N61165.AR.003956
CNC CHARLESTON
5090.3a

COMPLETION REPORT INTERIM MEASURE FOR AREA OF CONCERN 707 (AOC707) DIESEL FUEL OIL SPILL AND AREA OF CONCERN 708 (AOC708) PETROLEUM RELEASE WITH TRANSMITTAL CNC CHARLESTON SC
8/20/1997
U S NAVY

COMPLETION REPORT

INTERIM MEASURE FOR
AOC 707 DIESEL FUEL OIL SPILL
AOC 708 PETROLEUM RELEASE
NAVAL BASE CHARLESTON
CHARLESTON, SC

Prepared for:

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON SC

Prepared by:

Supervisor of Shipbuilding, Conversion and Repair,
USN, (SUPSHIP) Portsmouth Va.,
Environmental Detachment Charleston, S.C.
1899 North Hobson Ave.
North Charleston, SC 29405-2106

August 4, 1997

DEPARTMENT OF THE NAVY
SUPERVISOR OF SHIPBUILDING, CONVERSION AND REPAIR, USN
PORTSMOUTH, VIRGINIA, DETACHMENT ENVIRONMENTAL CHARLESTON
1899 NORTH HOBSON AVENUE, BUILDING 30
NORTH CHARLESTON, SOUTH CAROLINA 29405-2106

IN REPLY REFER TO:

Ser: 873

AUG 20 1997

Mr. G. Randall Thompson, Director
Division of Hazardous and Infectious Waste Management
Bureau of Solid and Hazardous Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia SC 29201

Dear Mr. Thompson:

1. The enclosed Interim Measure Completion Report for Area of Concern (AOC) 707 and AOC 708 is submitted to fulfill the requirement of Permit Condition IV.D.6 for Permit Number SCO 170 022 560.

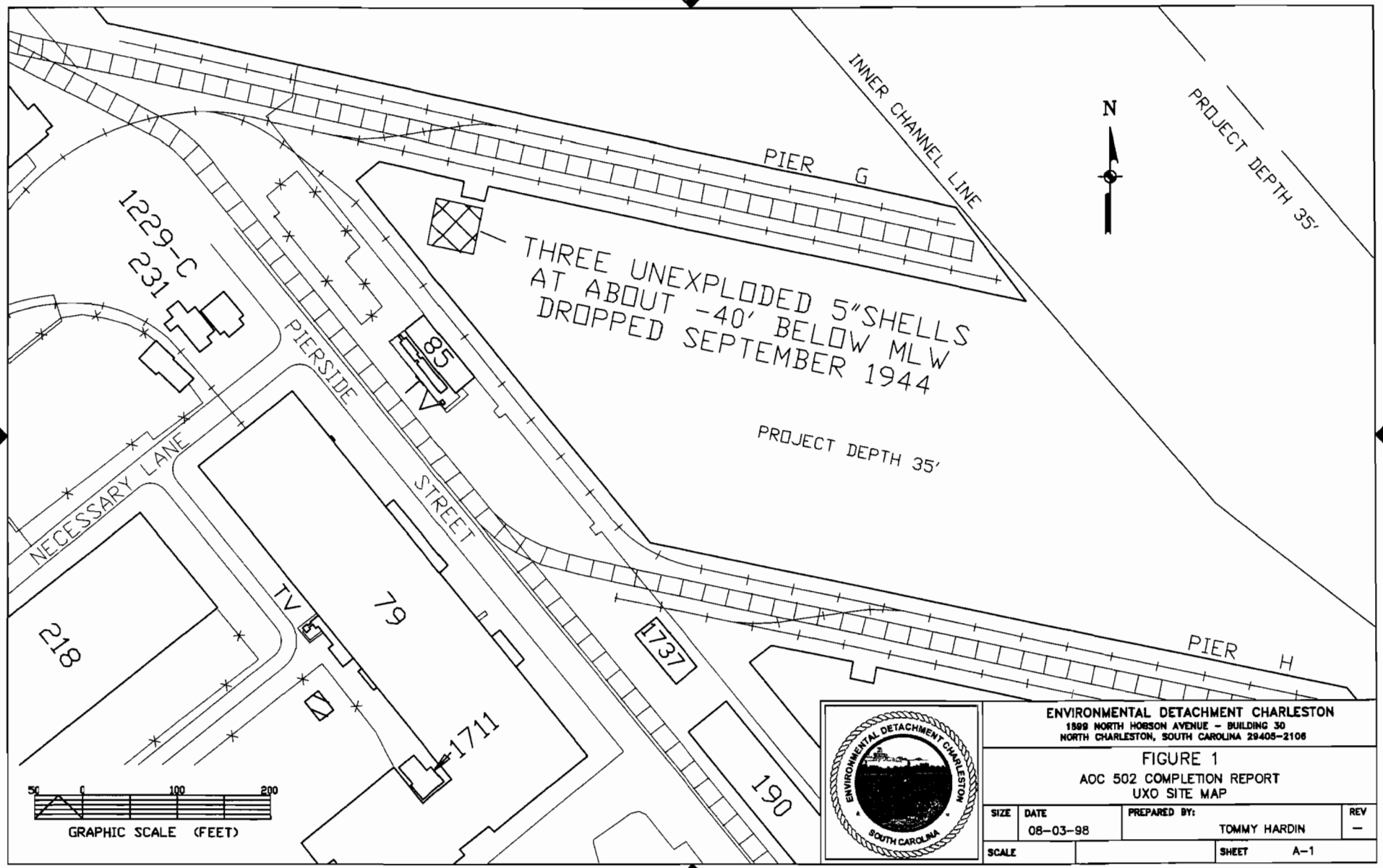
2. It should be noted that the 5.6 cubic yards of non hazardous soil excavated from AOC 707 is being stored at Charleston Naval Base until sufficient quantity is obtained to allow for a cost effective waste disposal contract to be awarded. Final disposition of this soil will be addressed via a letter to SCDHEC that can be appended to this report. If the Department of Health and Environmental Control should have any questions, please contact Reece Batten of Southern Division Naval Facilities Engineering Command (NAVFAC) at (803) 820-5578.

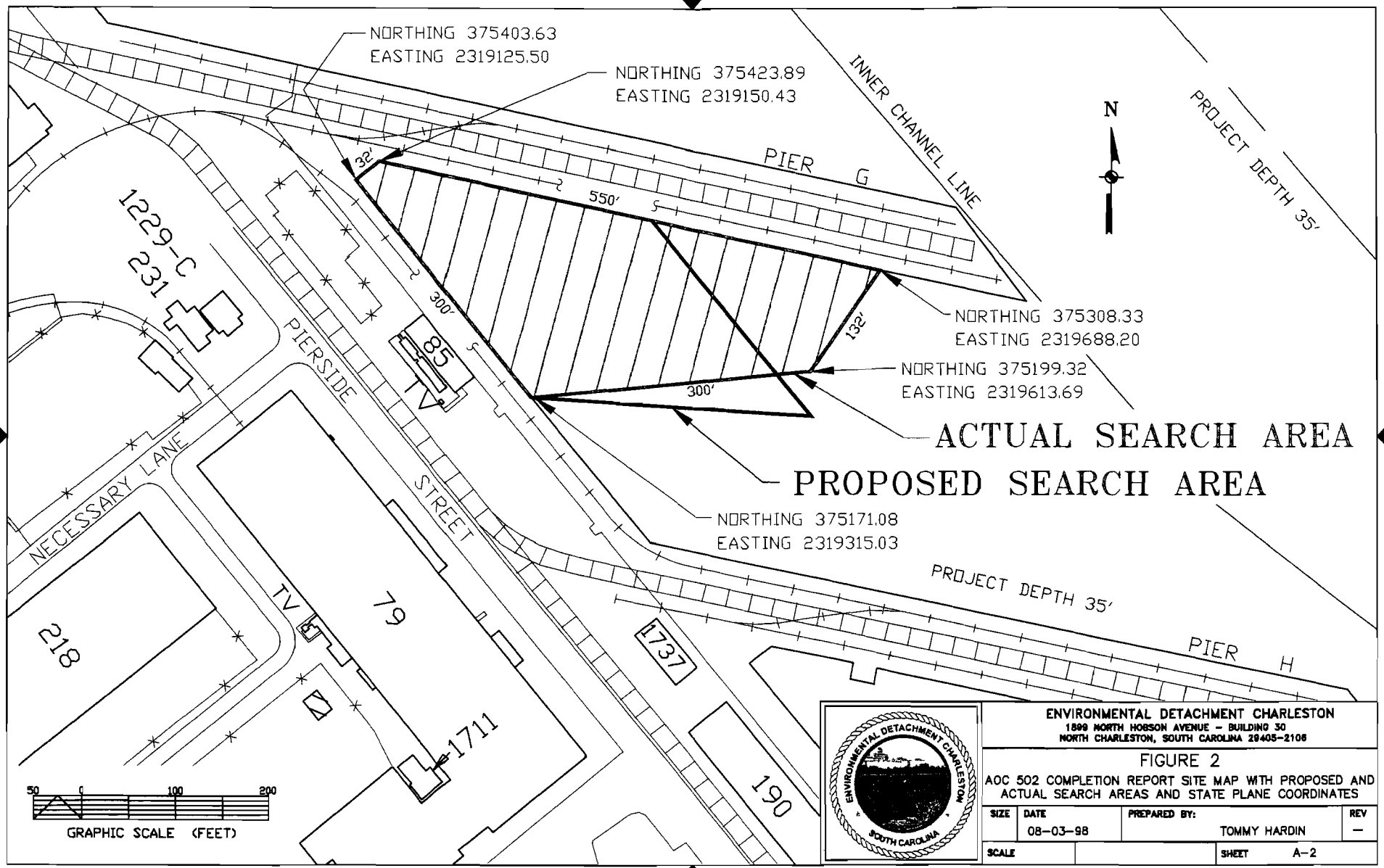
Sincerely,

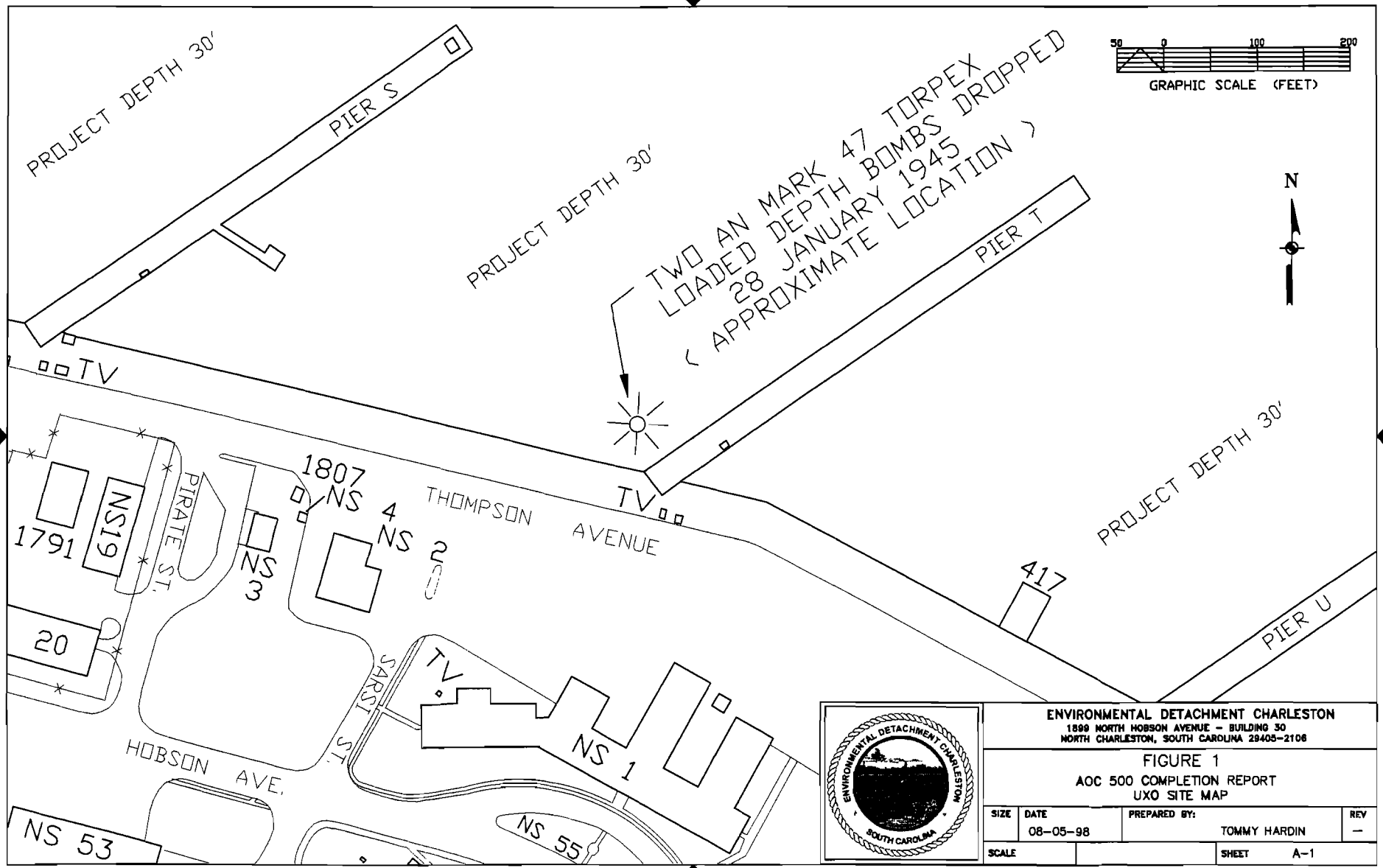
for E. R. Dearhart
Director

Encl:
(1) AOC 707 and AOC 708 Completion Report

Copy to:
SCDHEC (Mr. Tapia, Mr. Bergstsnd)
USEPA (Mr. Bassett)
CSO Naval Base Charleston (LCDR Rose)
NAVFAC (Mr. Batten)
EA&H (Ms. Maddux)


INNER CHANNEL LINE
PROJECT DEPTH 35'
N
PIER G
THREE UNEXPLODED 5"SHELLS
AT ABOUT -40' BELOW MLW
DROPPED SEPTEMBER 1944
PROJECT DEPTH 35'
1229-C
231
PIERSIDE
STREET
85
TV
NECESSARY LANE
218
TV
79
1711
1737
190
PIER H
50 0 100 200
GRAPHIC SCALE (FEET)
ENVIRONMENTAL DETACHMENT CHARLESTON
SOUTH CAROLINA
ENVIRONMENTAL DETACHMENT CHARLESTON
1899 NORTH HOBSON AVENUE - BUILDING 30
NORTH CHARLESTON, SOUTH CAROLINA 29405-2106
FIGURE 1
AOC 502 COMPLETION REPORT
UXO SITE MAP
SIZE
DATE 08-03-98
PREPARED BY: TOMMY HARDIN
REV —
SCALE
SHEET A-1

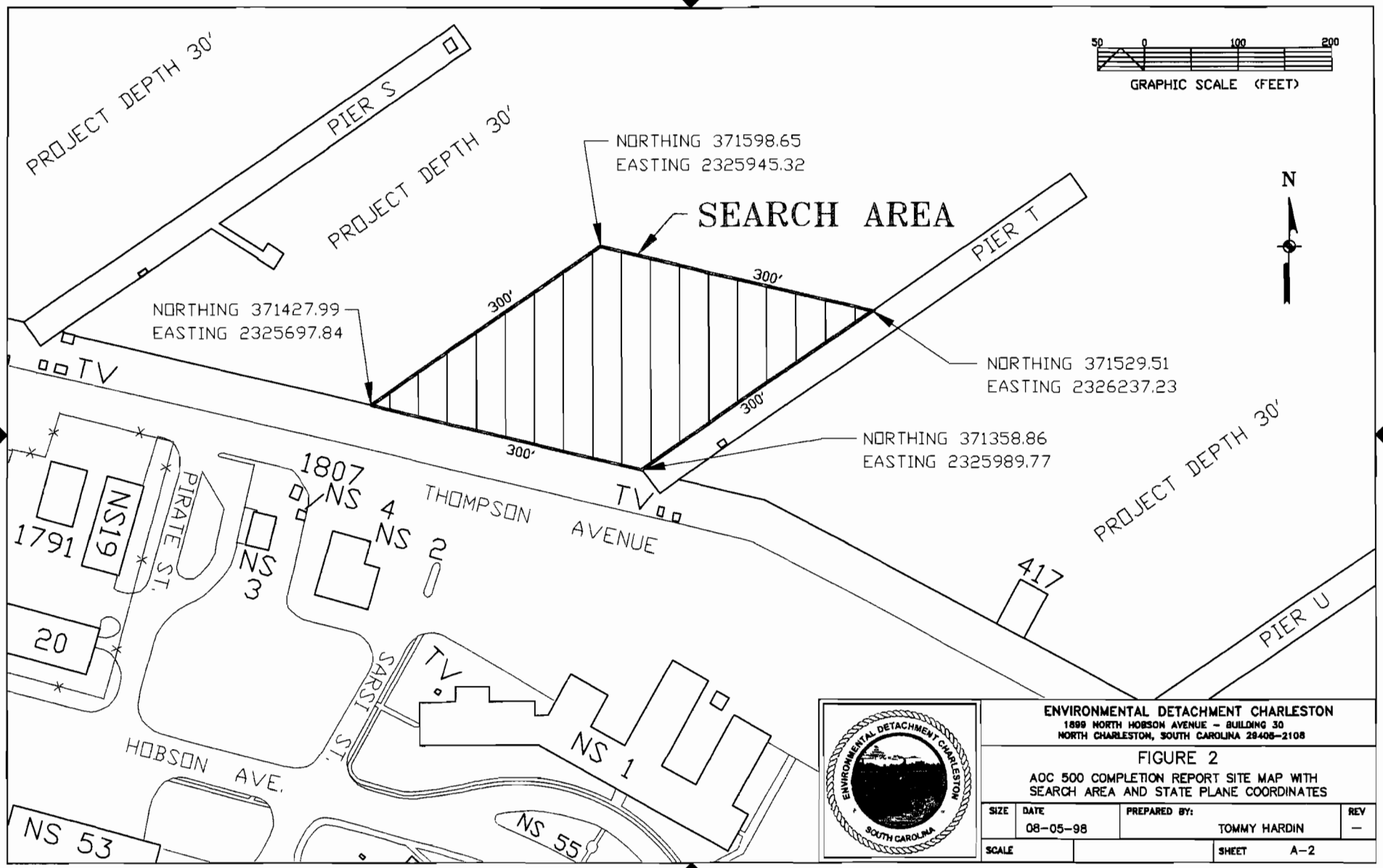

NORTHING 375403.63
EASTING 2319125.50
NORTHING 375423.89
EASTING 2319150.43
INNER CHANNEL LINE
PROJECT DEPTH 35'
N
PIER G
32'
550'
300'
132'
300'
NORTHING 375308.33
EASTING 2319688.20
NORTHING 375199.32
EASTING 2319613.69
ACTUAL SEARCH AREA
PROPOSED SEARCH AREA
NORTHING 375171.08
EASTING 2319315.03
1229-C
231
85
PIERSIDE
STREET
NECESSARY LANE
218
79
TV
1711
1737
190
PROJECT DEPTH 35'
PIER H
50 0 100 200
GRAPHIC SCALE (FEET)
ENVIRONMENTAL DETACHMENT CHARLESTON
SOUTH CAROLINA
ENVIRONMENTAL DETACHMENT CHARLESTON
1899 NORTH HOBSON AVENUE – BUILDING 30
NORTH CHARLESTON, SOUTH CAROLINA 29405-2106
FIGURE 2
AOC 502 COMPLETION REPORT SITE MAP WITH PROPOSED AND ACTUAL SEARCH AREAS AND STATE PLANE COORDINATES
SIZE
DATE 08-03-98
PREPARED BY: TOMMY HARDIN
REV –
SCALE
SHEET A-2



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

FIGURE 1
AOC 500 COMPLETION REPORT
UXO SITE MAP

SIZE	DATE	PREPARED BY:	REV
	08-05-98	TOMMY HARDIN	–
SCALE		SHEET A-1	

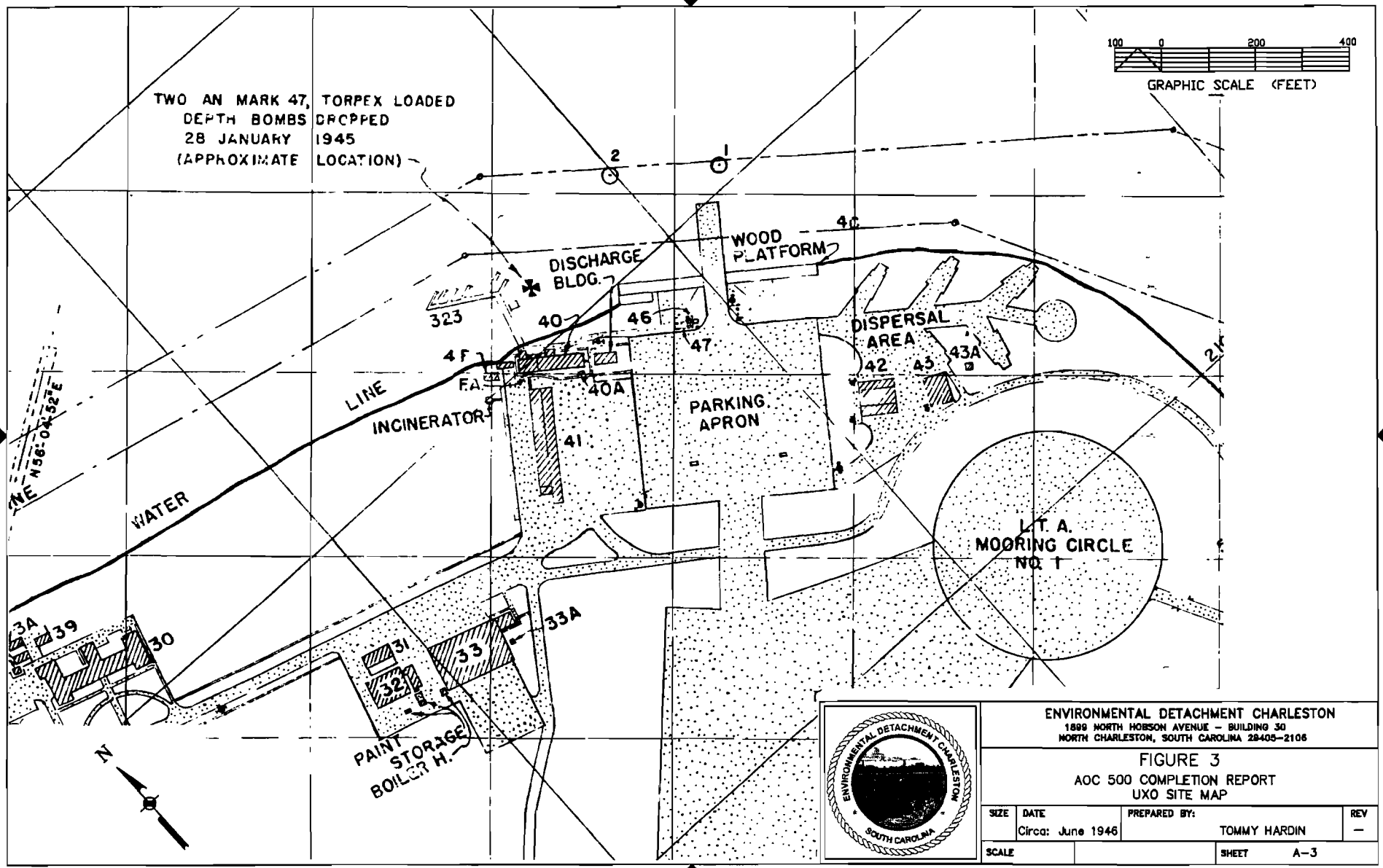


ENVIRONMENTAL DETACHMENT CHARLESTON
1899 NORTH HOBSON AVENUE – BUILDING 30
NORTH CHARLESTON, SOUTH CAROLINA 29405-2108

FIGURE 2

AOC 500 COMPLETION REPORT SITE MAP WITH SEARCH AREA AND STATE PLANE COORDINATES

SIZE	DATE	PREPARED BY:	REV
	08-05-98	TOMMY HARDIN	–
SCALE		SHEET	A-2



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

FIGURE 3
AOC 500 COMPLETION REPORT
UXO SITE MAP

SIZE	DATE	PREPARED BY:	REV
	Circa: June 1946	TOMMY HARDIN	–
SCALE		SHEET A-3	

COMPLETION REPORT

INTERIM MEASURE FOR
AOC 707 DIESEL FUEL OIL SPILL
AOC 708 PETROLEUM RELEASE
NAVAL BASE CHARLESTON
CHARLESTON, SC

Prepared for:

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON SC

Prepared by:

Supervisor of Shipbuilding, Conversion and Repair,
USN, (SUPSHIP) Portsmouth Va.,
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1899 North Hobson Ave.
North Charleston, SC 29405-2106

August 4, 1997

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ACRONYMS, ABBREVIATIONS and SYMBOLS

AOC	Area of Concern
BTEX	Benzene, Toluene, Ethylbenene, Xylenes
CMS	Corrective Measures Study
COPC	Constituents of Potential Concern
DERP	Defense Environmental Restoration Program
DET	Environmental Detachment Charleston
DON	Department of the Navy
IM	Interim Measure
IR	Installation Restoration
mg/kg (ppm)	milligrams per kilogram (equal to parts per million)
PAH	Polynuclear Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
RBC	Risk-Based Concentration
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
SARA	Superfund Amendments and Reauthorization Act
SCDHEC	South Carolina Department of Health and Environmental Control
SOUTHDIV	Southern Division Naval Facilities Engineering Command
SUPSHIP	Supervisor of Shipbuilding, Conversion and Repair, USN
SWMU	Solid Waste Management Unit
TPH	Total Petroleum Hydrocarbons
USEPA	United States Environmental Protection Agency
USN	United States Navy
μg/kg (ppb)	micrograms per kilogram (equal to parts per billion)

1. INTRODUCTION

1.1 INSTALLATION RESTORATION PROGRAM. The purpose of the Department of the Navy (DON) Installation Restoration (IR) Program is to identify, assess, characterize and cleanup or control contamination from past hazardous waste disposal operations and hazardous material spills at Navy and Marine Corps activities. The Defense Environmental Restoration Program (DERP) is codified in the Superfund Amendment and Reauthorization Act (SARA) Section 211 (10 USC 2701). The IR program is a component of DERP.

1.1.1 Naval Base Charleston Installation Restoration Program. At Naval Base Charleston, a Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) was prepared which divided the Naval Base into zones and identified Solid Waste Management Units (SWMUs) and Area of Concerns (AOCs) within each zone. The RFA evaluated each SWMU and AOC and determined which sites required further investigation. Based on the RFA, a RCRA Facility Investigation (RFI) work plan has been or is being prepared for each zone containing SWMUs and AOCs requiring further investigation. On completion of the RFI for each zone, a RFI report will be prepared for that zone. The RFI report will identify SWMUs and AOCs containing wastes requiring remediation. Eventually, Corrective Measures Studies (CMSs) will be prepared to determine the best means of remediating each site.

1.2 INTERIM MEASURES. Interim Measures (IM) performed as part of the IR program are intended to eliminate sources of environmental contamination or limit the spread of environmental contaminants prior to the completion of the RFI CMSs.

1.3 AREAS OF CONCERN 707 AND 708. AOC 707 (see Figure A-1, Appendix A) is located in Zone "I" near Building 1795. AOC 707 was a 5 foot by 15 foot strip of stained soil and stressed vegetation. AOC 708 (see Figure A-2, Appendix A) is located in Zone "H" between Buildings NS-668 and NS-669. AOC 708 was a 2 foot by 3 foot soil stained area containing stressed vegetation. The RFA identified Petroleum as the Constituents of Potential Concern (COPC) at these sites. Lab analyses were performed to determine the presence of Benzene,

Toluene, Ethylbenzene, Xylenes (BTEX), Total Petroleum Hydrocarbons (TPHs) Polynuclear Aromatic Hydrocarbons (PAHs) and RCRA Metals. Additionally, Polychlorinated Biphenyls (PCBs) analyses were performed at AOC 708 due to the presence of an electrical transformer.

1.4 AREAS OF CONCERN 707 AND 708 INTERIM MEASURE. During the interval between the RFA and the completion of the CMS, it was decided by Southern Division Naval Facilities Engineering Command (SOUTHDIV) that an IM would be performed by Supervisor of Shipbuilding, Conversion and Repair (SUPSHIP), United States Navy (USN), Portsmouth Va. Environmental Detachment Charleston (DET). The objective of this IM was to remove and dispose of the petroleum contaminated soil.

2. INTERIM MEASURE EXECUTION

2.1 ACTIONS REQUIRED BY INTERIM MEASURE WORK PLAN.

- At AOC 707, an estimated 5.6 cubic yards of petroleum contaminated soil was excavated from an area approximately 5 feet by 15 feet and 2 feet in depth. See Figure A-1.

- At AOC 708, three (grab) soil samples were collected to determine if remedial action was necessary. Based on the analysis, it was determined that no remedial action was required.

2.2 OBSERVATIONS NOTED. None.

2.3 PLAN MODIFICATIONS AND JUSTIFICATION. None.

3. INTERIM MEASURE OUTCOME

3.1 SITE CONDITIONS FOLLOWING COMPLETION OF WORK. Following completion of all site work on 15 May 1997, the excavated area was backfilled with clean soil. AOC 707 excavated waste was transported to Building 1601 for storage, awaiting disposal. Photo C-1 of Appendix C reflect conditions at AOC 707 during removal of contaminated soil. Photo C-2 reflect conditions at AOC 707 after completion of IM. Photo C-3 illustrates AOC 708 as it exists.

4. SAMPLING

4.1 SAMPLING EVOLUTIONS AND RESULTS.

4.1.1 Field Sampling. Field samples (immunoassay) were taken at AOC 707 and AOC 708 to determine the extent of TPH contamination. TPH levels greater than 100 ppm were found at AOC 707.

4.1.2 Confirmatory Sampling. Upon completion of AOC 707 excavation, confirmatory (grab) samples were taken. Samples were collected at the bottom and sidewalls of the excavated area. These samples were analyzed for BTEX, PAHs, TPHs and RCRA Metals. For sampling locations and analytical results, see Appendix B. BTEX, PAHs and RCRA Metals were less than the USEPA Region III Residential Risk-Based Concentration (RBC) Limits for first interval side wall samples and less than the soil screening levels for the second interval sample collected at the bottom of the excavation.

AOC 708 information/investigative (grab) samples were collected at three locations in the visually stained area. Samples were analyzed for BTEX, PAHs, TPHs, PCBs and RCRA Metals. For sampling location and analytical results, see Appendix B. BTEX, PAHs, PCBs and RCRA Metals were less than the USEPA Region III Residential RBC limits.

4.1.3 Waste Characterization Sampling. One composite sample was collected from the stockpile of excavated soil and submitted for laboratory analysis. A copy of all waste characterization samples is included in Appendix B. Table B-3 of Appendix B summarizes these samples.

5. WASTE GENERATION

5.1 HAZARDOUS/POTENTIALLY HAZARDOUS WASTE. No hazardous waste was generated at this site.

5.1.1 Hazardous Excavated Soil. No hazardous soil was generated at this site.

5.2 NON-HAZARDOUS WASTE. Approximately 5.6 cubic yards of non-hazardous waste was generated at AOC 707.

5.2.1 Non-Hazardous Excavated Soil. The 5.6 cubic yards excavated non-hazardous soil was transported from AOC 707 and stored in Building 1601 awaiting proper disposal.

APPENDIX A

SITE MAPS

FIGURE A-1
AOC 707 SITE MAP

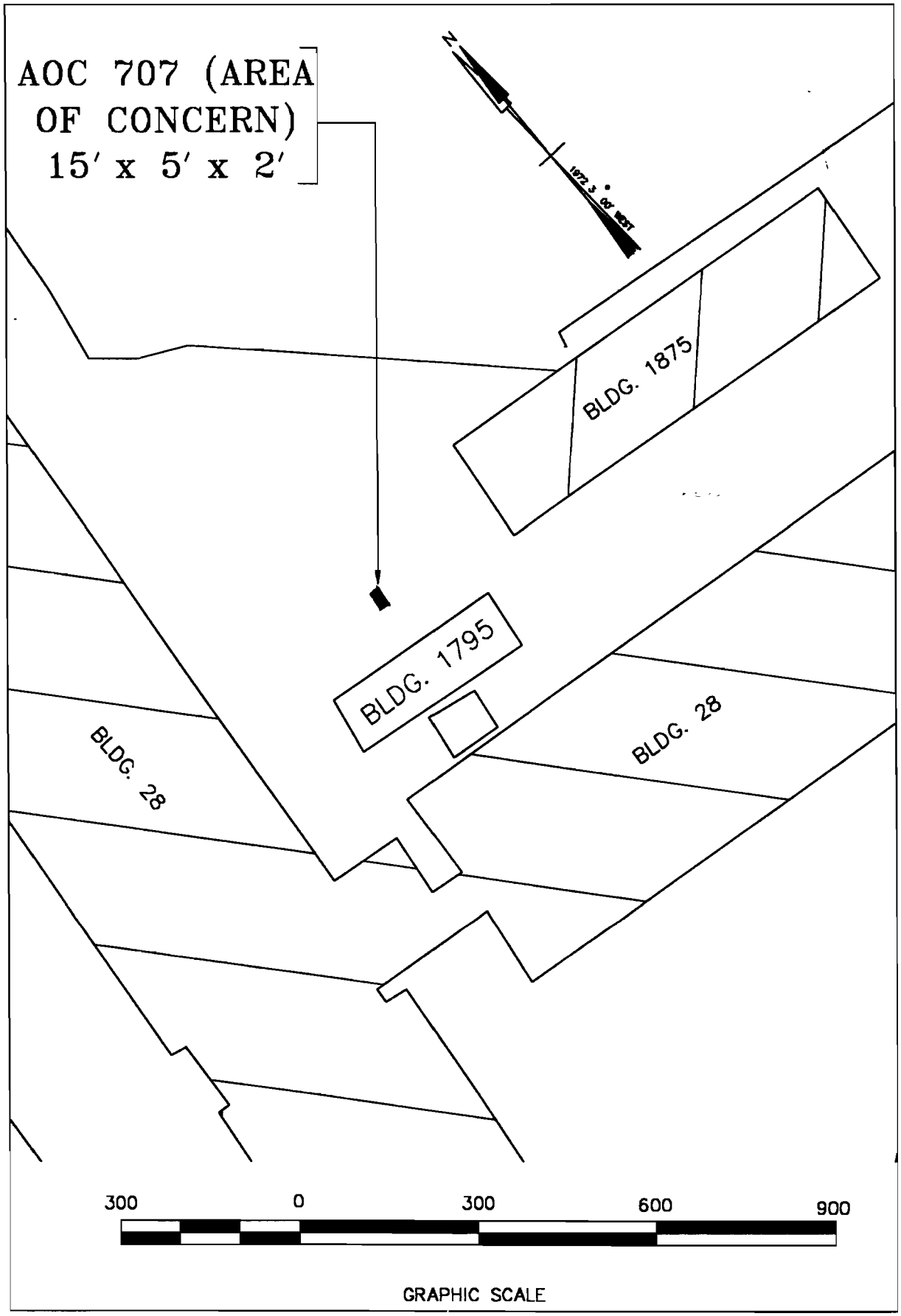
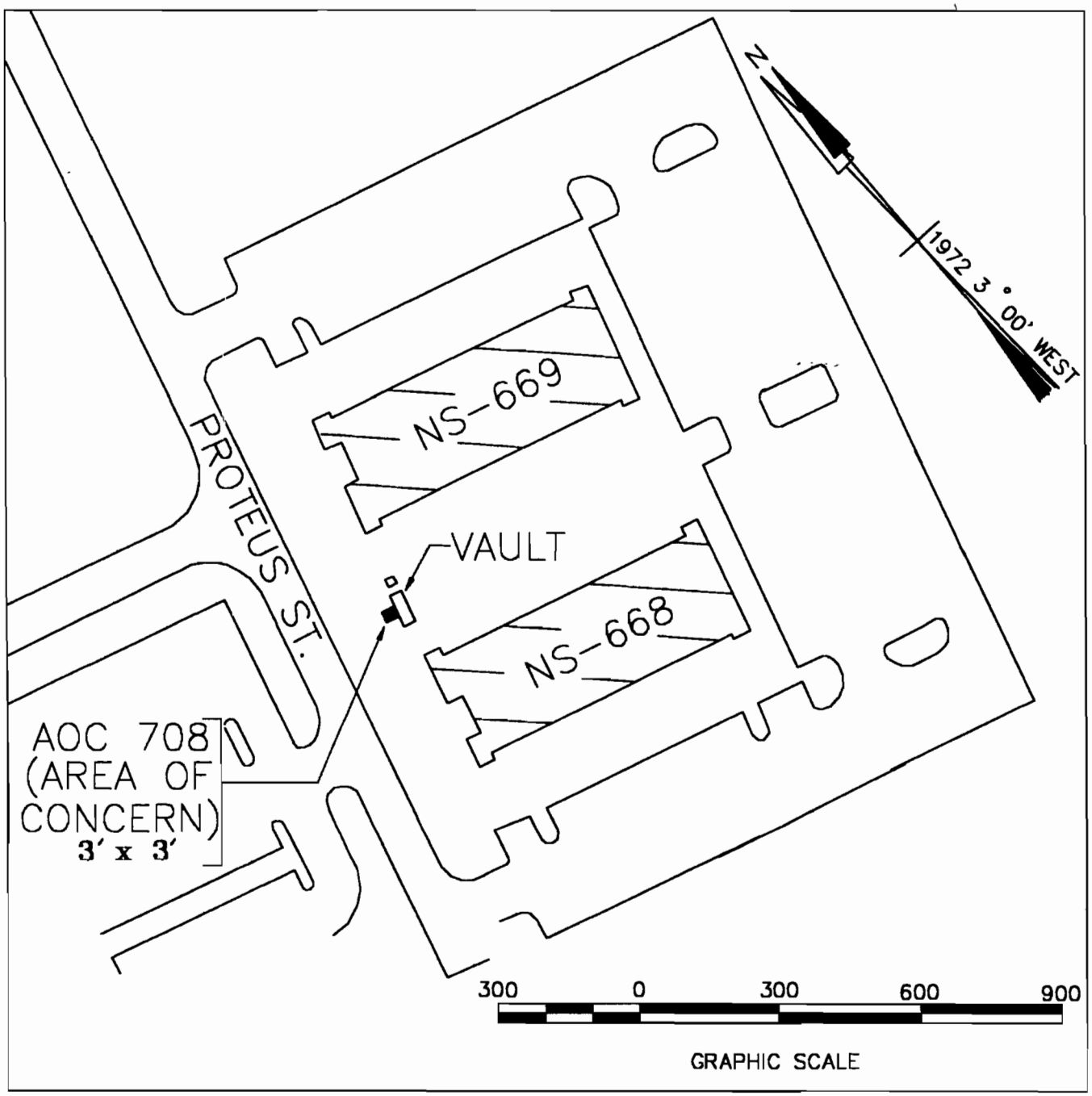


FIGURE A-2
AOC 708 SITE MAP

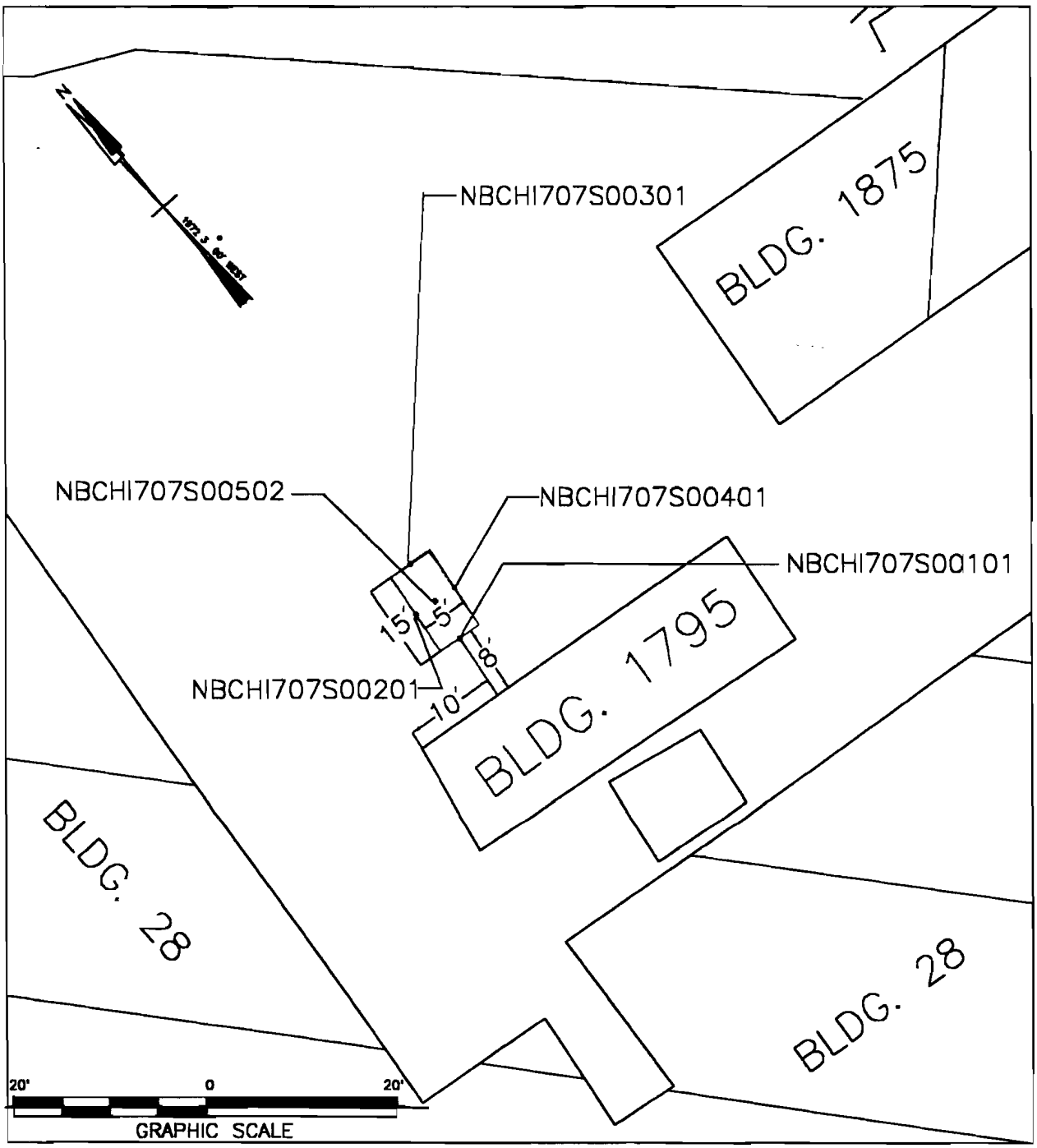


APPENDIX B

SAMPLING DOCUMENTATION

FIGURE B-1

AOC 707 CONFIRMATORY SAMPLING GRID MAP & DIMENSIONAL LOCATION



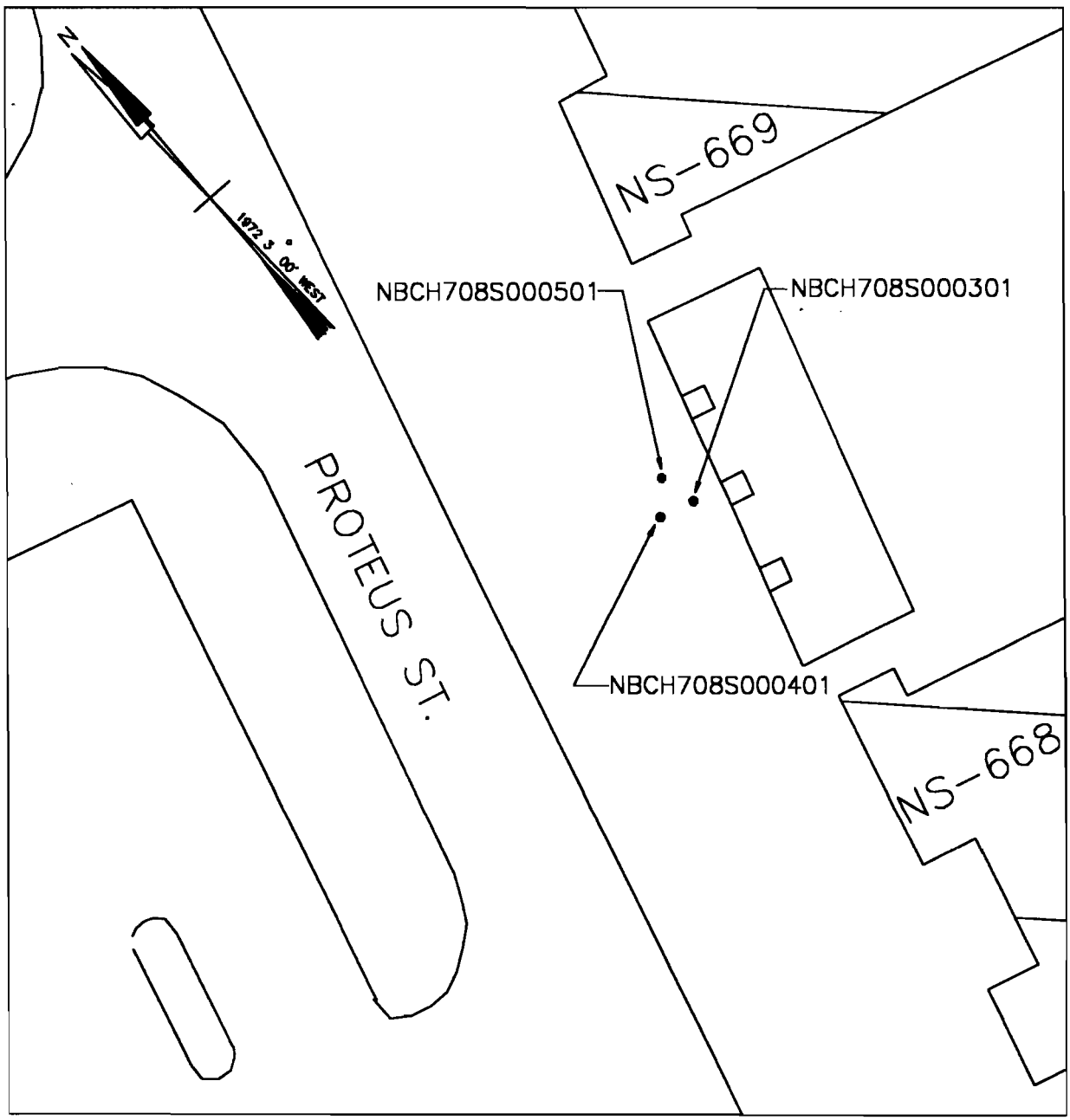
AOC 707 CONFIMATORY SAMPLING RESULTS SUMMARY			
SAMPLE NUMBER	SAMPLE DATE (1997)	SAMPLE ID NUMBER TEST (S) REQUESTED	REMARKS AND RESULTS THAT EXCEEDED USEPA RESIDENTIAL RBCs
1	MARCH 24	SPORT0386-1 NBCI707S000101 BTEX, PAH, TPH RCRA METALS	NONE
2	MARCH 24	SPORT0386-2 NBCI707S000201 BTEX, PAH, TPH RCRA METALS	NONE
3	MARCH 24	SPORT0386-3 NBCI707S000301 BTEX, PAH, TPH RCRA METALS	NONE
4	MARCH 24	SPORT0386-4 NBCH707S000401 BTEX, PAH, TPH RCRA METALS	NONE

Table B-1 (2 Sheets)

AOC 707 CONFIMATORY SAMPLING RESULTS SUMMARY			
SAMPLE NUMBER	SAMPLE DATE (1997)	SAMPLE ID NUMBER TEST (S) REQUESTED	REMARKS AND RESULTS THAT EXCEEDED USEPA RESIDENTIAL RBCs
5	MARCH 24	SPORT0386-5 NBCI707S000502 BTEX, PAH, TPH RCRA METALS	NONE

Table B-1 (2 Sheets)

FIGURE B-2
AOC 708 CONFIRMATORY SAMPLING GRID MAP



AOC 708 INFORMATION SAMPLING RESULTS SUMMARY			
SAMPLE NUMBER	SAMPLE DATE (1997)	SAMPLE ID NUMBER TEST (S) REQUESTED	REMARKS AND RESULTS THAT EXCEEDED USEPA RESIDENTIAL RBCs
1	MARCH 19	SPORT0380-1 NBCH708S000301 BTEX, PAH, TPH, PCB TOTAL METALS	NONE
2	MARCH 19	SPORT0380-2 NBCH708S000401 BTEX, PAH, TPH, PCB TOTAL METALS	NONE
3	MARCH 19	SPORT0380-3 NBCH708S000501 BTEX, PAH, TPH, PCB TOTAL METALS	NONE

Table B-2 (1 Sheet)

AOC 707 WASTE CHARACTERIZATION SAMPLING RESULTS SUMMARY			
SAMPLE NUMBER	SAMPLE DATE (1997)	SAMPLE ID NUMBER TEST (S) REQUESTED	REMARKS AND RESULTS THAT EXCEEDED USEPA RESIDENTIAL RBCs
1	JULY 21	SPORT0484-1 NBCI707S000700 BTEX, PAH, TPH RCRA METALS	NONE NOTE: TPH 868 ppm

Table B-3 (1 Sheet)

ANALYTICAL DATA

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: April 01, 1997

Sample ID	: SPORT0386-1
Lab ID	: 9703505-01
Matrix	: Soil
Date Collected	: 03/24/97
Date Received	: 03/24/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	RMB	03/26/97	1513	99708	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	333	666	ug/kg	2.0	DLW	03/27/97	1955	99514	2
Acenaphthylene	U	0.00	333	666	ug/kg	2.0					
Anthracene	U	0.00	333	666	ug/kg	2.0					
Benzo(a)anthracene	U	0.00	333	666	ug/kg	2.0					
Benzo(a)pyrene	U	0.00	333	666	ug/kg	2.0					
Benzo(b)fluoranthene	U	0.00	333	666	ug/kg	2.0					
Benzo(ghi)perylene	U	0.00	333	666	ug/kg	2.0					
Benzo(k)fluoranthene	U	0.00	333	666	ug/kg	2.0					
Chrysene	U	0.00	333	666	ug/kg	2.0					
Dibenzo(a,h)anthracene	U	0.00	333	666	ug/kg	2.0					
Fluoranthene	U	0.00	333	666	ug/kg	2.0					
Fluorene	U	0.00	333	666	ug/kg	2.0					
Indeno(1,2,3-c,d)pyrene	U	0.00	333	666	ug/kg	2.0					
Naphthalene	U	0.00	333	666	ug/kg	2.0					
Phenanthrene	U	0.00	333	666	ug/kg	2.0					
Pyrene	U	0.00	333	666	ug/kg	2.0					
Metals Analysis											
Mercury	J	0.0404	0.0149	0.200	mg/kg	1.0	RMJ	03/27/97	1809	99703	N
Silver	U	-71.3	40.8	962	ug/kg	2.0	MBL	03/28/97	1114	99608	3
Arsenic		2610	265	962	ug/kg	2.0					
Barium		16200	23.8	962	ug/kg	2.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: April 01, 1997

Sample ID : SPORT0386-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Cadmium	J	260	20.1	481	ug/kg	2.0					
Chromium		15700	59.7	962	ug/kg	2.0	MBL	03/28/97	1114	99608	3
Lead		7510	131	481	ug/kg	2.0					
Selenium	J	440	219	481	ug/kg	2.0					
General Chemistry											
Total Rec. Petro. Hydrocarbons		200	10.0	50.0	mg/kg	1.0	SLR	03/26/97	1200	99745	4

The following prep procedures were performed:

GC/MS Base/Neutral Compounds	MCS	03/25/97	1500	99514	5
Mercury	CRB	03/25/97	1630	99703	6
TRACE	FGD	03/25/97	1830	99608	7

Comments:
Volatile Organics contained matrix interferences.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	95.0	(30.0 - 115.)
Nitrobenzene-d5	M610	89.4	(23.0 - 120.)
p-Terphenyl-d14	M610	97.0	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	102.	(53.5 - 154.)
Dibromofluoromethane	BTEX-8260	117.	(63.4 - 136.)
Toluene-d8	BTEX-8260	101.	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 6010A
M 4	EPA 9071
M 5	EPA 3550

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9703505-01

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: April 01, 1997

Sample ID	: SPORT0386-2
Lab ID	: 9703505-02
Matrix	: Soil
Date Collected	: 03/24/97
Date Received	: 03/24/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	RMB	03/25/97	1323	99708	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	166	332	ug/kg	1.0	DLW	03/27/97	2027	99514	2
Acenaphthylene	U	0.00	166	332	ug/kg	1.0					
Anthracene	U	0.00	166	332	ug/kg	1.0					
Benzo(a)anthracene	U	0.00	166	332	ug/kg	1.0					
Benzo(a)pyrene	U	0.00	166	332	ug/kg	1.0					
Benzo(b)fluoranthene	U	0.00	166	332	ug/kg	1.0					
Benzo(ghi)perylene	U	0.00	166	332	ug/kg	1.0					
Benzo(k)fluoranthene	U	0.00	166	332	ug/kg	1.0					
Chrysene	U	0.00	166	332	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	0.00	166	332	ug/kg	1.0					
Fluoranthene	U	0.00	166	332	ug/kg	1.0					
Fluorene	U	0.00	166	332	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	0.00	166	332	ug/kg	1.0					
Naphthalene	U	0.00	166	332	ug/kg	1.0					
Phenanthrene	U	0.00	166	332	ug/kg	1.0					
Pyrene	U	0.00	166	332	ug/kg	1.0					
Metals Analysis											
Mercury	J	0.0450	0.0163	0.200	mg/kg	1.0	RMJ	03/27/97	1811	99703	N
Silver	U	-34.7	40.8	962	ug/kg	2.0	MBL	03/28/97	1107	99608	3
Arsenic		1660	265	962	ug/kg	2.0					
Barium		13000	23.8	962	ug/kg	2.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: April 01, 1997

Sample ID : SPORT0386-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Cadmium	J	185	20.1	481	ug/kg	2.0					
Chromium		21500	59.7	962	ug/kg	2.0	MBL	03/28/97	1107	99608	3
Lead		59300	131	481	ug/kg	2.0					
Selenium	J	338	219	481	ug/kg	2.0					
General Chemistry											
Total Rec. Petro. Hydrocarbons	U	0.00	10.0	50.0	mg/kg	1.0	SLR	03/26/97	1200	99745	4

The following prep procedures were performed:

GC/MS Base/Neutral Compounds	MCS	03/25/97	1500	99514	5
Mercury	CRB	03/25/97	1630	99703	6
TRACE	FGD	03/25/97	1830	99608	7

Comments:
Volatile Organics contained matrix interferences.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	83.5	(30.0 - 115.)
Nitrobenzene-d5	M610	84.9	(23.0 - 120.)
p-Terphenyl-d14	M610	93.7	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	108.	(53.5 - 154.)
Dibromofluoromethane	BTEX-8260	127.	(63.4 - 136.)
Toluene-d8	BTEX-8260	118.	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 6010A
M 4	EPA 9071
M 5	EPA 3550

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9703505-02

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: April 01, 1997

Sample ID	: SPORT0386-3
Lab ID	: 9703505-03
Matrix	: Soil
Date Collected	: 03/24/97
Date Received	: 03/24/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	RMB	03/26/97	1547	99708	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	162	330	ug/kg	1.0	DLW	03/27/97	2059	99514	2
Acenaphthylene	U	0.00	162	330	ug/kg	1.0					
Anthracene	U	0.00	162	330	ug/kg	1.0					
Benzo(a)anthracene	U	0.00	162	330	ug/kg	1.0					
Benzo(a)pyrene	U	0.00	162	330	ug/kg	1.0					
Benzo(b)fluoranthene	U	0.00	162	330	ug/kg	1.0					
Benzo(ghi)perylene	U	0.00	162	330	ug/kg	1.0					
Benzo(k)fluoranthene	U	0.00	162	330	ug/kg	1.0					
Chrysene	U	0.00	162	330	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	0.00	162	330	ug/kg	1.0					
Fluoranthene	U	0.00	162	330	ug/kg	1.0					
Fluorene	U	0.00	162	330	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	0.00	162	330	ug/kg	1.0					
Naphthalene	U	0.00	162	330	ug/kg	1.0					
Phenanthrene	U	0.00	162	330	ug/kg	1.0					
Pyrene	U	0.00	162	330	ug/kg	1.0					
Metals Analysis											
Mercury	J	0.0520	0.0166	0.200	mg/kg	1.0	RMJ	03/27/97	1813	99703	N
Silver	U	-30.1	40.4	952	ug/kg	2.0	MBL	03/28/97	1120	99608	3
Arsenic		1110	263	952	ug/kg	2.0					
Barium		13700	23.5	952	ug/kg	2.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: April 01, 1997

Sample ID : SPORT0386-3

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Cadmium	J	236	19.9	476	ug/kg	2.0					
Chromium		11700	59.1	952	ug/kg	2.0	MBL	03/28/97	1120	99608	3
Lead		18800	130	476	ug/kg	2.0					
Selenium	J	305	217	476	ug/kg	2.0					
General Chemistry											
Total Rec. Petro. Hydrocarbons	J	20.0	10.0	50.0	mg/kg	1.0	SLR	03/26/97	1200	99745	4

The following prep procedures were performed:

GC/MS Base/Neutral Compounds	MCS	03/25/97	1500	99514	5
Mercury	CRB	03/25/97	1630	99703	6
TRACE	FGD	03/25/97	1830	99608	7

Comments:
Volatile Organics contained matrix interferences.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	85.5	(30.0 - 115.)
Nitrobenzene-d5	M610	82.7	(23.0 - 120.)
p-Terphenyl-d14	M610	92.1	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	100.	(53.5 - 154.)
Dibromofluoromethane	BTEX-8260	117.	(63.4 - 136.)
Toluene-d8	BTEX-8260	103.	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 6010A
M 4	EPA 9071
M 5	EPA 3550

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: April 01, 1997

Sample ID	: SPORT0386-4
Lab ID	: 9703505-04
Matrix	: Soil
Date Collected	: 03/24/97
Date Received	: 03/24/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	RMB	03/27/97	1443	99838	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	33.2	66.4	ug/kg	2.0	BDG	03/28/97	1747	99782	2
Acenaphthylene	U	0.00	33.2	66.4	ug/kg	2.0					
Anthracene	U	0.00	33.2	66.4	ug/kg	2.0					
Benzo(a)anthracene		186	33.2	66.4	ug/kg	2.0					
Benzo(a)pyrene	J	62.4	33.2	66.4	ug/kg	2.0					
Benzo(b)fluoranthene		106	33.2	66.4	ug/kg	2.0					
Benzo(ghi)perylene	U	0.00	33.2	66.4	ug/kg	2.0					
Benzo(k)fluoranthene	U	0.00	33.2	66.4	ug/kg	2.0					
Chrysene	U	0.00	33.2	66.4	ug/kg	2.0					
Dibenzo(a,h)anthracene	U	14.6	33.2	66.4	ug/kg	2.0					
Fluoranthene		93.0	33.2	66.4	ug/kg	2.0					
Fluorene	U	0.00	33.2	66.4	ug/kg	2.0					
Indeno(1,2,3-c,d)pyrene	J	47.8	33.2	66.4	ug/kg	2.0					
Naphthalene	U	0.00	33.2	66.4	ug/kg	2.0					
Phenanthrene	U	0.00	33.2	66.4	ug/kg	2.0					
Pyrene		99.6	33.2	66.4	ug/kg	2.0					
Metals Analysis											
Mercury	J	0.0277	0.0163	0.200	mg/kg	1.0	RMJ	03/27/97	1824	99703	N
Silver	U	-46.7	39.6	934	ug/kg	2.0	MBL	03/28/97	1125	99608	3
Arsenic		1540	258	934	ug/kg	2.0					
Barium		19200	23.1	934	ug/kg	2.0					

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STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: April 01, 1997

Sample ID : SPORT0386-4

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Cadmium	J	202	19.5	467	ug/kg	2.0					
Chromium		12100	58.0	934	ug/kg	2.0	MBL	03/28/97	1125	99608	3
Lead		20800	127	467	ug/kg	2.0					
Selenium	U	172	213	467	ug/kg	2.0					
General Chemistry											
Total Rec. Petro. Hydrocarbons		1200	10.0	50.0	mg/kg	1.0	SLR	03/26/97	1200	99745	4

The following prep procedures were performed:

GC/MS Base/Neutral Compounds	MCS	03/27/97	1521	99782	5
Mercury	CRB	03/25/97	1630	99703	6
TRACE	FGD	03/25/97	1830	99608	7

Comments:
Volatile Organics contained matrix interferences.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	113.	(30.0 - 115.)
Nitrobenzene-d5	M610	74.1	(23.0 - 120.)
p-Terphenyl-d14	M610	120.	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	95.2	(53.5 - 154.)
Dibromofluoromethane	BTEX-8260	120.	(63.4 - 136.)
Toluene-d8	BTEX-8260	103.	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 6010A
M 4	EPA 9071
M 5	EPA 3550

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STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: April 01, 1997

Sample ID	: SPORT0386-5
Lab ID	: 9703505-05
Matrix	: Soil
Date Collected	: 03/24/97
Date Received	: 03/24/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	RMB	03/26/97	1652	99708	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	66.2	132	ug/kg	4.0	BDG	03/30/97	2134	99782	2
Acenaphthylene	U	0.00	66.2	132	ug/kg	4.0					
Anthracene	U	0.00	66.2	132	ug/kg	4.0					
Benzo(a)anthracene		424	66.2	132	ug/kg	4.0					
Benzo(a)pyrene		159	66.2	132	ug/kg	4.0					
Benzo(b)fluoranthene		265	66.2	132	ug/kg	4.0					
Benzo(ghi)perylene		132	66.2	132	ug/kg	4.0					
Benzo(k)fluoranthene	U	0.00	66.2	132	ug/kg	4.0					
Chrysene	U	0.00	66.2	132	ug/kg	4.0					
Dibenzo(a,h)anthracene	U	0.00	66.2	132	ug/kg	4.0					
Fluoranthene		344	66.2	132	ug/kg	4.0					
Fluorene	U	0.00	66.2	132	ug/kg	4.0					
Indeno(1,2,3-c,d)pyrene	J	117	66.2	132	ug/kg	4.0					
Naphthalene	U	0.00	66.2	132	ug/kg	4.0					
Phenanthrene	U	0.00	66.2	132	ug/kg	4.0					
Pyrene		318	66.2	132	ug/kg	4.0					
Metals Analysis											
Mercury	J	0.0221	0.0148	0.200	mg/kg	1.0	RMJ	03/27/97	1826	99703	N
Silver	U	-17.1	40.0	944	ug/kg	2.0	MBL	03/28/97	1130	99608	3
Arsenic		1220	260	944	ug/kg	2.0					
Barium		11300	23.3	944	ug/kg	2.0					

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STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: April 01, 1997

Sample ID : SPORT0386-5

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Cadmium	J	199	19.7	472	ug/kg	2.0					
Chromium		8000	58.6	944	ug/kg	2.0	MBL	03/28/97	1130	99608	3
Lead		20700	129	472	ug/kg	2.0					
General Chemistry											
Total Rec. Petro. Hydrocarbons	U	10.0	10.0	50.0	mg/kg	1.0	SLR	03/26/97	1200	99745	4

The following prep procedures were performed:

GC/MS Base/Neutral Compounds	MCS	03/27/97	1521	99782	5
Mercury	CRB	03/25/97	1630	99703	6
TRACE	FGD	03/25/97	1830	99608	7

Comments:
Volatile Organics contained matrix interferences.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	111.	(30.0 - 115.)
Nitrobenzene-d5	M610	61.4	(23.0 - 120.)
p-Terphenyl-d14	M610	115.	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	107.	(53.5 - 154.)
Dibromofluoromethane	BTEX-8260	115.	(63.4 - 136.)
Toluene-d8	BTEX-8260	102.	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 6010A
M 4	EPA 9071
M 5	EPA 3550
M 6	EPA 7471

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: March 31, 1997

Sample ID	: SPORT0380-1
Lab ID	: 9703404-01
Matrix	: Soil
Date Collected	: 03/19/97
Date Received	: 03/19/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	RMB	03/26/97	1334	99708	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	1670	3330	ug/kg	10.	DLW	03/27/97	1820	99514	2
Acenaphthylene	U	0.00	1670	3330	ug/kg	10.					
Anthracene	U	0.00	1670	3330	ug/kg	10.					
Benzo(a)anthracene	U	0.00	1670	3330	ug/kg	10.					
Benzo(a)pyrene	U	0.00	1670	3330	ug/kg	10.					
Benzo(b)fluoranthene	U	0.00	1670	3330	ug/kg	10.					
Benzo(ghi)perylene	U	0.00	1670	3330	ug/kg	10.					
Benzo(k)fluoranthene	U	0.00	1670	3330	ug/kg	10.					
Chrysene	U	0.00	1670	3330	ug/kg	10.					
Dibenzo(a,h)anthracene	U	0.00	1670	3330	ug/kg	10.					
Fluoranthene	U	0.00	1670	3330	ug/kg	10.					
Fluorene	U	0.00	1670	3330	ug/kg	10.					
Indeno(1,2,3-c,d)pyrene	U	0.00	1670	3330	ug/kg	10.					
Naphthalene	U	0.00	1670	3330	ug/kg	10.					
Phenanthrene	U	0.00	1670	3330	ug/kg	10.					
Pyrene	U	0.00	1670	3330	ug/kg	10.					
PCB analysis - 7 items											
PCB-1016	U	0.00	32.9	41.6	ug/kg	10.	JPA	03/22/97	0416	99445	3
PCB-1221	U	0.00	32.9	41.6	ug/kg	10.					
PCB-1232	U	0.00	32.9	41.6	ug/kg	10.					
PCB-1242	U	0.00	32.9	41.6	ug/kg	10.					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: March 31, 1997

Sample ID : SPORT0380-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
PCB-1248	U	0.00	32.9	41.6	ug/kg	10.					
PCB-1254	U	0.00	32.9	41.6	ug/kg	10.	JPA	03/22/97	0416	99445	3
PCB-1260	U	0.00	32.9	41.6	ug/kg	10.					
Metals Analysis											
Mercury	J	0.0708	0.0149	0.200	mg/kg	1.0	RMJ	03/27/97	1655	99548	N
Silver	U	-5.36	40.0	944	ug/kg	2.0	MBL	03/28/97	1239	99451	4
Arsenic		1440	260	944	ug/kg	2.0					
Barium		15100	23.3	944	ug/kg	2.0					
Beryllium	J	140	12.7	472	ug/kg	2.0					
Cadmium		1660	19.7	472	ug/kg	2.0					
Chromium		30000	58.6	944	ug/kg	2.0					
Nickel		4740	94.0	944	ug/kg	2.0					
Lead		20300	129	472	ug/kg	2.0					
Antimony	U	128	174	944	ug/kg	2.0					
Selenium	J	423	215	472	ug/kg	2.0					
General Chemistry											
Total Rec. Petro. Hydrocarbons		3120	10.0	50.0	mg/kg	1.0	SLR	03/25/97	1000	99658	5

The following prep procedures were performed:

GC/MS Base/Neutral Compounds	MCS	03/25/97	1500	99514	6
PCB's	GWL	03/20/97	1652	99445	6
Mercury	CRB	03/21/97	2130	99548	7
TRACE	DVW	03/21/97	1930	99451	8

Comments:
Volatile Organics contained matrix interferences.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	0.00*	(30.0 - 115.)
Nitrobenzene-d5	M610	0.00*	(23.0 - 120.)
p-Terphenyl-d14	M610	0.00*	(37.3 - 128.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: March 31, 1997

Sample ID : SPORT0380-1

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PCB	130.	(36.5 - 172.)
Bromofluorobenzene	BTEX-8260	109.	(53.5 - 154.)
Dibromofluoromethane	BTEX-8260	116.	(63.4 - 136.)
Toluene-d8	BTEX-8260	100.	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 8080
M 4	EPA 6010A
M 5	EPA 9071
M 6	EPA 3550
M 7	EPA 7471
M 8	EPA 3050

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Karen Blakeney at (803) 769-7386.

Karen Blakeney
Reviewed By

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STATE	GEL	EPI
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NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: March 31, 1997

Sample ID	: SPORT0380-2
Lab ID	: 9703404-02
Matrix	: Soil
Date Collected	: 03/19/97
Date Received	: 03/19/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	RMB	03/25/97	1718	99708	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	1620	3240	ug/kg	10.	DLW	03/27/97	1852	99514	2
Acenaphthylene	U	0.00	1620	3240	ug/kg	10.					
Anthracene	U	0.00	1620	3240	ug/kg	10.					
Benzo(a)anthracene	U	0.00	1620	3240	ug/kg	10.					
Benzo(a)pyrene	U	0.00	1620	3240	ug/kg	10.					
Benzo(b)fluoranthene	U	0.00	1620	3240	ug/kg	10.					
Benzo(ghi)perylene	U	0.00	1620	3240	ug/kg	10.					
Benzo(k)fluoranthene	U	0.00	1620	3240	ug/kg	10.					
Chrysene	U	0.00	1620	3240	ug/kg	10.					
Dibenzo(a,h)anthracene	U	0.00	1620	3240	ug/kg	10.					
Fluoranthene	U	0.00	1620	3240	ug/kg	10.					
Fluorene	U	0.00	1620	3240	ug/kg	10.					
Indeno(1,2,3-c,d)pyrene	U	0.00	1620	3240	ug/kg	10.					
Naphthalene	U	0.00	1620	3240	ug/kg	10.					
Phenanthrene	U	0.00	1620	3240	ug/kg	10.					
Pyrene	U	0.00	1620	3240	ug/kg	10.					
PCB analysis - 7 items											
PCB-1016	U	0.00	33.2	41.6	ug/kg	10.	JPA	03/22/97	0452	99445	3
PCB-1221	U	0.00	33.2	41.6	ug/kg	10.					
PCB-1232	U	0.00	33.2	41.6	ug/kg	10.					
PCB-1242	U	0.00	33.2	41.6	ug/kg	10.					

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NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: March 31, 1997

Sample ID : SPORT0380-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
PCB-1248	U	0.00	33.2	41.6	ug/kg	10.					
PCB-1254	U	0.00	33.2	41.6	ug/kg	10.	JPA	03/22/97	0452	99445	3
PCB-1260	U	0.00	33.2	41.6	ug/kg	10.					
Metals Analysis											
Mercury	J	0.0441	0.0162	0.200	mg/kg	1.0	RMJ	03/27/97	1657	99548	N
Silver	J	77.5	41.6	980	ug/kg	2.0	MBL	03/28/97	1244	99451	4
Arsenic		2380	270	980	ug/kg	2.0					
Barium		14600	24.2	980	ug/kg	2.0					
Beryllium	J	195	13.2	490	ug/kg	2.0					
Cadmium		1340	20.5	490	ug/kg	2.0					
Chromium		25200	60.9	980	ug/kg	2.0					
Nickel		6070	97.6	980	ug/kg	2.0					
Lead		13600	134	490	ug/kg	2.0					
Antimony	U	164	181	980	ug/kg	2.0					
Selenium	J	475	223	490	ug/kg	2.0					
General Chemistry											
Total Rec. Petro. Hydrocarbons		1670	10.0	50.0	mg/kg	1.0	SLR	03/25/97	1000	99658	5

The following prep procedures were performed:

GC/MS Base/Neutral Compounds	MCS	03/25/97	1500	99514	6
PCB's	GWL	03/20/97	1652	99445	6
Mercury	CRB	03/21/97	2130	99548	7
TRACE	DVW	03/21/97	1930	99451	8

Comments:
Volatile Organics contained matrix interferences.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	0.00*	(30.0 - 115.)
Nitrobenzene-d5	M610	0.00*	(23.0 - 120.)
p-Terphenyl-d14	M610	0.00*	(37.3 - 128.)

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FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: March 31, 1997

Sample ID : SPORT0380-2

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PCB	116.	(36.5 - 172.)
Bromofluorobenzene	BTEX-8260	110.	(53.5 - 154.)
Dibromofluoromethane	BTEX-8260	113.	(63.4 - 136.)
Toluene-d8	BTEX-8260	109.	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 8080
M 4	EPA 6010A
M 5	EPA 9071
M 6	EPA 3550
M 7	EPA 7471
M 8	EPA 3050

Notes:
The qualifiers in this report are defined as follows:
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J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed
in accordance with General Engineering Laboratories
standard operating procedures. Please direct
any questions to your Project Manager, Karen Blakeney at (803) 769-7386.

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SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196

Report Date: March 31, 1997

Sample ID	: SPORT0380-3
Lab ID	: 9703404-03
Matrix	: Soil
Date Collected	: 03/19/97
Date Received	: 03/19/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	1.00	2.00	ug/kg	1.0	RMB	03/25/97	1750	99708	1
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	163	330	ug/kg	1.0	DLW	03/27/97	2131	99514	2
Acenaphthylene	U	0.00	163	330	ug/kg	1.0					
Anthracene	U	0.00	163	330	ug/kg	1.0					
Benzo(a)anthracene	U	0.00	163	330	ug/kg	1.0					
Benzo(a)pyrene	U	0.00	163	330	ug/kg	1.0					
Benzo(b)fluoranthene	J	166	163	330	ug/kg	1.0					
Benzo(ghi)perylene	U	0.00	163	330	ug/kg	1.0					
Benzo(k)fluoranthene	J	189	163	330	ug/kg	1.0					
Chrysene	J	189	163	330	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	0.00	163	330	ug/kg	1.0					
Fluoranthene	J	224	163	330	ug/kg	1.0					
Fluorene	U	0.00	163	330	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	0.00	163	330	ug/kg	1.0					
Naphthalene	U	0.00	163	330	ug/kg	1.0					
Phenanthrene	U	0.00	163	330	ug/kg	1.0					
Pyrene	J	325	163	330	ug/kg	1.0					
PCB analysis - 7 items											
PCB-1016	U	0.00	33.2	41.6	ug/kg	10.	JPA	03/22/97	0528	99445	3
PCB-1221	U	0.00	33.2	41.6	ug/kg	10.					
PCB-1232	U	0.00	33.2	41.6	ug/kg	10.					
PCB-1242	U	0.00	33.2	41.6	ug/kg	10.					

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SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: March 31, 1997

Sample ID : SPORT0380-3

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
PCB-1248	U	0.00	33.2	41.6	ug/kg	10.					
PCB-1254	U	0.00	33.2	41.6	ug/kg	10.	JPA	03/22/97	0528	99445	3
PCB-1260	U	0.00	33.2	41.6	ug/kg	10.					
Metals Analysis											
Mercury	J	0.0356	0.0154	0.200	mg/kg	1.0	RMJ	03/27/97	1700	99548	N
Silver	U	-110	40.4	952	ug/kg	2.0	MBL	03/28/97	1249	99451	4
Arsenic		4560	263	952	ug/kg	2.0					
Barium		14400	23.5	952	ug/kg	2.0					
Beryllium	J	301	12.9	476	ug/kg	2.0					
Cadmium		520	19.9	476	ug/kg	2.0					
Chromium		26500	59.1	952	ug/kg	2.0					
Nickel		8750	94.8	952	ug/kg	2.0					
Lead		9520	130	476	ug/kg	2.0					
Antimony	J	243	176	952	ug/kg	2.0					
Selenium		835	217	476	ug/kg	2.0					
General Chemistry											
Total Rec. Petro. Hydrocarbons	J	20.0	10.0	50.0	mg/kg	1.0	SLR	03/25/97	1000	99658	5

The following prep procedures were performed:

GC/MS Base/Neutral Compounds	MCS	03/25/97	1500	99514	6
PCB's	GWL	03/20/97	1652	99445	6
Mercury	CRB	03/21/97	2130	99548	7
TRACE	DVW	03/21/97	1930	99451	8

Comments:
Volatile Organics contained matrix interferences.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	75.0	(30.0 - 115.)
Nitrobenzene-d5	M610	77.8	(23.0 - 120.)
p-Terphenyl-d14	M610	92.6	(37.3 - 128.)

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FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00196 Report Date: March 31, 1997

Sample ID : SPORT0380-3

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PCB	104.	(36.5 - 172.)
Bromofluorobenzene	BTEX-8260	112.	(53.5 - 154.)
Dibromofluoromethane	BTEX-8260	108.	(63.4 - 136.)
Toluene-d8	BTEX-8260	114.	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 8080
M 4	EPA 6010A
M 5	EPA 9071
M 6	EPA 3550
M 7	EPA 7471
M 8	EPA 3050

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Karen Blakeney at (803) 769-7386.

Karen Blakeney
Reviewed By

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STATE	GEL	EPI
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NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: July 30, 1997

Sample ID	: SPORT0484-1
Lab ID	: 9707457-01
Matrix	: Soil
Date Collected	: 07/21/97
Date Received	: 07/21/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
BTEX - 4 items											
Benzene	U	0.00	5.00	10.0	ug/kg	5.0	TCL	07/27/97	0623	105570	1
Ethylbenzene	U	0.00	5.00	10.0	ug/kg	5.0					
Toluene	U	0.00	5.00	10.0	ug/kg	5.0					
Xylenes (TOTAL)	U	0.00	5.00	10.0	ug/kg	5.0					
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	0.00	329	658	ug/kg	2.0	WAM	07/23/97	2008	105392	2
Acenaphthylene	U	0.00	329	658	ug/kg	2.0					
Anthracene	U	0.00	329	658	ug/kg	2.0					
Benzo(a)anthracene	U	0.00	329	658	ug/kg	2.0					
Benzo(a)pyrene	U	0.00	329	658	ug/kg	2.0					
Benzo(b)fluoranthene	U	0.00	329	658	ug/kg	2.0					
Benzo(ghi)perylene	U	0.00	329	658	ug/kg	2.0					
Benzo(k)fluoranthene	U	0.00	329	658	ug/kg	2.0					
Chrysene	U	0.00	329	658	ug/kg	2.0					
Dibenzo(a,h)anthracene	U	0.00	329	658	ug/kg	2.0					
Fluoranthene	J	383	329	658	ug/kg	2.0					
Fluorene	U	0.00	329	658	ug/kg	2.0					
Indeno(1,2,3-c,d)pyrene	U	0.00	329	658	ug/kg	2.0					
Naphthalene	U	0.00	329	658	ug/kg	2.0					
Phenanthrene	U	0.00	329	658	ug/kg	2.0					
Pyrene	U	0.00	329	658	ug/kg	2.0					
Metals Analysis											
Mercury	J	0.0341	0.0155	0.200	mg/kg	1.0	CRB	07/28/97	0919	105360	N
Silver		1540	41.6	980	ug/kg	2.0	MBL	07/23/97	1505	105298	3
Arsenic		1580	270	980	ug/kg	2.0					
Barium		20500	24.2	980	ug/kg	2.0					

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FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: July 30, 1997

Sample ID : SPORT0484-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Cadmium	U	-30.4	20.5	490	ug/kg	2.0					
Chromium		9410	60.9	980	ug/kg	2.0	MBL	07/23/97	1505	105298	3
Lead		14500	134	490	ug/kg	2.0					
Selenium		513	223	490	ug/kg	2.0					
General Chemistry											
Total Rec. Petro. Hydrocarbons		868	10.0	50.0	mg/kg	1.0	SJ	07/24/97	1230	105406	4

The following prep procedures were performed:

GC/MS Base/Neutral Compounds	TSD	07/23/97	1500	105392	5
Mercury	CRB	07/27/97	1200	105360	6
TRACE	FGD	07/22/97	1500	105298	7

Comments:
A dilution was required for Volatile Organics and Extractable Organics due to matrix interferences. As a result, the detection limits are elevated.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	123.*	(30.0 - 115.)
Nitrobenzene-d5	M610	77.6	(23.0 - 120.)
p-Terphenyl-d14	M610	81.5	(37.3 - 128.)
Bromofluorobenzene	BTEX-8260	85.6	(53.5 - 154.)
Dibromofluoromethane	BTEX-8260	116.	(63.4 - 136.)
Toluene-d8	BTEX-8260	84.0	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 8270
M 3	EPA 6010A
M 4	EPA 9071A

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APPENDIX C

PHOTOGRAPHS

Photo C-1 Excavation viewed from east end of AOC 707.

Photo C-2 East end of AOC 707 after site was backfilled.

Photo C-3 Viewed from the north end of AOC 708.