

N61165.AR.005270
CNC CHARLESTON
5090.3a

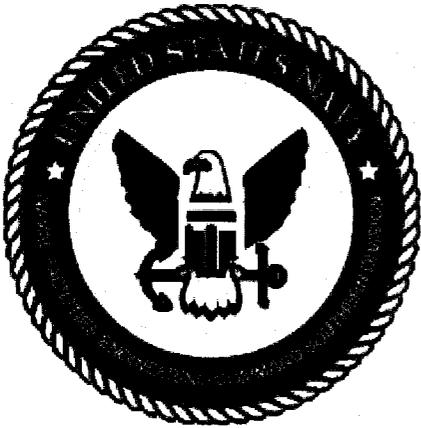
COMPLETION REPORT FOR REMEDIAL ACTION (NS-705) CNC CHARLESTON SC
05/05/1999
ENVIRONMENTAL DETACHMENT CHARLESTON

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106.3.99



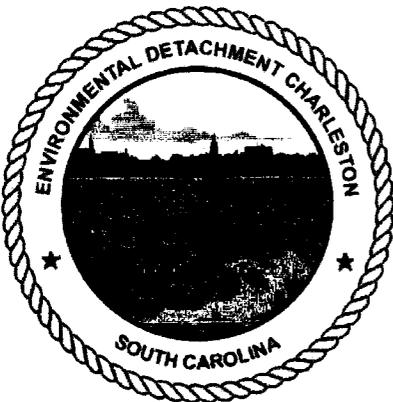
COMPLETION REPORT

REMEDIAL ACTION
NS705
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

May 5, 1999

RECEIVED

MAY 25 1999

Water Monitoring, Assessment &
Protection Division

COMPLETION REPORT

Remedial Action

NS705

Charleston Naval Complex, Charleston, SC



Engineering Branch Head:

[Signature]

Date:

5/5/99

Prepared By:

Elise C. Stoner

Date:

5/5/99

REPORT GENERATED BY:
ENVIRONMENTAL DETACHMENT CHARLESTON
1899 NORTH HOBSON AVENUE
NORTH CHARLESTON, SC 29405

1.0 INTRODUCTION

Environmental Detachment Charleston (DET) performed a Contamination Assessment (CA) for the Navy at Building NS705 at the former Charleston Naval Base (NAVBASE). NAVBASE is located in the city of North Charleston, on the west bank of the Cooper River in Charleston County, South Carolina. See Figures 1-1 and 1-2 of Attachment A. The CA was performed between 26 March 1998 and 24 April 1998 in response to contamination detected in the soil samples taken during removal of an underground storage tank (UST). See Figure 1-3.

The CA field activities included advancing six soil borings to the water table to assess the horizontal and vertical extent of potential hydrocarbon contamination in soil at the site and taking six surface soil samples from the area surrounding the former tank location to assess the risk to site residents. A soil sample from each soil boring was analyzed for Polynuclear Aromatic Hydrocarbons (PAHs) and Benzene, Toluene, Ethylbenzene, and Xylene plus Naphthalene (BTEX + Naphthalene) Chemicals of Concern (COC).

No COCs were detected above groundwater protection Risk Based Screening Levels (RBSLs) in soil boring samples. In surface soil samples (approximately 1-foot deep), one COC, Benzo(a)pyrene, in one sample was detected in a concentration exceeding residential soil ingestion RBSLs.

Based on the findings of the CA of the former UST NS705 site, the Navy recommended remediation at the site consisting of removal of contaminated surface soil and replacing it with clean fill to eliminate potential risk to future site residents. The soil recommended for removal consisted of soil within a five-foot horizontal radius of the location of surface soil sample NBCT705S100101 down to a depth of 18-inches. See Figure 1-4.

2.0 PROJECT EXECUTION

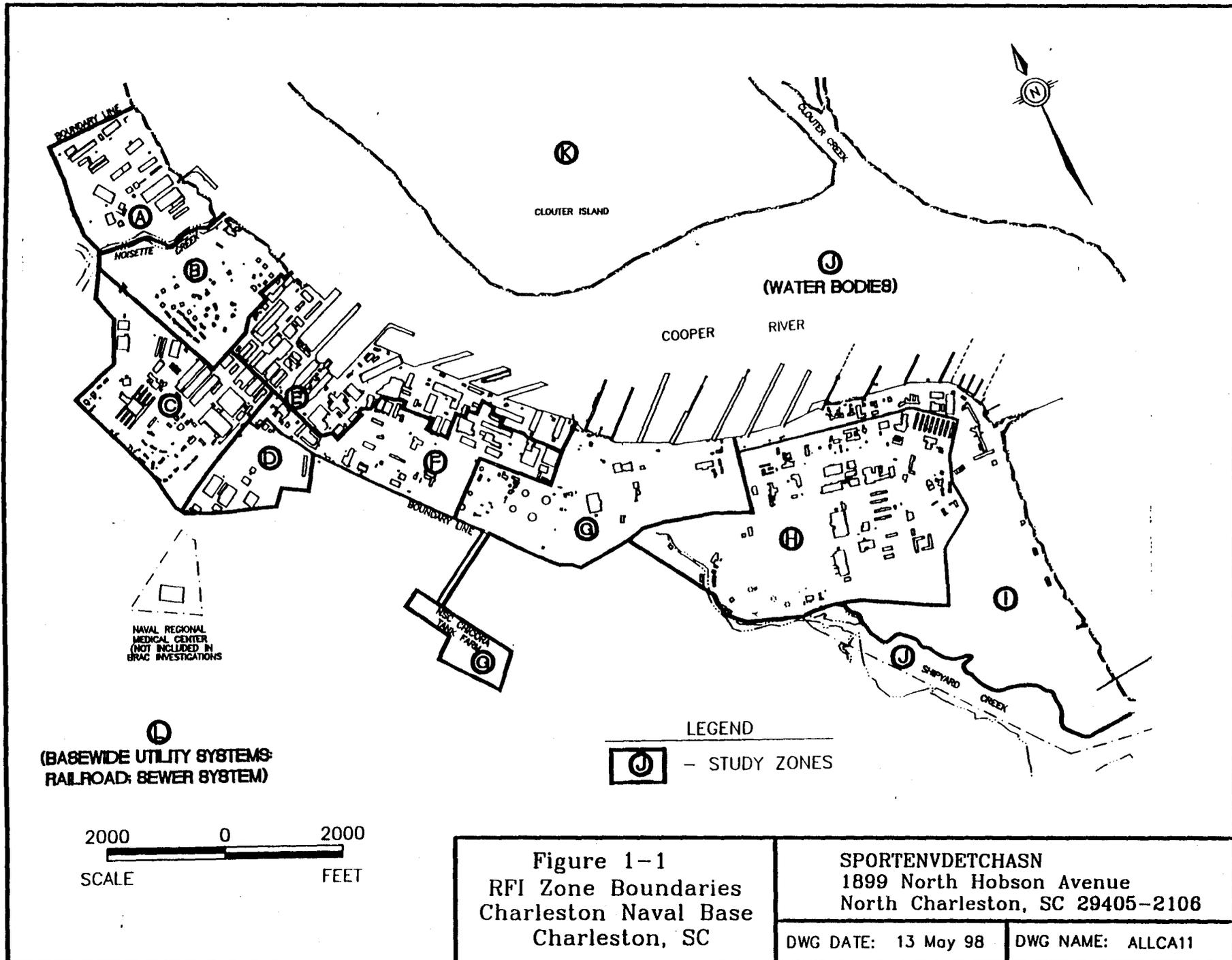
After the completion of the CA for the former UST NS705 site, it was decided by Southern Division Naval Facilities Engineering Command (SOUTHDIV) that a Remedial Action (RA) would be performed by the DET. The remedial action was executed in accordance with the recommendations of the Contamination Assessment Report UST NS705 (SCDHEC GWPD SITE ID # 17664), Naval Base Charleston, dated 16 July 1998. **Remediation at the site consisted of:**

- PAH contaminated surface soil removal within a five-foot horizontal radius of the location of surface soil sample NBCT705S100101, down to a depth of 18-inches.
- Collection of one confirmation sample approximately 18-inches below the bottom of the excavation to verify the effectiveness of the RA. See Figure 1-5. The COC was not detected in the confirmation sample results. See Attachment B for sample analysis.
- Disposition of approximately 10 cubic yards of non-hazardous petroleum contaminated soil at a subtitle D landfill. See Attachment C for manifest.
- Backfilling site with clean fill, grading to meet surrounding conditions and reseeding.

**SITE MAPS
AND
PHOTOGRAPHS**

Figures 1-1 through 1-5

A-1



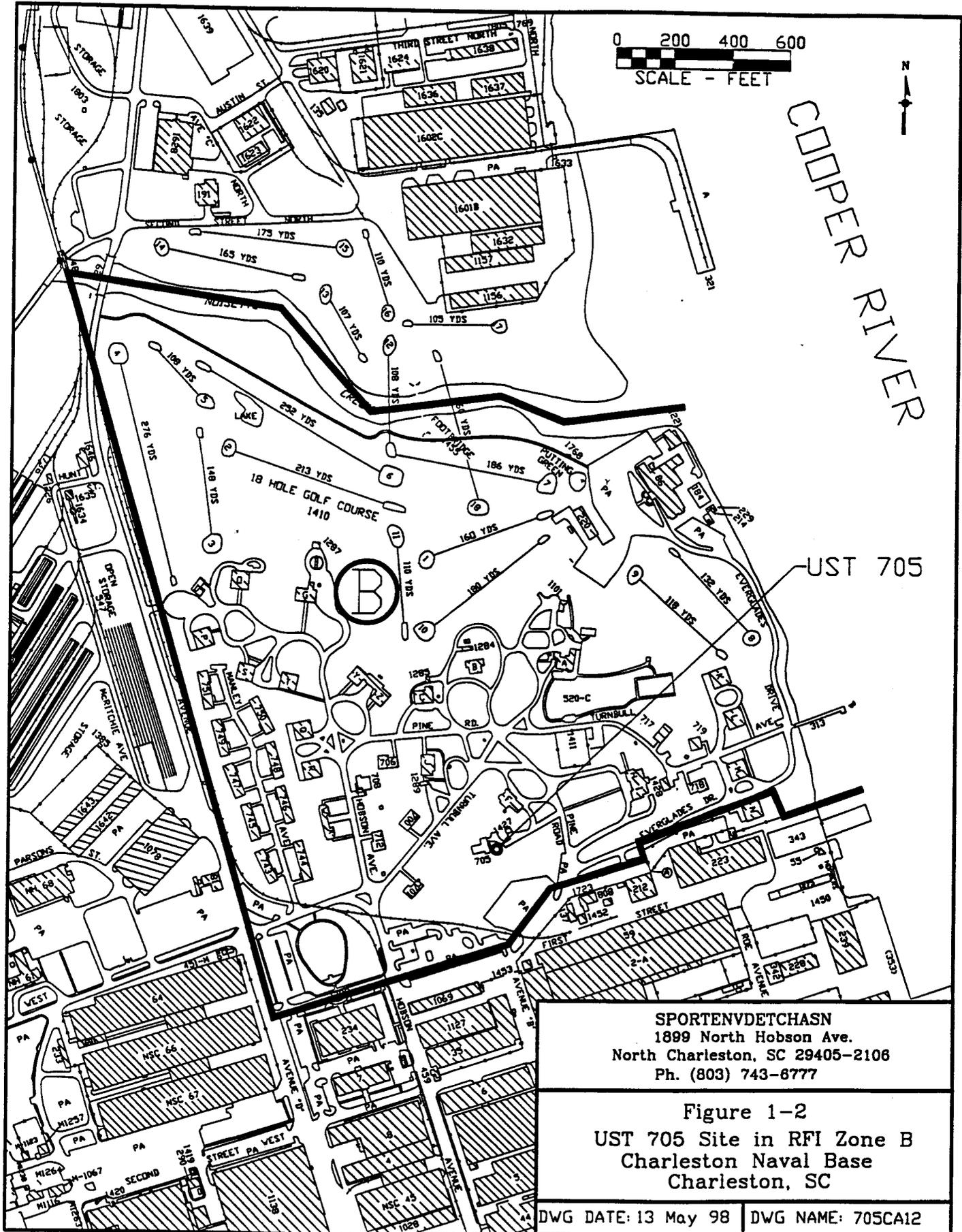

 (BASEWIDE UTILITY SYSTEMS:
RAILROAD; SEWER SYSTEM)

2000 0 2000

 SCALE FEET

LEGEND
 - STUDY ZONES

<p>Figure 1-1 RFI Zone Boundaries Charleston Naval Base Charleston, SC</p>	<p>SPORTENVDETHASN 1899 North Hobson Avenue North Charleston, SC 29405-2106</p>	
	<p>DWG DATE: 13 May 98</p>	<p>DWG NAME: ALLCA11</p>



0 200 400 600
SCALE - FEET



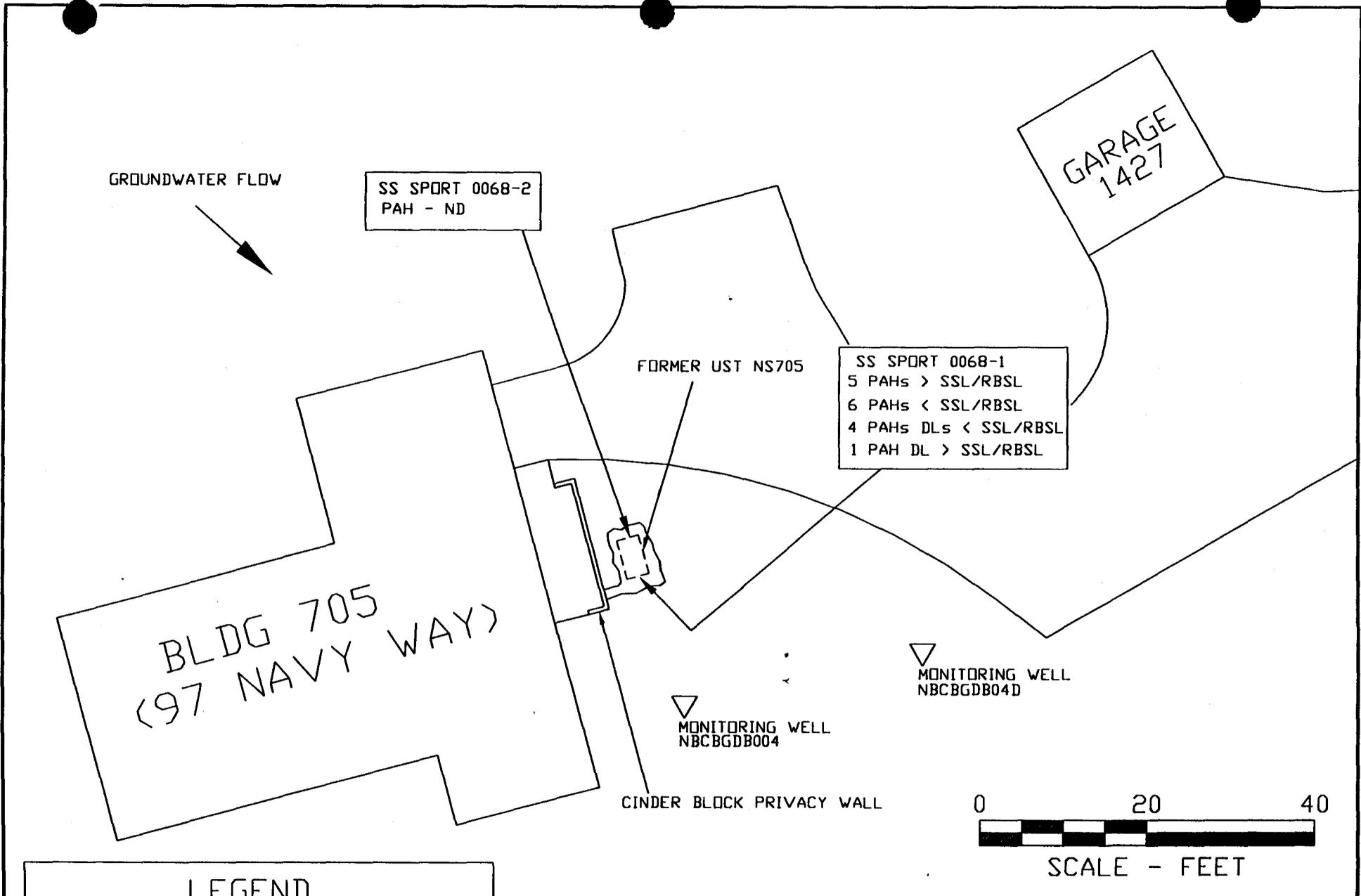
COOPER RIVER

UST 705

SPORTENVDECHASN
1899 North Hobson Ave.
North Charleston, SC 29405-2108
Ph. (803) 743-8777

Figure 1-2
UST 705 Site in RFI Zone B
Charleston Naval Base
Charleston, SC

DWG DATE: 13 May 98 DWG NAME: 705CA12



LEGEND

DL - DETECTION LIMIT
 ND - NON-DETECTABLE
 SS - SOIL SAMPLE

SPORTENVDETHASN
 1899 North Hobson Ave.
 North Charleston, SC
 29405-2106
 Ph. (803) 743-6777

Figure 1-3
 Removed UST NS705
 Charleston Naval Base
 Charleston, SC

DWG DATE: 20 MAY 98 DWG NAME: NS705_13



NBCT705S10	
Benzo(a)Anthracene	0.519 mg/kg
Benzo(a)Pyrene	0.303 mg/kg
Benzo(b)Fluoranthene	0.736 mg/kg
Chrysene	0.511 mg/kg
Fluoranthene	1.250 mg/kg
Phenanthrene	0.540 mg/kg
Pyrene	0.705 mg/kg

GARAGE
1427

NBCT705S09
ND

NBCT705S11
ND

NBCT705S12
ND

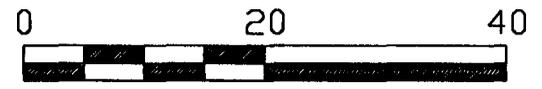
NBCT705S08
ND

NBCT705S07
ND

NBCBGDB04D

NBCBGDB004

BLDG 705
(97 NAVY WAY)
FORMER UST 705



SCALE - FEET

LEGEND	
ND	NON- DETECTABLE
+	SURFACE SOIL SAMPLE
▽	EXISTING MONITORING WELL

Figure 1-4
NS705 Surface Soil
Samples of PAHs (Taken from CAR)
Charleston Naval Base
Charleston, SC

SPORTENVDETHASN 1899 North Hobson Avenue North Charleston, SC 29405-2106	
DWG DATE: 14 MAY 98	DWG NAME: NS705CA43

A-4



SPORT0143-1

NBCT705S14

Benzo(a)Anthracene	ND
Benzo(a)Pyrene	ND
Benzo(b)Fluoranthene	ND
Chrysene	ND
Fluoranthene	ND
Phenanthrene	ND
Pyrene	ND

GARAGE
1427

A-5

BLDG 705
(97 NAVY WAY)

FORMER UST 705

EXCAVATION

▽
NBCBGDB04D

▽
NBCBGDB004



SCALE - FEET

LEGEND

ND	NON-DETECT
+	PREVIOUS SURFACE SOIL SAMPLE
▽	EXISTING MONITORING WELL

Figure 1-5
Excavation Boundaries
With Confirmation Sample Location
Charleston Naval Base
Charleston, SC

SPORTENVDETCASN
1899 North Hobson Avenue
North Charleston, SC 29405-2106

DWG DATE: 03 MAY 99

DWG NAME: NS705CA43



Photograph 1: Excavation

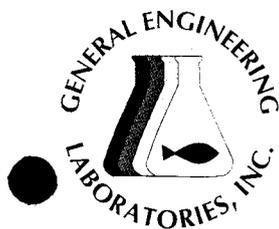


Photograph 2: Site restoration

ATTACHMENT B

ANALYTICAL RESULTS

Certified Analytical Results
Chain-of-Custody



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 07, 1999

Page 1 of 2

Sample ID : 99SPORT0143-1
 Lab ID : 9904013-01
 Matrix : Soil
 Date Collected : 03/31/99
 Date Received : 04/01/99
 Priority : Routine
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Extractable Organics											
<i>Polynuclear Aromatic Hydrocarbons - 18 items</i>											
1-Methylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0	TSD	04/05/99	1733	145893	1
2-Methylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0					
Acenaphthene	U	ND	6.66	33.3	ug/kg	1.0					
Acenaphthylene	U	ND	6.66	33.3	ug/kg	1.0					
Anthracene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(a)anthracene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(a)pyrene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(b)fluoranthene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(ghi)perylene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(k)fluoranthene	U	ND	6.66	33.3	ug/kg	1.0					
Chrysene	U	ND	6.66	33.3	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	ND	26.6	33.3	ug/kg	1.0					
Fluoranthene	U	ND	6.66	33.3	ug/kg	1.0					
Fluorene	U	ND	6.66	33.3	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	ND	23.3	33.3	ug/kg	1.0					
Naphthalene	U	ND	6.66	33.3	ug/kg	1.0					
Phenanthrene	U	ND	6.66	33.3	ug/kg	1.0					
Pyrene	U	ND	6.66	33.3	ug/kg	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds

GMS 04/02/99 2200 145893 2

Surrogate Recovery	Test	Percent %	Acceptable Limits
2-Fluorobiphenyl	M610-5972	61.0	(44.7 - 110.)

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29414

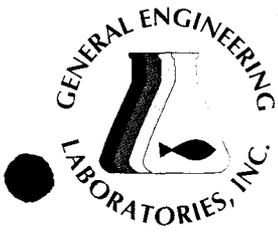
(843) 556-8171 • Fax (843) 766-1178



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9904013-01



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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 07, 1999

Page 2 of 2

Sample ID : 99SPORT0143-1

Surrogate Recovery	Test	Percent%	Acceptable Limits
Nitrobenzene-d5	M610-5972	54.6	(42.4 - 107.)
p-Terphenyl-d14	M610-5972	80.6	(45.5 - 104.)

M = Method	Method-Description
M 1	EPA 8270
M 2	EPA 3550

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, Elise Hanson at 843-556-8171.



Reviewed By



CHAIN OF CUSTODY RECORD

Page 1 of 1

Client Name/Facility Name		SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods										Remarks							
Collected by/Company		pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	METALS - specify	Pesticide	Herbicide	Total Phenol		Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type	PAH	
SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS												
SPORTENVDETCHASN	SPORTENVDETCHASN																		
99SPORT0143.1	3/31/99	0830	X	X			1												NBET 70551400
Relinquished by: <u>Elise E. Loney</u>	Date: <u>3/31/99</u>	Time: <u>0915</u>	Received by: <u>W.R. Hiers, Jr.</u>		Relinquished by: <u>W.R. Hiers, Jr.</u>	Date: <u>4/1/99</u>	Time: <u>0829</u>	Received by: _____											
Relinquished by: _____	Date: _____	Time: _____	Received by lab by: <u>P. Meyer</u>		Date: <u>4/1/99</u>	Time: <u>08:30</u>	Remarks: _____												

White = sample collector Yellow = file Pink = with report

ATTACHMENT C

DISPOSAL MANIFEST



OAKRIDGE LANDFILL
A WASTE MANAGEMENT COMPANY

SPECIAL WASTE MANIFEST

Approval # OR 9902015
Expiration 05/17/99

Generator: ENVIRONMENTAL DETACHMENT CHARLESTON
Account Number: 490-299
Location/Address: NS 705 UST CHARLESTON SC (10)
Tele Number: 843-743-6777, EXT 224 Contact: TODD DAILEY
Generator Signature: *Alan J. Meyer*

***** TO BE COMPLETED BY TRANSPORTER *****

Transporter of Waste: BUTLER WARE TRUCKING
Date: 3-11-99 Truck # 24
Driver Signature: *Jim Mijal*

***** TO BE COMPLETED BY OAKRIDGE LANDFILL *****

Disposal Site: Oakridge Landfill DWP 130
Description of Waste: SOL / PETROLEUM CONTAMINATED SOIL
Ticket Number: 92446 Tonnage: 14.00
Received By: *[Signature]* Date: 3/11/99

ATTACHMENT D

LETTER OF RECORD



24 August 1998

100 Bull Street
Columbia, SC 29201-1708

COMMISSIONER:
Douglas E. Bryant

BOARD:
John H. Burriss
Chairman

William M. Hull, Jr., MD
Vice Chairman

Roger Leaks, Jr.
Secretary

Mark B. Kent

Cyndi C. Mosteller

Brian K. Smith

Rodney L. Grandy

Department of the Navy
Southern Division NFEC
P.O. Box 190010
North Charleston, SC 29419-9010
Attn. Mr. Gabriel Magwood

Re: Contamination Assessment Report dated 30 July 1998
Building NS 705 (Site Identification # 17664)
Charleston Naval Complex/Charleston Naval Base
Charleston, SC
Charleston County

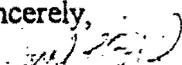
Dear Mr. Magwood:

The author has completed technical review of the referenced document. As submitted, the report provides a narrative describing sampling activities, site conditions and analytical results of environmental sampling conducted to determine the extent and severity, if any, of suspected contamination associated with the referenced vessel and/or associated piping system. The results provided indicate that elevated concentrations of PAH compounds were detected in surface soil samples obtained proximal to the former UST pit. Provided this information, the facility recommends removal of contaminated surface material to eliminate potential risk to future site residents.

Based on the foregoing review, the author concurs with the conclusions and recommendations presented for the subject site. In this regard, the facility may implement source removal at their convenience. Subsequent to submittal and review of the final report detailing the proposed activities, appropriate consideration for closure of this site will be presented to your office.

Should you have any questions please contact me at (803) 734-5328.

Sincerely,


Paul L. Bristol, Hydrogeologist
Groundwater Quality Section
Bureau of Water

cc: Trident District EQC