors - May/June 2001, March 2002 and July 2002



- Shallow Well
- Intermediate Well
- Shallow Injector (10-13 ft bls)
- Intermediate Injector (16-19 ft bls)
- Deep Injector (22-25 ft bls)
- Very Deep Injector (31-34 or 33-36 ft bls)

bls = below land surface

- Known Isoconcentration Contour
- Inferred Isoconcentration Contour
- Building
- Fence
- Road
- Creek
- WaterLine

25 12.5 0 25 Feet

Figure 2-2
TCE Isoconcentration in Shallow/Intermediate Zone
Study Area 17, Naval Training Center
Orlando, Florida

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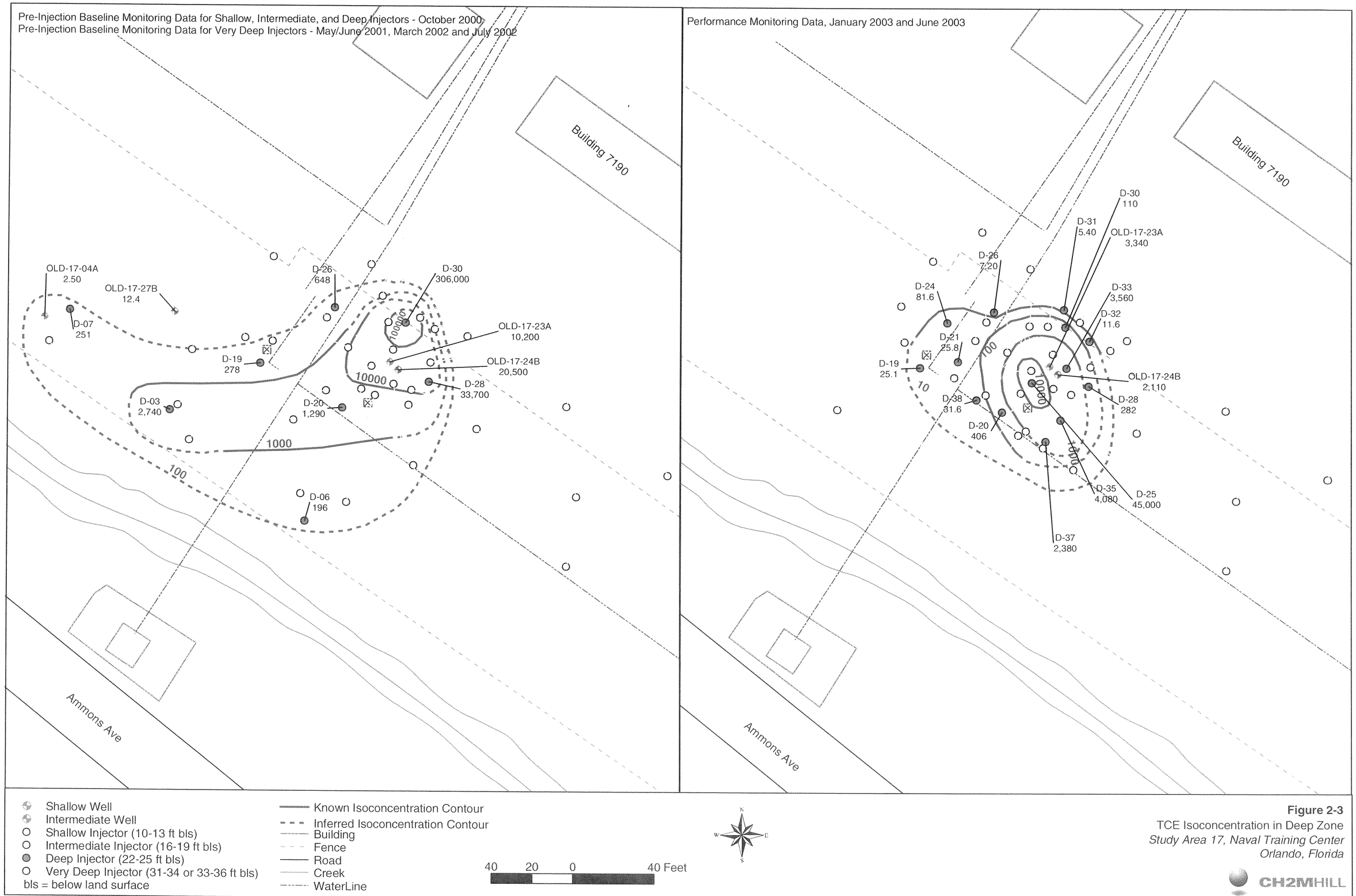

Figure 2-3
TCE Isoconcentration in Deep Zone
Study Area 17, Naval Training Center
Orlando, Florida

CH2MHILL

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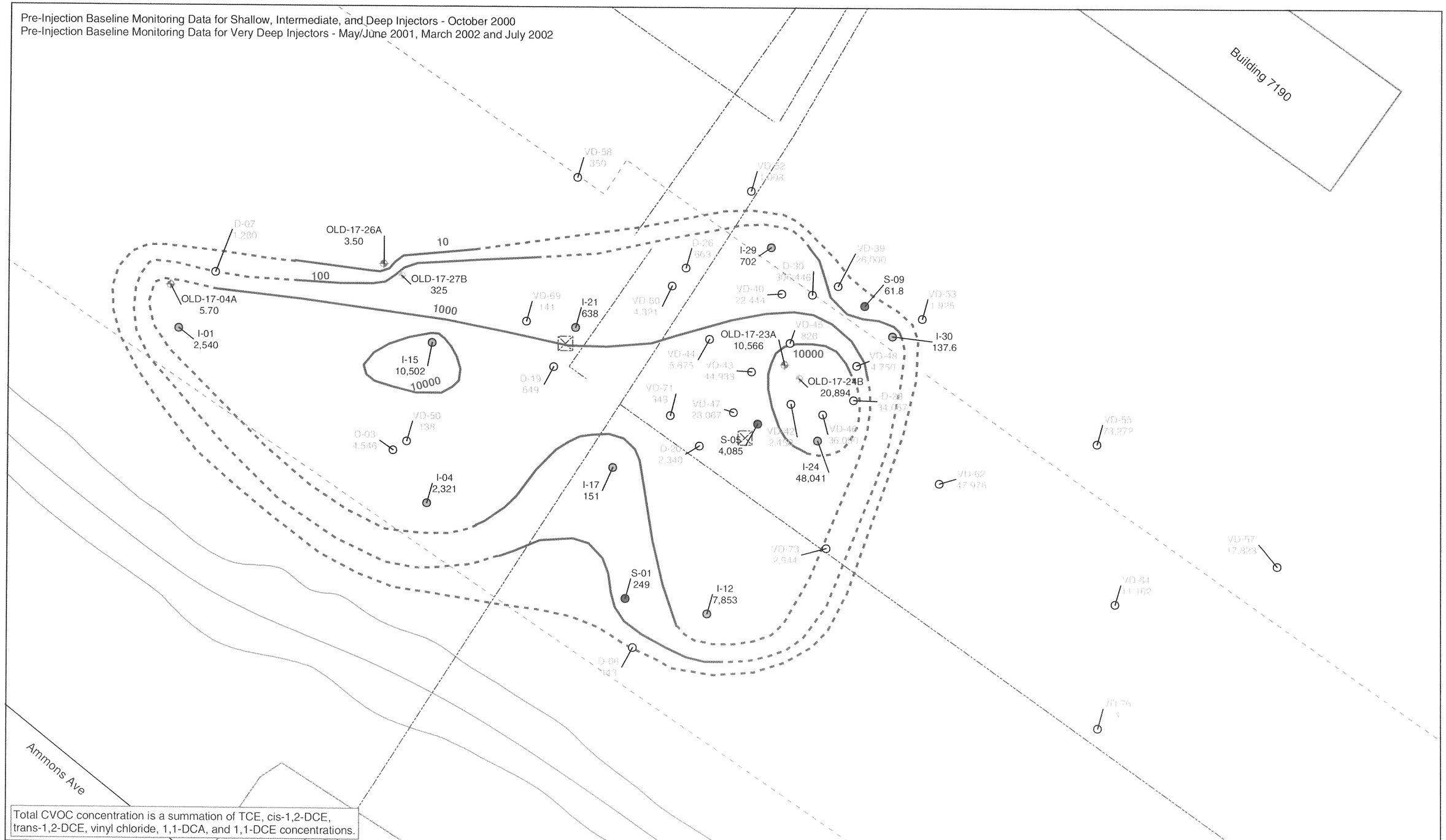
Pre-Injection Baseline Monitoring Data for Shallow, Intermediate, and Deep Injectors - October 2000
Pre-Injection Baseline Monitoring Data for Very Deep Injectors - May/June 2001, March 2002 and July 2002



Total CVOC concentration is a summation of TCE, cis-1,2-DCE, trans-1,2-DCE, vinyl chloride, 1,1-DCA, and 1,1-DCE concentrations.

- Shallow Well
- Intermediate Well
- Shallow Injector (10-13 ft bls)
- Intermediate Injector (16-19 ft bls)
- Deep Injector (22-25 ft bls)
- Very Deep Injector (31-34 or 33-36 ft bls)

bls = below land surface

- Known Isoconcentration Contour
- Inferred Isoconcentration Contour
- Building
- Fence
- Road
- Creek
- WaterLine

25 12.5 0 25 Feet

Figure 2-4
Total CVOC Isoconcentration in Shallow/Intermediate Zone
Study Area 17, Naval Training Center
Orlando, Florida

CH2MHILL

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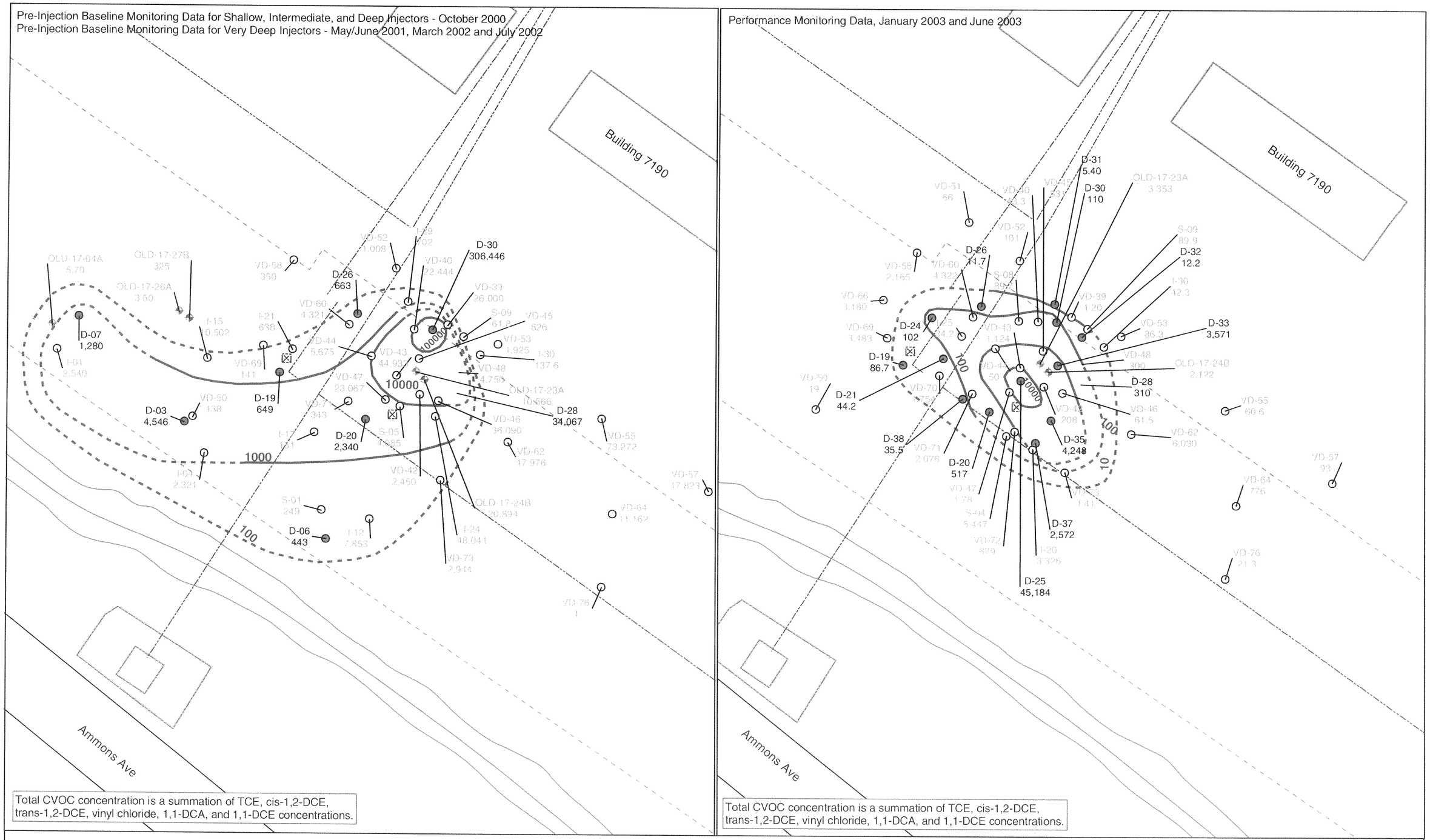

Figure 2-5
Total CVOC Isoconcentration in Deep Zone
Study Area 17, Naval Training Center
Orlando, Florida

CH2MHILL

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Pre-Injection Baseline Monitoring Data for Shallow, Intermediate, and Deep Injectors - October 2000
Pre-Injection Baseline Monitoring Data for Very Deep Injectors - May/June 2001, March 2002 and July 2002

Performance Monitoring Data, January 2003 and June 2003

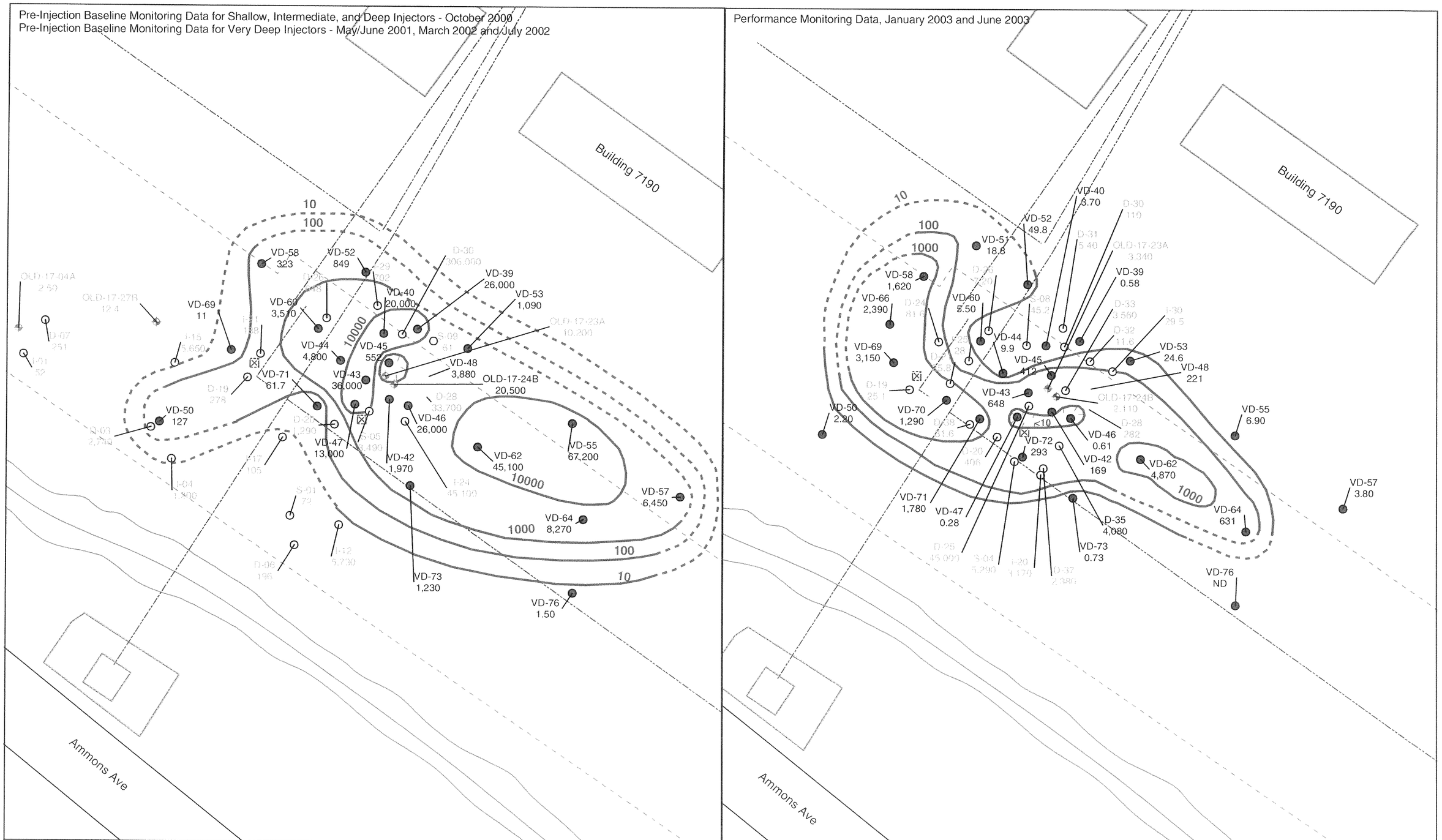

Figure 2-10
TCE Isoconcentration in Very Deep Zone
Study Area 17, Naval Training Center
Orlando, Florida

CH2MHILL

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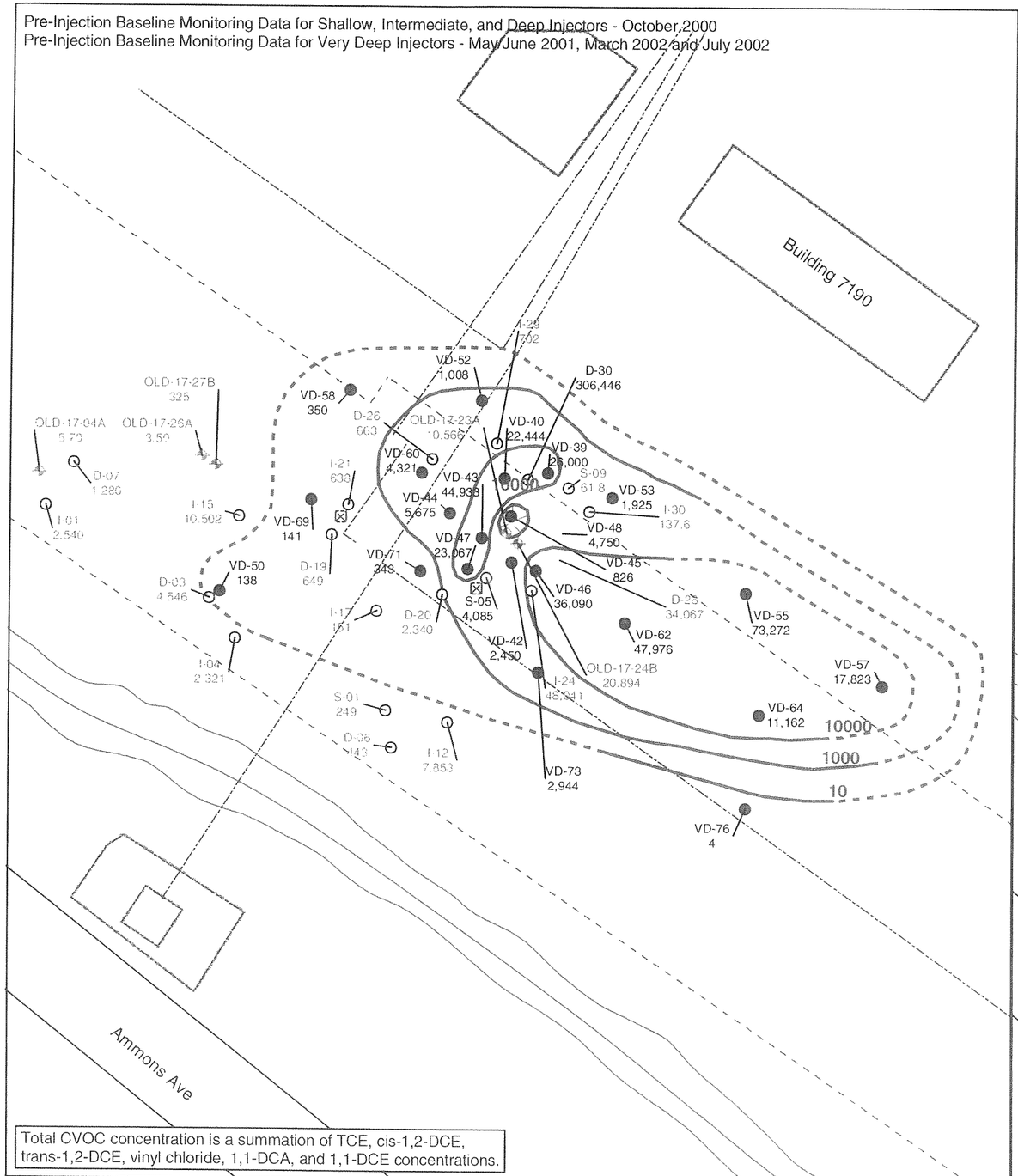

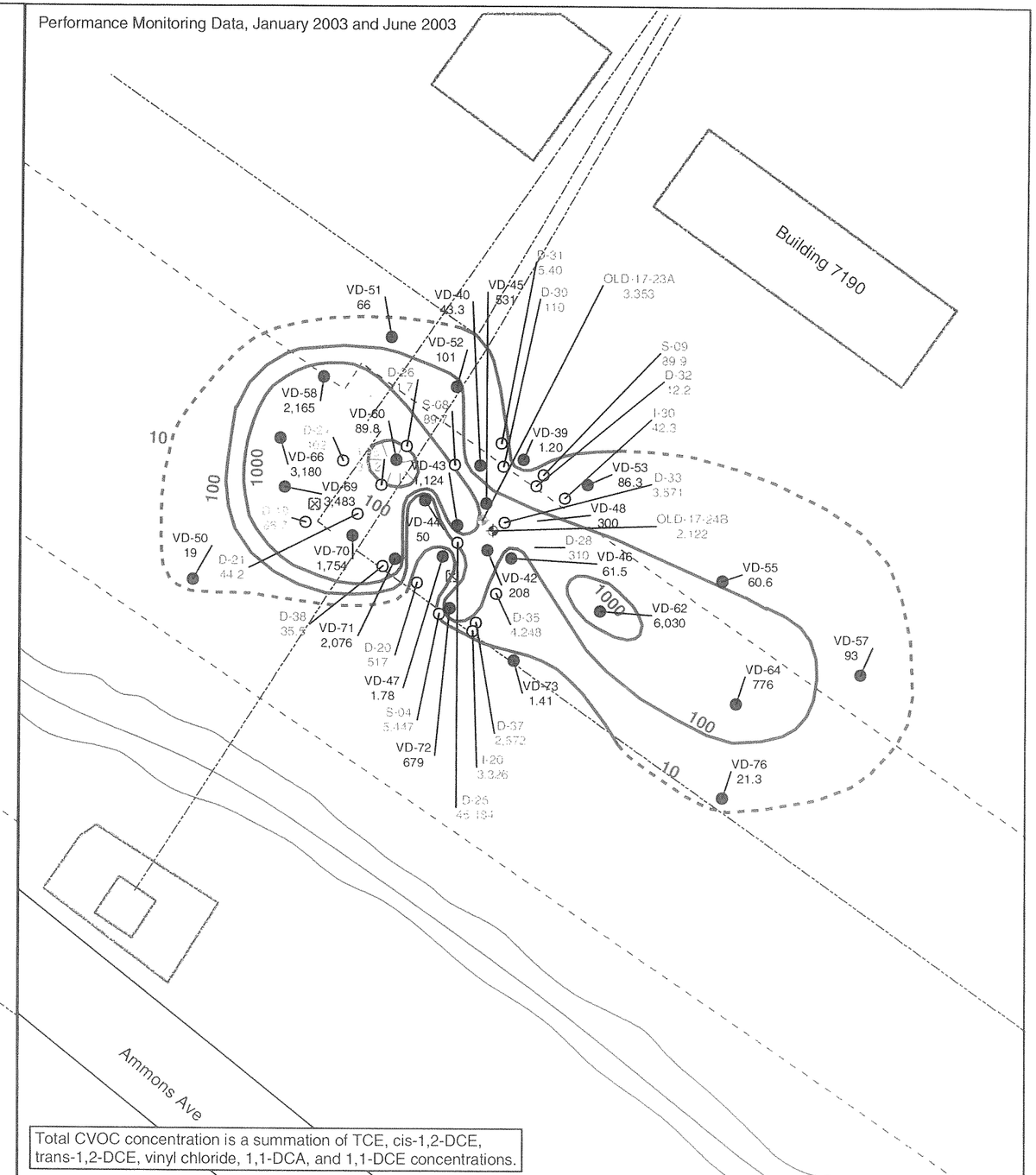

- Shallow Well
- Intermediate Well
- Shallow Injector (10-13 ft bls)
- Intermediate Injector (16-19 ft bls)
- Deep Injector (22-25 ft bls)
- Very Deep Injector (31-34 or 33-36 ft bls)

bls = below land surface

- Known Isoconcentration Contour
- Inferred Isoconcentration Contour
- Building
- Fence
- Road
- Creek
- WaterLine

40 20 0 40 Feet

N W E S

Figure 2-11
Total CVOC Isoconcentration in Very Deep Zone
Study Area 17, Naval Training Center
Orlando, Florida

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File Path: \\boomerang\projects2\NTC-Orlando\MXD\figure2-11_verydeeptcvoc.mxd, Date: 07.04.2003, User: NMOUDRY