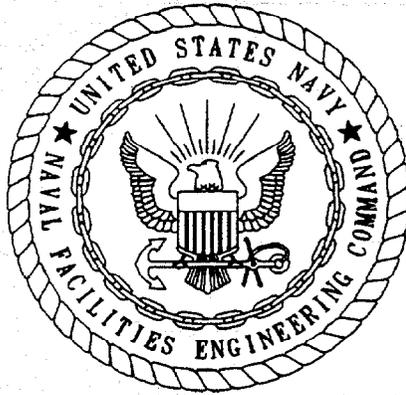


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NTC ORLANDO
5090.3a

BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT FOR
STUDY AREA 46 NTC ORLANDO FL
1/1/1997
ABB ENVIRONMENTAL

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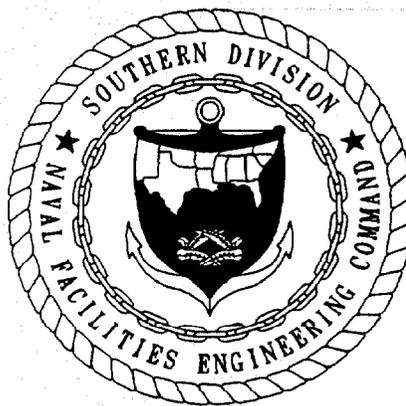
**BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE SCREENING REPORT**

**STUDY AREA 46
DOMESTIC WASTEWATER TREATMENT PLANT**

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

**UNIT IDENTIFICATION CODE: N65928
CONTRACT NO. N62467-89-D-0317/107**

JANUARY 1997



**SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORTH CHARLESTON, SOUTH CAROLINA
29419-9010**

**BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE SCREENING REPORT**

**STUDY AREA 46
DOMESTIC WASTEWATER TREATMENT PLANT**

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

Unit Identification Code: N65928

Contract No.: N62467-89-D-0317/107

Prepared by:

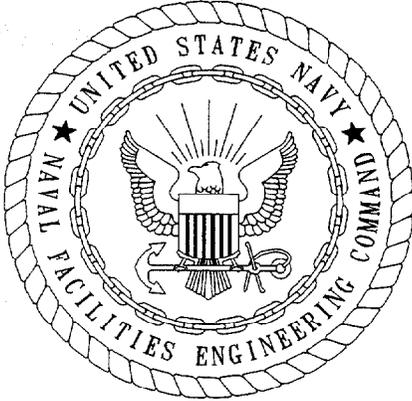
**ABB Environmental Services, Inc.
2590 Executive Center Circle, East
Tallahassee, Florida 32301**

Prepared for:

**Department of the Navy, Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29418**

Barbara Nwokike, Code 1873, Engineer-in-Charge

January 1997



CERTIFICATION OF TECHNICAL
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/107 are complete and accurate and comply with all requirements of this contract.

DATE: January 14, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: John Kaiser
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Richard Allen
Project Technical Lead

(DFAR 252.227-7036)

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Environmental Site Screening Investigation
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Orlando, Florida

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Environmental Site Screening Investigation
Study Area 46, Domestic Wastewater Treatment Plant
Naval Training Center
Orlando, Florida

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GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
bls	below land surface
CLP	Contract Laboratory program
DQO	data quality objective
DWTP	domestic wastewater treatment plant
FDEP	Florida Department of Environmental Protection
FID	flame ionization detector
$\mu\text{g}/\ell$	micrograms per liter
PCB	polychlorinated biphenyl
QC	quality control
RBC	risk-based concentration
SA	study area
SCG	soil cleanup goals
SVOC	semivolatile organic compound
TAL	target analyte list
TC	terrain conductivity
TCL	target compound list
TSS	total suspended solids
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

1.0 STUDY AREA (SA) 46, ALLEGED DISPOSAL AREA NEAR DOMESTIC
WASTEWATER TREATMENT PLANT, MCCOY ANNEX

This report details the activities and results of the site screening investigation conducted at SA 46. The investigation at SA 46 was initiated in March 1996 and was completed in June 1996. Proposed field activities were presented in the Site Screening Plan, Air Force Sites, Addendum 2 (ABB Environmental Services, Inc. [ABB-ES], 1995).

1.1 SA 46, BACKGROUND AND CONDITIONS. SA 46 is located in the southeast corner of the McCoy Annex of the Naval Training Center in Orlando, Florida (Figure 1), approximately 200 feet northwest of the former location of the Annex's domestic wastewater treatment plant (DWTP). A map of the Annex, dated March 1955, was discovered in the Air Force archives and indicated that this area may have been a sewage disposal point. Surface debris currently found at the site suggest that unauthorized trash disposal has occurred there. The site is heavily vegetated and partially wooded.

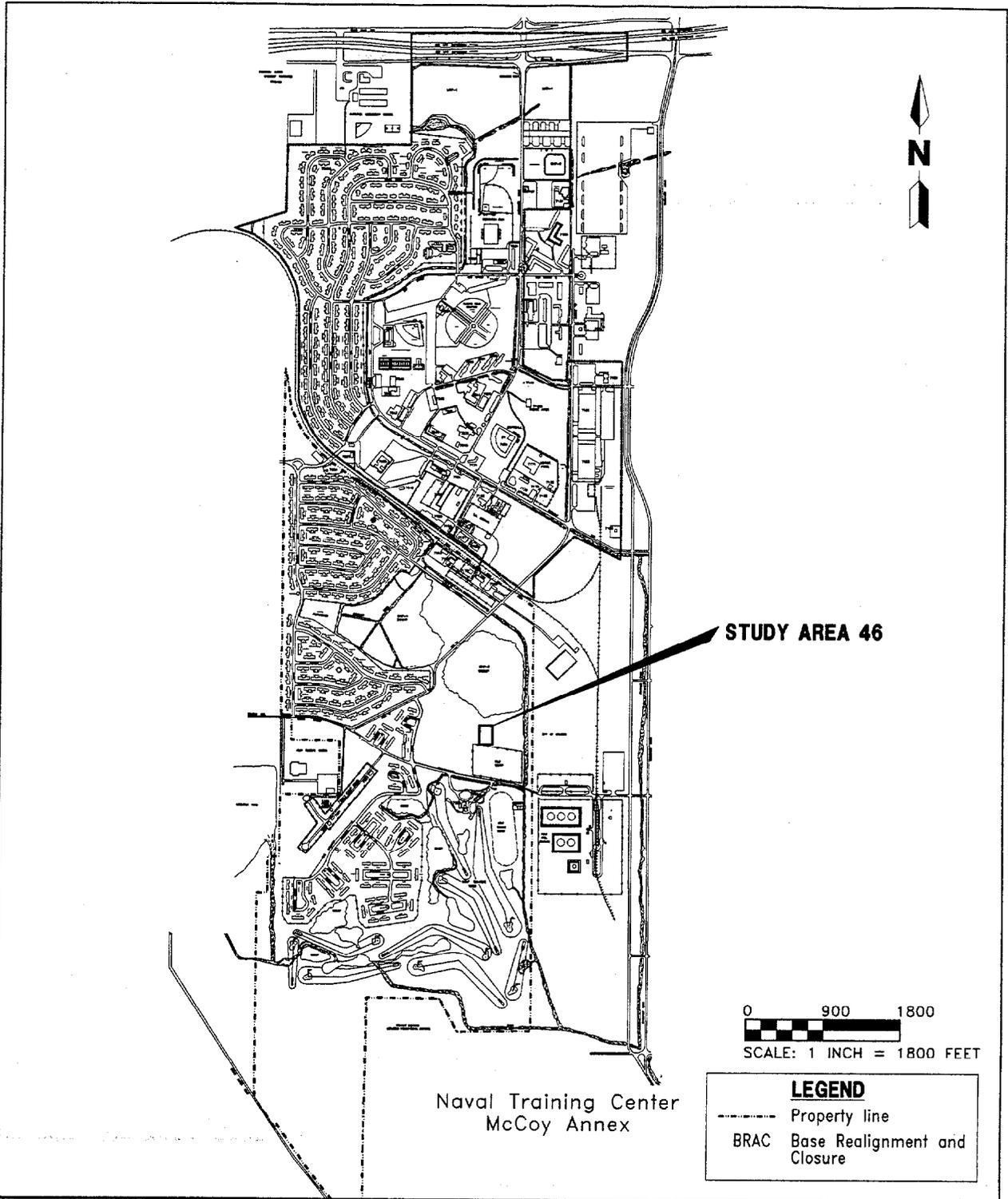
The objective of the site screening activities was to evaluate the nature and extent of alleged disposal activities near the northwest corner of the DWTP and to evaluate what contaminants may be present as a result of disposal or dumping of sewage or other materials. To accomplish these objectives, the following field activities were completed:

- geophysical survey (magnetometer and terrain conductivity [TC])
- surface soil sampling
- subsurface soil sampling
- temporary monitoring well installation
- groundwater sampling

The geophysical survey was conducted over the alleged disposal area, and soil and groundwater samples were collected from locations within the potentially affected area and analyzed for various analytical parameters. Soil and groundwater samples submitted for laboratory analysis were analyzed in accordance with U.S. Environmental Protection Agency (USEPA) Level IV data quality objectives (DQOs). Groundwater samples were also analyzed for total suspended solids (TSS) in accordance with USEPA Level III DQOs.

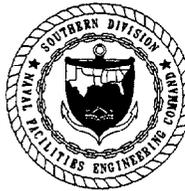
1.2 SA 46, INVESTIGATION SUMMARY. The activities and results of the site screening investigation conducted at SA 47 are described below.

1.2.1 Geophysical Survey Prior to the start of the field program, ABB-ES established an arbitrary grid coordinate system in the survey area. Because a large part of SA 46 and all of SA 47 are contained entirely within the boundary of SA 49, all three study areas were surveyed together. The grid system was oriented approximately to magnetic north and parallel to Eighth Street, which extends along the entire length of SA 49's southern border. The grid consisted of a series of stakes located on 100 square-foot nodes established over the survey area with a cloth measuring tape and level. Interim grid locations were marked with pin flags.



**FIGURE 1
STUDY AREA LOCATION**

H:\OLD\MCCOY\NP-NMM\11-06-96



**TECHNICAL MEMORANDUM
BRAC ENVIRONMENTAL
SITE SCREENING INVESTIGATION
STUDY AREA 46
NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

The survey involved the use of magnetometry and TC techniques to evaluate potential subsurface debris disposal. Attachment A presents a detailed summary of the techniques and results of the survey. Included in Attachment A are four figures that help portray the results of the effort, including a field map of the survey area, a vertical magnetic gradient contour map, a quadrature contour map, and an inphase contour map. The limits of the geophysical survey are shown on Figure 2.

1.2.2 Surface Soil Sampling Three surface soil samples (designated 46S00101, 46S00201, and 46B00101) were collected at SA 46 (the third sample was given a "B" designation because it was collected at the surface but in conjunction with subsurface sampling as opposed to an independent surface sample location), from the locations shown on Figure 2. The surface soil samples were collected with hand augers from a depth of 0 to 1 foot below land surface (bls). The soil samples were collected adjacent to surface debris areas. No flame ionization detector (FID) response was noted at any of the surface soil sample locations. Appropriate quality control (QC) samples were collected and submitted for laboratory analysis. This included the collection of a field duplicate sample at 46B00101 and the submittal of a trip blank along with the samples.

The surface soil samples were submitted for Contract Laboratory program (CLP) target compound list (TCL) volatile organic compounds (VOCs), TCL semivolatile organic compounds (SVOCs), TCL pesticides and polychlorinated biphenyls (PCBs) and target analyte list (TAL) metals.

1.2.3 Subsurface Soil Sampling One soil boring was completed at SA 46. The soil boring was advanced with a hand auger and was located southeast of an area of surface debris (Figure 2). One subsurface soil sample (46B00201) was collected from the boring from the interval directly above the water table at a depth of approximately 4 to 5 feet bls. No FID response was noted during the soil boring activities.

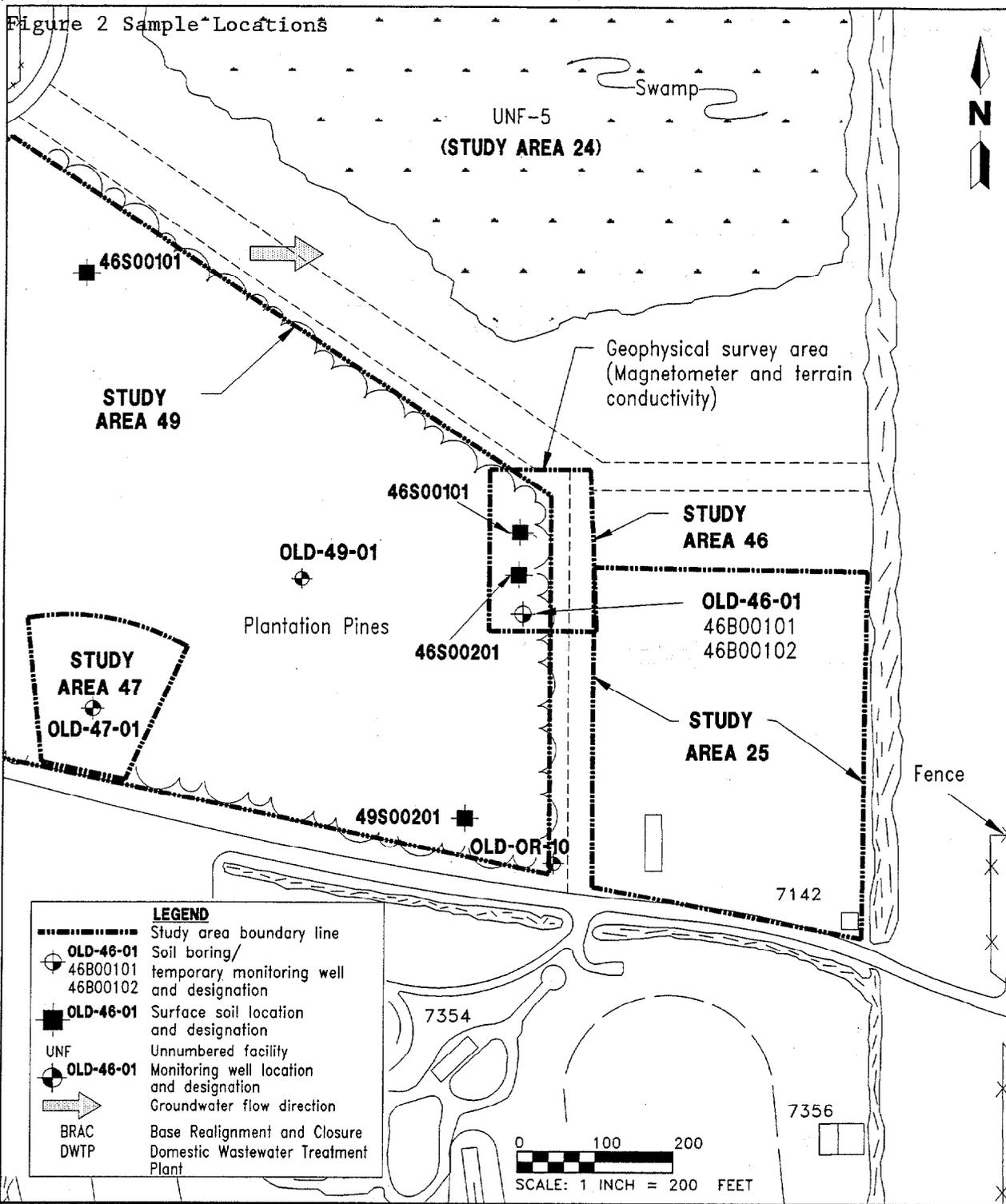
The subsurface soil sample was submitted for CLP TCL VOCs, TCL SVOCs, TCL pesticides and PCBs, and TAL metals.

1.2.4 Groundwater Sampling A single temporary monitoring well (OLD-46-01, Figure 2) was installed in the soil boring described in Subsection 1.2.3. The boring was advanced to approximately 4 feet below the water table before constructing the well. A slotted 2-inch diameter, polyvinyl chloride well screen was lowered into the boring and the annular space was filled with sand to create a filter pack. After purging enough water from the well to allow for minimizing the turbidity, both filtered and unfiltered groundwater samples were collected using the low-flow technique. The well screen was then withdrawn and the boring backfilled with granular bentonite.

Groundwater sample identifiers are 46G00101 and 46H00101 ("G" designates the unfiltered sample and "H" designates the filtered sample). The unfiltered groundwater sample was analyzed for CLP TCL VOCs, TCL SVOCs, TCL pesticides PCBs and TAL metals. The filtered sample was submitted for laboratory analysis of TAL metals. The unfiltered groundwater sample was also analyzed for TSS.

A trip blank and a matrix spike/matrix spike duplicate were submitted for analysis for QC purposes.

Figure 2 Sample Locations



**FIGURE 2
SAMPLE LOCATIONS
MCCOY ANNEX, STUDY AREA 46
ALLEGED DISPOSAL AREA NEAR DWTP,
AIR FORCE SITES**



**TECHNICAL MEMORANDUM
BRAC ENVIRONMENTAL
SITE SCREENING INVESTIGATION
STUDY AREA 46
NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

1.3 SA 46, RESULTS. The results of the geophysical survey are presented in Attachment A.

The results of the soil and groundwater analyses are presented as Attachments B and C. Attachment B includes B-1, Summary of Positive Detections in Surface Soil Analytical Results; B-2, Summary of Positive Detections in Subsurface Soil Analytical Results; and B-3, Summary of Positive Detections in Groundwater Analytical Results. Attachment C includes C-1, Summary of the Surface Soil Analytical Results; C-2, Summary of the Subsurface Soil Analytical Results; and C-3, Summary of the Groundwater Analytical Results.

The surface and subsurface soil analytical results were evaluated by comparing their respective concentrations to (1) their respective site-specific (McCoy Annex) soil background screening concentrations; (2) Florida Department of Environmental Protection's (FDEP's) soil cleanup goals (SCGs) for residential soils, and (3) USEPA Region III risk-based concentrations (RBCs). Groundwater analytical results were compared with basewide groundwater background screening concentrations, FDEP's groundwater guideline values, and USEPA Region III RBCs. Following are the significant findings from this investigation.

1.3.1 Geophysical Survey The geophysical data indicate the presence of a number of small magnetic and TC anomalies throughout SA 49 but none within the limits of SA 46. Most of the magnetic and TC anomalies in SA 49, can be attributed to surface debris observed in the field at the time of the survey. Items such as a car seat, a discarded sofa, and a steel pipe were noted. Also, in the southeast portion of SA 49 there is evidence of reworking or dumping (mounds and depressions) such as might occur with minor excavation or dumptruck-size loads of discarded earth materials.

1.3.2 Surface Soil Mercury and zinc were detected in surface soil samples slightly above background screening concentrations. In addition, aluminum, chromium, lead, nickel, and sodium, among other inorganics, were detected but at concentrations below background screening values. None of the analytes detected exceeded the corresponding RBC or SCG values.

VOCs detected in surface soil samples include 2-butanone, ethylbenzene, methylene chloride, and xylene(s). It is likely that 2-butanone and methylene chloride are laboratory artifacts. All VOC detections are well below the corresponding residential RBCs or SCGs.

1.3.3 Subsurface Soil Vanadium and zinc were detected in one subsurface soil sample (46B00201) above background screening concentrations. The detection of methylene chloride at 1 part per billion in the same sample appears to be a laboratory artifact. All detections are below the corresponding residential RBCs or SCGs.

1.3.4 Groundwater Inorganic detections above background screening values in both the filtered and unfiltered groundwater samples include magnesium, mercury and sodium. However, none of the analytes detected exceeded the corresponding residential RBC or SCG values. A pesticide, 4,4-dichlorodiphenyltrichloroethane, was detected at 0.098 micrograms per liter ($\mu\text{g}/\ell$), slightly below the FDEP groundwater guideline of 0.1 $\mu\text{g}/\ell$. It is unlikely, however, that this detection represents a significant environmental concern as this compound has very low

solubility and mobility characteristics and was not detected in associated surface and subsurface soil samples.

1.4 SA 46, CONCLUSIONS AND RECOMMENDATIONS. The geophysical investigation and site walkover indicate that limited surface disposal of household debris has occurred at SA 46, but that the activities do not represent a systematic disposal and burial of large amounts of debris. Limited surface dumping has taken place in areas adjacent to SA 46 where vehicular access is possible.

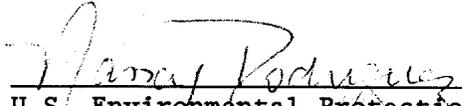
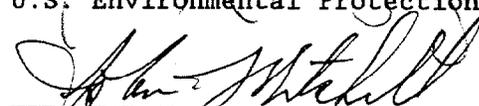
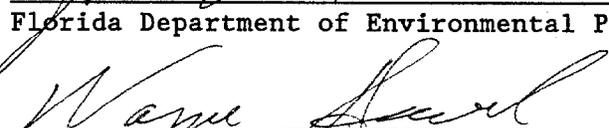
Surface soil, subsurface soil, and groundwater samples collected at SA 46 did not contain concentrations of analytes greater than screening criteria.

Based on information available and evaluation of site screening data for this study area, ABB-ES recommends the following:

- A classification of 1/White for SA 46, because evidence does not indicate either the storage, release, or disposal of hazardous substances or petroleum products. Nor does it suggest the migration of these substances from adjacent areas.

SA 46 is suitable for transfer with no further requirement for evaluation.

The undersigned members of the Orlando Partnering Team concur with the findings and recommendations of the site screening program for SA 46.

<u>STUDY AREA 46</u>	
 _____ U.S. Environmental Protection Agency, Region IV	<u>1/23/97</u> Date
 _____ Florida Department of Environmental Protection	<u>1/23/97</u> Date
 _____ U.S. Department of the Navy	<u>1/23/97</u> Date

REFERENCE

ABB Environmental Services, Inc., 1995, Site Screening Plan, Former Air Force Sites, Addendum 2, Naval Training Center, Orlando, Florida: prepared for Southern Division, Naval Facilities Engineering Command, Charleston, South Carolina, December.

ATTACHMENT A
GEOPHYSICAL SURVEY

TECHNICAL MEMORANDUM
GEOPHYSICAL SURVEYS
STUDY AREAS (SAs) 46, 47, AND 49

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

INTRODUCTION. The following is a summary of the significant findings of the geophysical surveys that took place in the area comprising SAs 46, 47, and 49, Naval Training Center (NTC), Orlando. Initial surveys took place between January 11 and 17, 1996. Geophysical survey techniques were used at SA 46 to evaluate potential subsurface debris disposal. Because most of SA 46 and all of SA 47 are contained within the boundary of SA 49, all three study areas were surveyed together. More than 1,000 data points were acquired at 20-foot by 20-foot spacings with both types of geophysical instruments.

The techniques used were magnetometry and terrain conductivity (TC). Ground penetrating radar (GPR) was to be used to investigate magnetometer and TC anomalies, if appropriate.

GEOPHYSICAL TECHNIQUES. The magnetic method is a versatile geophysical technique used for evaluating shallow geologic structures and for locating buried manmade objects and buried debris by mapping local distortions in the earth's magnetic field produced by buried magnetic objects (steel and other magnetic materials). Vertical gradient measurements of the earth's magnetic field are often taken during environmental magnetic surveys, as they are more sensitive to the presence of near-surface metal objects than total field values alone. A GSM-19 magnetometer with gradiometer capability was used during this survey.

TC surveys, also referred to as EMI (electro-magnetic induction) surveys, have traditionally been used in mineral exploration for tracing conductive ore bodies (i.e., massive sulfides). More recently, conductivity surveys have been used in environmental studies for mapping buried debris and former structures, and for tracing conductive contaminant plumes in groundwater. TC instruments record two parameters: the quadrature phase and the in-phase components of an induced magnetic field. The quadrature-phase component is a measure of the ground conductivity value expressed in millimhos per meter. The in-phase component is significantly more sensitive to metallic objects and is useful for looking for buried tanks and drums and other manmade objects. The TC instrument used during this work was a Geonics EM-31DL with digital data logger.

The GPR technique uses high frequency radio waves to determine the presence of subsurface objects and structures. The radio wave energy is reflected from surfaces where there is a contrast in the electrical properties of subsurface materials, such as naturally-occurring geologic horizons or manmade objects (e.g., buried utilities tanks, drums). Typical applications for GPR include mapping buried utilities and delineating the boundaries of buried materials and abandoned landfills. No GPR profiling was completed during the investigation, as it was not deemed to be necessary.

A discussion of the results of this investigation follows.

RESULTS - SA 49, ALLEGED DISPOSAL AREA. A geophysical survey was completed in SA 49, which is 650 feet wide (east to west) by 800 feet long (north to south). A geophysical survey grid with an arbitrary origin and oriented perpendicular to Eighth Street was established. Subsequently, a magnetometer and TC survey were completed in the area shown on Figure 1, an area of approximately 9.6 acres. Figure 2 presents a map generated in the field showing the location of all magnetometer and TC traverses. More than 1,000 data points were acquired on a 20-foot by 20-foot measurement grid with each instrument. Contour data are presented as Figures 3 through 5. Figure 3 presents the vertical magnetic gradient contours, and Figures 4 and 5 present the quadrature (conductivity) and inphase (equivalent to a metal detector) contours of the magnetic field induced by the transmitter of the TC instrument.

The geophysical data indicate the presence of a number of small magnetic and TC anomalies in the area, but no anomalies were observed within SA 46. The data indicate the presence of a number of small magnetic and terrain conductivity anomalies. Some of the magnetic and conductivity anomalies can be attributed to surface debris observed in the field at the time of the survey. Items such as a car seat, a discarded sofa, and a steel pipe were noted. Also, in the southeast portion of the study area, there is evidence of reworking or dumping (mounds and depressions) such as might occur with dumptruck loads of discarded earth materials.

ABB Environmental Services, Inc. concludes that the survey area has limited surface disposal of household debris, but that the area is not characterized by systematic disposal and burial of large amounts of debris. Limited surface dumping has taken place along the northern, eastern, and southern boundaries where vehicular access is possible.

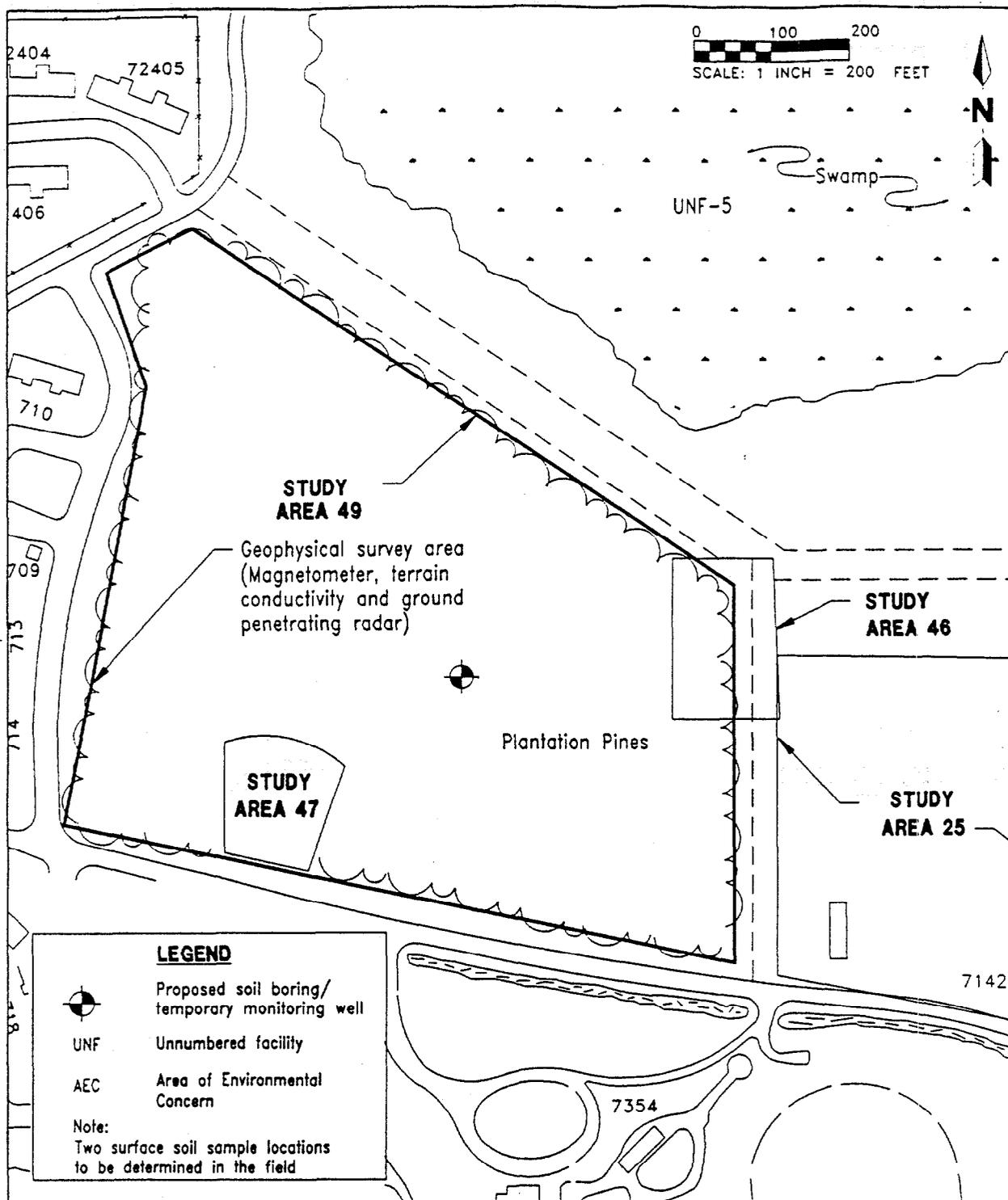


FIGURE 1
GEOPHYSICAL SURVEY
McCOY ANNEX, STUDY AREA 46
ALLEGED DISPOSAL AREA NEAR UNF-5
AIR FORCE SITES



NAVAL TRAINING CENTER
ORLANDO, FLORIDA

**STUDY AREAS 46, 47 AND 49
MAGNETOMETER/TERRAIN CONDUCTIVITY TRAVERSES**

COMP. BY
JMN

JOB NO.
08519.10

CHK. BY

DATE
1/11/96

1-16/95 1-28 mag, A11TC
Em-31 26x20'
GEM-19

1-16/95 29- mag.

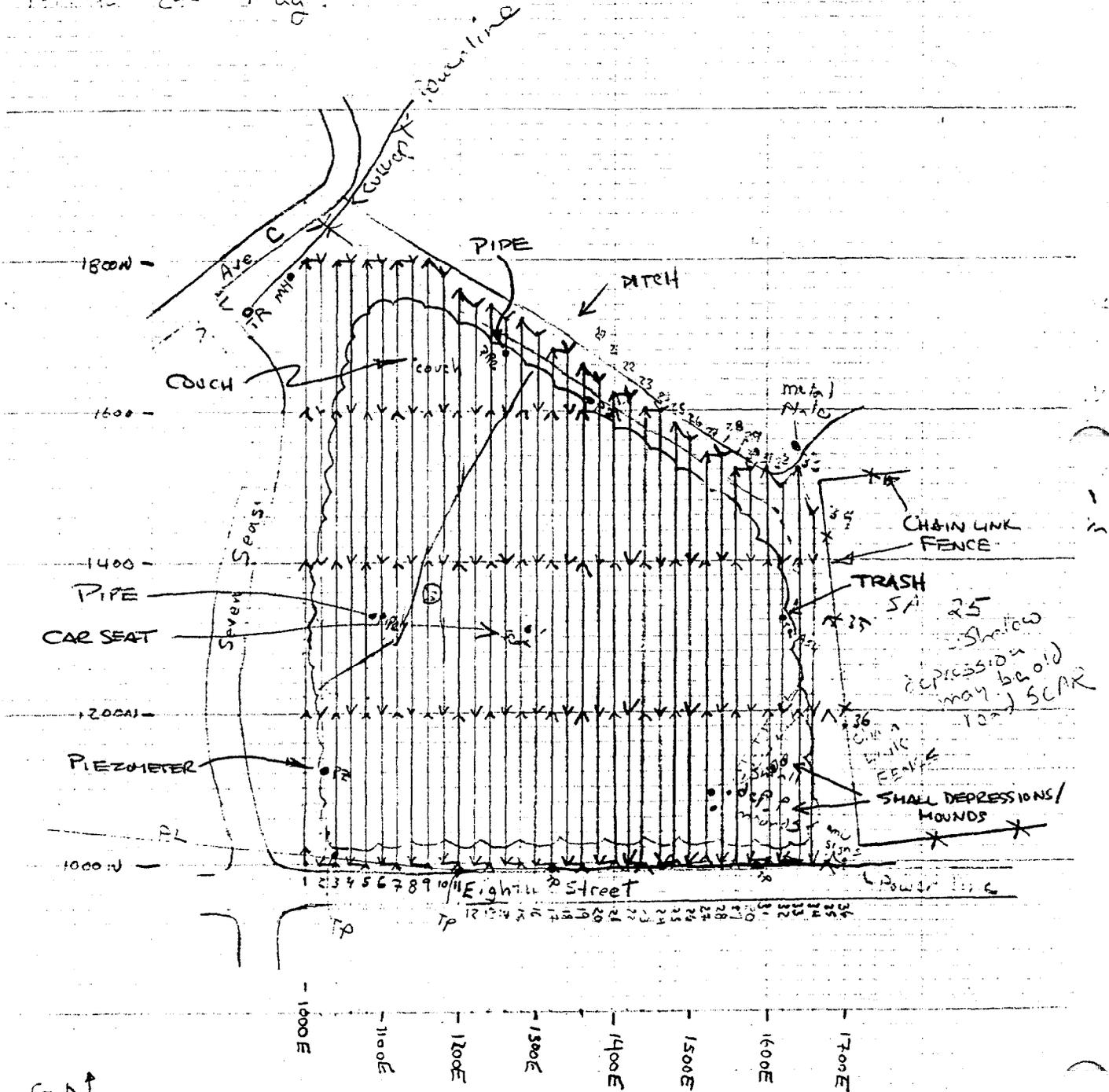
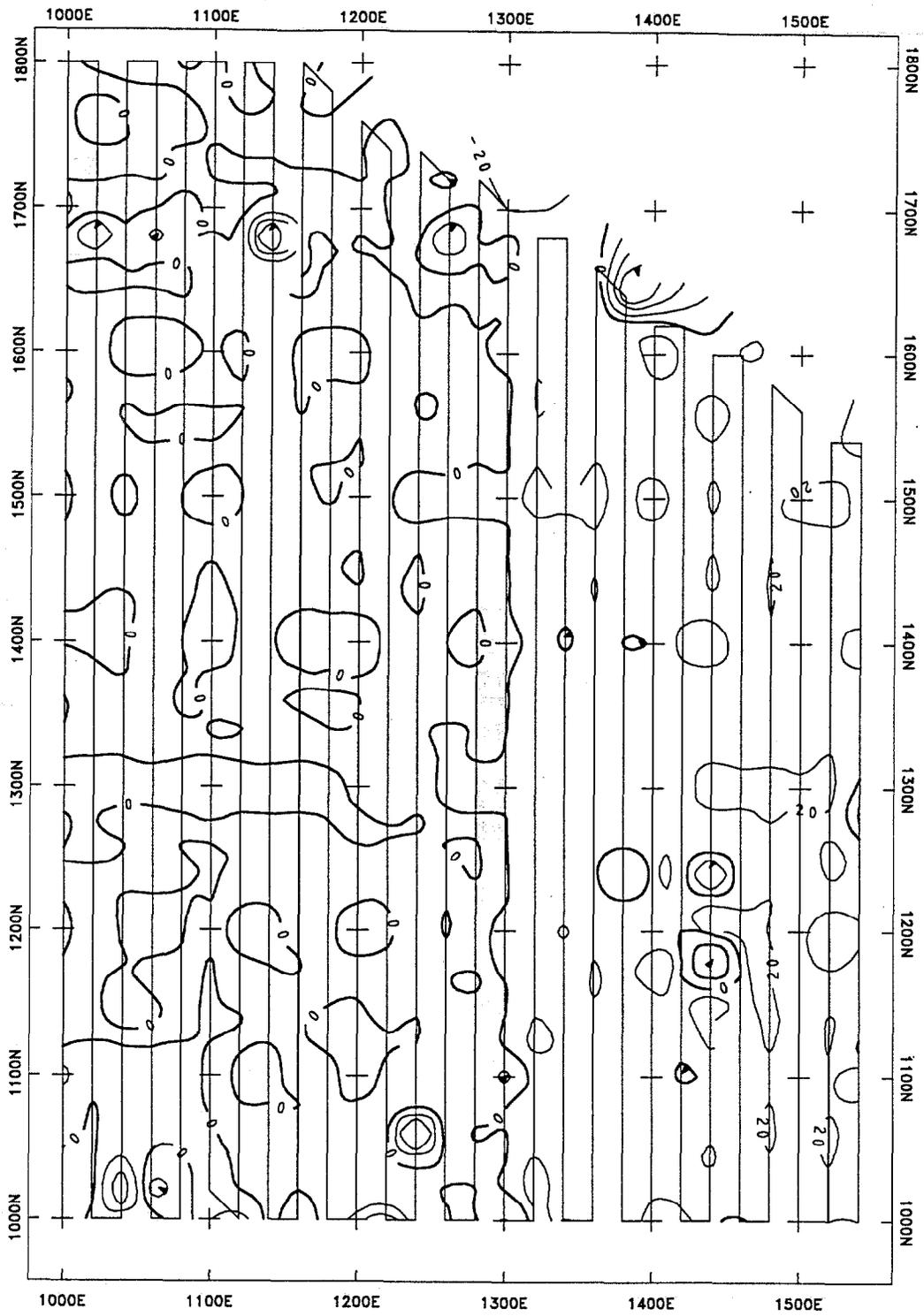


FIGURE 2

FIELD MAP OF GEOPHYSICAL SURVEY

ABB Environmental Services, Inc.

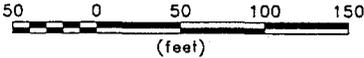


CONTOUR INTERVAL = 20 GAMMAS/METER

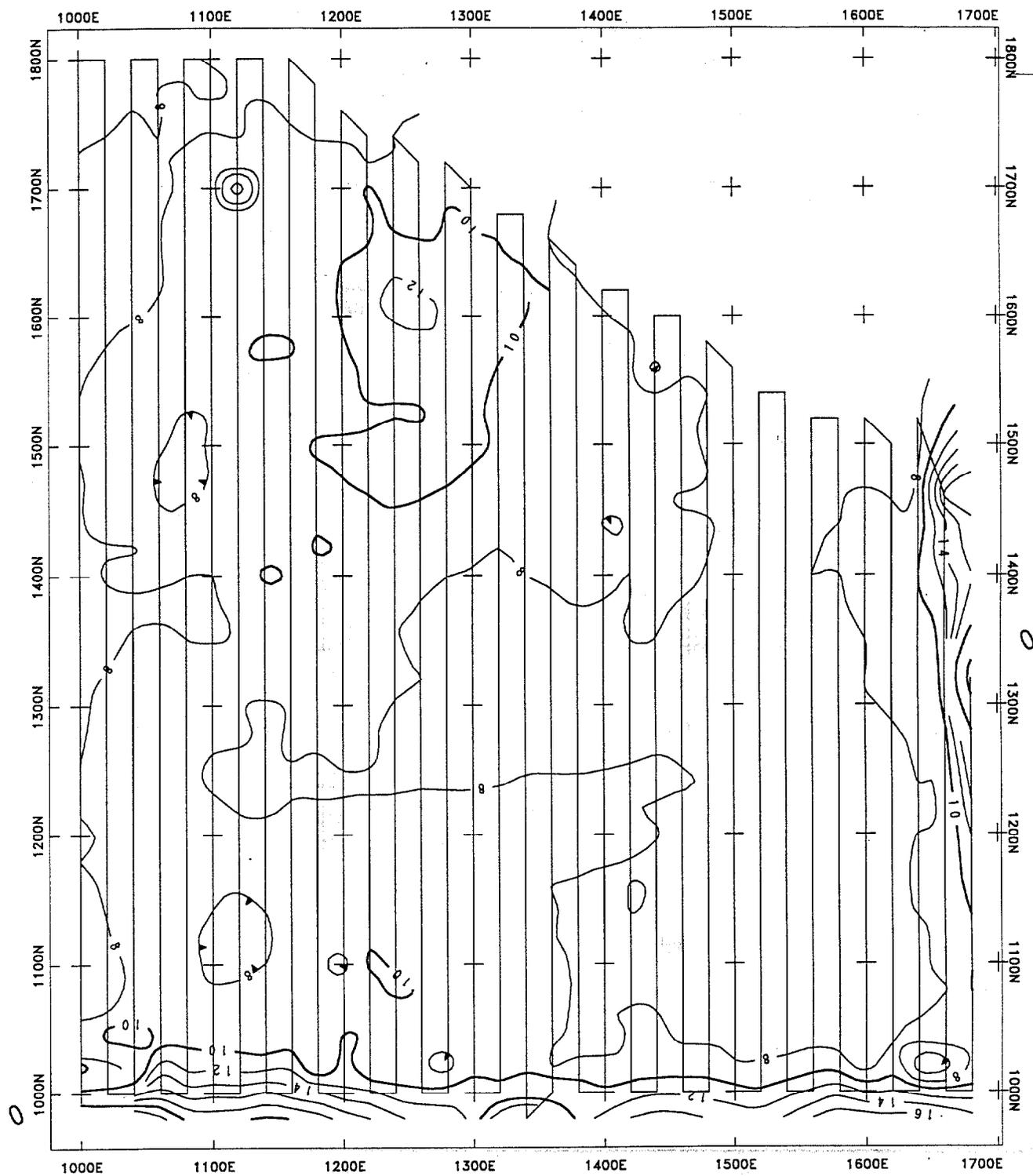
FIGURE 3

SOUTHERN DIVISION
VERTICAL GRADIENT CONTOURS
STUDY AREA 49
ABB ENVIRONMENTAL SERVICES, INC.

Scale 1:1400



(feet)



CONTOUR INTERVAL = 2/10 MILLIMHOS/METER

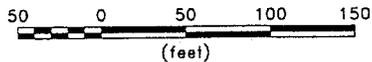
FIGURE 4

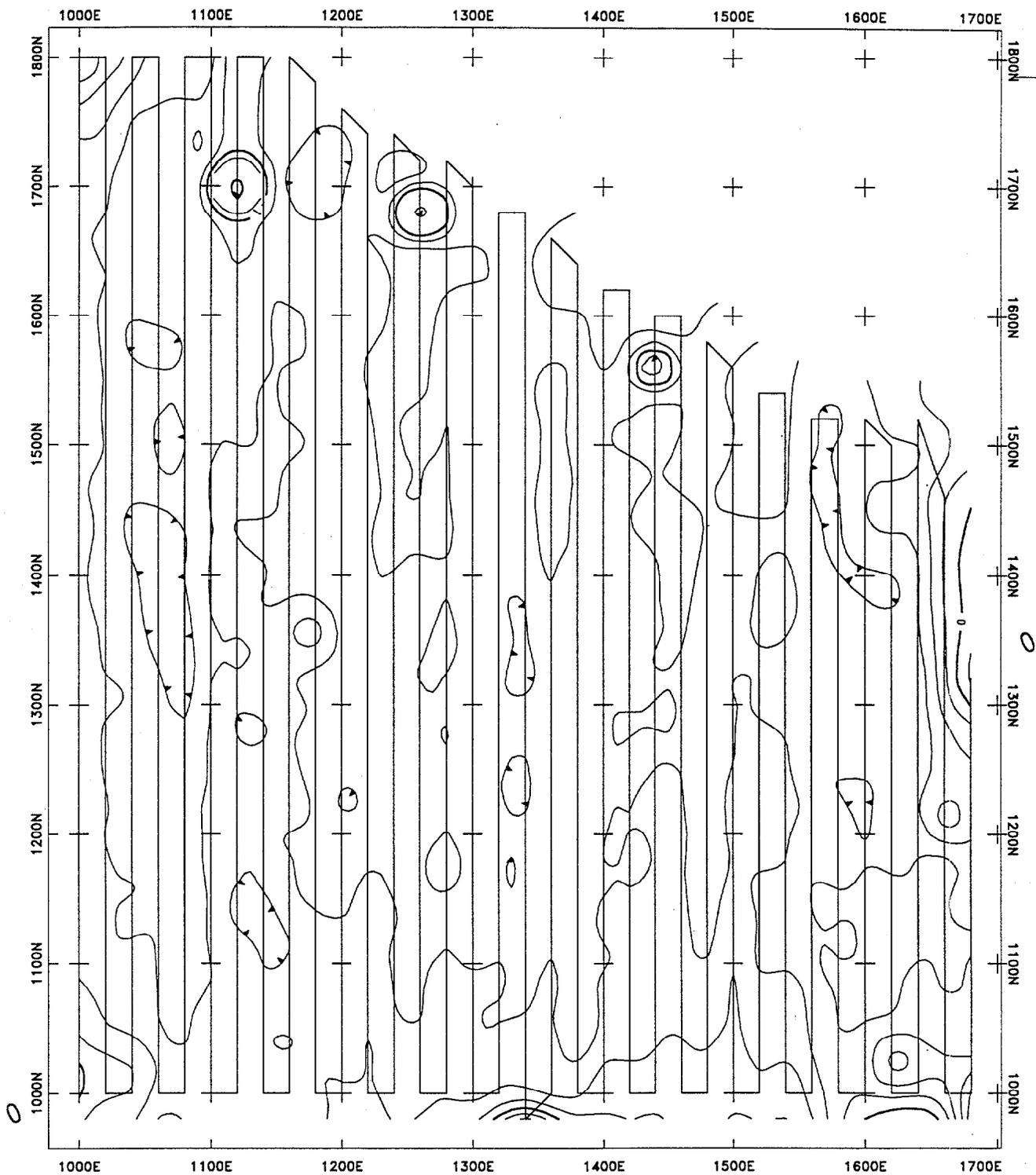
SOUTHERN DIVISION
 QUADRATURE CONTOURS
 TERRAIN CONDUCTIVITY SURVEY

STUDY AREA 49

ABB ENVIRONMENTAL SERVICES, INC.

Scale 1:1400





CONTOUR INTERVAL = 0.2/1

FIGURE 5

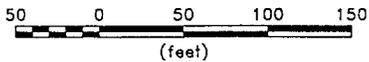
SOUTHERN DIVISION

INPHASE CONTOURS
TERRAIN CONDUCTIVITY SURVEY

STUDY AREA 46

ABB ENVIRONMENTAL SERVICES, INC.

Scale 1:1400



ATTACHMENT B

**SUMMARY OF POSITIVE DETECTIONS IN SOIL AND GROUNDWATER
ANALYTICAL RESULTS**

- B-1 Summary of Positive Detections in Surface Soil Analytical Results
- B-2 Summary of Positive Detections in Subsurface Soil Analytical Results
- B-3 Summary of Positive Detections in Groundwater Analytical Results

ATTACHMENT B-1

**SUMMARY OF POSITIVE DETECTIONS IN SURFACE SOIL
ANALYTICAL RESULTS**

Attachment B

B-1. Summary of Positive Detections in Surface Soil Analytical Results, Study Area 46

Naval Training Center, Orlando
Orlando, FL

Identifier	Background Screening ¹	SCG ²	RBC ³ for Residential Soil	RBC ³ for Industrial Soil	46B00101	46B00101D	46S00101	46S00201
Sampling Date					19-Jun-96	19-Jun-96	19-Jun-96	19-Jun-96
Feet bls					0-1	0-1	0-1	0-1
Volatile Organics, ug/kg								
2-Butanone		2,200,000	47,000,000 n	1,000,000,000 n	2 J			
Ethylbenzene		1,400,000	7,800,000 n	200,000,000 n		1 J		
Methylene chloride		16,000	85,000 c	760,000 c	3 J	2 J	2 J	1 J
Xylene (total)		13,000,000	160,000,000 n	1,000,000,000 n	2 J	6 J	2 J	4 J
Inorganics, mg/kg								
Aluminum	4,870	75,000	78,000 n	1,000,000 n	4380 J	4260 J	3990 J	741 J
Antimony		26	31 n	820 n				3.8 B
Arsenic	1.9	0.8	0.43 /23 c/n	3.8 /610 c/n	0.78 B	0.51 B		
Barium	21.6	5,200	5,500 n	140,000 n	1.7 B	1.7 B	1.8 B	1.6 B
Beryllium	0.46	0.2	0.15 c	1.3 c				
Calcium	33,568	ND	1,000,000	1,000,000	38.1 BJ	45.9 BJ	66.6 J	205 BJ
Chromium	7.7	290	390 n	10,000 n	2.8	2.5	2.7	0.96 B
Iron	843	ND	23,000 n	610,000 n	369	310	344	102
Lead	21.3	500	400	400	2.7	3	5.5	6.3
Magnesium	381	ND	460,468	460,468	27.1 B	27 B	23 B	37.6 B
Manganese	10.8	370	1800 n	47,000 n	0.68 B	0.77 B	0.62 B	1 B
Mercury	0.05	23	23 n	610 n	0.08 B	0.07 B	0.08 B	0.07 B
Nickel		1,500	1,600 n	41,000 n	2.3 B	1.4 B		
Selenium	1.1	390	390 n	10,000 n	0.45 BJ	0.48 B	0.43 BJ	
Sodium		ND	1,000,000	1,000,000	34.8 B		62 B	32.2 B
Vanadium	4.9	490	550 n	14,000 n	1.3 B	1 B	0.65 B	
Zinc	4.6	23,000	23,000 n	610,000 n		5	8.6	5.7

Attachment B

B-1. Summary of Positive Detections in Surface Soil Analytical Results, Study Area 46

Naval Training Center, Orlando
Orlando, FL

NOTES:

¹ The background screening value is twice the average of detected concentrations for inorganic analytes.

² SCG = Soil Cleanup Goals for Florida (Florida Department of Environmental Protection memorandum, September 29, 1995). Arsenic value is as revised in Applicability of Soil Cleanup Goals for Florida (FDEP memorandum, January 19, 1996). Values indicated are from a residential scenario. Chromium values are for Chromium VI.

³ 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, and sodium) screening values were derived based on recommended daily allowances (RDAs).

n = noncarcinogenic pathway

c = carcinogenic pathway

ND = Not determined.

bis = below land surface

mg/kg = milligrams per kilogram.

ug/kg = micrograms per kilogram.

OSWER = Office of Solid Waste and Emergency Response.

USEPA = U.S. Environmental Protection Agency.

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

J = Reported concentration is an estimated quantity.

All inorganics results expressed in milligrams per kilogram (mg/kg) soil dry weight; organics in micrograms per kilogram (ug/kg) soil dry weight.

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

ATTACHMENT B-2

**SUMMARY OF POSITIVE DETECTIONS IN SUBSURFACE SOIL
ANALYTICAL RESULTS**

Attachment B

B-2. Summary of Positive Detections in Subsurface Soil Analytical Results, Study Area 46

Naval Training Center, Orlando
Orlando, FL

Identifier	Background Screening ¹	SCG ²	RBC ³ for Residential Soil		RBC ³ for Industrial Soil		46B00102	
Sampling Date							19-Jun-96	
Feet bls							4-5	
Volatile Organics, ug/kg								
Methylene chloride		NA	85000	c	760000	c	1	J
Inorganics, mg/kg								
Aluminum	11,130	NA	78,000	n	1,000,000	n	9850	J
Antimony		NA	31	n	820	n	3.7	B
Arsenic	2	NA	0.43 /23	c/n	3.8 /610	c/n	0.83	B
Barium	11.3	NA	5,500	n	140,000	n	4.2	B
Beryllium	0.18	NA	0.15	c	1.3	c	0.07	B
Calcium	321	NA	1,000,000		1,000,000		34.8	BJ
Chromium	11.3	NA	390	n	10,000	n	8.5	
Iron	829	NA	23,000	n	610,000	n	197	
Lead	7	NA	400		400		4.7	
Magnesium	38.9	NA	460,468		460,468		26.6	B
Manganese	0.69	NA	1800	n	47,000	n	0.59	B
Mercury	0.12	NA	23	n	610	n	0.1	B
Nickel	11.3	NA	1,600	n	41,000	n	2.7	B
Selenium	1.4	NA	390	n	10,000	n	0.35	BJ
Sodium		NA	1,000,000		1,000,000		41.7	B
Vanadium	5.9	NA	550	n	14,000	n	6.4	B
Zinc	0.66	NA	23,000	n	610,000	n	7.2	

Attachment B

B-2. Summary of Positive Detections in Subsurface Soil Analytical Results, Study Area 46

Naval Training Center, Orlando
Orlando, FL

NOTES:

¹ The background screening value is twice the average of detected concentrations for inorganic analytes.

² SCG = Soil Cleanup Goals for Florida (Florida Department of Environmental Protection memorandum, September 29, 1995). Arsenic value is as revised in Applicability of Soil Cleanup Goals for Florida (FDEP memorandum, January 19, 1996). Values indicated are from a residential scenario.
Chromium values are for Chromium VI.

³ 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, and sodium) screening values were derived based on recommended daily allowances (RDAs).

n = noncarcinogenic pathway

c = carcinogenic pathway

bls = below land surface

mg/kg = milligrams per kilogram.

ug/kg = micrograms per kilogram.

OSWER = Office of Solid Waste and Emergency Response.

USEPA = U.S. Environmental Protection Agency.

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

J = Reported concentration is an estimated quantity.

All inorganics results expressed in milligrams per kilogram (mg/kg) soil dry weight; organics in micrograms per kilogram (ug/kg) soil dry weight.

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

ATTACHMENT B-3

**SUMMARY OF POSITIVE DETECTIONS IN GROUNDWATER
ANALYTICAL RESULTS**

Attachment B

B-3. Summary of Positive Detections in Groundwater Analytical Results
Study Area 46

Naval Training Center, Orlando
Orlando, FL

Sample ID	Background ¹	FDEPG	FEDMCL	RBC ² for Tap Water	46G00101	46H00101
Sampling Date					20-Jun-96	20-Jun-96
Pesticides, ug/L						
4,4'-DDT		0.1 ⁶			0.098	NA
Inorganics, ug/L						
Aluminum	4,067	200 ³	ND	37,000 n	2520 J	2080 J
Arsenic	5	50 ⁴	50	0.045/11 c/n	3.1 BJ	3 BJ
Barium	31.4	2,000 ⁵	2,000	2,600 n	29.5 BJ	29.1 BJ
Calcium	36,830	ND	ND	1,000,000	1170 BJ	1170 BJ
Iron	1,227	300 ³	ND	11,000 n	336	332
Magnesium	4,560	ND	ND	118,807	11100	11200
Mercury	0.12	2 ⁵	2	11 c	0.13 B	0.12 B
Potassium	5,400	ND	ND	297,016	1330 B	1230 B
Selenium	10	50 ⁵	ND	180 n		1.7 BJ
Sodium	18,222	160,000 ⁵	ND	396,022	49400 J	49800 J
Vanadium	21	49 ⁴	ND	260 n	2.2 B	
General Chemistry, mg/L						
Total Suspended Solids	ND	ND	ND	ND	8	NA

Attachment B

B-3. Summary of Positive Detections in Groundwater Analytical Results Study Area 46

Naval Training Center, Orlando
Orlando, FL

NOTES:

¹ Groundwater background screening value is twice the average of detected concentrations for inorganic analytes.

² RBC = Risk-Based Concentration Table, USEPA Region III, May 1996, R.L. Smith.

For essential nutrients (calcium, magnesium, potassium, and sodium) screening values were derived based on recommended daily allowances (RDAs).

³ Secondary Standard.

⁴ Systemic Toxicant

⁵ Primary Standard

⁶ Carcinogen

n = noncarcinogenic pathway

c = carcinogenic pathway

ND = Not determined.

NA = Not analyzed.

ID = identifier

USEPA = U.S. Environmental Protection Agency.

FDEPG = Florida Department of Environmental Protection, Groundwater Guidance Concentrations, June 1994.

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

B = Reported concentration is between the instrument detection limit (IDL) and the contract required detection limit (CRDL).

J = Reported concentration is an estimated quantity.

ug/l = micrograms per liter.

mg/l = milligrams per liter.

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

ATTACHMENT C

SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS

- C-1 Summary of Surface Soil Analytical Results
- C-2 Summary of Subsurface Soil Analytical Results
- C-3 Summary of Groundwater Analytical Results

ATTACHMENT C-1
SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS

Attachment C

C-1 Summary of Surface Soil Analytical Results
Study Area 46Site Screening Report
Naval Training Center, Orlando
Orlando, FL

Sample ID	46B00101	46B00101D	46S00101	46S00201	
Lab ID	MB186002	MB186003	MB186005	MB186006	MB186006DL
Sampling Date	19-Jun-96	19-Jun-96	19-Jun-96	19-Jun-96	19-Jun-96
Volatile organics, ug/kg					
1,1,1-Trichloroethane	11 U	11 U	11 U	12 U	NA
1,1,2,2-Tetrachloroethane	11 U	11 U	11 U	12 U	NA
1,1,2-Trichloroethane	11 U	11 U	11 U	12 U	NA
1,1-Dichloroethane	11 U	11 U	11 U	12 U	NA
1,1-Dichloroethene	11 U	11 U	11 U	12 U	NA
1,2-Dichloroethane	11 U	11 U	11 U	12 U	NA
1,2-Dichloroethene (total)	11 U	11 U	11 U	12 U	NA
1,2-Dichloropropane	11 U	11 U	11 U	12 U	NA
2-Butanone	2 J	11 U	11 U	12 U	NA
2-Hexanone	11 U	11 U	11 U	12 U	NA
4-Methyl-2-pentanone	11 U	11 U	11 U	12 U	NA
Acetone	16 U	11 U	11 U	12 U	NA
Benzene	11 U	11 U	11 U	12 U	NA
Bromodichloromethane	11 U	11 U	11 U	12 U	NA
Bromoform	11 U	11 U	11 U	12 U	NA
Bromomethane	11 U	11 U	11 U	12 U	NA
Carbon disulfide	11 U	11 U	11 U	12 U	NA
Carbon tetrachloride	11 U	11 U	11 U	12 U	NA
Chlorobenzene	11 U	11 U	11 U	12 U	NA
Chloroethane	11 U	11 U	11 U	12 U	NA
Chloroform	11 U	11 U	11 U	12 U	NA
Chloromethane	11 U	11 U	11 U	12 U	NA
cis-1,3-Dichloropropene	11 U	11 U	11 U	12 U	NA
Dibromochloromethane	11 U	11 U	11 U	12 U	NA
Ethylbenzene	11 U	1 J	11 U	12 U	NA
Methylene chloride	3 J	2 J	2 J	1 J	NA
Styrene	11 U	11 U	11 U	12 U	NA
Tetrachloroethene	11 U	11 U	11 U	12 U	NA
Toluene	11 U	11 U	11 U	12 U	NA
trans-1,3-Dichloropropene	11 U	11 U	11 U	12 U	NA
Trichloroethene	11 U	11 U	11 U	12 U	NA
Vinyl chloride	11 U	11 U	11 U	12 U	NA
Xylene (total)	2 J	6 J	2 J	4 J	NA
Semivolatile organics, ug/kg					
1,2,4-Trichlorobenzene	380 U	380 U	380 U	390 UR	1200 U
1,2-Dichlorobenzene	380 U	380 U	380 U	390 UR	1200 U
1,3-Dichlorobenzene	380 U	380 U	380 U	390 UR	1200 U
1,4-Dichlorobenzene	380 U	380 U	380 U	390 UR	1200 U
2,2'-oxybis(1-Chloropropane)	380 U	380 U	380 U	390 UR	1200 U
2,4,5-Trichlorophenol	950 U	950 U	960 U	970 UR	2900 U
2,4,6-Trichlorophenol	380 U	380 U	380 U	390 UR	1200 U
2,4-Dichlorophenol	380 U	380 U	380 U	390 UR	1200 U
2,4-Dimethylphenol	380 U	380 U	380 U	390 UR	1200 U
2,4-Dinitrophenol	950 U	950 U	960 U	970 UR	2900 U
2,4-Dinitrotoluene	380 U	380 U	380 U	390 UR	1200 U
2,6-Dinitrotoluene	380 U	380 U	380 U	390 UR	1200 U
2-Chloronaphthalene	380 U	380 U	380 U	390 UR	1200 U
2-Chlorophenol	380 U	380 U	380 U	390 UR	1200 U
2-Methylnaphthalene	380 U	380 U	380 U	390 UR	1200 U
2-Methylphenol	380 U	380 U	380 U	390 UR	1200 U

Attachment C

C-1 Summary of Surface Soil Analytical Results
Study Area 46Site Screening Report
Naval Training Center, Orlando
Orlando, FL

Sample ID	46B00101	46B00101D	46S00101	46S00201	
Lab ID	MB186002	MB186003	MB186005	MB186006	MB186006DL
Sampling Date	19-Jun-96	19-Jun-96	19-Jun-96	19-Jun-96	19-Jun-96
2-Nitroaniline	950 U	950 U	960 U	970 UR	2900 U
2-Nitrophenol	380 U	380 U	380 U	390 UR	1200 U
3,3'-Dichlorobenzidine	380 U	380 U	380 U	390 UR	1200 U
3-Nitroaniline	950 U	950 U	960 U	970 UR	2900 U
4,6-Dinitro-2-methylphenol	950 U	950 U	960 U	970 UR	2900 U
4-Bromophenyl-phenylether	380 U	380 U	380 U	390 UR	1200 U
4-Chloro-3-methylphenol	380 U	380 U	380 U	390 UR	1200 U
4-Chloroaniline	380 U	380 U	380 U	390 UR	1200 U
4-Chlorophenyl-phenylether	380 U	380 U	380 U	390 UR	1200 U
4-Methylphenol	380 U	380 U	380 U	390 UR	1200 U
4-Nitroaniline	950 U	950 U	960 U	970 UR	2900 U
4-Nitrophenol	950 U	950 U	960 U	970 UR	2900 U
Acenaphthene	380 U	380 U	380 U	390 UR	1200 U
Acenaphthylene	380 U	380 U	380 U	390 UR	1200 U
Anthracene	380 U	380 U	380 U	390 UR	1200 U
Benzo(a)anthracene	380 U	380 U	380 U	390 UR	1200 U
Benzo(a)pyrene	380 U	380 U	380 U	390 UR	1200 U
Benzo(b)fluoranthene	380 U	380 U	380 U	390 UR	1200 U
Benzo(g,h,i)perylene	380 U	380 U	380 U	390 UR	1200 U
Benzo(k)fluoranthene	380 U	380 U	380 U	390 UR	1200 U
bis(2-Chloroethoxy)methane	380 U	380 U	380 U	390 UR	1200 U
bis(2-Chloroethyl)ether	380 U	380 U	380 U	390 UR	1200 U
bis(2-Ethylhexyl)phthalate	380 U	380 U	380 U	390 UR	1200 U
Butylbenzylphthalate	380 U	380 U	380 U	390 UR	1200 U
Carbazole	380 U	380 U	380 U	390 UR	1200 U
Chrysene	380 U	380 U	380 U	390 UR	1200 U
Di-n-butylphthalate	380 U	380 U	380 U	390 UR	1200 U
Di-n-octylphthalate	380 U	380 U	380 U	390 UR	1200 U
Dibenz(a,h)anthracene	380 U	380 U	380 U	390 UR	1200 U
Dibenzofuran	380 U	380 U	380 U	390 UR	1200 U
Diethylphthalate	380 U	380 U	380 U	390 UR	1200 U
Dimethylphthalate	380 U	380 U	380 U	390 UR	1200 U
Fluoranthene	380 U	380 U	380 U	390 UR	1200 U
Fluorene	380 U	380 U	380 U	390 UR	1200 U
Hexachlorobenzene	380 U	380 U	380 U	390 UR	1200 U
Hexachlorobutadiene	380 U	380 U	380 U	390 UR	1200 U
Hexachlorocyclopentadiene	380 U	380 U	380 U	390 UR	1200 U
Hexachloroethane	380 U	380 U	380 U	390 UR	1200 U
Indeno(1,2,3-cd)pyrene	380 U	380 U	380 U	390 UR	1200 U
Isophorone	380 U	380 U	380 U	390 UR	1200 U
N-Nitroso-di-n-propylamine	380 U	380 U	380 U	390 UR	1200 U
N-Nitrosodiphenylamine	380 U	380 U	380 U	390 UR	1200 U
Naphthalene	380 U	380 U	380 U	390 UR	1200 U
Nitrobenzene	380 U	380 U	380 U	390 UR	1200 U
Pentachlorophenol	950 U	950 U	960 U	970 UR	2900 U
Phenanthrene	380 U	380 U	380 U	390 UR	1200 U
Phenol	380 U	380 U	380 U	390 UR	1200 U
Pyrene	380 U	380 U	380 U	390 UR	1200 U
Pesticides/PCB, ug/kg					
4,4'-DDD	3.7 U	3.7 U	3.8 U	3.8 U	NA
4,4'-DDE	3.7 U	3.7 U	3.8 U	3.8 U	NA

Attachment C

C-1 Summary of Surface Soil Analytical Results
Study Area 46Site Screening Report
Naval Training Center, Orlando
Orlando, FL

Sample ID	46B00101	46B00101D	46S00101	46S00201	
Lab ID	MB186002	MB186003	MB186005	MB186006	MB186006DL
Sampling Date	19-Jun-96	19-Jun-96	19-Jun-96	19-Jun-96	19-Jun-96
4,4'-DDT	3.7 U	3.7 U	3.8 U	3.8 U	NA
Aldrin	1.9 U	1.9 U	2 U	2 U	NA
alpha-BHC	1.9 UJ	1.9 UJ	2 UJ	2 UJ	NA
alpha-Chlordane	1.9 U	1.9 U	2 U	2 U	NA
Aroclor-1016	37 U	37 U	38 U	38 U	NA
Aroclor-1221	76 U	76 U	77 U	78 U	NA
Aroclor-1232	37 U	37 U	38 U	38 U	NA
Aroclor-1242	37 U	37 U	38 U	38 U	NA
Aroclor-1248	37 U	37 U	38 U	38 U	NA
Aroclor-1254	37 U	37 U	38 U	38 U	NA
Aroclor-1260	37 U	37 U	38 U	38 U	NA
beta-BHC	1.9 U	1.9 U	2 U	2 U	NA
delta-BHC	1.9 UJ	1.9 UJ	2 UJ	2 UJ	NA
Dieldrin	3.7 U	3.7 U	3.8 U	3.8 U	NA
Endosulfan I	1.9 U	1.9 U	2 U	2 U	NA
Endosulfan II	3.7 U	3.7 U	3.8 U	3.8 U	NA
Endosulfan sulfate	3.7 U	3.7 U	3.8 U	3.8 U	NA
Endrin	3.7 U	3.7 U	3.8 U	3.8 U	NA
Endrin aldehyde	3.7 U	3.7 U	3.8 U	3.8 U	NA
Endrin ketone	3.7 U	3.7 U	3.8 U	3.8 U	NA
gamma-BHC (Lindane)	1.9 U	1.9 U	2 U	2 U	NA
gamma-Chlordane	1.9 U	1.9 U	2 U	2 U	NA
Heptachlor	1.9 U	1.9 U	2 U	2 U	NA
Heptachlor epoxide	1.9 U	1.9 U	2 U	2 U	NA
Methoxychlor	19 U	19 U	20 U	20 U	NA
Toxaphene	190 U	190 U	200 U	200 U	NA
Inorganics, mg/kg					
Aluminum	4380 J	4260 J	3990 J	741 J	NA
Antimony	3.4 U	3.4 U	3.5 U	3.8 B	NA
Arsenic	0.78 B	0.51 B	0.3 U	0.3 U	NA
Barium	1.7 B	1.7 B	1.8 B	1.6 B	NA
Beryllium	0.03 U	0.03 U	0.03 U	0.03 U	NA
Cadmium	0.75 U	0.75 U	0.76 U	0.77 U	NA
Calcium	38.1 BJ	45.9 BJ	66.6 J	205 BJ	NA
Chromium	2.8	2.5	2.7	0.96 B	NA
Cobalt	0.57 U	0.57 U	0.58 U	0.58 U	NA
Copper	0.27 U	0.27 U	0.28 U	0.28 U	NA
Iron	369	310	344	102	NA
Lead	2.7	3	5.5	6.3	NA
Magnesium	27.1 B	27 B	23 B	37.6 B	NA
Manganese	0.68 B	0.77 B	0.62 B	1 B	NA
Mercury	0.08 B	0.07 B	0.08 B	0.07 B	NA
Nickel	2.3 B	1.4 B	1.3 U	1.3 U	NA
Potassium	170 U	169 U	172 U	173 U	NA
Selenium	0.45 BJ	0.48 B	0.43 BJ	0.3 U	NA
Silver	0.5 UJ	0.5 UJ	0.51 UJ	0.51 UJ	NA
Sodium	34.8 B	24 U	62 B	32.2 B	NA
Thallium	0.2 U	0.19 U	0.2 U	0.2 U	NA
Vanadium	1.3 B	1 B	0.65 B	0.4 U	NA
Zinc	3.9 U	5	8.6	5.7	NA

ATTACHMENT C-2

SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS

Attachment C

C-2 Summary of Subsurface Soil Analytical Results
Study Area 46

Site Screening Report
Naval Training Center, Orlando
Orlando, FL

Sample ID	46B00102	
Lab ID	MB186004	
Sampling Date	19-Jun-96	
Volatile organics, ug/kg		
1,1,1-Trichloroethane	12	U
1,1,2,2-Tetrachloroethane	12	U
1,1,2-Trichloroethane	12	U
1,1-Dichloroethane	12	U
1,1-Dichloroethene	12	U
1,2-Dichloroethane	12	U
1,2-Dichloroethene (total)	12	U
1,2-Dichloropropane	12	U
2-Butanone	12	U
2-Hexanone	12	U
4-Methyl-2-pentanone	12	U
Acetone	12	U
Benzene	12	U
Bromodichloromethane	12	U
Bromoform	12	U
Bromomethane	12	U
Carbon disulfide	12	U
Carbon tetrachloride	12	U
Chlorobenzene	12	U
Chloroethane	12	U
Chloroform	12	U
Chloromethane	12	U
cis-1,3-Dichloropropene	12	U
Dibromochloromethane	12	U
Ethylbenzene	12	U
Methylene chloride	1	J
Styrene	12	U
Tetrachloroethene	12	U
Toluene	12	U
trans-1,3-Dichloropropene	12	U
Trichloroethene	12	U
Vinyl chloride	12	U
Xylene (total)	12	U
Semivolatile organics, ug/kg		
1,2,4-Trichlorobenzene	400	U
1,2-Dichlorobenzene	400	U
1,3-Dichlorobenzene	400	U
1,4-Dichlorobenzene	400	U
2,2'-oxybis(1-Chloropropane)	400	U
2,4,5-Trichlorophenol	990	U
2,4,6-Trichlorophenol	400	U
2,4-Dichlorophenol	400	U
2,4-Dimethylphenol	400	U
2,4-Dinitrophenol	990	U
2,4-Dinitrotoluene	400	U
2,6-Dinitrotoluene	400	U
2-Chloronaphthalene	400	U
2-Chlorophenol	400	U
2-Methylnaphthalene	400	U
2-Methylphenol	400	U

Attachment C

C-2 Summary of Subsurface Soil Analytical Results
Study Area 46

Site Screening Report
Naval Training Center, Orlando
Orlando, FL

Sample ID	46B00102
Lab ID	MB186004
Sampling Date	19-Jun-96
2-Nitroaniline	990 U
2-Nitrophenol	400 U
3,3'-Dichlorobenzidine	400 U
3-Nitroaniline	990 U
4,6-Dinitro-2-methylphenol	990 U
4-Bromophenyl-phenylether	400 U
4-Chloro-3-methylphenol	400 U
4-Chloroaniline	400 U
4-Chlorophenyl-phenylether	400 U
4-Methylphenol	400 U
4-Nitroaniline	990 U
4-Nitrophenol	990 U
Acenaphthene	400 U
Acenaphthylene	400 U
Anthracene	400 U
Benzo(a)anthracene	400 U
Benzo(a)pyrene	400 U
Benzo(b)fluoranthene	400 U
Benzo(g,h,i)perylene	400 U
Benzo(k)fluoranthene	400 U
bis(2-Chloroethoxy)methane	400 U
bis(2-Chloroethyl)ether	400 U
bis(2-Ethylhexyl)phthalate	400 U
Butylbenzylphthalate	400 U
Carbazole	400 U
Chrysene	400 U
Di-n-butylphthalate	400 U
Di-n-octylphthalate	400 U
Dibenz(a,h)anthracene	400 U
Dibenzofuran	400 U
Diethylphthalate	400 U
Dimethylphthalate	400 U
Fluoranthene	400 U
Fluorene	400 U
Hexachlorobenzene	400 U
Hexachlorobutadiene	400 U
Hexachlorocyclopentadiene	400 U
Hexachloroethane	400 U
Indeno(1,2,3-cd)pyrene	400 U
Isophorone	400 U
N-Nitroso-di-n-propylamine	400 U
N-Nitrosodiphenylamine	400 U
Naphthalene	400 U
Nitrobenzene	400 U
Pentachlorophenol	990 U
Phenanthrene	400 U
Phenol	400 U
Pyrene	400 U
Pesticides/PCB, ug/kg	
4,4'-DDD	3.9 U
4,4'-DDE	3.9 U

Attachment C

C-2 Summary of Subsurface Soil Analytical Results
Study Area 46

Site Screening Report
Naval Training Center, Orlando
Orlando, FL

Sample ID	46B00102
Lab ID	MB186004
Sampling Date	19-Jun-96
4,4'-DDT	3.9 U
Aldrin	2 U
alpha-BHC	2 UJ
alpha-Chlordane	2 U
Aroclor-1016	39 U
Aroclor-1221	80 U
Aroclor-1232	39 U
Aroclor-1242	39 U
Aroclor-1248	39 U
Aroclor-1254	39 U
Aroclor-1260	39 U
beta-BHC	2 U
delta-BHC	2 UJ
Dieldrin	3.9 U
Endosulfan I	2 U
Endosulfan II	3.9 U
Endosulfan sulfate	3.9 U
Endrin	3.9 U
Endrin aldehyde	3.9 U
Endrin ketone	3.9 U
gamma-BHC (Lindane)	2 U
gamma-Chlordane	2 U
Heptachlor	2 U
Heptachlor epoxide	2 U
Methoxychlor	20 U
Toxaphene	200 U
Inorganics, mg/kg	
Aluminum	9850 J
Antimony	3.7 B
Arsenic	0.83 B
Barium	4.2 B
Beryllium	0.07 B
Cadmium	0.78 U
Calcium	34.8 BJ
Chromium	8.5
Cobalt	0.59 U
Copper	0.29 U
Iron	197
Lead	4.7
Magnesium	26.6 B
Manganese	0.59 B
Mercury	0.1 B
Nickel	2.7 B
Potassium	177 U
Selenium	0.35 BJ
Silver	0.52 UJ
Sodium	41.7 B
Thallium	0.2 U
Vanadium	6.4 B
Zinc	7.2

ATTACHMENT C-3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Attachment C

C-3 Summary of Groundwater Analytical Results
Study Area 46Site Screening Report
Naval Training Center, Orlando
Orlando, FL

Sample ID	46G00101	46H00101
Lab ID	MB201002	MB201003
Sampling Date	20-Jun-96	20-Jun-96
Volatile organics, ug/L		
1,1,1-Trichloroethane	1 U	NA
1,1,2,2-Tetrachloroethane	1 U	NA
1,1,2-Trichloroethane	1 U	NA
1,1-Dichloroethane	1 U	NA
1,1-Dichloroethene	1 U	NA
1,2-Dibromo-3-chloropropane	1 U	NA
1,2-Dibromoethane	1 U	NA
1,2-Dichlorobenzene	1 U	NA
1,2-Dichloroethane	1 U	NA
1,2-Dichloropropane	1 U	NA
1,3-Dichlorobenzene	1 U	NA
1,4-Dichlorobenzene	1 U	NA
2-Butanone	5 UR	NA
2-Hexanone	5 U	NA
4-Methyl-2-pentanone	5 U	NA
Acetone	5 UR	NA
Benzene	1 U	NA
Bromochloromethane	1 U	NA
Bromodichloromethane	1 U	NA
Bromoform	1 U	NA
Bromomethane	1 U	NA
Carbon disulfide	1 U	NA
Carbon tetrachloride	1 U	NA
Chlorobenzene	1 U	NA
Chloroethane	1 U	NA
Chloroform	1 U	NA
Chloromethane	1 U	NA
cis-1,2-Dichloroethene	1 U	NA
cis-1,3-Dichloropropene	1 U	NA
Dibromochloromethane	1 U	NA
Ethylbenzene	1 U	NA
Methylene chloride	2 U	NA
Styrene	1 U	NA
Tetrachloroethene	1 U	NA
Toluene	1 U	NA
trans-1,2-Dichloroethene	1 U	NA
trans-1,3-Dichloropropene	1 U	NA
Trichloroethene	1 U	NA
Vinyl chloride	1 U	NA
Xylene (total)	1 U	NA
Semivolatile organics, ug/L		
1,2,4-Trichlorobenzene	10 U	NA
1,2-Dichlorobenzene	10 U	NA
1,3-Dichlorobenzene	10 U	NA
1,4-Dichlorobenzene	10 U	NA
2,2'-oxybis(1-Chloropropane)	10 U	NA
2,4,5-Trichlorophenol	25 U	NA
2,4,6-Trichlorophenol	10 U	NA
2,4-Dichlorophenol	10 U	NA

Attachment C

C-3 Summary of Groundwater Analytical Results
Study Area 46Site Screening Report
Naval Training Center, Orlando
Orlando, FL

Sample ID	46G00101	46H00101
Lab ID	MB201002	MB201003
Sampling Date	20-Jun-96	20-Jun-96
2,4-Dimethylphenol	10 U	NA
2,4-Dinitrophenol	25 U	NA
2,4-Dinitrotoluene	10 U	NA
2,6-Dinitrotoluene	10 U	NA
2-Chloronaphthalene	10 U	NA
2-Chlorophenol	10 U	NA
2-Methylnaphthalene	10 U	NA
2-Methylphenol	10 U	NA
2-Nitroaniline	25 U	NA
2-Nitrophenol	10 U	NA
3,3'-Dichlorobenzidine	10 U	NA
3-Nitroaniline	25 U	NA
4,6-Dinitro-2-methylphenol	25 U	NA
4-Bromophenyl-phenylether	10 U	NA
4-Chloro-3-methylphenol	10 U	NA
4-Chloroaniline	10 U	NA
4-Chlorophenyl-phenylether	10 U	NA
4-Methylphenol	10 U	NA
4-Nitroaniline	25 U	NA
4-Nitrophenol	25 U	NA
Acenaphthene	10 U	NA
Acenaphthylene	10 U	NA
Anthracene	10 U	NA
Benzo(a)anthracene	10 U	NA
Benzo(a)pyrene	10 U	NA
Benzo(b)fluoranthene	10 U	NA
Benzo(g,h,i)perylene	10 U	NA
Benzo(k)fluoranthene	10 U	NA
bis(2-Chloroethoxy)methane	10 U	NA
bis(2-Chloroethyl)ether	10 U	NA
bis(2-Ethylhexyl)phthalate	10 U	NA
Butylbenzylphthalate	10 U	NA
Carbazole	10 U	NA
Chrysene	10 U	NA
Di-n-butylphthalate	10 U	NA
Di-n-octylphthalate	10 U	NA
Dibenz(a,h)anthracene	10 U	NA
Dibenzofuran	10 U	NA
Diethylphthalate	10 U	NA
Dimethylphthalate	10 U	NA
Fluoranthene	10 U	NA
Fluorene	10 U	NA
Hexachlorobenzene	10 U	NA
Hexachlorobutadiene	10 U	NA
Hexachlorocyclopentadiene	10 U	NA
Hexachloroethane	10 U	NA
Indeno(1,2,3-cd)pyrene	10 U	NA
Isophorone	10 U	NA
N-Nitroso-di-n-propylamine	10 U	NA
N-Nitrosodiphenylamine	10 U	NA

Attachment C

C-3 Summary of Groundwater Analytical Results
Study Area 46Site Screening Report
Naval Training Center, Orlando
Orlando, FL

Sample ID	46G00101	46H00101
Lab ID	MB201002	MB201003
Sampling Date	20-Jun-96	20-Jun-96
Naphthalene	10 U	NA
Nitrobenzene	10 U	NA
Pentachlorophenol	25 U	NA
Phenanthrene	10 U	NA
Phenol	10 U	NA
Pyrene	10 U	NA
Pesticides/PCBs, ug/L		
4,4'-DDD	0.1 U	NA
4,4'-DDE	0.1 U	NA
4,4'-DDT	0.098	NA
Aldrin	0.05 U	NA
alpha-BHC	0.05 UJ	NA
alpha-Chlordane	0.05 U	NA
Aroclor-1016	0.5 U	NA
Aroclor-1221	0.5 U	NA
Aroclor-1232	0.5 U	NA
Aroclor-1242	0.5 U	NA
Aroclor-1248	0.5 U	NA
Aroclor-1254	0.5 U	NA
Aroclor-1260	0.5 U	NA
beta-BHC	0.05 U	NA
delta-BHC	0.05 UJ	NA
Dieldrin	0.1 U	NA
Endosulfan I	0.05 U	NA
Endosulfan II	0.1 U	NA
Endosulfan sulfate	0.1 U	NA
Endrin	0.1 U	NA
Endrin aldehyde	0.1 U	NA
Endrin ketone	0.1 U	NA
gamma-BHC (Lindane)	0.05 U	NA
gamma-Chlordane	0.05 U	NA
Heptachlor	0.05 U	NA
Heptachlor epoxide	0.05 U	NA
Methoxychlor	0.5 U	NA
Toxaphene	5 U	NA
Inorganics, ug/L		
Aluminum	2520 J	2080 J
Antimony	2.6 U	2.6 U
Arsenic	3.1 BJ	3 BJ
Barium	29.5 BJ	29.1 BJ
Beryllium	0.13 U	0.13 U
Cadmium	3.3 U	3.3 U
Calcium	1170 BJ	1170 BJ
Chromium	6 U	4.9 U
Cobalt	2.5 U	2.5 U
Copper	1.2 U	1.2 U
Iron	336	332
Lead	1.2 U	1.2 U
Magnesium	11100	11200
Manganese	2.3 U	2.3 U

Attachment C

C-3 Summary of Groundwater Analytical Results
Study Area 46

Site Screening Report
Naval Training Center, Orlando
Orlando, FL

Sample ID	46G00101	46H00101
Lab ID	MB201002	MB201003
Sampling Date	20-Jun-96	20-Jun-96
Mercury	0.13 B	0.12 B
Nickel	5.5 U	5.5 U
Potassium	1330 B	1230 B
Selenium	1.3 U	1.7 BJ
Silver	2.2 U	2.2 U
Sodium	49400 J	49800 J
Thallium	5.2 UR	5.2 UR
Vanadium	2.2 B	1.7 U
Zinc	5.1 U	5.4 U
General Chemistry, mg/L		
Total Suspended Solids	8	NA

NOTES TO SUMMARY TABLES OF ANALYTICAL RESULTS

Naval Training Center
Orlando, FL

NA = Identified parameter not analyzed.

Sample ID = Sample Identifier

Lab ID = Laboratory identifier

Units:

mg/kg milligram per kilogram

ug/kg microgram per kilogram

mg/L milligram per liter

The following standard validation qualifiers shown next to the number are used in this Attachment.

- U The analyte/compound was analyzed for but was not detected above the reported sample quantitation limit
- J The analyte/compound was positively identified and the associated numerical value is an estimated concentration of the analyte/compound in the sample.
- N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
- JN The analysis indicates the presence of a compound that has been tentatively identified, and the associated numerical value represents an estimated concentration.
- UJ The analyte/compound was not detected above the reported sample quantitation limit.
The reported quantitation limit, however, is approximate and may or may not represent the actual limit of quantitation necessary to accurately measure the analyte/compound in the sample.
- R The sample results are rejected because of serious deficiencies in meeting quality control criteria.

The following laboratory qualifiers are typically dropped upon validation but are retained here to provide additional information on their associated numerical values.

- B The inorganic analyte was positively identified and the associated numerical value is an estimated concentration because the detection was below the contract required detection limit (CRDL) and above the instrument detection
- E The reported value for the compound exceeds the linear calibration range for that compound. Therefore, the sample have been reanalyzed at an appropriate dilution (sample identifiers ending in DL).
- D The reported value for the compound has been quantified at a secondary dilution factor. This value typically is used in favor of E qualified values. When this applies, the E qualifier are flagged ER;
D qualified values that are rejected in favor of the original results are flagged DR.