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FINAL BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORTS STUDY AREA 29 NTC ORLANDO FL

1/1/1998

ABB ENVIRONMENTAL

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BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT

STUDY AREA 29

NAVAL TRAINING CENTER ORLANDO, FLORIDA

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

JANUARY 1998

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

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BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT

STUDY AREA 29

NAVAL TRAINING CENTER ORLANDO, FLORIDA

Unit Identification Code: N65928

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

Prepared by:

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Prepared for:

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Naval Facilities Engineering Command
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Barbara Nwokike, Code 1873, Engineer-in-Charge

January 1998

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, 1998

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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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
FGGC	Florida groundwater guidance concentration
MCL	maximum contaminant level
mg/kg	milligrams per kilogram
$\mu g/\ell$	micrograms per liter
$\mu g/kg$	micrograms per kilogram
PCB	polychlorinated biphenyl
RBC	risk-based concentration
SCG	soil cleanup goal
TAL	target analyte list
TCL	target compound list
TPH	total petroleum hydrocarbons
USEPA	U.S. Environmental Protection Agency

1.0 STUDY AREA 29, GROUNDS MAINTENANCE BUILDING 127

This report contains information gathered during site screening activities conducted at Study Area 29. Site screening investigations took place between June 24 and June 26, 1997. Proposed field activities were presented in the Site Screening Plan (ABB Environmental Services, Inc. [ABB-ES], 1995).

1.1 STUDY AREA 29, BACKGROUND AND CONDITIONS. Study Area 29 is located on the Main Base, Naval Training Center, Orlando (Figure 1). This section includes a brief background summary of conditions at Study Area 29. Additional details can be found in the Site Screening Plan (ABB-ES, 1995).

Building 127 is located on the eastern part of the Main Base, along the northern shoreline of Lake Susannah and south of Langley Street. Since 1988, the area has been used for storage and maintenance of groundskeeping equipment. The building was originally constructed in 1975 and was used as a sail loft. Areas of environmental interest at the site include the flammable-storage lockers on the west end of the building and an area on the east side of the compound where unlabelled drums were previously stored.

1.2 STUDY AREA 29, INVESTIGATION SUMMARY. The site screening investigation was intended to evaluate the potential for release of contaminants to environmental media due to past site practices. Historical site activities and current site conditions were used to determine sampling locations. Samples were collected from the eastern part of the site where drums were previously stored and west of Building 127 adjacent to the flammable-storage lockers. Additional samples were collected in areas that were downgradient of, or received surface water runoff from, these areas. ABB-ES did not note any indications of environmental releases or stressed vegetation around the perimeter of Building 127 (Figure 2).

1.2.1 Surface Soil Sampling Four surface soil samples (29S00101 through 29S00401) were collected in the drum area and one (29S00501) was collected in the surface water runoff path from this area. Surface soil samples were also collected from in front of the flammable storage cabinets (29S00701 and 29S00801). One surface soil sample (29S00601) was collected from the surface water runoff path for the western part of the site. The surface soil samples were submitted to an approved laboratory for full suite Contract Laboratory Program (CLP), target analyte list (TAL), and target compound list (TCL) laboratory analysis plus pesticides and polychlorinated biphenyl (PCBs), along with total petroleum hydrocarbons (TPH), in accordance with U.S. Environmental Protection Agency (USEPA) Level IV data quality objectives (DQOs).

1.2.2 Soil Boring Investigation Two soil borings were advanced in the areas of interest. One boring was located adjacent to the east side of the drum area. The other boring was located downgradient of the flammable-storage area, adjacent to the wetland bordering Lake Susannah. Subsurface soil samples were collected in each soil boring from the interval directly above the water table, approximately 2 to 3 feet below land surface (bls). The subsurface soil samples were submitted for full suite CLP, TAL, and TCL laboratory analysis plus pesticides and PCBs, along with TPH, in accordance with USEPA Level IV DQOs.

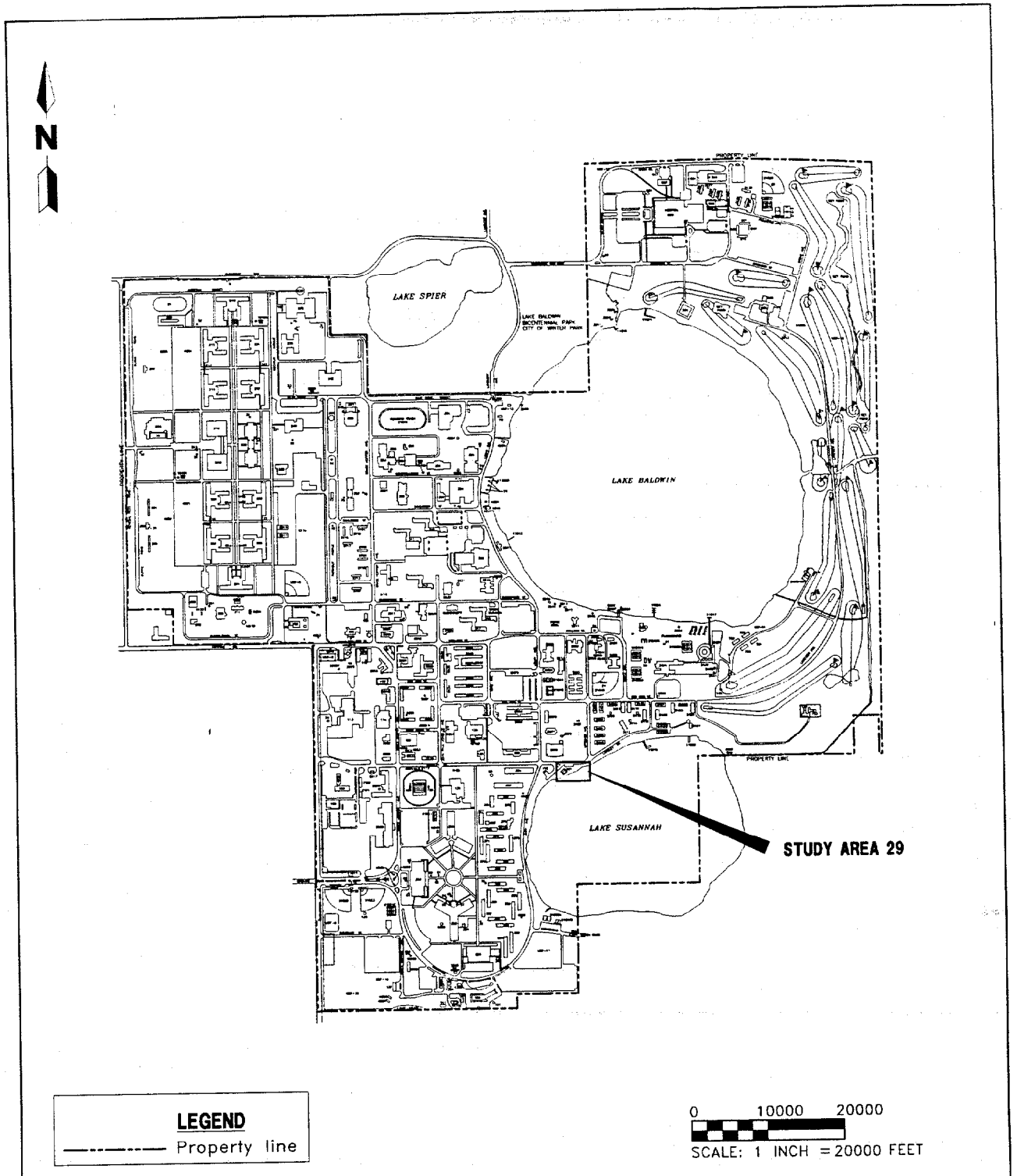

FIGURE 1
STUDY AREA LOCATION

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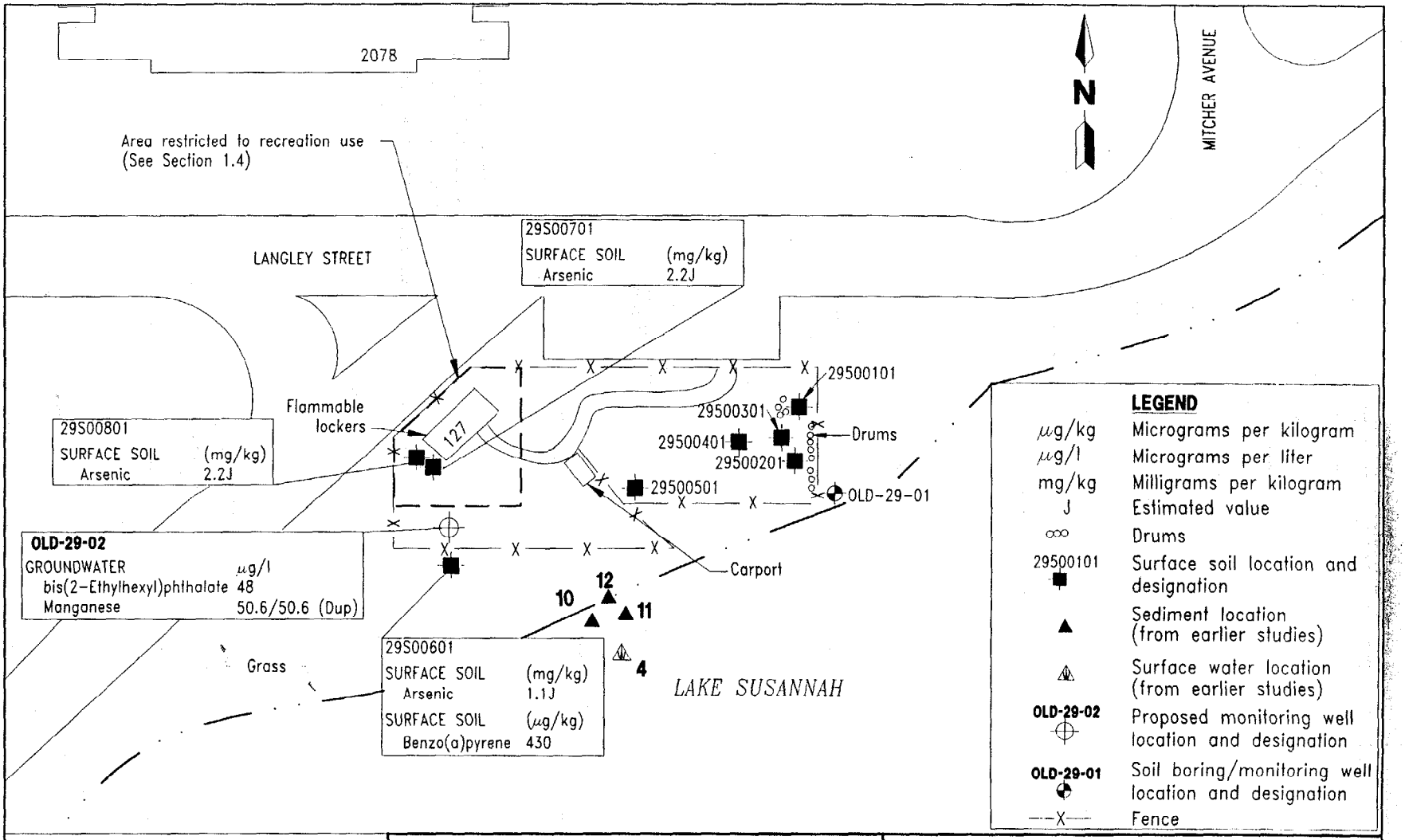
BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE
SCREENING REPORT
STUDY AREA 29
NAVAL TRAINING CENTER
ORLANDO, FLORIDA



0 30 60
APPROXIMATE SCALE: 1 INCH = 60 FEET

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FIGURE 2
SURFACE SOIL, SOIL BORING, AND MONITORING WELL LOCATIONS, BUILDING 127, GROUNDS MAINTENANCE, MAIN BASE

BASE REALIGNMENT AND CLOSURE ENVIROMENTAL SITE SCREENING REPORT STUDY AREA 29 NAVAL TRAINING CENTER ORLANDO, FLORIDA

1.2.3 **Groundwater Monitoring Well Installation and Sampling** The two soil borings were completed as temporary monitoring wells, OLD-29-01 and OLD-29-02 (Figure 2). The soil borings for the well installations were advanced with hand augers to approximately 6 feet bls. The screened interval for each monitoring well bracketed the water table, which was encountered 2.6 to 3.2 feet bls during the investigation. Groundwater samples were collected from each well using the low-flow sampling method (ABB-ES, 1997). Groundwater samples were submitted to an approved laboratory for full suite CLP, TAL, and TCL laboratory analysis plus pesticides and PCBs, along with TPH and suspended solids analysis, in accordance with USEPA Level IV DQOs. Filtered samples (0.45 micron in-line filter) were also collected and submitted for TAL inorganics analysis. The monitoring well installation diagrams and field sample data are included in Appendix A.

1.3 **STUDY AREA RESULTS**. Analytical results from the media sampled at Study Area 29 are presented as Positive Detections Tables in Appendix B. A complete set of analytical results is presented in Appendix C. Exceedances of background screening or regulatory guidance concentrations (shaded on the positive hits tables) are displayed in chem-boxes near their respective explorations on Figure 2.

1.3.1 **Surface Soil Analytical Results** Analysis of the surface soil collected at Study Area 29 detected semivolatile organics and inorganics (Appendix B). Two semivolatile organic compounds—benzo(a)pyrene and benzo(b)fluoranthene—were detected at concentrations exceeding screening criteria. Sample 29S00601 had a benzo(a)pyrene concentration of 430 micrograms per kilogram (μg/kg), exceeding both the Florida residential soil cleanup goal (SCG) (100 μg/kg) and the USEPA Region III residential risk based concentration (RBC) for residential soil (88 μg/kg). Benzo(b)fluoranthene in the same sample had a concentration of 1,300 μg/kg, exceeding only the RBC (880 μg/kg). The Florida residential SCG for that compound is 1,400 μg/kg.

The only volatile organic compound detected in groundwater was toluene. Because toluene was not detected in soil, the comparison to leachability-based SCG values is unnecessary. The only other organic compound detected in groundwater was bis(2-ethylhexyl)phthalate. This compound was detected in one surface soil sample at 94 μg/kg, well below the leachability-based SCG of 11,000 μg/kg.

The only metal detected at concentrations exceeding screening criteria was arsenic in samples 29S00601, 29S00701, and 29S00801 at concentrations of 1.1, 2.2 and 2.2 milligrams per kilogram (mg/kg), respectively, versus a background screening value for arsenic of 1.0 mg/kg.

1.3.2 **Subsurface Soil Analytical Results** Analysis of the subsurface soil collected at Study Area 29 detected semivolatile organics and inorganics (Appendix B-1). None of the analytes detected were at concentrations exceeding their respective residential RBCs or SCGs. The two organic compounds, (toluene and *bis*(2-ethylhexyl)phthalate) that was detected in groundwater were not detected in subsurface soil; therefore, the comparison to leachability-based SCGs is unnecessary.

1.3.3 **Groundwater Analytical Results** Analysis of the groundwater collected at Study Area 29 detected volatile organics, semivolatile organics, and inorganics (Appendix B-2). One organic compound and one metal were detected at concentra-

tions exceeding the Florida maximum contaminant level (MCL) and the Florida secondary standard, respectively. Bis(2-ethylhexyl)phthalate was detected in temporary well OLD-29-02 at a concentration of 48 micrograms per liter ($\mu g/\ell$). This compound is a common laboratory artifact and was not detected in the duplicate sample at this location.

Manganese was detected in temporary well OLD-29-02 at a concentration of 50.6 $\mu g/\ell$ versus a Florida secondary standard of 50 $\mu g/\ell$. The tapwater RBC for manganese is 840 $\mu g/\ell$.

1.4 STUDY AREA 29, CONCLUSIONS AND RECOMMENDATIONS. The analytical results from media sampled at Study Area 29 indicate that the site may have been affected by past use.

Benzo(a)pyrene was detected in surface soil sample 29S00601 at a concentration of 430 $\mu g/kg$, exceeding the SCG and residential RBC, but not the industrial RBC. Sample 29S00601 was collected in the area that receives surface water runoff from the western part of the site. This area of the base has been developed and urbanized since the base was opened. Semivolatile compounds, including benzo(a)pyrene, are not uncommon in urban areas where petroleum products have been used. The single detection of benzo(a)pyrene (one out of eight locations) at Study Area 29 indicates a small localized area largely impacted by urban non-point sources (i.e., surface water runoff).

The only metal detected in surface soil at concentrations exceeding screening criteria was arsenic in three out of eight locations at concentrations of up to 2.2 mg/kg versus a background screening value for arsenic of 1.0 mg/kg. These concentrations of arsenic may be the result of handling and use of arsenic-containing pesticides.

The detection of manganese in one groundwater sample slightly exceeded the Florida Department of Environmental Protection groundwater secondary standard and was well below the Federal MCL. The manganese concentration may be elevated due to the turbidity of the sample, which was 50 nephelometric turbidity units.

Based on available information and site screening data, it has been concluded that there is minimal contamination in the media sampled at Study Area 29. The single benzo(a)pyrene exceedance and three arsenic exceedances do not suggest site contamination due to past use. The inorganics detected in groundwater can be attributed to natural site conditions or limits of the analytical methods used.

The arsenic detected in surface soil exceeds the Florida residential SCGs. Therefore, ABB-ES recommends that a portion of Study Area 29 be restricted to recreational use as indicated on Figure 2. ABB-ES further recommends that Study Area 29 be made eligible for transfer and that the majority of the site be reclassified from 7/Grey to 1/White, except for the restricted area which should be reclassified to 4/Dark Green.

The undersigned members of the Orlando Partnering Team concur with the findings and recommendations of the preceding investigation.

STUDY AREA 29

U.S. Environmental Protection Agency, Region IV	1-22-98 Date
Florida Department of Environmental Protection	1-22-98 Date
U.S. Department of the Navy	1-22-98 Date

REFERENCES

ABB Environmental Services, Inc. (ABB-ES). 1995. *Site Screening Plan, Groups I through IV Study Areas and Miscellaneous Additional Sites, Naval Training Center (NTC), Orlando, Florida.* Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina.

ABB-ES. 1997. *Project Operations Plan for Site Investigations and Remedial Investigations, NTC, Orlando, Florida.* Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina.

APPENDIX A

MONITORING WELL INSTALLATION DIAGRAMS, GROUNDWATER SAMPLE FIELD DATA, AND SURFACE SOIL SAMPLE FIELD DATA

A-1 Monitoring Well Installation Diagrams
A-2 Groundwater Sample Field Data
A-3 Surface Soil Sample Field Data

APPENDIX A-1

MONITORING WELL INSTALLATION DIAGRAMS

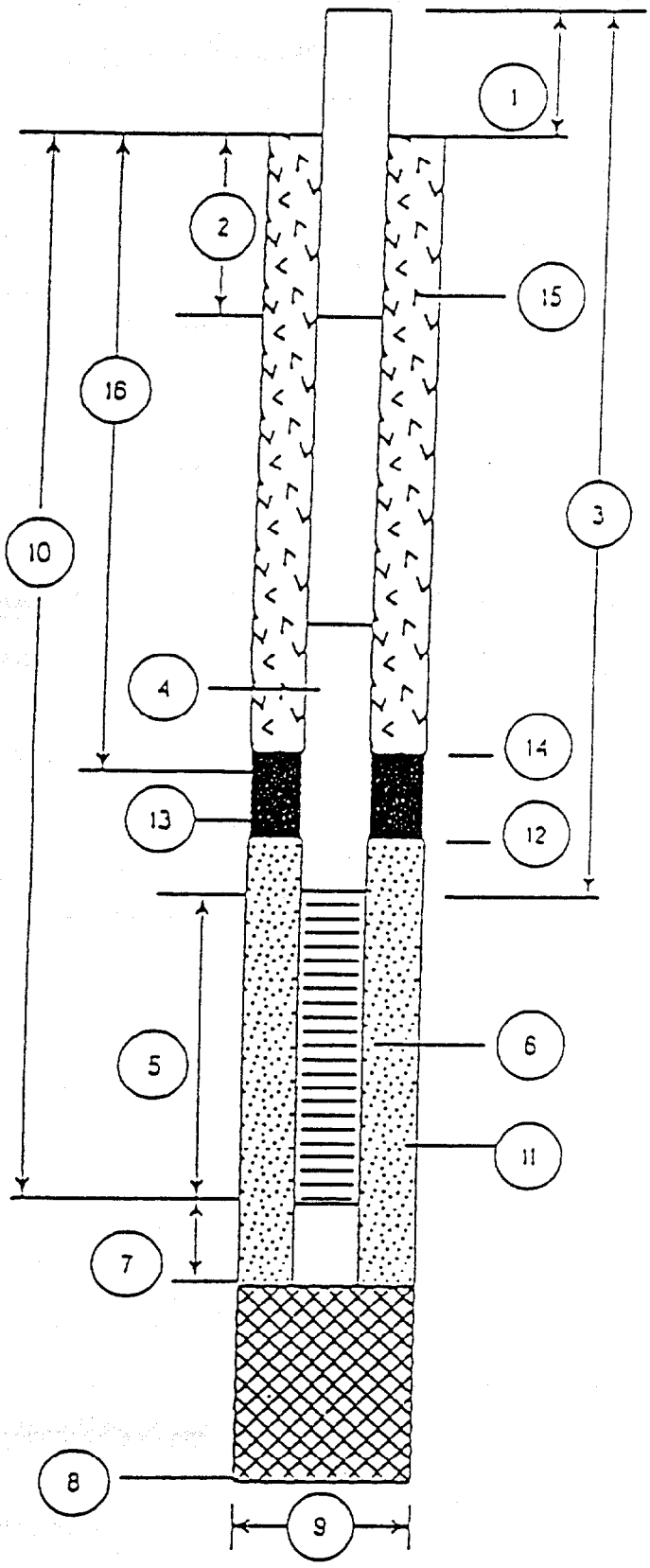
DEPARTMENT OF THE NAVY

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SC.

WELL CONSTRUCTION DETAIL

WELL NUMBER: OLD-29-01

DATE OF INSTALLATION: 6-24/97



1. Height of Casing above ground: 4.30
2. Depth to first Coupling: 0.70

   Coupling Interval Depths: 5'
3. Total Length of Riser Pipe: 5'
4. Type of Riser Pipe: 2" Sched. 40 PVC
5. Length of Screen: 5'
6. Type of Screen: 2" Sched. 40 PVC 0.010 Slot
7. Length of Sump: 6"
8. Total Depth of Boring: 8'
9. Diameter of Boring: 4"
10. Depth to Bottom of Screen: 5.7'
11. Type of Screen Filter: Silica Sand

    Quantity Used: 35 lb Size: —
12. Depth to Top of Filter: 1'
13. Type of Seal: Benseal

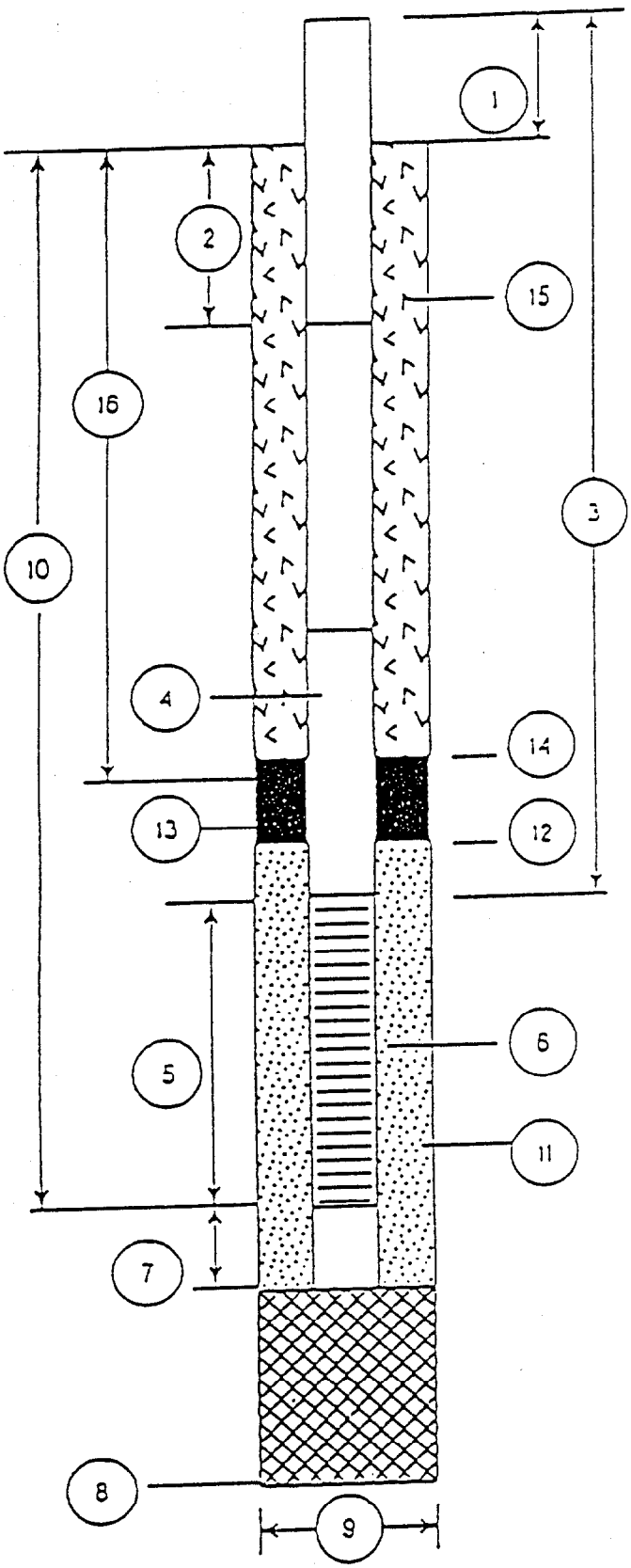
    Quantity Used: 1 lb
14. Depth to Top of Seal: 6"
15. Type of Grout: NA

    Grout Mixture:

    Method of Placement: NA
16. Tot. Depth of 6 in. Steel Casing: NA

DEPARTMENT OF THE NAVY

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SC.



WELL CONSTRUCTION DETAIL

WELL NUMBER: OLD-29-02

DATE OF INSTALLATION: 6-24

1. Height of Casing above ground: 4.6 ft
2. Depth to first Coupling: 0.4'
   Coupling Interval Depths: 5'
3. Total Length of Riser Pipe: 5'
4. Type of Riser Pipe: 2" Sched 40 PVC
5. Length of Screen: 5'
6. Type of Screen: 2" sched 40 PVC 0.010 slot
7. Length of Sump: 6"
8. Total Depth of Boring: 7
9. Diameter of Boring: 4"
10. Depth to Bottom of Screen: 5.4'
11. Type of Screen Filter: Silica Sand
    Quantity Used: 30 lb Size: —
12. Depth to Top of Filter: 1'
13. Type of Seal: Benseal
    Quantity Used: 1 Lb
14. Depth to Top of Seal: 6"
15. Type of Grout: NA
    Grout Mixture:
    Method of Placement: NA
16. Tot. Depth of 6 in. Steel Casing: NA

APPENDIX A-2

GROUNDWATER SAMPLE FIELD DATA

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO
Project Number: 08545.10
Sample Location ID: OLD-29-01
Time: Start: 1355 End: 1600

Point of Interest: SA 29
Date: 6-26/97
Signature of Sampler: William D. Olson

Water Level/Well Data

Well Depth 10.14 Ft. — X Measured ___ Historical

X Top of Well ___ Top of Protective Casing

Well Riser Stick-up (from ground) 4.30 Ft.

Protective Casing/Well Difference NA Ft.

Protective Casing NA Ft.

Depth to Water 6.92 Ft.

Well Material: X PVC ___ SS

Well Locked?: X Yes ___ No

Well Dia. X 2 inch ___ 4 inch ___ 6 inch

Water Level Equip. Used: X Elect. Cond. Probe ___ Float Activated ___ Press. Transducer

Height of Water Column 3.22 Ft. X X .16 Gal/Ft. (2 in.) ___ .65 Gal/Ft. (4 in.) ___ 1.5 Gal/Ft. (6 in.) ___ Gal/Ft. (__ in.) = 0.51 Gal/Vol; 9 Total Gal Purged

Well Integrity: Yes ___ No ___
Prot. Casing Secure ___ ___
Concrete Collar Intact NA ___ ___
Other ___ ___

Equipment Documentation

Purging/Sampling Equipment Used:

(✓ If Used For) Purging	Sampling		Equipment ID
X	X	Peristaltic Pump	
		Submersible Pump	
		Bailer	
		PVC/Silicon Tubing	
X	X	Teflon/Silicon Tubing	
		Airlift	
		Hand Pump	
	X	In-line Filter	0.45 µ
		Press/Vac Filter	

Decontamination Fluids Used: (✓ All That Apply at Location)

- ___ Methanol (100%)
- ___ 25% Methanol/75% ASTM Type II water
- X Deionized Water
- ___ Liquinox Solution
- ___ Hexane
- ___ HNO_3/D.I. Water Solution
- ___ Potable Water
- ___ None

Field Analysis Data

Ambient Air VOC ___ ppm Well Mouth ___ ppm

Field Data Collected ___ In-line △ In Container

Sample Observations: ___ Turbid ___ Clear X Cloudy ___ Colored ___ Odor

Purge Data	@ ___ Gal.	@ 7 Gal.	@ ___ Gal.	@ ___ Gal.	@ ___ Gal.
Temperature, Deg. C	26.5	26.5	26.2	26.1	26.0
pH, units	6.14	5.98	6.03	6.04	6.03
Specific Conductivity (µmhos/cm. ~~@ 25 Deg. C.~~)	362	321	321	321	320
NTU	23.0	56.7	21.7	18	50
~~Oxidation - Reduction, mV mv~~					
~~Dissolved Oxygen, ppm~~					

FINAL TURB = 13 NTU
FILTERED TURB = 2.2 NTU

Sample Collection Requirements

(✓ If Required at this Location)

Analytical Parameter	✓ If Field Filtered	Preservation Method	Volume Required	✓ If Sample Collected	Sample Bottle IDs
VOA		HCL	3x40ml	✓	___ / ___ / ___ / ___
SVOA		4°C	2x1L	✓	___ / ___ / ___ / ___
Pest/PCB		4°C	2x1L	✓	___ / ___ / ___ / ___
Inorganics	✓	HNO_3	2x1L	✓	___ / ___ / ___ / ___
Explosives		4°C			___ / ___ / ___ / ___
TPH		H_2SO_4	2x1L	✓	___ / ___ / ___ / ___
~~TOC~~ TSS		~~H2SO4~~	1x500ml	✓	___ / ___ / ___ / ___
Nitrate		H_2SO_4			___ / ___ / ___ / ___

Notes: 2x1L metals, 1L filtered

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO
Project Number: 08545.10
Sample Location ID: OLD-29-02
Time: Start: 1110 End: 1327

Point of Interest: SA29
Date: 6/26/97
Signature of Sampler: William P. Olsen

Water Level/Well Data

Well Depth 10.14 Ft. — X Measured ___ Historical — X Top of Well ___ Top of Protective Casing

Well Riser Stick-up (from ground) 4.6 Ft.

Protective Casing/Well Difference NA Ft.

Protective Casing NA Ft.

Depth to Water 7.81 Ft.

Well Material: X PVC ___ SS

Well Locked?: X Yes ___ No

Well Dia. X 2 inch ___ 4 inch ___ 6 inch

Water Level Equip. Used: X Elect. Cond. Probe ___ Float Activated ___ Press. Transducer

Height of Water Column 2.23 Ft. X [X .16 Gal/Ft. (2 in.) ___ .65 Gal/Ft. (4 in.) ___ 1.5 Gal/Ft. (6 in.) ___ Gal/Ft. (__ in.)] = 0.37 Gal/Vol; 7 Total Gal Purged

Well Integrity: Prot. Casing Secure ___ Yes ___ No; Concrete Collar Intact NA ___ Yes ___ No; Other ___ ___ Yes ___ No

Equipment Documentation

Purging/Sampling Equipment Used:

(✓ If Used For) Purging	Sampling		Equipment ID
X	X	Peristaltic Pump	
		Submersible Pump	
		Bailer	
		PVC/Silicon Tubing	
X	X	Teflon/Silicon Tubing	
		Airlift	
		Hand Pump	
	X	In-line Filter	
		Press/Vac Filter	

Decontamination Fluids Used: (✓ All That Apply at Location)

- ___ Methanol (100%)
- ___ 25% Methanol/75% ASTM Type II water
- X Deionized Water
- ___ Liquinox Solution
- ___ Hexane
- ___ HNO_3/D.I. Water Solution
- ___ Potable Water
- ___ None

Field Analysis Data

Ambient Air VOC — ppm Well Mouth — ppm

Field Data Collected ___ In-line X In Container

Sample Observations: ___ Turbid X Clear ___ Cloudy ___ Colored ___ Odor

Purge Data	@ ___ Gal.	@ ___ Gal.	@ ___ Gal.	@ ___ Gal.	@ ___ Gal.
Temperature, Deg. C	26.2	25.5	25.6	25.4	25.4
pH, units	6.99	6.89	6.88	6.81	6.82
Specific Conductivity	500	500	480	470	460
~~Turbidity, @ 25 Deg. C~~ NTU	8.96	6.21	36.0	5.51	2.48
~~Oxidation—Reduction, w/ mv~~					
~~Dissolved Oxygen, ppm~~					

final 2.15 NTU

Sample Collection Requirements (✓ If Required at this Location)

Analytical Parameter	✓ If Field Filtered	Preservation Method	Volume Required	✓ If Sample Collected	Sample Bottle IDs
VOA		HCL	6 X 40ml	✓	/ / /
SVOA		4°C	4 x 1l	✓	/ / /
Pest/PCB		4°C	4 x 1l	✓	/ / /
Inorganics	✓	HNO_3	4 x 1l	✓	/ / /
~~Explosives~~		4°C			/ / /
TPH		H_2SO_4	2 x 1l		/ / /
~~TOC~~ TSS		~~H_2SO_4~~	2 x 500ml	✓	/ / /
Nitrate		H_2SO_4			/ / /

Notes: Collected Dup.
2x1l metals filtered
2x1l not filtered

APPENDIX A-3

SURFACE SOIL SAMPLE FIELD DATA

SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 08545.10
Sample Location ID: 29500101
Time: Start: 1420 End: _____

Site: SA 29
Date: 7-8/97
Signature of Sampler: William D. Olson

SOIL SAMPLE

DEPTH OF SAMPLE 0-1

EQUIPMENT USED FOR COLLECTION:
- [X] HAND AUGER
- [ ] S.S. SPLIT SPOON
- [ ] SHOVEL
- [ ] HAND SPOON
- [ ] ALUMINUM PANS
- [ ] SS BUCKET
- [ ] _____

TYPE OF SAMPLE COLLECTED:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS:
- [ ] ODOR _____
- [X] COLOR Dark Brown
- [ ] _____

DECONTAMINATION FLUIDS USED:
- ✓ ALL USED
- [ ] ETHYL ALCOHOL
- [ ] 25% METHANOL/75% ASTM TYPE II WATER
- [X] DEIONIZED WATER
- [X] LIQUINOX SOLUTION
- [ ] HEXANE
- [ ] HNO_3 SOLUTION
- [X] POTABLE WATER
- [X] ~~NONE~~ iPA

SOIL TYPE:
- [ ] CLAY
- [X] SAND
- [ ] ORGANIC
- [ ] GRAVEL

FIELD GC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
- [ ] YES
- [ ] NO Sec 29500201

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[X] TCL VOC	[ ]	[ ]	[ ]	1x 2oz	[X]	___/___/___/___
[ ]	[ ]	[ ]	[ ]		[ ]	___/___/___/___
[X] TCL SVOC	[ ]	[ ]	[ ]		[X]	___/___/___/___
[X] TCL PEST/PCB	[ ]	[ ]	[ ]	2x 4oz	[X]	___/___/___/___
[X] TAL INORGANIC	[ ]	[ ]	[ ]		[X]	___/___/___/___
[ ]	[ ]	[ ]	[ ]		[ ]	___/___/___/___
[X] TPH	[ ]	[ ]	[ ]	1x 4oz	[X]	___/___/___/___

NOTES/SKETCH

SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 08545.10
Sample Location ID: 29500201
Time: Start: 1400 End:

Site: SA 29
Date: 7-8/97
Signature of Sampler: [signature]

SOIL SAMPLE

DEPTH OF SAMPLE 0-1

EQUIPMENT USED FOR COLLECTION:
- [X] HAND AUGER
- [ ] S.S. SPLIT SPOON
- [ ] SHOVEL
- [ ] HAND SPOON
- [ ] ALUMINUM PANS
- [ ] SS BUCKET
- [ ] _____

TYPE OF SAMPLE COLLECTED:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS:
- [ ] ODOR _____
- [X] COLOR dark brown
- [ ] _____

DECONTAMINATION FLUIDS USED:
- ✓ ALL USED
- [ ] ETHYL ALCOHOL
- [ ] 25% METHANOL 75% ASTM TYPE II WATER
- [X] DEIONIZED WATER
- [X] LIQUINOX SOLUTION
- [ ] HEXANE
- [ ] HNO_3 SOLUTION
- [X] POTABLE WATER
- [X] ~~NONE~~ IPA

SOIL TYPE:
- [ ] CLAY
- [X] SAND
- [ ] ORGANIC
- [ ] GRAVEL

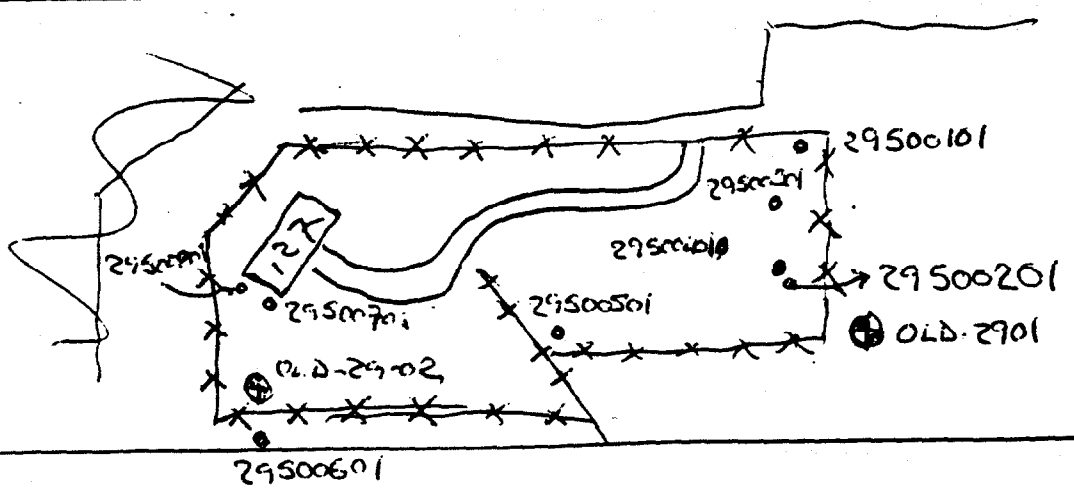
FIELD QC DATA: [X] FIELD DUPLICATE COLLECTED
DUPLICATE ID 29500201D

SAMPLE LOCATION SKETCH:
- [ ] YES
- [ ] NO

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[X] TCL VOC	[ ]	[ ]	[ ]	1x 20z	[X]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[X] TCL SVOC	[ ]	[ ]	[ ]		[X]	/ / /
[X] TCL PEST/PCB	[ ]	[ ]	[ ]	2x 4oz.	[X]	/ / /
[X] TAL INORGANICS	[ ]	[ ]	[ ]		[X]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[X] TPH	[ ]	[ ]	[ ]	1x 4oz	[X]	/ / /

NOTES/SKETCH



SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 08545.10
Sample Location ID: 29500301
Time: Start: 1405 End: _____

Site: SA 29
Date: 7-8/97
Signature of Sampler: William D. Olson

SOIL SAMPLE

DEPTH OF SAMPLE 0-1

EQUIPMENT USED FOR COLLECTION:
- [X] HAND AUGER
- [ ] S.S. SPLIT SPOON
- [ ] SHOVEL
- [ ] HAND SPOON
- [ ] ALUMINUM PANS
- [ ] SS BUCKET
- [ ] _____

TYPE OF SAMPLE COLLECTED:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS:
- [ ] ODOR _____
- [X] COLOR dark brown
- [ ] _____

DECONTAMINATION FLUIDS USED:
- ✓ ALL USED
- [ ] ETHYL ALCOHOL
- [ ] 25% METHANOL 75% ASTM TYPE II WATER
- [X] DEIONIZED WATER
- [X] LIQUINOX SOLUTION
- [ ] HEXANE
- [ ] HNO_3 SOLUTION
- [X] POTABLE WATER
- [X] ~~NONE~~ IPA

SOIL TYPE:
- [ ] CLAY
- [X] SAND
- [ ] ORGANIC
- [ ] GRAVEL

FIELD GC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
- [ ] YES
- [ ] NO

SEE 29500201

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[X] ~~TCL~~ VOC	[ ]	[ ]	[ ]	1 X 20z	[X]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[X] ~~TCL~~ SVOC	[ ]	[ ]	[ ]		[ ]	/ / /
[X] ~~TCL~~ PEST/PCB	[ ]	[ ]	[ ]	2 X 40z	[X]	/ / /
[X] TAL INORGANIC	[ ]	[ ]	[ ]		[ ]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[X] TPH	[ ]	[ ]	[ ]	1 X 4oz	[X]	/ / /

NOTES/SKETCH

SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 08545.10
Sample Location ID: 29S00401
Time: Start: 1412 End: _____

Site: SA 29
Date: 7-8/97
Signature of Sampler: William P. Olsa

SOIL SAMPLE

DEPTH OF SAMPLE 0-1

EQUIPMENT USED FOR COLLECTION:
[X] HAND AUGER
[ ] S.S. SPLIT SPOON
[ ] SHOVEL
[ ] HAND SPOON
[ ] ALUMINUM PANS
[ ] SS BUCKET
[ ] _____

TYPE OF SAMPLE COLLECTED:
[X] DISCRETE
[ ] COMPOSITE

SAMPLE OBSERVATIONS:
[ ] ODOR _____
[X] COLOR Dark brown
[ ] _____

DECONTAMINATION FLUIDS USED:
✓ ALL USED
[ ] ETHYL ALCOHOL
[ ] 25% METHANOL 75% ASTM TYPE II WATER
[X] DEIONIZED WATER
[X] LIQUINOX SOLUTION
[ ] HEXANE
[ ] HNO_3 SOLUTION
[X] POTABLE WATER
[X] ~~NONE~~ IPA

SOIL TYPE:
[ ] CLAY
[X] SAND
[ ] ORGANIC
[ ] GRAVEL

FIELD GC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
[ ] YES
[ ] NO SEE 29S00201

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[X] TCL VOC	[ ]	[ ]	[ ]	1 X 2 OZ	[X]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[X] TCL SVOC	[ ]	[ ]	[ ]		[ ]	/ / /
[X] TCL PEST/PCB	[ ]	[ ]	[ ]	2 X 4 OZ	[X]	/ / /
[X] TAL INORGANIC	[ ]	[ ]	[ ]		[ ]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[X] TPH	[ ]	[ ]	[ ]	1 X 4 OZ	[X]	/ / /

NOTES/SKETCH

SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 08545.10
Sample Location ID: 29500501
Time: Start: 1426 End:

Site: SA 29
Date: 7-8/97
Signature of Sampler: William D. Olson

SOIL SAMPLE

DEPTH OF SAMPLE 0-1

EQUIPMENT USED FOR COLLECTION:
- [X] HAND AUGER
- [ ] S.S. SPLIT SPOON
- [ ] SHOVEL
- [ ] HAND SPOON
- [ ] ALUMINUM PANS
- [ ] SS BUCKET
- [ ] _____

TYPE OF SAMPLE COLLECTED:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS:
- [ ] ODOR _____
- [X] COLOR Dark brown
- [ ] Shell Material

DECONTAMINATION FLUIDS USED:
- ✓ ALL USED
- [ ] ETHYL ALCOHOL
- [ ] 25% METHANOL 75% ASTM TYPE II WATER
- [X] DEIONIZED WATER
- [X] LIQUINOX SOLUTION
- [ ] HEXANE
- [ ] HNO_3 SOLUTION
- [X] POTABLE WATER
- [X] ~~NONE~~ IPA

SOIL TYPE:
- [ ] CLAY
- [X] SAND
- [ ] ORGANIC
- [ ] GRAVEL

FIELD GC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
[ ] YES
[ ] NO SEE 29500201

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[X] TCL VOC	[ ]	[ ]	[ ]	1x 2oz	[X]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[X] TCL SVOC	[ ]	[ ]	[ ]		[X]	/ / /
[X] TCL PEST/PCB	[ ]	[ ]	[ ]	2x 4oz	[X]	/ / /
[X] TAL INORGANIC	[ ]	[ ]	[ ]		[X]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[X] TPH	[ ]	[ ]	[ ]	1x 4oz	[X]	/ / /

NOTES/SKETCH

SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 08545.10
Sample Location ID: 29S00601
Time: Start: 1437 End:

Site: SA 29
Date: 7-8/97
Signature of Sampler: William D. Olson

SOIL SAMPLE

DEPTH OF SAMPLE 0-1

EQUIPMENT USED FOR COLLECTION:
- [X] HAND AUGER
- [ ] S.S. SPLIT SPOON
- [ ] SHOVEL
- [ ] HAND SPOON
- [ ] ALUMINUM PANS
- [ ] SS BUCKET
- [ ] _____

TYPE OF SAMPLE COLLECTED:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS:
- [ ] ODOR _____
- [X] COLOR Dark Brown
- [ ] _____

DECONTAMINATION FLUIDS USED:
- ✓ ALL USED
- [ ] ETHYL ALCOHOL
- [ ] 25% METHANOL 75% ASTM TYPE II WATER
- [X] DEIONIZED WATER
- [X] LIQUINOX SOLUTION
- [ ] HEXANE
- [ ] HNO_3 SOLUTION
- [X] POTABLE WATER
- [X] ~~NONE~~, PA

SOIL TYPE:
- [ ] CLAY
- [X] SAND
- [ ] ORGANIC
- [ ] GRAVEL

FIELD GC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
- [ ] YES
- [ ] NO

Sec 29S00201

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[X] TCL VOC	[ ]	[ ]	[ ]	1x 2oz	[X]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[X] TCL SVOC	[ ]	[ ]	[ ]		[X]	/ / /
[X] TCL PEST/PCB	[ ]	[ ]	[ ]	2x 4oz	[X]	/ / /
[X] TAL INORGANIC	[ ]	[ ]	[ ]		[X]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[X] TPH	[ ]	[ ]	[ ]	1x 4oz	[X]	/ / /

NOTES/SKETCH

SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 08545.10
Sample Location ID: 29500701
Time: Start: 1350 End:

Site: SA 29
Date: 7-2/97
Signature of Sampler: William D. Olson

SOIL SAMPLE

DEPTH OF SAMPLE 0-1

EQUIPMENT USED FOR COLLECTION:
- [X] HAND AUGER
- [ ] S.S. SPLIT SPOON
- [ ] SHOVEL
- [ ] HAND SPOON
- [ ] ALUMINUM PANS
- [ ] SS BUCKET
- [ ] _____

TYPE OF SAMPLE COLLECTED:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS:
- [ ] ODOR _____
- [X] COLOR dark brown
- [ ] _____

DECONTAMINATION FLUIDS USED:
- ✓ ALL USED
- [ ] ETHYL ALCOHOL
- [ ] 25% METHANOL/75% ASTM TYPE II WATER
- [X] DEIONIZED WATER
- [X] LIQUINOX SOLUTION
- [ ] HEXANE
- [ ] HNO_3 SOLUTION
- [X] POTABLE WATER
- [X] ~~NONE~~ IPA

SOIL TYPE:
- [ ] CLAY
- [X] SAND
- [ ] ORGANIC
- [ ] GRAVEL

FIELD GC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
[ ] YES
[ ] NO
see 29500201

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[X] TCL VOC	[ ]	[ ]	[ ]	1 x 2oz	[X]	____/____/____/____
[ ]	[ ]	[ ]	[ ]		[ ]	____/____/____/____
[X] TCL SVOC	[ ]	[ ]	[ ]		[X]	____/____/____/____
[X] TCL PEST/PCB	[ ]	[ ]	[ ]	2 x 4oz	[X]	____/____/____/____
[X] TAL INORGANIC	[ ]	[ ]	[ ]		[X]	____/____/____/____
[ ]	[ ]	[ ]	[ ]		[ ]	____/____/____/____
[X] TPH	[ ]	[ ]	[ ]	1 x 4oz	[X]	____/____/____/____

NOTES/SKETCH

SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 08545.10
Sample Location ID: 295 00801
Time: Start: 1330 End:

Site: SA 29
Date: ~~7-8/97~~ 7-2/97
Signature of Sampler: [signature]

SOIL SAMPLE

DEPTH OF SAMPLE 0-1

EQUIPMENT USED FOR COLLECTION:
- [X] HAND AUGER
- [ ] S.S. SPLIT SPOON
- [ ] SHOVEL
- [ ] HAND SPOON
- [ ] ALUMINUM PANS
- [ ] SS BUCKET
- [ ] _____

TYPE OF SAMPLE COLLECTED:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS:
- [ ] ODOR
- [X] COLOR Dark brown
- [X] Stained

DECONTAMINATION FLUIDS USED:
- ✓ ALL USED
- [ ] ETHYL ALCOHOL
- [ ] 25% METHANOL 75% ASTM TYPE II WATER
- [X] DEIONIZED WATER
- [X] LIQUINOX SOLUTION
- [ ] HEXANE
- [ ] HNO_3 SOLUTION
- [X] POTABLE WATER
- [X] ~~NONE~~ IPA

SOIL TYPE:
- [ ] CLAY
- [X] SAND
- [ ] ORGANIC
- [ ] GRAVEL

FIELD QC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
[ ] YES
[ ] NO See 295 00201

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[X] TCL VOC	[ ]	[ ]	[ ]	1 x 2oz	[X]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[X] TCL SVOC	[ ]	[ ]	[ ]		[X]	/ / /
[X] TCL PEST/PCB	[ ]	[ ]	[ ]	2 x 4oz	[X]	/ / /
[X] TAL INORGANIC	[ ]	[ ]	[ ]		[X]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[X] TPH	[ ]	[ ]	[ ]	1 x 4oz	[X]	/ / /

NOTES/SKETCH

SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 08545.10
Sample Location ID: 29B0010
Time: Start: 1435 End:

Site: SA 29
Date: 7-2/97
Signature of Sampler: William D. Olson

SOIL SAMPLE

DEPTH OF SAMPLE 1.5-2.5'

EQUIPMENT USED FOR COLLECTION:
[X] HAND AUGER
[ ] S.S. SPLIT SPOON
[ ] SHOVEL
[ ] HAND SPOON
[ ] ALUMINUM PANS
[ ] SS BUCKET
[ ] _____

TYPE OF SAMPLE COLLECTED:
[X] DISCRETE
[ ] COMPOSITE

SAMPLE OBSERVATIONS:
[ ] ODOR _____
[X] COLOR Dark Brown
[ ] _____

DECONTAMINATION FLUIDS USED:
✓ ALL USED
[ ] ETHYL ALCOHOL
[ ] 25% METHANOL 75% ASTM TYPE II WATER
[X] DEIONIZED WATER
[X] LIQUINOX SOLUTION
[ ] HEXANE
[ ] HNO_3 SOLUTION
[X] POTABLE WATER
[X] ~~NONE~~ IPA

SOIL TYPE:
[ ] CLAY
[X] SAND
[ ] ORGANIC
[ ] GRAVEL

FIELD GC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
[ ] YES
[ ] NO SEE 29S0020I

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[X] TCL VOC	[ ]	[ ]	[ ]	1X 2oz	[X]	____/____/____/____
[ ]	[ ]	[ ]	[ ]		[ ]	____/____/____/____
[X] TCL SVOC	[ ]	[ ]	[ ]		[X]	____/____/____/____
[X] TCL PEST/PCB	[ ]	[ ]	[ ]	2X 4oz	[X]	____/____/____/____
[X] TAL INORGANIC	[ ]	[ ]	[ ]		[X]	____/____/____/____
[ ]	[ ]	[ ]	[ ]		[ ]	____/____/____/____
[X] TPH	[ ]	[ ]	[ ]	1X 4oz	[X]	____/____/____/____

NOTES/SKETCH

SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 08545.10
Sample Location ID: 29B00201
Time: Start: 1410 End:

Site: SA 29
Date: 7-2/97
Signature of Sampler: William D. Olson

SOIL SAMPLE

DEPTH OF SAMPLE 2-3'

EQUIPMENT USED FOR COLLECTION:
[X] HAND AUGER
[ ] S.S. SPLIT SPOON
[ ] SHOVEL
[ ] HAND SPOON
[ ] ALUMINUM PANS
[ ] SS BUCKET
[ ] _____

TYPE OF SAMPLE COLLECTED:
[ ] DISCRETE
[ ] COMPOSITE

SAMPLE OBSERVATIONS:
[ ] ODOR _____
[X] COLOR Dark Brown
[ ] _____

DECONTAMINATION FLUIDS USED:
✓ ALL USED
[ ] ETHYL ALCOHOL
[ ] 25% METHANOL 75% ASTM TYPE II WATER
[X] DEIONIZED WATER
[X] LIQUINOX SOLUTION
[ ] HEXANE
[ ] HNO_3 SOLUTION
[X] POTABLE WATER
[X] ~~NONE~~ IPA

SOIL TYPE:
[ ] CLAY
[X] SAND
[ ] ORGANIC
[ ] GRAVEL

FIELD GC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
[ ] YES
[ ] NO SEE 29S00201

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[X] TCL VOC	[ ]	[ ]	[ ]	1X 2oz	[X]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[X] TCL SVOC	[ ]	[ ]	[ ]		[X]	/ / /
[X] TCL PESTICIDE	[ ]	[ ]	[ ]	2X 4oz	[X]	/ / /
[X] TAL INORGANIC	[ ]	[ ]	[ ]		[X]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[X] TPH	[ ]	[ ]	[ ]	1X 4oz	[X]	/ / /

NOTES/SKETCH

APPENDIX B

SUMMARY OF POSITIVE DETECTIONS TABLES

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

TABLE B-1

SUMMARY OF POSITIVE DETECTIONS IN SURFACE SOIL

Appendix B

Table B-1. Summary of Positive Detections in Surface Soil Analytical Results

Study Area 29

Naval Training Center, Orlando

Orlando, FL

Sample ID	Background Screening [1]		SCG for Residential Soil		RBC [3] for Residential Soil		RBC [3] for Industrial Soil		29S00101		29S00201		29S00201D		29S00301		29S00401		29S00501	
Sampling Date									8-Jul-97		8-Jul-97		8-Jul-97		8-Jul-97		8-Jul-97		8-Jul-97	
Semivolatile organics, ug/kg																				
Acenaphthylene			670,000		2,300,000	n	61,000,000	n												
Anthracene			20000000		23,000,000	n	610000000	n												
Benzo(a)anthracene			1,400		880	c	7,800	c												
Benzo(a)pyrene			100		88	c	780	c							48	J				
Benzo(b)fluoranthene			1,400		880	c	7,800	c	68	J					68	J				
Benzo(g,h,i)perylene			14,000		2300000	n	61,000,000	n												
Benzo(k)fluoranthene			14,000		8,800	c	78,000	c							49	J				
bis(2-Ethylhexyl)phthalate			48,000		46,000	c	410,000	c							94	J				
Butylbenzylphthalate			15,000,000		16000000	n	410,000,000	n							230	J				
Carbazole			42,000		32,000	c	290,000	c												
Chrysene			140,000		88,000	c	780,000	c	51	J					57	J				
Di-n-butylphthalate			7,300,000		7,800,000	n	200,000,000	n							150	J				
Fluoranthene			2,900,000		3,100,000	n	82,000,000	n	63	J					70	J				
Indeno(1,2,3-cd)pyrene			1400		880	c	7,800	c												
Pentachlorophenol			5,400		5,300	c	48,000	c												
Pyrene			2,200,000		2,300,000	n	61,000,000	n							47	J				
Pesticides/PCBs, ug/kg																				
4,4'-DDD			4500		2,700	c	24,000	c	150								39			
4,4'-DDE			3000		1,900	c	17,000	c	1500	D	17		12		64		830	D		
4,4'-DDT			3100		1,900	c	17,000	c	1300	D	6.9		5.4		23		510	D	120	
alpha-Chlordane			800		490	c	4,400	c	19						47	J				
gamma-Chlordane			800		490	c	4,400	c							44					

Appendix B

Table B-1. Summary of Positive Detections in Surface Soil Analytical Results

Study Area 29

Naval Training Center, Orlando

Orlando, FL

Sample ID	Background Screening [1]		SCG for Residential Soil		RBC [3] for Residential Soil		RBC [3] for Industrial Soil		29S00101		29S00201		29S00201D		29S00301		29S00401		29S00501	
Sampling Date									8-Jul-97		8-Jul-97		8-Jul-97		8-Jul-97		8-Jul-97		8-Jul-97	
Methoxychlor			380000		390,000	n	10,000,000	n												
Inorganics, mg/kg																				
Aluminum	2088		75000		78,000	n	1,000,000	n	2900		1120		1340		1380		2300		1110	
Arsenic	1.0		0.8		0.43 /23	c/n	3.8 c/610	c/n	0.66	J							0.97	J		
Barium	8.7		5,200.0		5,500	n	140,000	n	19.6	J	7.6	J	9.7	J	11.7	J	5.5	J	8.8	J
Calcium	25295		ND		1000000		1000000		7830		1500		1930		9890		6970		56200	
Chromium	5		290		390	n	10,000	n	4.4		1.5	J	1.8	J	4.2		6.3		2.5	J
Copper	4.1		ND		3,100	n	82,000	n	4.5	J	3.5	J	3.8	J	5	J	4	J	3.5	J
Iron	712		ND		23,000	n	610,000	n	873		158		141		830		1930		695	
Lead	14.5		500		400		400		33.7		10		11.4		24		26.3		12.5	
Magnesium	328		ND		460,468		460,468		157	J	61.9	J	87	J	178	J	126	J	206	J
Manganese	8.1		370		1,800	n	47,000	n	7.7		1.4	J	1.6	J	9.7		8.6		4.9	
Potassium	210		ND		1,000,000		1,000,000		128	J					88.5	J	121	J	118	J
Selenium	1.1		390		390	n	10,000	n					0.84	J			0.74	J		
Sodium	ND		ND		100,000		1,000,000		59.2	J	62	J	74.4	J	39.4	J	613	J	474	J
Vanadium	3.1		490		550	n	14,000	n	2.5	J	1.7	J	1.6	J	2.5	J	8	J	3.5	J
Zinc	17.2		23000		23,000	n	610,000	n	64.3		5	J	6.7		52.7		17		16.3	

Appendix B

Table B-1. Summary of Positive Detections in Surface Soil Analytical Results
Study Area 29

Naval Training Center, Orlando
Orlando, FL

Sample ID	Background Screening [1]		SCG for Residential Soil		RBC [3] for Residential Soil		RBC [3] for Industrial Soil		29S00601		29S00701		29S00801	
Sampling Date									8-Jul-97		2-Jul-97		2-Jul-97	
Semivolatile organics, ug/kg														
Acenaphthylene			670,000		2,300,000	n	61,000,000	n	110	J				
Anthracene			20000000		23,000,000	n	610000000	n	240	J				
Benzo(a)anthracene			1,400		880	c	7,800	c	330	J				
Benzo(a)pyrene			100		88	c	780	c	430					
Benzo(b)fluoranthene			1,400		880	c	7,800	c	1300					
Benzo(g,h,i)perylene			14,000		2300000	n	61,000,000	n	66	J				
Benzo(k)fluoranthene			14,000		8,800	c	78,000	c	500					
bis(2-Ethylhexyl)phthalate			48,000		46,000	c	410,000	c						
Butylbenzylphthalate			15,000,000		16000000	n	410,000,000	n						
Carbazole			42,000		32,000	c	290,000	c	65	J				
Chrysene			140,000		88,000	c	780,000	c	680					
Di-n-butylphthalate			7,300,000		7,800,000	n	200,000,000	n						
Fluoranthene			2,900,000		3,100,000	n	82,000,000	n	500		50	J		
Indeno(1,2,3-cd)pyrene			1400		880	c	7,800	c	110	J				
Pentachlorophenol			5,400		5,300	c	48,000	c	510	J				
Pyrene			2,200,000		2,300,000	n	61,000,000	n	910					
Pesticides/PCBs, ug/kg														
4,4'-DDD			4500		2,700	c	24,000	c						
4,4'-DDE			3000		1,900	c	17,000	c	3.1	J	210		7.1	
4,4'-DDT			3100		1,900	c	17,000	c			40		7.4	
alpha-Chlordane			800		490	c	4,400	c						
gamma-Chlordane			800		490	c	4,400	c						

Appendix B

Table B-1. Summary of Positive Detections in Surface Soil Analytical Results

Study Area 29

Naval Training Center, Orlando
Orlando, FL

Sample ID	Background Screening [1]		SCG for Residential Soil		RBC [3] for Residential Soil		RBC [3] for Industrial Soil		29S00601		29S00701		29S00801	
Sampling Date									8-Jul-97		2-Jul-97		2-Jul-97	
Methoxychlor			380000		390,000	n	10,000,000	n	14	J				
Inorganics, mg/kg														
Aluminum	2088		75000		78,000	n	1,000,000	n	2600		3760	J	2510	J
Arsenic	1.0		0.8		0.43 /23	c/n	3.8 c/610	c/n	1.1	J	2.2	J	2.2	J
Barium	8.7		5,200.0		5,500	n	140,000	n	11.8	J	5	J	5.2	J
Calcium	25295		ND		1000000		1000000		1030	J	1190	J	1930	
Chromium	5		290		390	n	10,000	n	3.6		6.8		6.8	
Copper	4.1		ND		3,100	n	82,000	n	2	J	4.7	J	2.5	J
Iron	712		ND		23,000	n	610,000	n	207		641		371	
Lead	14.5		500		400		400		4.6		17.2		14.4	
Magnesium	328		ND		460,468		460,468		65.7	J			116	J
Manganese	8.1		370		1,800	n	47,000	n	5.4		3.6	J	7.4	
Potassium	210		ND		1,000,000		1,000,000		113	J	95.7	J		
Selenium	1.1		390		390	n	10,000	n						
Sodium	ND		ND		100,000		1,000,000		40.8	J	129	J		
Vanadium	3.1		490		550	n	14,000	n	1.2	J	2	J	1.1	J
Zinc	17.2		23000		23,000	n	610,000	n	26.4		27.3		51.4	

Appendix B

Table B-1. Summary of Positive Detections in Surface Soil Analytical Results
Study Area 29

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, March 1997, 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, potassium) screening values were derived based on recommended daily allowances (RDAs).
RBC for benzo(g,h,i)perylene and phenanthrene are not available, value is based on pyrene.

n = noncarcinogenic pathway
c = carcinogenic pathway
ND = Not determined.
bls = below land surface
PCB = polychlorinated biphenyl.
mg/kg = milligrams per kilogram.
ug/kg = micrograms per kilogram.
OSWER = Office of Solid Waste and Emergency Response.
USEPA = U.S. Environmental Protection Agency.
DDD = Dichlorodiphenyldichloroethane
DDE = Dichlorodiphenyldichloroethene
DDT = Dichlorodiphenyltrichloroethane
D = Indicates value was determined during a diluted reanalysis.
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.
Bold/shaded values indicate exceedance of SCG or background (if background is higher than SCG).
Blank space indicates analyte/compound was not detected at the reporting limit.

TABLE B-2

SUMMARY OF POSITIVE DETECTIONS IN SUBSURFACE SOIL

Appendix B

Table B-2. Summary of Positive Detections in Subsurface Soil Analytical Results
Study Area 29

Naval Training Center, Orlando
Orlando, FL

Sample ID	Background Screening [1]		SCG [2] Leaching		RBC [3] for Residential Soil		RBC [3] for Industrial Soil		29B00101		29B00201		
Sampling Date									2-Jul-97		2-Jul-97		
Semivolatile organics, ug/kg													
Fluoranthene			NA		3,100,000	n	82,000,000	n	76	J			
Inorganics, mg/kg													
Aluminum	2,119		NA		78,000	n	1,000,000	n	2360	J	2530	J	
Arsenic	1.1		NA		0.43 /23	c/n	3.8 /610	c/n			0.56	J	
Barium	3.6		NA		5,500	n	140,000	n	18	J	5.9	J	
Calcium	115		NA		1,000,000		1,000,000		955	J	622	J	
Chromium	3.7		NA		390	n	10,000	n	2.5	J	7		
Copper	ND		NA		3,100	n	82,000	n	0.62	J	0.63	J	
Iron	264		NA		23,000	n	610,000	n	91.4		63.8		
Lead	3.9		NA		400		400		1.8		12.5		
Manganese	2.1		NA		1800	n	47,000	n	1.3	J	1.5	J	
Potassium	185		NA		1,000,000		1,000,000				81	J	
Vanadium	3.4		NA		550	n	14,000	n	1.2	J	1.5	J	

Appendix B

Table B-2. Summary of Positive Detections in Subsurface Soil Analytical Results
Study Area 29

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).
For detected analytes and compounds in subsurface soils, SCGs are not applicable (NAs) because there are no associated exceedances of Florida groundwater guidance concentrations in site groundwater.
[3] RBC = Risk-Based Concentration Table, USEPA Region III, March 1997, 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, potassium) screening values were derived based on recommended daily allowances (RDAs).

n = noncarcinogenic pathway
c = carcinogenic pathway
NA = Not applicable (for SCGs) or not analyzed.
ND = Not determined.
mg/kg = milligrams per kilogram.
ug/kg = micrograms per kilogram.
OSWER = Office of Solid Waste and Emergency Response.
USEPA = U.S. Environmental Protection Agency.
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.

TABLE B-3

SUMMARY OF POSITIVE DETECTIONS IN GROUNDWATER

Appendix B

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

Study Area 29

Naval Training Center, Orlando
Orlando, FL

Identifier	Background [1] Screening		FDEPG		Primary FEDMCL		RBC[2] for Tap Water		29G00101		29H00101		29G00201		29G00201D		29H00201		29H00201D	
Sampling Date									26-Jun-97		26-Jun-97		26-Jun-97		26-Jun-97		26-Jun-97		26-Jun-97	
Volatile Organics, ug/L																				
Toluene			40 / 1,000	s/p	1,000		750	n	0.61											
Semivolatile Organics, ug/L																				
bis(2-Ethylhexyl)phthalate			6	p	ND		4.8	c					48							
Inorganics, ug/L																				
Aluminum	4,067		200	s	ND		37,000	n	254		371		397		379		77.4	J	83.8	J
Arsenic	5		50	p	50		0.045/11	c/n					2.6	J			2.7	J		
Barium	31.4		2,000	p	2,000		2,600	n	9.4	J	11	J	10.4	J	10.6	J	9.8	J	9.7	J
Beryllium	ND		4	p	4		0.016	c	0.18	J	0.32	J			0.21	J	0.15	J		
Calcium	36,830		ND		ND		1,000,000		41000	J	41200	J	74000	J	74400	J	76400	J	76000	J
Copper	5.4		1,000	s	1,300		1,500	n			1.7	J					3.4	J	2.5	J
Iron	1,227		300	s	ND		11,000	n	43.6	J	42	J	83.8	J	73.2	J	52.6	J	52.9	J
Lead	4		15	p	15		15						3.3	J					1.3	J
Magnesium	4,560		ND		ND		118,807		3050	J	3210	J	4440	J	4460	J	4500	J	4480	J
Manganese	17		50	s	ND		840	n	11.1	J	11.1	J	50.6		50.6		47.9		47.9	
Potassium	5,400		ND		ND		297,016		2010	J	2110	J	1690	J	1860	J	1910	J	1890	J
Sodium	18,222		160,000	p	ND		396,022		12300		13100		15600		15600		15700		16100	
Vanadium	20.6		49	st	ND		260	n	3.6	J	3.6	J					3	J	3.1	J

Appendix B
Table B-3. Summary of Positive Detections in Groundwater Analytical Results
Study Area 29

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, March 1997, R.L. Smith. RBC for chromium is based on chromium VI.
For essential nutrients (calcium, magnesium, sodium and potassium) screening values were derived based on recommended daily allowances (RDAs).
s = Secondary Standard.
st = Systemic Toxicant
p = Primary Standard

n = noncarcinogenic effects.
c = carcinogenic effects.
ND = Not determined.
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, October 1996.
J = Reported concentration is an estimated quantity.
G = unfiltered water sample.
H = filtered water sample.
ug/l = micrograms per liter.
Bold/shaded numbers indicate exceedance of groundwater guidance or background (if background is higher than groundwater guidance)
Blank space indicates analyte/compound was not detected at the reporting limit.

APPENDIX C

SUMMARY OF ANALYTICAL RESULTS

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

TABLE C-1

SUMMARY OF ANALYTICAL RESULTS IN SURFACE SOIL

Appendix C
Table C-1. Summary of Surface Soil Analytical Results
Study Area 29

Naval Training Center, Orlando
Orlando, FL

Sample ID	29S00101		29S00201		29S00201D		29S00301		29S00401		29S00501	
Lab ID	C7G100151018		C7G100151014		C7G100151015		C7G100151016		C7G100151017		C7G100151019	
Sampling Date	8-Jul-97		8-Jul-97		8-Jul-97		8-Jul-97		8-Jul-97		8-Jul-97	
Volatile organics, ug/kg												
1,1,1-Trichloroethane	13	U	14	U	13	U	12	U	12	U	14	U
1,1,2,2-Tetrachloroethane	13	U	14	U	13	U	12	U	12	U	14	U
1,1,2-Trichloroethane	13	U	14	UJ	13	U	12	UJ	12	UJ	14	UJ
1,1-Dichloroethane	13	U	14	U	13	U	12	U	12	U	14	U
1,1-Dichloroethene	13	U	14	U	13	U	12	U	12	U	14	U
1,2-Dichloroethane	13	U	14	U	13	U	12	U	12	U	14	U
1,2-Dichloroethene (total)	13	U	14	U	13	U	12	U	12	U	14	U
1,2-Dichloropropane	13	U	14	U	13	U	12	U	12	U	14	U
2-Butanone	13	UJ	14	UJ	13	UJ	12	UJ	12	UJ	14	UJ
2-Hexanone	13	UJ	14	UJ	13	UJ	12	UJ	12	UJ	14	UJ
4-Methyl-2-pentanone	13	U	14	U	13	U	12	U	12	U	14	U
Acetone	13	UJ	14	UJ	13	UJ	12	UJ	12	UJ	14	UJ
Benzene	13	U	14	U	13	U	12	U	12	U	14	U
Bromodichloromethane	13	U	14	U	13	U	12	U	12	U	14	U
Bromoform	13	U	14	UJ	13	U	12	UJ	12	UJ	14	UJ
Bromomethane	13	UJ	14	U	13	UJ	12	U	12	U	14	U
Carbon disulfide	13	UJ	14	UJ	13	UJ	12	UJ	12	UJ	14	UJ
Carbon tetrachloride	13	U	14	U	13	U	12	U	12	U	14	U
Chlorobenzene	13	U	14	U	13	U	12	U	12	U	14	U
Chloroethane	13	U	14	U	13	U	12	U	12	U	14	U
Chloroform	13	U	14	U	13	U	12	U	12	U	14	U
Chloromethane	13	UJ	14	UJ	13	UJ	12	UJ	12	UJ	14	UJ
cis-1,3-Dichloropropene	13	U	14	U	13	U	12	U	12	U	14	U
Dibromochloromethane	13	U	14	U	13	U	12	U	12	U	14	U
Ethylbenzene	13	U	14	U	13	U	12	U	12	U	14	U
Methylene chloride	13	U	14	U	13	U	12	U	12	U	14	U
Styrene	13	U	14	U	13	U	12	U	12	U	14	U
Tetrachloroethene	13	U	14	U	13	U	12	U	12	U	14	U
Toluene	13	U	14	UJ	13	UJ	12	U	12	U	14	U
trans-1,3-Dichloropropene	13	U	14	U	13	U	12	U	12	U	14	U
Trichloroethene	13	U	14	U	13	U	12	U	12	U	14	U
Vinyl chloride	13	UJ	14	U	13	UJ	12	U	12	U	14	U
Xylene (total)	13	U	14	U	13	U	12	U	12	U	14	U
Semivolatile organics, ug/kg												
1,2,4-Trichlorobenzene	430	U	450	U	430	U	390	U	390	U	450	U
1,2-Dichlorobenzene	430	U	450	U	430	U	390	U	390	U	450	U
1,3-Dichlorobenzene	430	U	450	U	430	U	390	U	390	U	450	U
1,4-Dichlorobenzene	430	U	450	U	430	U	390	U	390	U	450	U
2,2'-oxybis(1-Chloropropane)	430	U	450	U	430	U	390	U	390	U	450	U
2,4,5-Trichlorophenol	1000	U	1100	U	1000	U	950	U	950	U	1100	U
2,4,6-Trichlorophenol	430	U	450	U	430	U	390	U	390	U	450	U
2,4-Dichlorophenol	430	U	450	U	430	U	390	U	390	U	450	U
2,4-Dimethylphenol	430	U	450	U	430	U	390	U	390	U	450	U
2,4-Dinitrophenol	1000	U	1100	U	1000	U	950	U	950	U	1100	U
2,4-Dinitrotoluene	430	U	450	U	430	U	390	U	390	U	450	U
2,6-Dinitrotoluene	430	U	450	U	430	U	390	U	390	U	450	U
2-Chloronaphthalene	430	U	450	U	430	U	390	U	390	U	450	U
2-Chlorophenol	430	U	450	U	430	U	390	U	390	U	450	U
2-Methylnaphthalene	430	U	450	U	430	U	390	U	390	U	450	U
2-Methylphenol	430	U	450	U	430	U	390	U	390	U	450	U

Appendix C
Table C-1. Summary of Surface Soil Analytical Results
Study Area 29

Naval Training Center, Orlando
Orlando, FL

Sample ID	29S00101		29S00201		29S00201D		29S00301		29S00401		29S00501	
Lab ID	C7G100151018		C7G100151014		C7G100151015		C7G100151016		C7G100151017		C7G100151019	
Sampling Date	8-Jul-97		8-Jul-97		8-Jul-97		8-Jul-97		8-Jul-97		8-Jul-97	
2-Nitroaniline	1000	U	1100	U	1000	U	950	U	950	U	1100	U
2-Nitrophenol	430	U	450	U	430	U	390	U	390	U	450	U
3,3'-Dichlorobenzidine	430	U	450	U	430	U	390	U	390	U	450	U
3-Nitroaniline	1000	U	1100	U	1000	U	950	U	950	U	1100	U
4,6-Dinitro-2-methylphenol	1000	U	1100	U	1000	U	950	U	950	U	1100	U
4-Bromophenyl-phenylether	430	U	450	U	430	U	390	U	390	U	450	U
4-Chloro-3-methylphenol	430	U	450	U	430	U	390	U	390	U	450	U
4-Chloroaniline	430	U	450	U	430	U	390	U	390	U	450	U
4-Chlorophenyl-phenylether	430	U	450	U	430	U	390	U	390	U	450	U
4-Methylphenol	430	U	450	U	430	U	390	U	390	U	450	U
4-Nitroaniline	1000	U	1100	U	1000	U	950	U	950	U	1100	U
4-Nitrophenol	1000	U	1100	U	1000	U	950	U	950	U	1100	U
Acenaphthene	430	U	450	U	430	U	390	U	390	U	450	U
Acenaphthylene	430	U	450	U	430	U	390	U	390	U	450	U
Anthracene	430	U	450	U	430	U	390	U	390	U	450	U
Benzo(a)anthracene	430	U	450	U	430	U	390	U	390	U	450	U
Benzo(a)pyrene	430	U	450	U	430	U	48	J	390	U	450	U
Benzo(b)fluoranthene	68	J	450	U	430	U	68	J	390	U	450	U
Benzo(g,h,i)perylene	430	U	450	U	430	U	390	U	390	U	450	U
Benzo(k)fluoranthene	430	U	450	U	430	U	49	J	390	U	450	U
bis(2-Chloroethoxy)methane	430	U	450	U	430	U	390	U	390	U	450	U
bis(2-Chloroethyl)ether	430	U	450	U	430	U	390	U	390	U	450	U
bis(2-Ethylhexyl)phthalate	430	U	450	U	430	U	94	J	390	U	450	U
Butylbenzylphthalate	430	U	450	U	430	U	230	J	390	U	450	U
Carbazole	430	U	450	U	430	U	390	U	390	U	450	U
Chrysene	51	J	450	U	430	U	57	J	390	U	450	U
Di-n-butylphthalate	430	U	450	U	430	U	150	J	390	U	450	U
Di-n-octylphthalate	430	U	450	U	430	U	390	U	390	U	450	U
Dibenz(a,h)anthracene	430	U	450	U	430	U	390	U	390	U	450	U
Dibenzofuran	430	U	450	U	430	U	390	U	390	U	450	U
Diethylphthalate	430	U	450	U	430	U	390	U	390	U	450	U
Dimethylphthalate	430	U	450	U	430	U	390	U	390	U	450	U
Fluoranthene	63	J	450	U	430	U	70	J	390	U	450	U
Fluorene	430	U	450	U	430	U	390	U	390	U	450	U
Hexachlorobenzene	430	U	450	U	430	U	390	U	390	U	450	U
Hexachlorobutadiene	430	U	450	U	430	U	390	U	390	U	450	U
Hexachlorocyclopentadiene	430	U	450	U	430	U	390	U	390	U	450	U
Hexachloroethane	430	U	450	U	430	U	390	U	390	U	450	U
Indeno(1,2,3-cd)pyrene	430	U	450	U	430	U	390	U	390	U	450	U
Isophorone	430	U	450	U	430	U	390	U	390	U	450	U
N-Nitroso-di-n-propylamine	430	U	450	U	430	U	390	U	390	U	450	U
N-Nitrosodiphenylamine (1)	430	U	450	U	430	U	390	U	390	U	450	U
Naphthalene	430	U	450	U	430	U	390	U	390	U	450	U
Nitrobenzene	430	U	450	U	430	U	390	U	390	U	450	U
Pentachlorophenol	1000	U	1100	U	1000	U	950	U	950	U	1100	U
Phenanthrene	430	U	450	U	430	U	390	U	390	U	450	U
Phenol	430	U	450	U	430	U	390	U	390	U	450	U
Pyrene	430	U	450	U	430	U	47	J	390	U	450	U
Pesticides/PCBs, ug/kg												
4,4'-DDD	150		4.5	U	4.3	U	20	U	39		22	U
4,4'-DDE	1500	D	17		12		64		830	D	22	U

Appendix C

Table C-1. Summary of Surface Soil Analytical Results
Study Area 29

Naval Training Center, Orlando
Orlando, FL

Sample ID	29S00101		29S00201		29S00201D		29S00301		29S00401		29S00501	
Lab ID	C7G100151018		C7G100151014		C7G100151015		C7G100151016		C7G100151017		C7G100151019	
Sampling Date	8-Jul-97		8-Jul-97		8-Jul-97		8-Jul-97		8-Jul-97		8-Jul-97	
4,4'-DDT	1300	D	6.9		5.4		23		510	D	120	
Aldrin	11	U	2.3	U	2.2	U	10	U	4	U	11	U
alpha-BHC	11	UJ	2.3	UJ	2.2	UJ	10	UJ	4	UJ	11	UJ
alpha-Chlordane	19		2.3	U	2.2	U	47	P	4	U	11	U
Aroclor-1016	210	U	45	U	43	U	200	U	79	U	220	U
Aroclor-1221	440	U	92	U	87	U	400	U	160	U	450	U
Aroclor-1232	210	U	45	U	43	U	200	U	79	U	220	U
Aroclor-1242	210	U	45	U	43	U	200	U	79	U	220	U
Aroclor-1248	210	U	45	U	43	U	200	U	79	U	220	U
Aroclor-1254	210	U	45	U	43	U	200	U	79	U	220	U
Aroclor-1260	210	U	45	U	43	U	200	U	79	U	220	U
beta-BHC	11	U	2.3	U	2.2	U	10	U	4	U	11	U
delta-BHC	11	UJ	2.3	UJ	2.2	UJ	10	UJ	4	UJ	11	UJ
Dieldrin	21	U	4.5	U	4.3	U	20	U	7.9	U	22	U
Endosulfan I	11	U	2.3	U	2.2	U	10	U	4	U	11	U
Endosulfan II	21	U	4.5	U	4.3	U	20	U	7.9	U	22	U
Endosulfan sulfate	21	U	4.5	U	4.3	U	20	U	7.9	U	22	U
Endrin	21	U	4.5	U	4.3	U	20	U	7.9	U	22	U
Endrin aldehyde	21	U	4.5	U	4.3	U	20	U	7.9	U	22	U
Endrin ketone	21	U	4.5	U	4.3	U	20	U	7.9	U	22	U
gamma-BHC (Lindane)	11	U	2.3	U	2.2	U	10	U	4	U	11	U
gamma-Chlordane	11	U	2.3	U	2.2	U	44		4	U	11	U
Heptachlor	11	U	2.3	U	2.2	U	10	U	4	U	11	U
Heptachlor epoxide	11	U	2.3	U	2.2	U	10	U	4	U	11	U
Methoxychlor	110	U	23	U	22	U	100	U	40	U	110	U
Toxaphene	1100	U	230	U	220	U	1000	U	400	U	1100	U
Inorganics, mg/kg												
Aluminum	2900		1120		1340		1380		2300		1110	
Antimony	3.6	U	3.8	U	3.7	U	3.3	U	3.3	U	3.8	U
Arsenic	0.66	J	0.63	U	0.6	U	0.55	U	0.97	J	0.63	U
Barium	19.6	J	7.6	J	9.7	J	11.7	J	5.5	J	8.8	J
Beryllium	0.12	U	0.03	UJ	0.1	UJ	0.04	U	0.08	U	0.1	U
Cadmium	0.67	U	0.7	U	0.67	U	0.61	U	0.61	U	0.7	U
Calcium	7830		1500		1930		9890		6970		56200	
Chromium	4.4		1.5	J	1.8	J	4.2		6.3		2.5	J
Cobalt	0.81	U	0.86	U	0.81	U	0.75	U	0.74	U	0.85	U
Copper	4.5	J	3.5	J	3.8	J	5	J	4	J	3.5	J
Iron	873		158		141		830		1930		695	
Lead	33.7		10		11.4		24		26.3		12.5	
Magnesium	157	J	61.9	J	87	J	178	J	126	J	206	J
Manganese	7.7		1.4	J	1.6	J	9.7		8.6		4.9	
Mercury	0.13	UJ	0.14	UJ	0.13	UJ	0.12	UJ	0.12	UJ	0.14	UJ
Nickel	2.2	U	2.3	U	2.2	U	2	U	2	U	2.3	U
Potassium	128	J	88.4	U	84	U	88.5	J	121	J	118	J
Selenium	0.78	U	0.82	UJ	0.84	J	0.71	U	0.74	J	0.81	U
Silver	0.62	U	0.65	U	0.62	U	0.57	U	0.57	U	0.65	U
Sodium	59.2	J	62	J	74.4	J	39.4	J	613	J	474	J
Thallium	0.81	U	0.74	UJ	0.78	UJ	0.65	U	0.72	U	0.74	U
Vanadium	2.5	J	1.7	J	1.6	J	2.5	J	8	J	3.5	J
Zinc	64.3		5	J	6.7		52.7		17		16.3	
General Chemistry, mg/kg												

Appendix C
Table C-1. Summary of Surface Soil Analytical Results
Study Area 29

Naval Training Center, Orlando
Orlando, FL

Sample ID	29S00101		29S00201		29S00201D		29S00301		29S00401		29S00501	
Lab ID	C7G100151018		C7G100151014		C7G100151015		C7G100151016		C7G100151017		C7G100151019	
Sampling Date	8-Jul-97		8-Jul-97		8-Jul-97		8-Jul-97		8-Jul-97		8-Jul-97	
TRPH	130	U	140	U	NA		120	U	120	U	140	U

Appendix C

Table C-1. Summary of Surface Soil Analytical Results

Study Area 29

Naval Training Center, Orlando

Orlando, FL

Sample ID	29S00601		29S00701		29S00801	
Lab ID	C7G100151020		C7G030123004		C7G030123003	
Sampling Date	8-Jul-97		2-Jul-97		2-Jul-97	
Volatile organics, ug/kg						
1,1,1-Trichloroethane	12	U	13	U	12	U
1,1,2,2-Tetrachloroethane	12	U	13	U	12	U
1,1,2-Trichloroethane	12	UJ	13	U	12	U
1,1-Dichloroethane	12	U	13	U	12	U
1,1-Dichloroethene	12	U	13	U	12	U
1,2-Dichloroethane	12	U	13	U	12	U
1,2-Dichloroethene (total)	12	U	13	U	12	U
1,2-Dichloropropane	12	U	13	U	12	U
2-Butanone	12	UJ	13	U	12	U
2-Hexanone	12	UJ	13	U	12	U
4-Methyl-2-pentanone	12	U	13	U	12	U
Acetone	12	UJ	13	U	12	U
Benzene	12	U	13	U	12	U
Bromodichloromethane	12	U	13	U	12	U
Bromoform	12	UJ	13	U	12	U
Bromomethane	12	U	13	U	12	U
Carbon disulfide	12	UJ	13	UJ	12	UJ
Carbon tetrachloride	12	U	13	U	12	U
Chlorobenzene	12	U	13	U	12	U
Chloroethane	12	U	13	UJ	12	UJ
Chloroform	12	U	13	U	12	U
Chloromethane	12	UJ	13	U	12	U
cis-1,3-Dichloropropene	12	U	13	U	12	U
Dibromochloromethane	12	U	13	U	12	U
Ethylbenzene	12	U	13	U	12	U
Methylene chloride	12	U	13	U	12	U
Styrene	12	U	13	U	12	U
Tetrachloroethene	12	U	13	U	12	U
Toluene	12	U	13	U	12	U
trans-1,3-Dichloropropene	12	U	13	U	12	U
Trichloroethene	12	U	13	U	12	U
Vinyl chloride	12	U	13	U	12	U
Xylene (total)	12	U	13	U	12	U
Semivolatile organics, ug/kg						
1,2,4-Trichlorobenzene	410	U	420	U	390	U
1,2-Dichlorobenzene	410	U	420	U	390	U
1,3-Dichlorobenzene	410	U	420	U	390	U
1,4-Dichlorobenzene	410	U	420	U	390	U
2,2'-oxybis(1-Chloropropane)	410	U	420	U	390	U
2,4,5-Trichlorophenol	990	U	1000	U	940	U
2,4,6-Trichlorophenol	410	U	420	U	390	U
2,4-Dichlorophenol	410	U	420	U	390	U
2,4-Dimethylphenol	410	U	420	U	390	U
2,4-Dinitrophenol	990	U	1000	U	940	U
2,4-Dinitrotoluene	410	U	420	U	390	U
2,6-Dinitrotoluene	410	U	420	U	390	U
2-Chloronaphthalene	410	U	420	U	390	U
2-Chlorophenol	410	U	420	U	390	U
2-Methylnaphthalene	410	U	420	U	390	U
2-Methylphenol	410	U	420	U	390	U

Appendix C
Table C-1. Summary of Surface Soil Analytical Results
Study Area 29

Naval Training Center, Orlando
Orlando, FL

Sample ID	29S00601		29S00701		29S00801	
Lab ID	C7G100151020		C7G030123004		C7G030123003	
Sampling Date	8-Jul-97		2-Jul-97		2-Jul-97	
2-Nitroaniline	990	U	1000	U	940	U
2-Nitrophenol	410	U	420	U	390	U
3,3'-Dichlorobenzidine	410	U	420	U	390	U
3-Nitroaniline	990	U	1000	U	940	U
4,6-Dinitro-2-methylphenol	990	U	1000	U	940	U
4-Bromophenyl-phenylether	410	U	420	U	390	U
4-Chloro-3-methylphenol	410	U	420	U	390	U
4-Chloroaniline	410	U	420	U	390	U
4-Chlorophenyl-phenylether	410	U	420	U	390	U
4-Methylphenol	410	U	420	U	390	U
4-Nitroaniline	990	U	1000	U	940	U
4-Nitrophenol	990	U	1000	U	940	U
Acenaphthene	410	U	420	U	390	U
Acenaphthylene	110	J	420	U	390	U
Anthracene	240	J	420	U	390	U
Benzo(a)anthracene	330	J	420	U	390	U
Benzo(a)pyrene	430		420	U	390	U
Benzo(b)fluoranthene	1300		420	U	390	U
Benzo(g,h,i)perylene	66	J	420	U	390	U
Benzo(k)fluoranthene	500		420	U	390	U
bis(2-Chloroethoxy)methane	410	U	420	U	390	U
bis(2-Chloroethyl)ether	410	U	420	U	390	U
bis(2-Ethylhexyl)phthalate	410	U	420	U	390	U
Butylbenzylphthalate	410	U	420	U	390	U
Carbazole	65	J	420	U	390	U
Chrysene	680		420	U	390	U
Di-n-butylphthalate	410	U	420	U	390	U
Di-n-octylphthalate	410	U	420	U	390	U
Dibenz(a,h)anthracene	410	U	420	U	390	U
Dibenzofuran	410	U	420	U	390	U
Diethylphthalate	410	U	420	U	390	U
Dimethylphthalate	410	U	420	U	390	U
Fluoranthene	500		50	J	390	U
Fluorene	410	U	420	U	390	U
Hexachlorobenzene	410	U	420	U	390	U
Hexachlorobutadiene	410	U	420	U	390	U
Hexachlorocyclopentadiene	410	U	420	U	390	U
Hexachloroethane	410	U	420	U	390	U
Indeno(1,2,3-cd)pyrene	110	J	420	UJ	390	U
Isophorone	410	U	420	U	390	U
N-Nitroso-di-n-propylamine	410	U	420	U	390	U
N-Nitrosodiphenylamine (1)	410	U	420	U	390	U
Naphthalene	410	U	420	U	390	U
Nitrobenzene	410	U	420	U	390	U
Pentachlorophenol	510	J	1000	U	940	U
Phenanthrene	410	U	420	U	390	U
Phenol	410	U	420	U	390	U
Pyrene	910		420	U	390	U
Pesticides/PCBs, ug/kg						
4,4'-DDD	4.1	U	21	U	3.9	U
4,4'-DDE	3.1	J	210		7.1	

Appendix C
Table C-1. Summary of Surface Soil Analytical Results
Study Area 29

Naval Training Center, Orlando
Orlando, FL

Sample ID	29S00601		29S00701		29S00801	
Lab ID	C7G100151020		C7G030123004		C7G030123003	
Sampling Date	8-Jul-97		2-Jul-97		2-Jul-97	
4,4'-DDT	4.1	U	40		7.4	
Aldrin	2.1	U	11	U	2	U
alpha-BHC	2.1	UJ	11	UJ	2	UJ
alpha-Chlordane	2.1	U	11	U	2	U
Aroclor-1016	41	U	210	U	39	U
Aroclor-1221	83	U	430	U	79	U
Aroclor-1232	41	U	210	U	39	U
Aroclor-1242	41	U	210	U	39	U
Aroclor-1248	41	U	210	U	39	U
Aroclor-1254	41	U	210	U	39	U
Aroclor-1260	41	U	210	U	39	U
beta-BHC	2.1	U	11	U	2	U
delta-BHC	2.1	UJ	11	UJ	2	UJ
Dieldrin	4.1	U	21	U	3.9	U
Endosulfan I	2.1	U	11	U	2	U
Endosulfan II	4.1	U	21	U	3.9	U
Endosulfan sulfate	4.1	U	21	U	3.9	U
Endrin	4.1	U	21	U	3.9	U
Endrin aldehyde	4.1	U	21	U	3.9	U
Endrin ketone	4.1	U	21	U	3.9	U
gamma-BHC (Lindane)	2.1	U	11	U	2	U
gamma-Chlordane	2.1	U	11	U	2	U
Heptachlor	2.1	U	11	U	2	U
Heptachlor epoxide	2.1	U	11	U	2	U
Methoxychlor	14	J	110	U	20	U
Toxaphene	210	U	1100	U	200	U
Inorganics, mg/kg						
Aluminum	2600		3760	J	2510	J
Antimony	3.5	U	3.6	U	3.3	U
Arsenic	1.1	J	2.2	J	2.2	J
Barium	11.8	J	5	J	5.2	J
Beryllium	0.07	U	0.15	U	0.07	U
Cadmium	0.64	U	0.66	U	0.61	U
Calcium	1030	J	1190	J	1930	
Chromium	3.6		6.8		6.8	
Cobalt	0.77	U	0.8	U	0.74	U
Copper	2	J	4.7	J	2.5	J
Iron	207		641		371	
Lead	4.6		17.2		14.4	
Magnesium	65.7	J	65.1	U	116	J
Manganese	5.4		3.6	J	7.4	
Mercury	0.12	U	0.13	U	0.12	U
Nickel	2.1	U	2.2	U	2	U
Potassium	113	J	95.7	J	76.2	U
Selenium	0.74	U	0.77	U	0.71	U
Silver	0.59	U	0.61	U	0.56	U
Sodium	40.8	J	129	J	47	U
Thallium	0.67	U	0.7	U	0.64	U
Vanadium	1.2	J	2	J	1.1	J
Zinc	26.4		27.3		51.4	
General Chemistry, mg/kg						

Appendix C
Table C-1. Summary of Surface Soil Analytical Results
Study Area 29

Naval Training Center, Orlando
Orlando, FL

Sample ID	29S00601		29S00701		29S00801	
Lab ID	C7G100151020		C7G030123004		C7G030123003	
Sampling Date	8-Jul-97		2-Jul-97		2-Jul-97	
TRPH	120	U	130	U	120	U

TABLE C-2

SUMMARY OF ANALYTICAL RESULTS IN SUBSURFACE SOIL

Appendix C

Table C-2. Summary of Subsurface Soil Analytical Results

Study Area 29

Naval Training Center, Orlando

Orlando, FL

Sample ID	29B00101		29B00201	
Lab ID	C7G030123006		C7G030123005	
Sampling Date	2-Jul-97		2-Jul-97	
Volatile organics, ug/kg				
1,1,1-Trichloroethane	13	U	12	U
1,1,2,2-Tetrachloroethane	13	U	12	U
1,1,2-Trichloroethane	13	U	12	U
1,1-Dichloroethane	13	U	12	U
1,1-Dichloroethene	13	U	12	U
1,2-Dichloroethane	13	U	12	U
1,2-Dichloroethene (total)	13	U	12	U
1,2-Dichloropropane	13	U	12	U
2-Butanone	13	U	12	U
2-Hexanone	13	U	12	U
4-Methyl-2-pentanone	13	U	12	U
Acetone	13	U	12	U
Benzene	13	U	12	U
Bromodichloromethane	13	U	12	U
Bromoform	13	U	12	U
Bromomethane	13	U	12	U
Carbon disulfide	13	UJ	12	UJ
Carbon tetrachloride	13	U	12	U
Chlorobenzene	13	U	12	U
Chloroethane	13	UJ	12	UJ
Chloroform	13	U	12	U
Chloromethane	13	U	12	U
cis-1,3-Dichloropropene	13	U	12	U
Dibromochloromethane	13	U	12	U
Ethylbenzene	13	U	12	U
Methylene chloride	13	U	12	U
Styrene	13	U	12	U
Tetrachloroethene	13	U	12	U
Toluene	13	U	12	U
trans-1,3-Dichloropropene	13	U	12	U
Trichloroethene	13	U	12	U
Vinyl chloride	13	U	12	U
Xylene (total)	13	U	12	U
Semivolatile organics, ug/kg				
1,2,4-Trichlorobenzene	420	U	400	U
1,2-Dichlorobenzene	420	U	400	U
1,3-Dichlorobenzene	420	U	400	U
1,4-Dichlorobenzene	420	U	400	U
2,2'-oxybis(1-Chloropropane)	420	U	400	U
2,4,5-Trichlorophenol	1000	U	960	U
2,4,6-Trichlorophenol	420	U	400	U
2,4-Dichlorophenol	420	U	400	U
2,4-Dimethylphenol	420	U	400	U
2,4-Dinitrophenol	1000	U	960	U
2,4-Dinitrotoluene	420	U	400	U
2,6-Dinitrotoluene	420	U	400	U
2-Chloronaphthalene	420	U	400	U
2-Chlorophenol	420	U	400	U
2-Methylnaphthalene	420	U	400	U
2-Methylphenol	420	U	400	U

Appendix C
Table C-2. Summary of Subsurface Soil Analytical Results
Study Area 29

Naval Training Center, Orlando
Orlando, FL

Sample ID	29B00101		29B00201	
Lab ID	C7G030123006		C7G030123005	
Sampling Date	2-Jul-97		2-Jul-97	
2-Nitroaniline	1000	U	960	U
2-Nitrophenol	420	U	400	U
3,3'-Dichlorobenzidine	420	U	400	U
3-Nitroaniline	1000	U	960	U
4,6-Dinitro-2-methylphenol	1000	U	960	U
4-Bromophenyl-phenylether	420	U	400	U
4-Chloro-3-methylphenol	420	U	400	U
4-Chloroaniline	420	U	400	U
4-Chlorophenyl-phenylether	420	U	400	U
4-Methylphenol	420	U	400	U
4-Nitroaniline	1000	U	960	U
4-Nitrophenol	1000	U	960	U
Acenaphthene	420	U	400	U
Acenaphthylene	420	U	400	U
Anthracene	420	U	400	U
Benzo(a)anthracene	420	U	400	U
Benzo(a)pyrene	420	U	400	U
Benzo(b)fluoranthene	420	U	400	U
Benzo(g,h,i)perylene	420	U	400	U
Benzo(k)fluoranthene	420	U	400	U
bis(2-Chloroethoxy)methane	420	U	400	U
bis(2-Chloroethyl)ether	420	U	400	U
bis(2-Ethylhexyl)phthalate	420	U	400	U
Butylbenzylphthalate	420	U	400	U
Carbazole	420	U	400	U
Chrysene	420	U	400	U
Di-n-butylphthalate	420	U	400	U
Di-n-octylphthalate	420	U	400	U
Dibenz(a,h)anthracene	420	U	400	U
Dibenzofuran	420	U	400	U
Diethylphthalate	420	U	400	U
Dimethylphthalate	420	U	400	U
Fluoranthene	76	J	400	U
Fluorene	420	U	400	U
Hexachlorobenzene	420	U	400	U
Hexachlorobutadiene	420	U	400	U
Hexachlorocyclopentadiene	420	U	400	U
Hexachloroethane	420	U	400	U
Indeno(1,2,3-cd)pyrene	420	U	400	UJ
Isophorone	420	U	400	U
N-Nitroso-di-n-propylamine	420	U	400	U
N-Nitrosodiphenylamine (1)	420	U	400	U
Naphthalene	420	U	400	U
Nitrobenzene	420	U	400	U
Pentachlorophenol	1000	U	960	U
Phenanthrene	420	U	400	U
Phenol	420	U	400	U
Pyrene	420	U	400	U
Pesticides/PCBs, ug/kg				
4,4'-DDD	4.2	U	4	U
4,4'-DDE	4.2	U	4	U

Appendix C

Table C-2. Summary of Subsurface Soil Analytical Results
Study Area 29

Naval Training Center, Orlando
Orlando, FL

Sample ID	29B00101		29B00201	
Lab ID	C7G030123006		C7G030123005	
Sampling Date	2-Jul-97		2-Jul-97	
4,4'-DDT	4.2	U	4	U
Aldrin	2.2	U	2	U
alpha-BHC	2.2	UJ	2	UJ
alpha-Chlordane	2.2	U	2	U
Aroclor-1016	42	U	40	U
Aroclor-1221	85	U	81	U
Aroclor-1232	42	U	40	U
Aroclor-1242	42	U	40	U
Aroclor-1248	42	U	40	U
Aroclor-1254	42	U	40	U
Aroclor-1260	42	U	40	U
beta-BHC	2.2	U	2	U
delta-BHC	2.2	UJ	2	UJ
Dieldrin	4.2	U	4	U
Endosulfan I	2.2	U	2	U
Endosulfan II	4.2	U	4	U
Endosulfan sulfate	4.2	U	4	U
Endrin	4.2	U	4	U
Endrin aldehyde	4.2	U	4	U
Endrin ketone	4.2	U	4	U
gamma-BHC (Lindane)	2.2	U	2	U
gamma-Chlordane	2.2	U	2	U
Heptachlor	2.2	U	2	U
Heptachlor epoxide	2.2	U	2	U
Methoxychlor	22	U	20	U
Toxaphene	220	U	200	U
Inorganics, mg/kg				
Aluminum	2360	J	2530	J
Antimony	3.5	U	3.4	U
Arsenic	0.59	U	0.56	J
Barium	18	J	5.9	J
Beryllium	0.07	U	0.08	U
Cadmium	0.65	U	0.62	U
Calcium	955	J	622	J
Chromium	2.5	J	7	
Cobalt	0.79	U	0.75	U
Copper	0.62	J	0.63	J
Iron	91.4		63.8	
Lead	1.8		12.5	
Magnesium	44.7	U	47	U
Manganese	1.3	J	1.5	J
Mercury	0.13	U	0.12	U
Nickel	2.1	U	2	U
Potassium	81.7	U	81	J
Selenium	0.76	U	0.72	U
Silver	0.61	U	0.57	U
Sodium	52.2	U	59.5	U
Thallium	0.81	U	0.65	U
Vanadium	1.2	J	1.5	J
Zinc	3.8	U	3.3	U
General Chemistry, mg/kg				

Appendix C

Table C-2. Summary of Subsurface Soil Analytical Results
Study Area 29

Naval Training Center, Orlando
Orlando, FL

Sample ID	29B00101		29B00201	
Lab ID	C7G030123006		C7G030123005	
Sampling Date	2-Jul-97		2-Jul-97	
TRPH	130	U	120	U

TABLE C-3

SUMMARY OF ANALYTICAL RESULTS IN GROUNDWATER

Appendix C

Table C-3. Summary of Groundwater Analytical Results

Study Area 29

Naval Training Center, Orlando

Orlando, FL

Sample ID	29G00101		29G00201		29G00201D		29H00101		29H00201		29H00201D	
LabID	C7G010113008		C7G010113004		C7G010113005		C7G010113009		C7G010113006		C7G010113007	
Sampling Date	6/26/97		6/26/97		6/26/97		6/26/97		6/26/97		6/26/97	
Volatile organics, ug/L												
1,1,1,2-Tetrachloroethane	0.5	U	0.5	U	0.5	U	NA		NA		NA	
1,1,1-Trichloroethane	0.5	U	0.5	U	0.5	U	NA		NA		NA	
1,1,2,2-Tetrachloroethane	0.5	UJ	0.5	UJ	0.5	UJ	NA		NA		NA	
1,1,2-Trichloroethane	0.5	U	0.5	U	0.5	U	NA		NA		NA	
1,1-Dichloroethane	0.5	U	0.5	U	0.5	U	NA		NA		NA	
1,1-Dichloroethene	0.5	U	0.5	U	0.5	U	NA		NA		NA	
1,1-Dichloropropene	0.5	U	0.5	U	0.5	U	NA		NA		NA	
1,2,3-Trichlorobenzene	0.5	UJ	0.5	UJ	0.5	UJ	NA		NA		NA	
1,2,3-Trichloropropane	0.5	UJ	0.5	UJ	0.5	UJ	NA		NA		NA	
1,2,4-Trimethylbenzene	0.5	UJ	0.5	UJ	0.5	UJ	NA		NA		NA	
1,2-Dibromo-3-chloropropane	0.5	R	0.5	R	0.5	R	NA		NA		NA	
1,2-Dibromoethane	0.5	U	0.5	U	0.5	U	NA		NA		NA	
1,2-Dichloroethane	0.5	U	0.5	U	0.5	U	NA		NA		NA	
1,2-Dichloropropane	0.5	UJ	0.5	UJ	0.5	UJ	NA		NA		NA	
1,3,5-Trimethylbenzene	0.5	UJ	0.5	UJ	0.5	UJ	NA		NA		NA	
1,3-Dichloropropane	0.5	U	0.5	U	0.5	U	NA		NA		NA	
2,2-Dichloropropane	0.5	U	0.5	U	0.5	U	NA		NA		NA	
2-Chlorotoluene	0.5	UJ	0.5	U	0.5	UJ	NA		NA		NA	
4-Chlorotoluene	0.5	U	0.5	U	0.5	U	NA		NA		NA	
4-Isopropyltoluene	0.5	UJ	0.5	UJ	0.5	UJ	NA		NA		NA	
Benzene	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Bromobenzene	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Bromochloromethane	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Bromodichloromethane	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Bromoform	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Bromomethane	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Carbon tetrachloride	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Chlorobenzene	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Chloroethane	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Chloroform	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Chloromethane	0.5	U	0.5	U	0.5	U	NA		NA		NA	
cis-1,2-Dichloroethene	0.5	U	0.5	U	0.5	U	NA		NA		NA	
cis-1,3-Dichloropropene	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Dibromochloromethane	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Dibromomethane	0.5	U	0.5	U	0.5	U	NA		NA		NA	
1,2-Dichlorobenzene	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Dichlorodifluoromethane (CFC 12)	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Ethylbenzene	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Isopropylbenzene	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Methylene chloride	0.5	U	0.5	U	0.5	U	NA		NA		NA	
n-Butylbenzene	0.5	U	0.5	U	0.5	U	NA		NA		NA	
n-Propylbenzene	0.5	UJ	0.5	UJ	0.5	UJ	NA		NA		NA	
sec-Butylbenzene	0.5	UJ	0.5	U	0.5	UJ	NA		NA		NA	
Styrene	0.5	U	0.5	U	0.5	U	NA		NA		NA	
tert-Butylbenzene	0.5	UJ	0.5	U	0.5	UJ	NA		NA		NA	
Tetrachloroethene	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Toluene	0.61		0.5	U	0.5	U	NA		NA		NA	
trans-1,2-Dichloroethene	0.5	U	0.5	U	0.5	U	NA		NA		NA	
trans-1,3-Dichloropropene	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Trichloroethene	0.5	UJ	0.5	UJ	0.5	UJ	NA		NA		NA	

Appendix C
Table C-3. Summary of Groundwater Analytical Results
Study Area 29

Naval Training Center, Orlando
Orlando, FL

Sample ID	29G00101		29G00201		29G00201D		29H00101		29H00201		29H00201D	
LabID	C7G010113008		C7G010113004		C7G010113005		C7G010113009		C7G010113006		C7G010113007	
Trichlorofluoromethane (CFC 11)	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Vinyl chloride	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Xylene (total)	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Semivolatile organics, ug/L												
1,2,4-Trichlorobenzene	10	U	10	U	10	U	NA		NA		NA	
1,2-Dichlorobenzene	10	U	10	U	10	U	NA		NA		NA	
1,3-Dichlorobenzene	10	U	10	U	10	U	NA		NA		NA	
1,4-Dichlorobenzene	10	U	10	U	10	U	NA		NA		NA	
2,2'-oxybis(1-Chloropropane)	10	U	10	U	10	U	NA		NA		NA	
2,4,5-Trichlorophenol	25	U	25	U	25	U	NA		NA		NA	
2,4,6-Trichlorophenol	10	U	10	U	10	U	NA		NA		NA	
2,4-Dichlorophenol	10	U	10	U	10	U	NA		NA		NA	
2,4-Dimethylphenol	10	U	10	U	10	U	NA		NA		NA	
2,4-Dinitrophenol	25	U	25	U	25	U	NA		NA		NA	
2,4-Dinitrotoluene	10	U	10	U	10	U	NA		NA		NA	
2,6-Dinitrotoluene	10	U	10	U	10	U	NA		NA		NA	
2-Chloronaphthalene	10	U	10	U	10	U	NA		NA		NA	
2-Chlorophenol	10	U	10	U	10	U	NA		NA		NA	
2-Methylnaphthalene	10	U	10	U	10	U	NA		NA		NA	
2-Methylphenol	10	U	10	U	10	U	NA		NA		NA	
2-Nitroaniline	25	U	25	U	25	U	NA		NA		NA	
2-Nitrophenol	10	U	10	U	10	U	NA		NA		NA	
3,3'-Dichlorobenzidine	10	U	10	U	10	U	NA		NA		NA	
3-Nitroaniline	25	U	25	U	25	U	NA		NA		NA	
4,6-Dinitro-2-methylphenol	25	U	25	U	25	U	NA		NA		NA	
4-Bromophenyl-phenylether	10	U	10	U	10	U	NA		NA		NA	
4-Chloro-3-methylphenol	10	U	10	U	10	U	NA		NA		NA	
4-Chloroaniline	10	U	10	U	10	U	NA		NA		NA	
4-Chlorophenyl-phenylether	10	U	10	U	10	U	NA		NA		NA	
4-Methylphenol	10	U	10	U	10	U	NA		NA		NA	
4-Nitroaniline	25	U	25	U	25	U	NA		NA		NA	
4-Nitrophenol	25	U	25	U	25	U	NA		NA		NA	
Acenaphthene	10	U	10	U	10	U	NA		NA		NA	
Acenaphthylene	10	U	10	U	10	U	NA		NA		NA	
Anthracene	10	U	10	U	10	U	NA		NA		NA	
Benzo(a)anthracene	10	U	10	U	10	U	NA		NA		NA	
Benzo(a)pyrene	10	U	10	U	10	U	NA		NA		NA	
Benzo(b)fluoranthene	10	U	10	U	10	U	NA		NA		NA	
Benzo(g,h,i)perylene	10	UJ	10	UJ	10	U	NA		NA		NA	
Benzo(k)fluoranthene	10	U	10	U	10	U	NA		NA		NA	
bis(2-Chloroethoxy)methane	10	U	10	U	10	U	NA		NA		NA	
bis(2-Chloroethyl)ether	10	U	10	U	10	U	NA		NA		NA	
bis(2-Ethylhexyl)phthalate	10	U	48		10	U	NA		NA		NA	
Butylbenzylphthalate	10	U	10	U	10	U	NA		NA		NA	
Carbazole	10	U	10	U	10	U	NA		NA		NA	
Chrysene	10	U	10	U	10	U	NA		NA		NA	
Di-n-butylphthalate	10	U	10	U	10	U	NA		NA		NA	
Di-n-octylphthalate	10	U	10	U	10	U	NA		NA		NA	
Dibenz(a,h)anthracene	10	UJ	10	UJ	10	U	NA		NA		NA	
Dibenzofuran	10	U	10	U	10	U	NA		NA		NA	
Diethylphthalate	10	U	10	U	10	U	NA		NA		NA	
Dimethylphthalate	10	U	10	U	10	U	NA		NA		NA	

Appendix C

Table C-3. Summary of Groundwater Analytical Results

Study Area 29

Naval Training Center, Orlando

Orlando, FL

Sample ID	29G00101		29G00201		29G00201D		29H00101		29H00201		29H00201D	
LabID	C7G010113008		C7G010113004		C7G010113005		C7G010113009		C7G010113006		C7G010113007	
Fluoranthene	10	U	10	U	10	U	NA		NA		NA	
Fluorene	10	U	10	U	10	U	NA		NA		NA	
Hexachlorobenzene	10	U	10	U	10	U	NA		NA		NA	
Hexachlorobutadiene	10	U	10	U	10	U	NA		NA		NA	
Hexachlorocyclopentadiene	10	U	10	U	10	U	NA		NA		NA	
Hexachloroethane	10	U	10	U	10	U	NA		NA		NA	
Indeno(1,2,3-cd)pyrene	10	UJ	10	UJ	10	U	NA		NA		NA	
Isophorone	10	U	10	U	10	U	NA		NA		NA	
N-Nitroso-di-n-propylamine	10	U	10	U	10	U	NA		NA		NA	
N-Nitrosodiphenylamine (1)	10	U	10	U	10	U	NA		NA		NA	
Naphthalene	10	U	10	U	10	U	NA		NA		NA	
Nitrobenzene	10	U	10	U	10	U	NA		NA		NA	
Pentachlorophenol	25	U	25	U	25	U	NA		NA		NA	
Phenanthrene	10	U	10	U	10	U	NA		NA		NA	
Phenol	10	U	10	U	10	U	NA		NA		NA	
Pyrene	10	U	10	U	10	U	NA		NA		NA	
Pesticides/PCBs, ug/L												
4,4'-DDD	0.1	U	0.1	U	0.1	U	NA		NA		NA	
4,4'-DDE	0.1	U	0.1	U	0.1	U	NA		NA		NA	
4,4'-DDT	0.1	U	0.1	U	0.1	U	NA		NA		NA	
Aldrin	0.05	U	0.05	U	0.05	U	NA		NA		NA	
alpha-BHC	0.05	UJ	0.05	UJ	0.05	UJ	NA		NA		NA	
alpha-Chlordane	0.05	U	0.05	U	0.05	U	NA		NA		NA	
Aroclor-1016	1	U	1	U	1	U	NA		NA		NA	
Aroclor-1221	2	U	2	U	2	U	NA		NA		NA	
Aroclor-1232	1	U	1	U	1	U	NA		NA		NA	
Aroclor-1242	1	U	1	U	1	U	NA		NA		NA	
Aroclor-1248	1	U	1	U	1	U	NA		NA		NA	
Aroclor-1254	1	U	1	U	1	U	NA		NA		NA	
Aroclor-1260	1	U	1	U	1	U	NA		NA		NA	
beta-BHC	0.05	U	0.05	U	0.05	U	NA		NA		NA	
delta-BHC	0.05	UJ	0.05	UJ	0.05	UJ	NA		NA		NA	
Dieldrin	0.1	U	0.1	U	0.1	U	NA		NA		NA	
Endosulfan I	0.05	U	0.05	U	0.05	U	NA		NA		NA	
Endosulfan II	0.1	U	0.1	U	0.1	U	NA		NA		NA	
Endosulfan sulfate	0.1	U	0.1	U	0.1	U	NA		NA		NA	
Endrin	0.1	U	0.1	U	0.1	U	NA		NA		NA	
Endrin aldehyde	0.1	U	0.1	U	0.1	U	NA		NA		NA	
Endrin ketone	0.1	U	0.1	U	0.1	U	NA		NA		NA	
gamma-BHC (Lindane)	0.05	U	0.05	U	0.05	U	NA		NA		NA	
gamma-Chlordane	0.05	U	0.05	U	0.05	U	NA		NA		NA	
Heptachlor	0.05	U	0.05	U	0.05	U	NA		NA		NA	
Heptachlor epoxide	0.05	U	0.05	U	0.05	U	NA		NA		NA	
Methoxychlor	0.5	U	0.5	U	0.5	U	NA		NA		NA	
Toxaphene	5	U	5	U	5	U	NA		NA		NA	
Inorganics, ug/L												
Aluminum	254		397		379		371		77.4	J	83.8	J
Antimony	14	U	14	U	14	U	14	U	14	U	14	U
Arsenic	2.3	U	2.6	J	2.3	UJ	2.3	U	2.7	J	2.3	UJ
Barium	9.4	J	10.4	J	10.6	J	11	J	9.8	J	9.7	J
Beryllium	0.18	J	0.12	UJ	0.21	J	0.32	J	0.15	J	0.12	UJ
Cadmium	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U

Appendix C

Table C-3. Summary of Groundwater Analytical Results

Study Area 29

Naval Training Center, Orlando

Orlando, FL

Sample ID	29G00101		29G00201		29G00201D		29H00101		29H00201		29H00201D	
LabID	C7G010113008		C7G010113004		C7G010113005		C7G010113009		C7G010113006		C7G010113007	
Calcium	41000	J	74000	J	74400	J	41200	J	76400	J	76000	J
Chromium	2.3	U	2.3	U	2.3	U	2.3	U	2.3	U	2.3	U
Cobalt	3.1	U	3.1	U	3.1	U	3.1	U	3.1	U	3.1	U
Copper	1.5	U	1.5	U	1.5	U	1.7	J	3.4	J	2.5	J
Iron	43.6	J	83.8	J	73.2	J	42	J	52.6	J	52.9	J
Lead	1	U	3.3	J	1	UJ	1	U	1	UJ	1.3	J
Magnesium	3050	J	4440	J	4460	J	3210	J	4500	J	4480	J
Manganese	11.1	J	50.6		50.6		11.1	J	47.9		47.9	
Mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Nickel	8.4	U	8.4	U	8.4	U	8.4	U	8.4	U	8.4	U
Potassium	2010	J	1690	J	1860	J	2110	J	1910	J	1890	J
Selenium	3	U	3	U	3	U	3	U	3	U	3	U
Silver	2.4	U	2.4	U	2.4	U	2.4	U	2.4	U	2.4	U
Sodium	12300		15600		15600		13100		15700		16100	
Thallium	3.2	U	2.7	UJ	4.6	UJ	2.7	U	4.1	U	4.6	U
Vanadium	3.6	J	1.6	U	1.6	U	3.6	J	3	J	3.1	J
Zinc	4.3	U	5.2	U	3.8	U	5.2	U	8.7	UJ	6	UJ
General Chemistry, mg/L												
Total Suspended Solids	4	U	4	U	4	U	NA		NA		NA	
TRPH	1	U	1	U	NA		NA		NA		NA	

Notes for Summary of Analytical Results Tables
Study Area 29

Naval Training Center, Orlando
Orlando Florida

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
ug/L	microgram per liter

The following standard analytical data qualifiers have the following definitions:

U	The analyte/compound was analyzed for but was not detected above the reported sample quantitation limit The number preceding the U qualifier is 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.
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 during data validation because of serious deficiencies in meeting quality control criteria.
D	Reported concentration is from a dilution or reanalysis of the sample.

1,2-Dichlorobenzene