

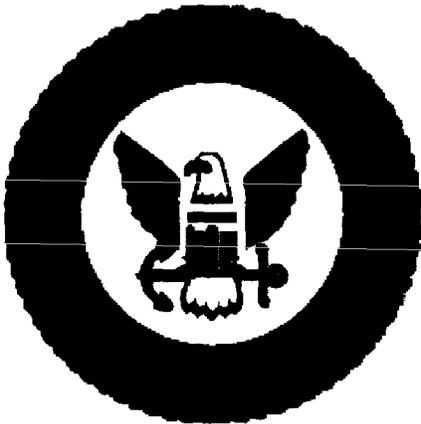
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CNC CHARLESTON  
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COMPLETION REPORT FOR INTERIM MEASURE FOR SOLID WASTE MANAGEMENT UNIT  
38 (SWMU38) CNC CHARLESTON SC  
10/29/1998  
CAPE ENVIRONMENTAL MANAGEMENT, INC.



# COMPLETION REPORT

INTERIM MEASURE FOR  
SWMU 38  
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

October 29, 1998



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

IN REPLY REFER TO:

Ser: 968  
NOV 17 1998

Mr. John Litton, 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. Litton:

The enclosed completion report for SWMU 38 is submitted to fulfill the requirement of Permit Condition IV.D.6 for Permit Number SCO 170 022 560. If the Department of Health and Environmental Control should have any questions, please contact Reece Batten of Southern Division Naval Facilities Engineering Command at (843)820-5578.

Sincerely,

  
E.R. Dearhart  
Director

Encl:

(1) Completion Report for SWMU 38

Copy to:

SCDHEC (Mr. Tapia, Mr. Bergstrand)

USEPA (Mr. Spariosu)

CSO Naval Base Charleston (Mr. Shepard)

  
EA&H (Ms. Maddux)

**COMPLETION REPORT**  
**FOR SWMU 38**  
**NAVAL BASE CHARLESTON**  
**CHARLESTON, SOUTH CAROLINA**

Engineering Branch Head:

*J. W. G. [Signature]*

Date: 11-17-58

Prepared By:

*J. L. [Signature]*

Date: 11-17-58

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



# COMPLETION REPORT

**INTERIM MEASURE FOR  
SWMU 38  
NAVAL BASE CHARLESTON  
CHARLESTON, SC**



Prepared for:

**DEPARTMENT OF THE NAVY  
SOUTHERN DIVISION  
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October 29, 1998

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## ACRONYMS, ABBREVIATIONS and SYMBOL

ACM	Asbestos Containing Material
AOC	Area of Concern
BLS	Below Land Surface
CMS	Corrective Measures Study
DERP	Defense Environmental Restoration Program
DET	Environmental Detachment Charleston
DON	Department of the Navy
FO	Fuel Oil
IM	Interim Measure
IR	Installation Restoration
PVC	Polyvinyl Chloride
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
ROC	Run of Crusher
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
USN	United States Navy

## **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 clean up 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 Amendments and Reauthorization Act (SARA) Section 211 (10 USC 2701). The IR Program is a component of DERP.

**1.1.1 Naval Base Charleston IR 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 Areas of Concern (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 reports 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 SWMU 38** SWMU 38 is a site where a former storage yard was associated with Buildings 1605 and 1604 for approximately 50 years. The site is a graded "Run of Crusher" (ROC) area used for the temporary storage of non perishable industrial equipment such as high voltage cable, transformers, electrical controllers/motors, refrigerators, construction and heavy machining equipment. The site is north of Building 1605, near the northern boundary of NAVBASE. The

Hess Oil, Inc., tank farm is adjacent to this boundary. The boundary of SWMU 38 was reduced to encompass only the specific area formerly used for storage of empty drums. The remaining area depicted in the RFA was exclusively used for the storage of wooden pallets, boats, and automobiles. (See Figure #1, Appendix A).

Past investigations documented in the Zone A RCRA Facility Investigation Report for NAVBASE Charleston have identified the pesticides 4,4'-DDT, 4,4'-DDE and 4,4'-DDD as contaminants of concern at this site.

**1.4 SWMU 38 INTERIM MEASURE** During the interval between the RFI 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 (SPORTENVDETCNASN). The objective of this IM was to excavate and dispose of pesticide contaminated soil. The excavation was to continue until a sampling program indicated with reasonable confidence that the concentrations of contaminants at the site were less than residential limits specified by the United States Environmental Protection Agency Region III Risk Based Concentrations (RBC's), dated 23 September 1996 for pesticides. This IM is consistent with the ultimate cleanup of SWMU 38 and is not intended to circumvent the public participation process inherent within environmental cleanup under RCRA authority.

**1.4.1 SWMU 38 INTERIM MEASURE EXECUTION SUMMARY** The execution of this IM consisted of two excavations at the site. The initial work plan (Rev 0) required the excavation of pesticide contaminated soil from two 6' by 6' and 4' in depth areas. One was located at soil boring 038-S-B001, the other at soil boring 038-S-B003. (See Figure #1, Appendix A). The cleanup goal for the pesticides was 1.9 mg/kg for DDT, DDE, and 2.7 mg/kg for DDD, which are the residential RBC's. The initial work plan also required the abandonment of well NBCA-38-01. See Appendix B for the well abandonment letter. The initial excavation began in April of 1997. Soil removed from the site was characterized as hazardous "U" listed waste, and disposed of in a

certified Subtitle C landfill. Confirmation samples collected after completion of the initial excavation indicated results above the residential RBC's. (See Figure #2 and sample results, Appendix A).

To further delineate the area, immunoassay and field gas chromatograph sampling was conducted in July and November of 1997. Results from this sampling indicated an area approximately 120' x 25' and a depth of 3 to 4 feet was contaminated with pesticides. (See Figure #3, Appendix A).

In February of 1998, the Navy reassessed the waste characterization of soils at SWMU 38 and SCDHEC agreed with the Navy that the soil at SWMU 38 was contaminated from the application of the pesticides and was therefore not a listed waste. SCDHEC agreed that since the soil was not contaminated with a listed waste, it could not be considered hazardous waste, and should be managed as "Contaminated Media." (See Appendix B).

A risk evaluation for SWMU 38 was conducted by Ensafe, Inc. following the initial excavation. (See Appendix C). This evaluation developed Remedial Goal Options (RGO) values of 9.2 mg/kg for DDD and 6.5 mg/kg for DDT and DDE as the clean up goals. Based on the newly established clean-up goals (RGO values), the work plan was amended as (Rev 1) in April 1998 to incorporate the new RGO's.

The final excavation began in August of 1998 and encompassed an area approximately 120' x 25' and a depth of 4 to 5 feet. Upon completion of the excavation confirmatory samples were taken along the east, west and south side walls and bottom of the excavation. (See Figure #4 and sample results, Appendix A). The north side walls and 3<sup>rd</sup> interval perimeter sampling was conducted following excavation back fill. (See Figure #5 and sample results, Appendix A).

Perimeter confirmatory sampling of the excavation side walls was conducted at the 1<sup>st</sup> and 2<sup>nd</sup> intervals. Results showed that pesticide levels were less than the RGO's with the exception of one 1<sup>st</sup> interval sample located along the fenced property line of Hess Oil Inc. reading 50.9 ppm DDT.

Three confirmatory samples were collected from the bottom centerline of the excavation. Results showed pesticide contamination in all three samples ranging from 19 ppm to 388 ppm. Because groundwater was encountered, no further excavation was performed and the site was back filled, compacted and graded. SCDHEC requested additional perimeter sampling be performed in the 3<sup>rd</sup> interval (6' - 7') to determine if pesticide contamination existed below and beyond the perimeter of

the excavation. The DET collected six samples from around the perimeter of the excavation. The results of these samples were all less than the RGO's with the highest detection reading 2.25 ppm. (See Figure #5 and sample results, Appendix A). Sample analysis data sheets are found in Appendix D.

#### **1.4.2 SWMU 38 INTERIM MEASURE CONCLUSION**

This Interim Measure effectively removed contaminated soil from land surface to approximately 4' below land surface (BLS). Groundwater was encountered at approximately 4' BLS. According to investigative samples conducted after remediation, 3<sup>rd</sup> interval samples collected at the perimeter of the excavation indicated the presence of pesticides, although below the clean levels defined for SWMU 38. Samples collected along the Naval Complex property line indicated one result greater than RGO levels and confirmation samples collected approximately 4' BLS also exceeded RGO levels. Based on these results, further investigation may be warranted.

## **2. INTERIM MEASURE EXECUTION**

**2.1 ACTIONS REQUIRED BY INTERIM MEASURE WORK PLAN** Required actions are listed below:

### **2.1.1 Actions required by Interim Measure Work Plan Rev (0)**

- Abandonment of groundwater monitoring well NBCA-38-01 to prevent possible cross contamination of the groundwater by the surrounding soil.
- Removal and disposal of approximately 5.4 cubic yards of DDD, DDE, and DDT contaminated soil at soil boring 038-S-B001.
- Removal and disposal of approximately 2.7 cubic yards of DDD and DDT contaminated soil at soil boring 038-S-B003.

### **2.1.2 Actions required by Interim Measure Work Plan Rev (1)**

- Removal and disposal of DDD, DDE, and DDT contaminated soil from an area approximately 120' x 25' to a depth of 4 to 5 feet extending between and beyond soil borings 038-S-B001 and 038-S-B003 based on new clean guidelines established as RGO's.

## **2.2 OBSERVATIONS NOTED**

**2.2.1 Soil Conditions** The land surface to approximately 6" below ground surface was made up of gravel (ROC). From 6" below ground surface to the bottom of the excavations, the soil was a sandy fill, gray in color with orange-brown mottling, with some silt and clay.

**2.2.2 Groundwater** Groundwater was encountered at approximately 4 feet.

**2.3 PLAN MODIFICATIONS AND JUSTIFICATION** The IM Work Plan (Rev 0) specified removal of soil to a depth of 4' in two 6' x 6' square areas at RFI sample locations 038-S-B001 and 038-S-B003. The sample analysis from the two areas revealed that the excavation site required further expansion to include an area approximately 120' x 25', extending between and beyond the two RFI sample locations. (See Figure #3, Appendix A).

Waste disposal characterization was changed from hazardous, for the initial excavation, to non-hazardous for the final excavation. Additionally a change was made from the residential RBC cleanup goals specified by USEPA to Remedial Goal Option (RGO) values. This change was based on a risk evaluation conducted by Ensafe, Inc. (See Appendix C) The RGO values established for SWMU 38 was 6.5 mg/kg for DDT, DDE and 9.2 mg/kg for DDD.

### **3. INTERIM MEASURE OUTCOME**

**3.1 SITE CONDITIONS FOLLOWING COMPLETION OF WORK.** Following completion of all site work on 29 October 1998, the DET had removed 519 cubic yards of pesticide contaminated soil. The site was back-filled, compacted, covered with ROC and graded to existing conditions. Site photographs are included in Appendix E.

## **4. SAMPLING**

### **4.1 SAMPLING EVOLUTIONS AND RESULTS**

**4.1.1 Field Sampling** Field sampling consisted of immunoassay and field gas chromatography testing to determine the extent of contamination. This data was used to estimate growth in the scope of work.

**4.1.2 Confirmation Sampling** Upon completion of field work, grab samples were taken along the perimeter and bottom of the excavations to determine the effectiveness of the soil removal. Additional investigative sampling was conducted after clean fill and grading had been completed at the site for the Corrective Measures Study. See Appendix D for sampling documentation.

## **5. WASTE GENERATION**

### **5.1 HAZARDOUS/POTENTIALLY HAZARDOUS WASTE**

A total of 16 cubic yards of pesticide contaminated soil was disposed of to a permitted Treatment, Storage and Disposal Facility.

### **5.2 NON-HAZARDOUS WASTE**

A total of 503 cubic yards of non-hazardous pesticide contaminated soil was disposed of to a Subtitle D landfill permitted to accept special waste.

Waste Manifests are in Appendix F.

**APPENDIX A**

**FIGURES AND**

**SAMPLE RESULTS**

HESS TANK FARM

LEGEND

- - RFI MONITORING WELL LOCATION
- - RFI SOIL SAMPLE LOCATION

SWMU 38



BOUNDARY LINE

STORAGE

038-S-B003 ●

● NBCA-038-01 (038-S-B001)

● NBCA03801D

MISC. STORAGE

536

1604

1606

1605

1627

KINZER STREET

PA

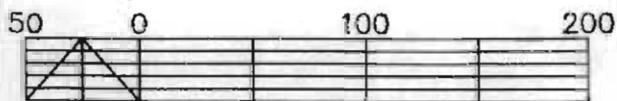
ENVIRONMENTAL DETACHMENT CHARLESTON

1899 NORTH HOBSON AVENUE - BUILDING 30

NORTH CHARLESTON, SOUTH CAROLINA 29405-2106

FIGURE 1

SWMU 38 COMPLETION REPORT SITE MAP WITH RFI SOIL SAMPLE AND MONITORING WELL LOCATIONS



GRAPHIC SCALE (FEET)



SIZE A	DATE: 10-29-98	PREPARED BY: J.I. BROWNLEE	REV -
SCALE: -		SHEET: A-1	

# HESS TANK FARM



## LEGEND

- RFI MONITORING WELL LOCATION
- SOIL SAMPLE LOCATION

## SWMU 38

NBCA038S000801  
 NBCA038S001002  
 NBCA038S001102  
 NBCA038S000901

NBCA038S000301  
 NBCA038S000504  
 NBCA038S000201

BOUNDARY LINE

INITIAL EXCAVATIONS

NBCA038S000701  
 NBCA038S000601  
 NBCA038S000401  
 NBCA038S000101

NBCA03801D

MISC. STORAGE

10 0 20 40



GRAPHIC SCALE (FEET)



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

### FIGURE 2

SWMU 38 COMPLETION REPORT SITE MAP WITH  
 INITIAL EXCAVATION BOUNDARY AND SOIL SAMPLE LOCATIONS

SIZE A	DATE: 10-30-98	PREPARED BY: J.I. BROWNLEE	REV -
SCALE: -		SHEET: A-2	

## CONFIRMATION SOIL SAMPLE RESULTS FROM INITIAL EXCAVATION

SAMPLE # (SPORT)	SAMPLE # (NBCA)	CONSTITUENT	RESULTS (MG/KG)	REGION III INDUSTRIAL RBC (MG/KG)	REGION III RESIDENTIAL RBC (MG/KG)
474-1	038S000101	DDD	<b>30.0</b>	24	2.7
474-1	038S000101	DDE	ND	17	1.9
474-1	038S000101	DDT	<b>136.0</b>	17	1.9
474-2	038S000201	DDD	<b>298.0</b>	24	2.7
474-2	038S000201	DDE	ND	17	1.9
474-2	038S000201	DDT	<b>154.0</b>	17	1.9
474-3	038S000301	DDD	1.5	24	2.7
474-3	038S000301	DDE	ND	17	1.9
474-3	038S000301	DDT	<b>5.03</b>	17	1.9
474-4	038S000401	DDD	<b>550.0</b>	24	2.7
474-4	038S000401	DDE	ND	17	1.9
474-4	038S000401	DDT	<b>1790.0</b>	17	1.9
474-5	038S000504	DDD	<b>23.1</b>	24	2.7
474-5	038S000504	DDE	ND	17	1.9
474-5	038S000504	DDT	1.36	17	1.9
474-6	038S000601	DDD	<b>13.3</b>	24	2.7
474-6	038S000601	DDE	ND	17	1.9
474-6	038S000601	DDT	<b>51.5</b>	17	1.9
474-7	038S000701	DDD	0.473	24	2.7
474-7	038S000701	DDE	0.281	17	1.9
474-7	038S000701	DDT	0.0548	17	1.9
474-8	038S000801	DDD	0.464	24	2.7
474-8	038S000801	DDE	0.253	17	1.9
474-8	038S000801	DDT	0.373	17	1.9
474-9	038S000901	DDD	<b>5.27</b>	24	2.7
474-9	038S000901	DDE	1.04	17	1.9
474-9	038S000901	DDT	<b>3.54</b>	17	1.9
474-10	038S001002	DDD	<b>41.5</b>	24	2.7
474-10	038S001002	DDE	ND	17	1.9
474-10	038S001002	DDT	<b>116.0</b>	17	1.9
474-11 (DUP OF 474-10)	038C001102	DDD	<b>20.3</b>	24	2.7
474-11 (DUP OF 474-10)	038C001102	DDE	<b>1.9</b>	17	1.9
474-11 (DUP OF 474-10)	038C001102	DDT	<b>26.2</b>	17	1.9

ND = NOT DETECTED

**BOLD** = VALUES EQUAL TO OR EXCEEDING THE RESIDENTIAL RBC

### CONFIRMATION SOIL SAMPLE RESULTS FROM BOTTOM OF EXCAVATION

SAMPLE # (SPORT)	SAMPLE # (NBCA)	CONSTITUENT	RESULTS (MG/KG)	REMEDIAL GOAL OPTION RGO (MG/KG)
783-1	038S03001	DDD	<b>19.0</b>	9.2
783-1	038S03001	DDE	ND	6.5
783-1	038S03001	DDT	<b>41.6</b>	6.5
783-2	038S03101	DDD	<b>123.0</b>	9.2
783-2	038S03101	DDE	ND	6.5
783-2	038S03101	DDT	<b>388.0</b>	6.5
783-3	038S03201	DDD	0.992	9.2
783-3	038S03201	DDE	ND	6.5
783-3	038S03201	DDT	4.63	6.5

ND = NOT DETECTED

**BOLD** = VALUES EXCEEDING THE REMEDIAL GOAL OPTION

# HESS TANK FARM

## LEGEND

-  - INITIAL EXCAVATION
-  - SOIL SAMPLE LOCATION
-  - RFI MONITORING WELL LOCATION
-  - .01 PPM
-  - .1 PPM
-  - 1 PPM
-  - 10 PPM
-  - 100 PPM

### SWMU 38

BOUNDARY LINE

MISC. STORAGE

NBCA03801D



GRAPHIC SCALE (FEET)



ENVIRONMENTAL DETACHMENT CHARLESTON

1899 NORTH HOBSON AVENUE - BUILDING 30

NORTH CHARLESTON, SOUTH CAROLINA 29405-2106

### FIGURE 3

#### SWMU 38 COMPLETION REPORT CONTOUR MAP

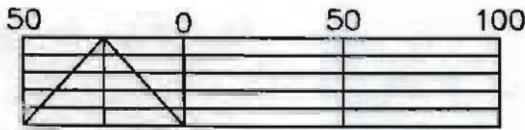
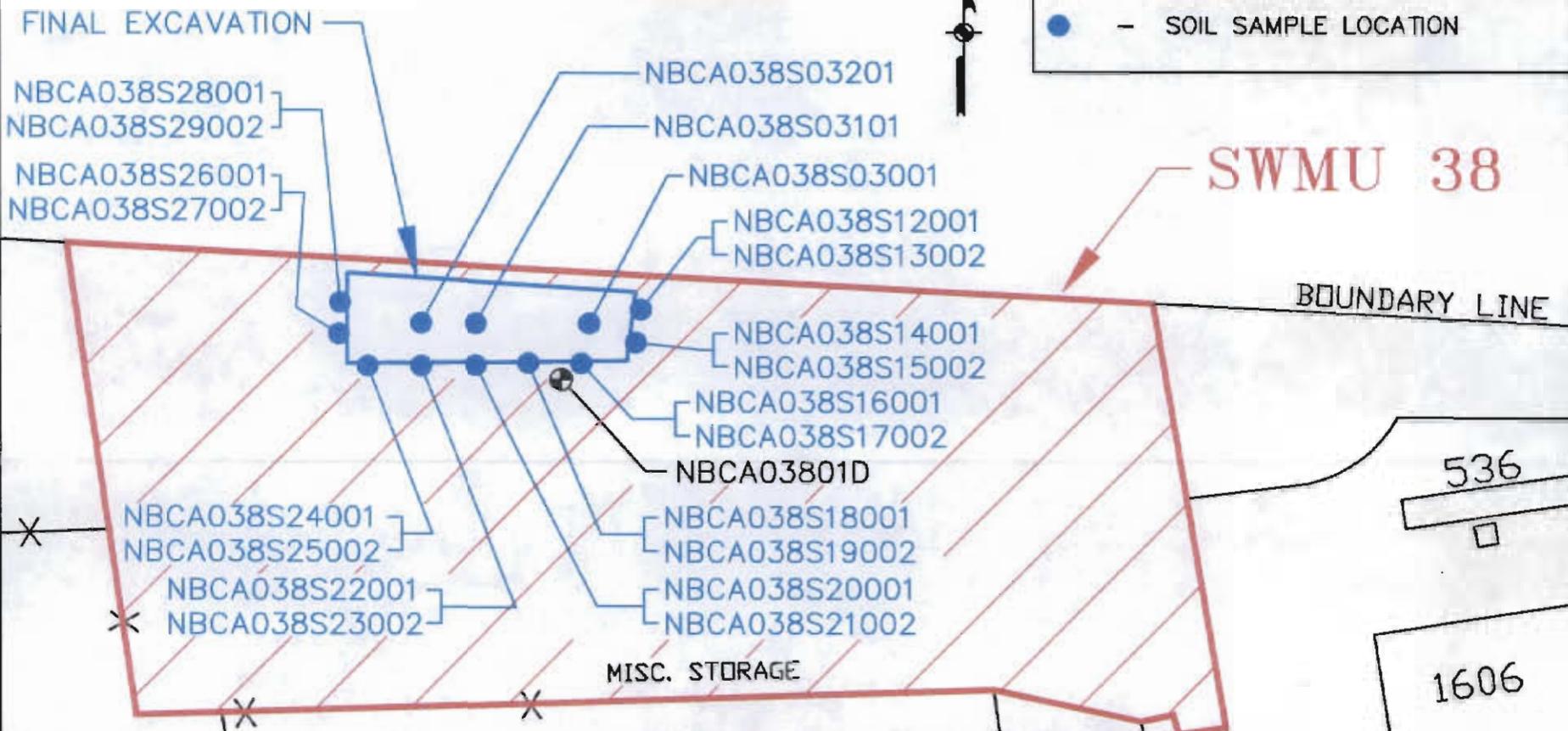
SIZE A	DATE: 11-03-98	PREPARED BY: J.I. BROWNLEE	REV -
SCALE: -		SHEET: A-3	

# HESS TANK FARM



## LEGEND

- RFI MONITORING WELL LOCATION
- SOIL SAMPLE LOCATION



GRAPHIC SCALE (FEET)



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

### FIGURE 4

SWMU 38 COMPLETION REPORT SITE MAP WITH  
FINAL EXCAVATION BOUNDARY AND SOIL SAMPLE LOCATIONS

SIZE	DATE:	PREPARED BY:	REV
A	10-30-98	J.I. BROWNLEE	-
SCALE: -	SHEET: A-4		

## CONFIRMATION SOIL SAMPLE RESULTS FROM FINAL EXCAVATION

SAMPLE # (SPORT)	SAMPLE # (NBCA)	CONSTITUENT	RESULTS (MG/KG)	REMEDIAL GOAL OPTION RGO (MG/KG)
886-1	038S12001	DDD	0.00169	9.2
886-1	038S12001	DDE	0.0127	6.5
886-1	038S12001	DDT	ND	6.5
886-2	038S013002	DDD	ND	9.2
886-2	038S013002	DDE	ND	6.5
886-2	038S013002	DDT	ND	6.5
886-3	038S014001	DDD	0.0847	9.2
886-3	038S014001	DDE	ND	6.5
886-3	038S014001	DDT	0.619	6.5
886-4	038S015002	DDD	0.0434	9.2
886-4	038S015002	DDE	ND	6.5
886-4	038S015002	DDT	0.319	6.5
886-5	038S016001	DDD	ND	9.2
886-5	038S016001	DDE	0.0331	6.5
886-5	038S016001	DDT	0.0513	6.5
886-6	038S017002	DDD	ND	9.2
886-6	038S017002	DDE	ND	6.5
886-6	038S017002	DDT	ND	6.5
886-7	038S018001	DDD	ND	9.2
886-7	038S018001	DDE	ND	6.5
886-7	038S018001	DDT	ND	6.5
886-8	038S019002	DDD	ND	9.2
886-8	038S019002	DDE	ND	6.5
886-8	038S019002	DDT	ND	6.5
886-9	038S020001	DDD	ND	9.2
886-9	038S020001	DDE	ND	6.5
886-9	038S020001	DDT	ND	6.5
886-10	038S021002	DDD	ND	9.2
886-10	038S021002	DDE	ND	6.5
886-10	038S021002	DDT	ND	6.5
886-11	038S022001	DDD	0.134	9.2
886-11	038S022001	DDE	ND	6.5
886-11	038S022001	DDT	ND	6.5

**CONFIRMATION SOIL SAMPLE RESULTS FROM FINAL EXCAVATION (CON'T)**

886-12	038S023002	DDD	ND	9.2
886-12	038S023002	DDE	ND	6.5
886-12	038S023002	DDT	ND	6.5
886-13	038S024001	DDD	ND	9.2
886-13	038S024001	DDE	ND	6.5
886-13	038S024001	DDT	ND	6.5
886-14	038S025002	DDD	ND	9.2
886-14	038S025002	DDE	ND	6.5
886-14	038S025002	DDT	ND	6.5
886-15	038S026001	DDD	ND	9.2
886-15	038S026001	DDE	ND	6.5
886-15	038S026001	DDT	ND	6.5
886-16	038S027002	DDD	ND	9.2
886-16	038S027002	DDE	ND	6.5
886-16	038S027002	DDT	ND	6.5
886-17	038S028001	DDD	7.630	9.2
886-17	038S028001	DDE	0.305	6.5
886-17	038S028001	DDT	0.170	6.5
886-18	038S029002	DDD	0.0616	9.2
886-18	038S029002	DDE	ND	6.5
886-18	038S029002	DDT	ND	6.5

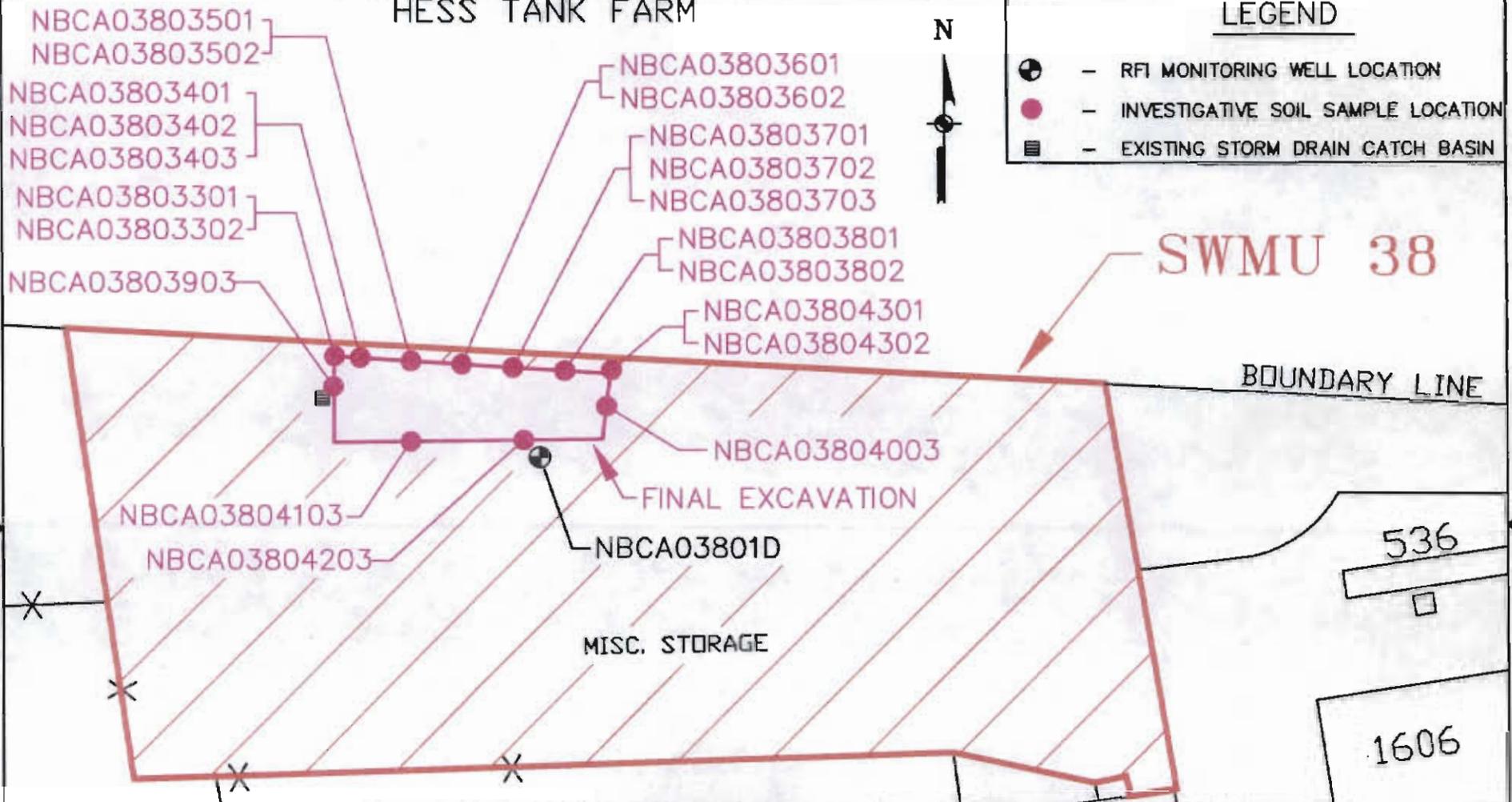
ND = NOT DETECTED

HESS TANK FARM

LEGEND



- RFI MONITORING WELL LOCATION
- INVESTIGATIVE SOIL SAMPLE LOCATION
- EXISTING STORM DRAIN CATCH BASIN



GRAPHIC SCALE (FEET)



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

FIGURE 5  
 SWMU 38 COMPLETION REPORT SITE MAP  
 WITH INVESTIGATIVE SOIL SAMPLE LOCATIONS

SIZE A	DATE: 11-02-98	PREPARED BY: J.I. BROWNLEE	REV -
SCALE: -		SHEET: A-5	

### INVESTIGATIVE SAMPLES

SAMPLE # (SPORT)	SAMPLE # (NBCA)	CONSTITUENT	RESULTS (MG/KG)	REMEDIAL GOAL OPTION RGO (MG/KG)
0015-01	03803301	DDD	0.0999	9.2
0015-01	03803301	DDE	0.546	6.5
0015-01	03803301	DDT	0.376	6.5
0015-02	03803302	DDD	0.024	9.2
0015-02	03803302	DDE	0.0306	6.5
0015-02	03803302	DDT	0.160	6.5
0015-03	03803401	DDD	0.013	9.2
0015-03	03803401	DDE	0.0639	6.5
0015-03	03803401	DDT	0.046	6.5
0015-04	03803402	DDD	ND	9.2
0015-04	03803402	DDE	ND	6.5
0015-04	03803402	DDT	ND	6.5
0015-05	03803501	DDD	0.0666	9.2
0015-05	03803501	DDE	0.123	6.5
0015-05	03803501	DDT	0.338	6.5
0015-06	03803502	DDD	0.783	9.2
0015-06	03803502	DDE	ND	6.5
0015-06	03803502	DDT	0.599	6.5
0015-07	03803601	DDD	0.193	9.2
0015-07	03803601	DDE	0.523	6.5
0015-07	03803601	DDT	0.713	6.5
0015-08	03803602	DDD	0.00598	9.2
0015-08	03803602	DDE	0.00783	6.5
0015-08	03803602	DDT	0.0291	6.5
0015-09	03803701	DDD	8.040	9.2
0015-09	03803701	DDE	5.880	6.5
0015-09	03803701	DDT	<b>50.900</b>	6.5
0015-10	03803702	DDD	0.0146	9.2
0015-10	03803702	DDE	0.011	6.5
0015-10	03803702	DDT	0.103	6.5
0015-11	03803801	DDD	0.0479	9.2
0015-11	03803801	DDE	0.115	6.5
0015-11	03803801	DDT	0.250	6.5

### INVESTIGATIVE SAMPLES CON'T

SAMPLE # (SPORT)	SAMPLE # (NBCA)	CONSTITUENT	RESULTS (MG/KG)	REMEDIAL GOAL OPTION RGO (MG/KG)
0015-12	03803802	DDD	0.649	9.2
0015-12	03803802	DDE	ND	6.5
0015-12	03803802	DDT	0.122	6.5
0015-13	03803903	DDD	0.0573	9.2
0015-13	03803903	DDE	0.0133	6.5
0015-13	03803903	DDT	0.114	6.5
0015-14	03804003	DDD	0.000829	9.2
0015-14	03804003	DDE	0.00113	6.5
0015-14	03804003	DDT	0.0110	6.5
0015-15	03804103	DDD	2.250	9.2
0015-15	03804103	DDE	ND	6.5
0015-15	03804103	DDT	0.639	6.5
0015-16	03804203	DDD	0.00216	9.2
0015-16	03804203	DDE	0.00456	6.5
0015-16	03804203	DDT	0.00633	6.5
0015-17	03804301	DDD	0.000679	9.2
0015-17	03804301	DDE	0.00423	6.5
0015-17	03804301	DDT	0.00290	6.5
0015-18	03804302	DDD	0.0739	9.2
0015-18	03804302	DDE	0.0999	6.5
0015-18	03804302	DDT	0.0348	6.5
0015-19	03803403	DDD	0.165	9.2
0015-19	03803403	DDE	0.0386	6.5
0015-19	03803403	DDT	0.153	6.5
0015-20	03803703	DDD	0.018	9.2
0015-20	03803703	DDE	0.00879	6.5
0015-20	03803703	DDT	0.0453	6.5

ND = NOT DETECTED

**BOLD** = VALUES EXCEEDING THE REMEDIAL GOAL OPTION

**APPENDIX B**

**LETTERS**

**OF**

**RECORD**



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 29406-2106

IN REPLY REFER TO:

Ser: 534  
APR 29 1997

Mr. Paul Berstrand  
South Carolina Department of Health & Environmental Control  
Bureau of Solid and Hazardous Waste Management  
2600 Bull Street  
Columbia, SC 29201

Subj: ABANDONMENT OF MONITORING WELL NBCA-38-01

Ref: (a) Approved Interim/Stabilization Measure (IM) Work Plan for Waste Management Unit (SWMU) 38, Naval Base Charleston, Charleston, SC

(b) South Carolina Well Standards and Regulations R. 61-71

Dear Mr. Bergstand.

Abandonment of monitoring well NBCA-38-01 was identified in paragraph 4.1 of reference (a). Abandonment of this well was determined to be necessary to facilitate excavation at the well location as part of the IM process. This well is located adjacent to the Hess Tank Farm boundary line at the Charleston Naval Complex. Fourth quarter sampling of this well is complete.

Please be informed that on April 22, 1997 this well was abandoned in place by Environmental Detachment Charleston (DET) personnel. This was accomplished by filling the 2 inch PVC well casing with cement grout in accordance with the requirements of reference (b) and under the supervision of Mr. Chuck Stutz of Southern Division Naval Facilities Engineering Command, Caretaker Site Office. Mr. Stutz is a well driller licensed by the state of South Carolina.

Questions and/or comments regarding abandonment of this well should be addressed to William W. Smalls at (803) 743-6777 extension 125.

  
E. R. Dearhart

Distribution:  
EPA (J. Basset)  
SCDHEC (J. Tapia)  
SDIV (Code 1876)



DEPARTMENT OF THE NAVY  
SOUTHERN DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
P. O. BOX 190010  
2155 EAGLE DRIVE  
NORTH CHARLESTON, S.C. 29419-0010

5090  
Ser CSO/77  
24 July 1998

Mr. Wray Mattice  
Chambers Landfill  
Hazardous Waste Permitting Section  
P. O. Box 145  
Dorchester, SC 29437

Dear Mr. Mattice:

**SUBJECT: WASTE DISPOSAL CHARACTERIZATION AT SWMU 38**

This letter provides information concerning the pesticide contaminated soils identified for removal located at SWMU 38, Charleston Naval Complex, Charleston. SWMU 38 is a graded gravel area that was used as a temporary storage area for nonperishable industrial equipment from 1940 through 1995.

An entomologist familiar with pesticide control practices at the former Charleston Naval Shipyard explained in the enclosed e-mail that the levels of DDT, DDD and DDE at SWMU 38 are consistent with application levels used on the Naval Base from 1950 through the early 1970's and did not originate from a spill of the pure commercial product. There is no documentation supporting any spills of DDT at this site from previous investigations. Therefore, the Navy has characterized this waste as nonhazardous.

S. C. Department of Health and Environmental Control (SC DHEC) reviewed the Navy's characterization methodology and confirmed that the soils at SWMU 38 are not contaminated with a listed (RCRA U-Listed or P-Listed) waste as stated in the enclosed e-mail. Therefore, the soils are not considered hazardous waste.

For additional information, please contact William A. Drawdy at 743-9985, extension 29.

Sincerely,

H. N. SHEPARD II  
Caretaker Site Officer  
By direction

Enclosures: (1) E-Mail from Tony Hunt (SOUTHNAVFACENGCOM) of 7 Jan 98  
(2) E-Mail from Johnny Tapia (SC DHEC) of 18 Feb 98

Author: <mahunt@efdsouth.navy.mil> at p-ssports-smtp  
Date: 1/7/98 1:54 PM  
Priority: Normal  
TO: Tunstall\_Jerome\_N\_K at Banyan\_Vines  
Subject: DDT levels in soils

----- Message Contents -----

I spoke with Bill Bennett who is an entomologist in our applied biology division, public works department concerning the DDT levels. The following is a summary of our conversation.

DDT and similar compounds (DDE, DDD which are more impurities than degradation or daughter products) were applied extensively at the Naval Base beginning in the 1950's through the early 1970's. This pesticide was used for termite, mosquito, turf pests, and fly control primarily. The compound is hydrophobic and was applied by mixing in concentrations of 5 - 10% by volume of diesel fuel, kerosine or JP-5. This form of the pesticide was purchased premixed by the government. Other forms which were used included wettable powders and emulsifiable forms which could be mixed with water for application.

The pesticide was applied in several ways. Mosquito and fly control was accomplished by use of the petroleum based form and generating a fog by pouring the liquid over a hot manifold which created a dense, DDT concentrated smoke. In low lying areas where mosquito breeding was a particular problem, 55 gallon drums were cut in half and filled with the petroleum/DDT mixture and allowed to overflow during rain events which dispersed the material across the surface of ponded areas.

Soil contamination could easily be in the order of magnitude of 1000 ppm from the petroleum/DDT mixture. The Public Works area could easily have been where some of these 55 gallon drums were placed.

Mr. Bennett also offered information on Chlordane which was used into the 1980's at the Naval Base. Application rates could easily result in soil contamination in the 500 to 1000 ppm range. This contaminant would also expect to be widespread since it was used for lawns and other turfs to control pests in these areas. This chemical is as persistent as DDT, contains a number of different isomers and would not be expected to migrate from where it was applied.

One thing to look at where we have high DDT hits then is PAHs and Diesel Range Organics which may give us a clue to what occurred. Bill was not sure of the emulsion composition which could give us some idea of what to look for there, however it may be irrelevant if the concentrations are in a range that is equal to or less than the 1000 ppm order of magnitude (application range). I believe this gives us sufficient justification to characterize soil in this range as industrial waste only.

Tony

**Gunter, Tammy**

**From:** Heames, Jed  
**Sent:** Monday, May 18, 1998 10:30 AM  
**To:** [tgunter@edc.net](mailto:tgunter@edc.net)  
**Subject:** FW: Waste Disposal Characterization at SWMU 38

Jed heames

—Original Message—

**From:** M A (Tony) Hunt [[SMTP:mahunt@efdsouth.navfac.navy.mil](mailto:SMTP:mahunt@efdsouth.navfac.navy.mil)]  
**Sent:** Monday, May 18, 1998 9:46 AM  
**To:** [jheames@edc.net](mailto:jheames@edc.net)  
**Subject:** fwd: Waste Disposal Characterization at SWMU 38

The info you requested....

Original Text

**From:** "Johnny Tapia" <[TapiaJM@columb34.dhec.state.sc.us](mailto:TapiaJM@columb34.dhec.state.sc.us)>, on  
2/18/98 3:45

PM:

**To:** [SMTP@Incoq@NAVFAC](mailto:SMTP@Incoq@NAVFAC) EFDSOUTH[<[THaverkost@Ensafe.com](mailto:THaverkost@Ensafe.com)>],  
[SMTP@Incoq@NAVFAC](mailto:SMTP@Incoq@NAVFAC)  
EFDSOUTH[<[SPARIOSU.DANN@epamail.epa.gov](mailto:SPARIOSU.DANN@epamail.epa.gov)>],  
[SMTP@Incoq@NAVFAC](mailto:SMTP@Incoq@NAVFAC)  
EFDSOUTH[<[Dearhart\\_Earl\\_R@mmlink.repair.navy.mil](mailto:Dearhart_Earl_R@mmlink.repair.navy.mil)>],  
[SMTP@Incoq@NAVFAC](mailto:SMTP@Incoq@NAVFAC)  
EFDSOUTH[<[Tunstall\\_Jerome\\_N\\_K@mmlink.repair.navy.mil](mailto:Tunstall_Jerome_N_K@mmlink.repair.navy.mil)>], Daryle  
L

[Fontenot@Code\\_18@NAVFAC](mailto:Fontenot@Code_18@NAVFAC) EFDSOUTH, M A (Tony) [Hunt@Code\\_18@NAVFAC](mailto:Hunt@Code_18@NAVFAC) EFDSOUTH

**Cc:** [SMTP@Incoq@NAVFAC](mailto:SMTP@Incoq@NAVFAC)  
EFDSOUTH[<[BERGSTPM@gw.state.sc.us](mailto:BERGSTPM@gw.state.sc.us)>]

\*\* High Priority \*\*

Gentlemen,

After last week's meeting I took on myself to confirm that the soils at SWMU 38 contaminated with pesticides (DDT, DDE) were characterized appropriately for disposal. The question revolved around DDT being listed as U061 waste and the regulatory interpretation of application to the land.

After consideration of all factors, it is clear that the DDT mixture purchased by the Navy was used for its intended purpose, as a product. The soil, although contaminated now is not because a documented spill, leak, etc. of a listed waste (U061) managed at the unit (SWMU 38). Therefore, since the soil is not contaminated with a listed waste, it cannot be considered hazardous waste. This

pesticide contaminated soil should be managed as "Contaminated Media" and apply the Best Management Practices available.

Guidance on managing contaminated media can be found on Guidance Number TSC-92-02 from EPA Region IV, dated December 28, 1992.

If you have any questions, please call.

Johnny Tapia  
SCDHEC

# **APPENDIX C**

# **RISK EVALUATION**

## Preliminary Risk Evaluation for SWMU 38 Following Initial Excavation

### **Site Background and Investigative Approach**

SWMU 38, formerly a storage yard associated with Buildings 1604 and 1605, is located on the northern boundary of Zone A. Materials formerly stored in SWMU 38 included wooden pallets, boats, automobiles, and empty drums. Fourteen surface soil samples were collected as part of the 1995 CSI activities at SWMU 38 during three sampling rounds.

Interim measures were conducted at SWMU 38 involving the removal of soil due to elevated concentrations of 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT detected in the RFI. Soil was excavated to a depth of 4' in two 10' X 10' square areas at RFI sample locations 038SB001 and 038SB003. The following assessment is based on data that was gathered after interim measures activities. Eight confirmatory surface soil samples were collected in proximity with the excavated areas. An additional twelve gas chromatograph samples were collected from the surficial interval in the same vicinity. Surface soil samples from the 20 sample locations were used to quantitatively assess soil exposure pathways. Nine immunoassay samples were also collected at the surficial interval in the immediate exposure area, but were not used in the quantitative assessment. Table 1 presents an initial screening against residential RBCs for 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT.

### **Exposure Assessment**

#### *Exposure Setting*

SWMU 38 is located along the northern boundary of NAVBASE and is currently covered with soil and gravel. The site is within a moderately developed area of NAVBASE, and most surrounding parcels are occupied by warehouse buildings and/or parking lots. Current base reuse plans indicate that the SWMU 38 area is slated to be developed as a marine terminal and warehouse storage area. It is likely that the surrounding area will either maintain its current features or be subject to construction/renovation activities.

#### *Potentially Exposed Populations*

The most probable exposed populations are current and future site workers. Additional potentially exposed populations are hypothetical future site residents. Future site resident and worker

exposure scenarios were addressed in this risk assessment. Current exposure to workers is discussed qualitatively in relation to the future workers and future residents. The hypothetical future site worker scenario assumes continuous exposure to surface soil conditions. Current site workers' exposure would be less than that assumed for the hypothetical future site worker scenario because of their limited soil contact. Chronic exposure to subsurface soil conditions (i.e. greater than 3 feet in depth) due to construction events is unlikely due to the shallow water table in the area. Therefore, future worker assessment is considered to be protective of both current site use and future construction events. The future site resident scenario was developed on the premise that existing buildings and surface coverings would be removed and replaced with dwellings.

#### ***Exposure Pathways***

Exposure pathways for the site workers are dermal contact and incidental ingestion of surface soils. The exposure pathways for future residential land use are the same as those for the future site worker. In addition, the hypothetical future site worker scenario assumed continuous exposure to surface soil conditions. Uniform exposure was assumed for all sample locations.

#### ***Exposure Point Concentrations***

Twenty SWMU 38 surface soil samples, representing approximately 0.1 acres or 2/10 of a typical one-half acre exposure unit area, were analyzed for pesticides. Table 2 presents the EPCs for the COPCs identified in surface soil, by using the 95% UCL. The 95% UCL for 4,4'-DDT exceeded its maximum concentration. As a result, the maximum concentration was used as the EPC for 4,4'-DDT. The EPCs presented in Table 2 represent an upper-bound concentration for each COPC in the 0.1 acre area.

CDIs for ingestion and dermal contact with soils are shown in Tables 3 and 4, respectively. An FI/FC approach is used for estimating the risk and hazard from the soil exposure pathways since it is unreasonable to assume that a potential receptor will be chronically exposed at the upper-bound soil concentration, in the 0.1 acre area. The exposure unit area was considered to be approximately one-half acre which is typical of a residential lot. Since the upper-bound concentration was calculated for an area the size of 2/10 of a half acre, the EPCs for 4,4'-DDD,

4,4'-DDE, and 4,4'-DDE were adjusted by an FL/FC term of 0.2 to account for the fact that a hypothetical site resident or future site worker would not be chronically exposed to this isolated area of maximum concentration. FL/FC terms are based on the spatial distribution assuming that exposure is uniform in the exposure unit area.

### Toxicity Assessment

Toxicity assessment terms and methods are discussed in Section 7 of the SWMU 38 RFI report. This information was used in the quantification of risk and hazard associated with soil and groundwater contaminants. Brief toxicological profiles for each COPC are provided in the following paragraphs:

*4,4'-DDD*, a by-product of the pesticide DDT, is a compound typical of halobenzene derivatives. It is soluble in fat, but not in water, and its target organ is the brain. This analog of DDT is the least toxic of the three primary DDT analog (i.e., the least likely to cause cancer). Other DDD effects could include cell death in the liver, fatty change of heart muscles, and kidney damage. If an individual loses body fat, DDD concentrations are not stored at sufficient concentrations to induce toxic effects (Dreisbach, et al., 1987). This compound is listed as a B2 carcinogen, and USEPA set the oral SF for DDD to  $0.24 \text{ (mg/kg-day)}^{-1}$ .

*4,4'-DDE* is a compound typical of halobenzene derivatives and is a by-product of the pesticide DDT. It is soluble in fat, but not in water, and its primary target organs are the liver and brain. DDE is the form of DDT which accumulates in organisms and is thought to be responsible for egg shell thinning and other ecological effects. DDE bioconcentrates in aquatic organisms and can significantly alter the ecology of some areas, especially where DDE-containing aquatic species are a critical species in the food chain (Dreisbach, et al., 1987) (Harte, et al., 1991). This compound is listed as a B2 carcinogen, and USEPA set the oral SF for DDE to  $0.34 \text{ (mg/kg-day)}^{-1}$ .

*4,4'-DDT* is a pesticide which is soluble in fat, but not in water. The primary target organ of DDT is the brain. Other DDT effects could include cell death in the liver, fatty change of heart muscles, and kidney damage. In a study mentioned in Dreisbach, et al., workers historically

exposed to DDT had up to 648 ppm DDT in their body fat, but no adverse health effects were observed. If an individual loses body fat, DDT concentrations are not stored at sufficient concentrations to induce toxic effects (Dreisbach, et al., 1987). As listed in IRIS, the critical noncarcinogenic effect of DDT is liver lesions. USEPA determined the oral RfD to be 0.0005 mg/kg-day, with an uncertainty factor of 100 and a modifying factor of 1.0. Confidence in the RfD is medium. DDT is a class B2 carcinogen based on tumors observed in seven studies in various mouse strains and three studies in rats. DDT is structurally similar to other probable carcinogens, such as DDD and DDE, common degradation products of DDT. USEPA determined the oral SF to be 0.34 (mg/kg-day)<sup>-1</sup>.

### **Risk Characterization**

Exposure to surface soil onsite was evaluated under both residential and industrial (site worker) scenarios. For these scenarios, the incidental ingestion and dermal contact exposure pathways were evaluated. For noncarcinogenic contaminants evaluated for future site residents, hazard was computed separately to address child and adult exposure. Tables 5 and 6 present the computed carcinogenic risks and/or HQs associated with the incidental ingestion of and dermal contact with site surface soils, respectively.

### ***Hypothetical Site Residents***

The ingestion ILCR (based on the adult and child lifetime weighted average) for SWMU 38 surface soils is 2E-04. The dermal pathway ILCR is 1E-04. 4,4'-DDD and 4,4'-DDT were the primary contributors for each pathway, and 4,4'-DDE was a secondary contributor. The computed hazard index for the adult and child resident were 1 and 9, respectively, for the soil ingestion pathway. The computed hazard index for the adult and child dermal contact pathways were 0.8 and 3, respectively. 4,4'-DDT was the sole contributor for both the ingestion and dermal pathways.

### ***Hypothetical Site Workers***

Site worker ILCRs are 3E-05 and 4E-05 for the ingestion and dermal contact pathways, respectively. 4,4'-DDD and 4,4'-DDT were the primary contributors for both pathways. Hazard

indices for the ingestion and dermal pathways are 0.4 and 0.6 for the ingestion and dermal pathways respectively for the future site-worker scenario. 4,4'-DDT is the sole hazard contributor for both pathways.

### ***COCs Identified***

Chemicals of concern were identified based on cumulative (all pathway) risk and hazard projected for this site. USEPA has established a generally acceptable risk range of 1E-04 to 1E-06, and a hazard index threshold of 1.0 (unity). As recommended by SCDHEC, a COC was considered to be any chemical contributing to a cumulative risk level of 1E-06 or greater and/or a cumulative hazard index above 1.0, if its individual ILCR exceeds 1E-06 or its hazard quotient exceeds 0.1. For carcinogens, this approach is relatively conservative, because a cumulative risk level of 1E-04 (and individual ILCR of 1E-06) is recommended by USEPA Region IV as the trigger for establishing COCs. The COC selection method presented was used to provide a more comprehensive evaluation of chemicals contributing to carcinogenic risk or noncarcinogenic hazard during the remedial goal options development process. Table 7 provides a summary of COCs identified in soil based on contribution to cumulative ILCR or hazard index.

### ***Hypothetical Site Residents***

4,4'-DDD and 4,4'-DDT were identified as COCs based on their contribution to cumulative ILCR. 4,4'-DDT was also identified as a COC based on its contribution to cumulative hazard index.

### ***Hypothetical Site Workers***

4,4'-DDD, and 4,4'-DDT were identified as COCs based on their contribution to cumulative ILCR.

4,4'-DDD and 4,4'-DDT were each detected in eleven of twenty surface soil samples, with the highest concentrations found at location 5 (550 and 1,790 mg/kg respectively). This sample was collected from the western edge of the excavated soil associated with sample location 038SB001. 4,4'-DDD and 4,4'-DDT surface soil concentrations were, however, detected at concentrations above their corresponding residential RBCs at 4 of 20 and 8 of 20 sample locations, respectively.

## **Risk Uncertainty**

### ***Characterization of Exposure Setting and Identification of Exposure Pathways***

The potential for high bias is introduced through the exposure setting and pathway selection due to the highly conservative assumptions (i.e., future residential use) recommended by USEPA Region IV and SCDHEC when assessing potential future and current exposure. The exposure assumptions made in the site-worker scenario are highly protective and would tend to overestimate exposure. Although current and future exposure to impacted areas is possible, the frequency and duration of direct contact are quite low in comparison to those assumed under either residential or industrial scenarios.

Residential use of the site is not expected, based on current site uses and the nature of surrounding buildings. Current base reuse plans call for Zone A to become a marine terminal. If this area were to be used as a residential site, the buildings would be demolished, and its concrete footing removed. The surface soil conditions would likely change dramatically to accommodate a residential setting. The soils could be covered with landscaping soil, houses, and driveways. Consequently, exposure to current surface soil conditions would not be likely under a true future scenario. These factors indicate that exposure pathways assessed in this HHRA would generally overestimate the risk and hazard posed to future site residents.

### ***Determination of Exposure Point Concentrations***

The 95% UCL for 4,4'-DDT exceeded the maximum detected concentration. As a result, the maximum detected surface soil concentration was used as the EPC for 4,4'-DDT. Since it is unlikely for an individual to be chronically exposed to an isolated area of maximum or upper-bound concentration ('hot spot'), a FL/FC term was applied to the EPC to reflect the spatial distribution in SWMU 38 surface soil, relative to a one-half acre exposure unit area.

### ***Frequency of Detection and Spatial Distribution Soil***

4,4'-DDD and 4,4'-DDT were each detected in 4 of 20 and 8 of 20 surface soil samples, respectively at concentrations in excess of their residential RBCs. These detections are isolated to the northern portion of the site.

### ***Quantification of Risk/Hazard***

As indicated by the discussions above, the uncertainty and variability inherent in the risk assessment process is great. In addition, many site-specific factors have affected the uncertainty of this assessment that would positively bias the risk and hazard estimates. Exposure pathway-specific sources of uncertainty are discussed below.

Of the CPSSs screened and eliminated from formal assessment, none was reported at a concentration close to its RBC (i.e., within approximately 10% of the RBC). The use of maximum concentrations for screening comparisons minimizes the likelihood of potentially significant cumulative risk and hazard based on the eliminated CPSS.

Although the future land use of SWMU 38 is unknown, both the worker and residential exposure scenarios were assessed in this HHRA. Current base reuse plans call for the development a marine terminal for Zone A. As previously discussed, it is likely that residential scenarios would lead to overestimates of risk and/or hazard.

### **Risk Summary**

The risk and hazard posed by contaminants at SWMU 38 were assessed for the hypothetical site-worker and the hypothetical future site resident under reasonable maximum exposure assumptions. For surface soils, the incidental ingestion and dermal contact pathways were assessed in this HHRA. Table 8 provides summaries for each pathway/receptor group evaluated for SWMU 38.

### **Remedial Goal Options**

Surface soil RGOs for carcinogens presented in Table 9 were based on the lifetime weighted average site resident and adult site-worker, respectively. Hazard-based RGOs were calculated based on either the hypothetical child resident or the adult site-worker, as noted in each of the corresponding tables. The background reference concentration for arsenic in soil would equate with a risk of approximately  $2E-05$  under a residential scenario and  $3E-06$  under the worker scenario, as shown on Table 10. Therefore, a reasonable remediation goal would fall between a target risk of  $1E-06$  and  $1E-05$ . Hence, the reasonable residential RGO ranges from 9.2 mg/kg to 92 mg/kg for 4,4'-DDD and from 6.5 to 65 mg/kg for 4,4'-DDT. Because it is likely that the

area will maintain its industrial usage the worker based RGOs ranging from 45 mg/kg to 452 mg/kg for 4,4'-DDD and from 32 mg/kg to 319 mg/kg for 4,4'-DDT would be most appropriate for this site.

Table 9  
 Remedial Goal Options Surface Soil  
 SWMU 38  
 Naval Base Charleston, Zone A  
 Charleston, South Carolina

**Residential-Based Remedial Goal Options**

Chemical	Slope Factor (mg/kg-day) <sup>-1</sup>	Reference Dose (mg/kg-day)	H/F/C Factor	EPC mg/kg	Hazard-Based Remedial Goal Options			Risk-Based Remedial Goal Options			Background Concentration mg/kg
					3 mg/kg	1 mg/kg	0.1 mg/kg	1E-06 mg/kg	1E-05 mg/kg	1E-04 mg/kg	
4,4'-DDD	0.24	NA	0.2	469.57	ND	ND	ND	92	92	918	NA
4,4'-DDE	0.34	NA	0.2	1.82	ND	ND	ND	65	65	648	NA
4,4'-DDT	0.34	0.0005	0.2	1790	455	152	15	65	65	648	NA

**Worker-Based Remedial Goal Options**

Chemical	Slope Factor (mg/kg-day) <sup>-1</sup>	Reference Dose (mg/kg-day)	H/F/C Factor	EPC mg/kg	Hazard-Based Remedial Goal Options			Risk-Based Remedial Goal Options			Background Concentration mg/kg
					3 mg/kg	1 mg/kg	0.1 mg/kg	1E-06 mg/kg	1E-05 mg/kg	1E-04 mg/kg	
4,4'-DDD	0.24	NA	0.2	469.57	ND	ND	ND	45	452	4516	NA
4,4'-DDE	0.34	NA	0.2	1.82	ND	ND	ND	32	319	3188	NA
4,4'-DDT	0.34	0.0005	0.2	1790	5807	1936	194	32	319	3188	NA

**NOTES:**

EPC Exposure point concentration

NA Not applicable

ND Not determined

- Remedial goal options were based on the lifetime weighted average for carcinogens and the child resident or site worker for noncarcinogens

Table 10  
 Risk/Hazard Associated with Background Inorganics  
 NAVBASE - Charleston, Zone A  
 Charleston, South Carolina

Parameter	Reference Conc. (mg/kg)	Residential				Industrial			
		RGO @ HI = 1	RGO @ 1E-6	Background Hazard	Background Risk	RGO @ HI = 1	RGO @ 1E-6	Background Hazard	Background Risk
Aluminum	12800	72927	NA	1.8E-01	NA	NA	NA	NA	NA
Arsenic	9.44	21.9	0.38	4.3E-01	2.5E-05	435	2.71	2E-02	3.5E-06
Barium	53	5105	NA	1.0E-02	NA	101500	NA	5E-04	NA
Chromium	50.4	72927	NA	6.9E-04	NA	NA	NA	NA	NA
Cobalt	4.4	4376	NA	1.0E-03	NA	87000	NA	5E-05	NA
Copper	165	255245	NA	6.5E-04	NA	53782	NA	3E-03	NA
Manganese	98.1	3650	NA	2.7E-02	NA	67800	NA	1E-03	NA
Mercury	0.3	22	NA	1.4E-02	NA	435	NA	7E-04	NA
Nickel	13.55	1459	NA	9.3E-03	NA	28993	NA	5E-04	NA
Selenium	1.2	365	NA	3.3E-03	NA	7248	NA	2E-04	NA
Vanadium	29.24	510	NA	5.7E-02	NA	10148	NA	3E-03	NA
Zinc	207.6	21878	NA	9.5E-03	NA	434894	NA	5E-04	NA
Cumulative Background Hazard				0.74				0.031	
Cumulative Background Risk					2.5E-05				3.5E-06

Notes:

RGO - Remedial goal option

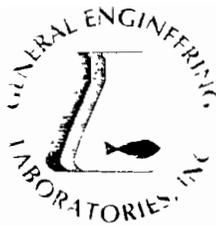
mg/kg - milligrams per kilogram

NA - Not applicable or not available

**APPENDIX D**

**SAMPLING**

**DOCUMENTATION**



# GENERAL ENGINEERING LABORATORIES

Testing to ASTM Standards and EPA Methods for Contaminants

### 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: July 17, 1997

Page 1 of 2

Sample ID : SPORT0474-1  
 Lab ID : 9707141-01  
 Matrix : Soil  
 Date Collected : 07/08/97  
 Date Received : 07/08/97  
 Priority : Routine  
 Collector : Client

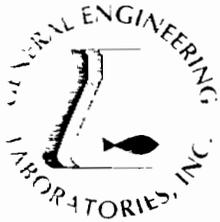
Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Method 8080 - Organochlorine Pesticides - 19 items</i>											
4,4'-DDD		30000	13100	26200	ug/kg	20000	TLD	07/16/97	2052	104721	1
4,4'-DDE	U	0.00	13100	26200	ug/kg	20000					
4,4'-DDT		136000	13100	26200	ug/kg	20000					
Aldrin	U	0.00	6540	13100	ug/kg	20000					
Chlordane	U	0.00	81800	164000	ug/kg	20000					
Dieldrin	U	0.00	13100	26200	ug/kg	20000					
Endosulfan I	U	0.00	6540	13100	ug/kg	20000					
Endosulfan II	U	0.00	13100	26200	ug/kg	20000					
Endosulfan sulfate	U	0.00	13100	26200	ug/kg	20000					
Endrin	U	0.00	13100	26200	ug/kg	20000					
Endrin aldehyde	U	0.00	13100	26200	ug/kg	20000					
Heptachlor	U	0.00	6540	13100	ug/kg	20000					
Heptachlor epoxide	U	0.00	6540	13100	ug/kg	20000					
Methoxychlor	U	0.00	65400	131000	ug/kg	20000					
Toxaphene	U	0.00	327000	654000	ug/kg	20000					
alpha-BHC	U	0.00	6540	13100	ug/kg	20000					
beta-BHC	U	0.00	6540	13100	ug/kg	20000					
delta-BHC	U	0.00	6540	13100	ug/kg	20000					
gamma-BHC	U	0.00	6540	13100	ug/kg	20000					

The following prep procedures were performed:

Pesticides

HDB 07/11/97 1000 104721 2





# GENERAL ENGINEERING LABORATORIES

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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: July 17, 1997

Page 2 of 2

Sample ID : SPORT0474-1

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	P8080	0.00*	(45.8 - 148.)
Dibutylchloroendate	P8080	0.00*	(30.7 - 143.)

M = Method	Method-Description
M 1	EPA 8080
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.

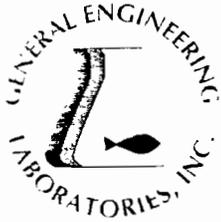
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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, Karen Blakeney at (803) 769-7386.

  
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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 17, 1997

Page 1 of 2

Sample ID : SPORT0474-2  
 Lab ID : 9707141-02  
 Matrix : Soil  
 Date Collected : 07/08/97  
 Date Received : 07/08/97  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Method 8080 - Organochlorine Pesticides - 19 items</i>											
4,4'-DDD		298000	32600	65200	ug/kg	50000	TLD	07/16/97	1428	104721	1
4,4'-DDE	U	0.00	32600	65200	ug/kg	50000					
4,4'-DDT		154000	32600	65200	ug/kg	50000					
Aldrin	U	0.00	16300	32600	ug/kg	50000					
Chlordane	U	0.00	204000	408000	ug/kg	50000					
Dieldrin	U	0.00	32600	65200	ug/kg	50000					
Endosulfan I	U	0.00	16300	32600	ug/kg	50000					
Endosulfan II	U	0.00	32600	65200	ug/kg	50000					
Endosulfan sulfate	U	0.00	32600	65200	ug/kg	50000					
Endrin	U	0.00	32600	65200	ug/kg	50000					
Endrin aldehyde	U	0.00	32600	65200	ug/kg	50000					
Heptachlor	U	0.00	16300	32600	ug/kg	50000					
Heptachlor epoxide	U	0.00	16300	32600	ug/kg	50000					
Methoxychlor	U	0.00	163000	326000	ug/kg	50000					
Toxaphene	U	0.00	815000	1630000	ug/kg	50000					
alpha-BHC	U	0.00	16300	32600	ug/kg	50000					
beta-BHC	U	0.00	16300	32600	ug/kg	50000					
delta-BHC	U	0.00	16300	32600	ug/kg	50000					
gamma-BHC	U	0.00	16300	32600	ug/kg	50000					

The following prep procedures were performed:

Pesticides

HDB 07/11/97 1000 104721 2





# GENERAL ENGINEERING LABORATORIES

1001 25th Ave. S. Charleston, SC 29405-5010

## 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: July 17, 1997

Page 2 of 2

Sample ID : SPORT0474-2

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	P8080	0.00*	(45.8 - 148.)
Dibutylchloroendate	P8080	0.00*	(30.7 - 143.)

M = Method	Method-Description
M 1	EPA 8080
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.

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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: July 17, 1997

Page 1 of 2

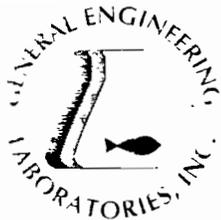
Sample ID : SPORT0474-3  
 Lab ID : 9707141-03  
 Matrix : Soil  
 Date Collected : 07/08/97  
 Date Received : 07/08/97  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Method 8080 - Organochlorine Pesticides - 19 items</i>											
4,4'-DDD		1500	330	660	ug/kg	500	TLD	07/16/97	2126	104721	1
4,4'-DDE	U	0.00	330	660	ug/kg	500					
4,4'-DDT		5030	330	660	ug/kg	500					
Aldrin	U	0.00	165	330	ug/kg	500					
Chlordane	U	0.00	2060	4130	ug/kg	500					
Dieldrin	U	0.00	330	660	ug/kg	500					
Endosulfan I	U	0.00	165	330	ug/kg	500					
Endosulfan II	U	0.00	330	660	ug/kg	500					
Endosulfan sulfate	U	0.00	330	660	ug/kg	500					
Endrin	U	0.00	330	660	ug/kg	500					
Endrin aldehyde	U	0.00	330	660	ug/kg	500					
Heptachlor	U	0.00	165	330	ug/kg	500					
Heptachlor epoxide	U	0.00	165	330	ug/kg	500					
Methoxychlor	U	0.00	1650	3300	ug/kg	500					
Toxaphene	U	0.00	8250	16500	ug/kg	500					
alpha-BHC	U	0.00	165	330	ug/kg	500					
beta-BHC	U	0.00	165	330	ug/kg	500					
delta-BHC	U	0.00	165	330	ug/kg	500					
gamma-BHC	U	0.00	165	330	ug/kg	500					

The following prep procedures were performed:  
 Pesticides

HDB 07/11/97 1000 104721 2





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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: July 17, 1997

Page 2 of 2

Sample ID : SPORT0474-3

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	P8080	0.00*	(45.8 - 148.)
Dibutylchloroendate	P8080	0.00*	(30.7 - 143.)

M = Method	Method-Description
M 1	EPA 8080
M 2	EPA 3550

### Notes:

The qualifiers in this report are defined as follows:

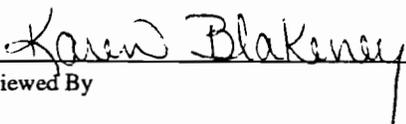
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J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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.

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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: July 17, 1997

Page 1 of 2

Sample ID : SPORT0474-4  
 Lab ID : 9707141-04  
 Matrix : Soil  
 Date Collected : 07/08/97  
 Date Received : 07/08/97  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Method 8080 - Organochlorine Pesticides - 19 items</i>											
4,4'-DDD		550000	133000	266000	ug/kg	200000	TLD	07/16/97	2201	104721	1
4,4'-DDE	U	0.00	133000	266000	ug/kg	200000					
4,4'-DDT		1790000	133000	266000	ug/kg	200000					
Aldrin	U	0.00	66400	133000	ug/kg	200000					
Chlordane	U	0.00	830000	1660000	ug/kg	200000					
Dieldrin	U	0.00	133000	266000	ug/kg	200000					
Endosulfan I	U	0.00	66400	133000	ug/kg	200000					
Endosulfan II	U	0.00	133000	266000	ug/kg	200000					
Endosulfan sulfate	U	0.00	133000	266000	ug/kg	200000					
Endrin	U	0.00	133000	266000	ug/kg	200000					
Endrin aldehyde	U	0.00	133000	266000	ug/kg	200000					
Heptachlor	U	0.00	66400	133000	ug/kg	200000					
Heptachlor epoxide	U	0.00	66400	133000	ug/kg	200000					
Methoxychlor	U	0.00	664000	1330000	ug/kg	200000					
Toxaphene	U	0.00	3320000	6640000	ug/kg	200000					
alpha-BHC	U	0.00	66400	133000	ug/kg	200000					
beta-BHC	U	0.00	66400	133000	ug/kg	200000					
delta-BHC	U	0.00	66400	133000	ug/kg	200000					
gamma-BHC	U	0.00	66400	133000	ug/kg	200000					

The following prep procedures were performed:  
 Pesticides

HDB 07/11/97 1000 104721 2





# GENERAL ENGINEERING LABORATORIES

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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: July 17, 1997

Page 2 of 2

Sample ID : SPORT0474-4

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	P8080	0.00*	(45.8 - 148.)
Dibutylchloroendate	P8080	0.00*	(30.7 - 143.)

M = Method	Method-Description
M 1	EPA 8080
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.

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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: July 17, 1997

Page 1 of 2

Sample ID : SPORT0474-5  
 Lab ID : 9707141-05  
 Matrix : Soil  
 Date Collected : 07/08/97  
 Date Received : 07/08/97  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Method 8080 - Organochlorine Pesticides - 19 items</i>											
4,4'-DDD		23100	1300	2610	ug/kg	2000	TLD	07/16/97	1319	104721	1
4,4'-DDE	U	0.00	1300	2610	ug/kg	2000					
4,4'-DDT	J	1360	1300	2610	ug/kg	2000					
Aldrin	U	0.00	652	1300	ug/kg	2000					
Chlordane	U	0.00	8150	16300	ug/kg	2000					
Dieldrin	U	0.00	1300	2610	ug/kg	2000					
Endosulfan I	U	0.00	652	1300	ug/kg	2000					
Endosulfan II	U	0.00	1300	2610	ug/kg	2000					
Endosulfan sulfate	U	0.00	1300	2610	ug/kg	2000					
Endrin	U	0.00	1300	2610	ug/kg	2000					
Endrin aldehyde	U	0.00	1300	2610	ug/kg	2000					
Heptachlor	U	0.00	652	1300	ug/kg	2000					
Heptachlor epoxide	U	0.00	652	1300	ug/kg	2000					
Methoxychlor	U	0.00	6520	13000	ug/kg	2000					
Toxaphene	U	0.00	32600	65200	ug/kg	2000					
alpha-BHC	U	0.00	652	1300	ug/kg	2000					
beta-BHC	U	0.00	652	1300	ug/kg	2000					
delta-BHC	U	0.00	652	1300	ug/kg	2000					
gamma-BHC	U	0.00	652	1300	ug/kg	2000					

The following prep procedures were performed:  
 Pesticides

HDB 07/11/97 1000 104721 2





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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: July 17, 1997

Page 2 of 2

Sample ID : SPORT0474-5

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	P8080	0.00*	(45.8 - 148.)
Dibutylchloroendate	P8080	0.00*	(30.7 - 143.)

M = Method	Method-Description
M 1	EPA 8080
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).

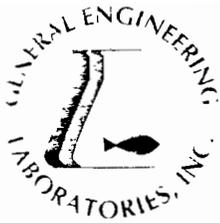
U indicates that the analyte was not detected at a concentration greater than the detection limit.

\* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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# GENERAL ENGINEERING LABORATORIES

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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: July 17, 1997

Page 1 of 2

Sample ID : SPORT0474-6  
Lab ID : 9707141-06  
Matrix : Soil  
Date Collected : 07/08/97  
Date Received : 07/08/97  
Priority : Routine  
Collector : Client

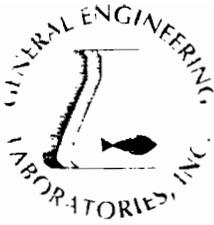
Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Method 8080 - Organochlorine Pesticides - 19 items</i>											
4,4'-DDD		13300	3290	6580	ug/kg	5000	TLD	07/16/97	2236	104721	1
4,4'-DDE	U	0.00	3290	6580	ug/kg	5000					
4,4'-DDT		51500	3290	6580	ug/kg	5000					
Aldrin	U	0.00	1650	3290	ug/kg	5000					
Chlordane	U	0.00	20600	41100	ug/kg	5000					
Dieldrin	U	0.00	3290	6580	ug/kg	5000					
Endosulfan I	U	0.00	1650	3290	ug/kg	5000					
Endosulfan II	U	0.00	3290	6580	ug/kg	5000					
Endosulfan sulfate	U	0.00	3290	6580	ug/kg	5000					
Endrin	U	0.00	3290	6580	ug/kg	5000					
Endrin aldehyde	U	0.00	3290	6580	ug/kg	5000					
Heptachlor	U	0.00	1650	3290	ug/kg	5000					
Heptachlor epoxide	U	0.00	1650	3290	ug/kg	5000					
Methoxychlor	U	0.00	16500	32900	ug/kg	5000					
Toxaphene	U	0.00	82300	165000	ug/kg	5000					
alpha-BHC	U	0.00	1650	3290	ug/kg	5000					
beta-BHC	U	0.00	1650	3290	ug/kg	5000					
delta-BHC	U	0.00	1650	3290	ug/kg	5000					
gamma-BHC	U	0.00	1650	3290	ug/kg	5000					

The following prep procedures were performed:

Pesticides

HDB 07/11/97 1000 104721 2





# GENERAL ENGINEERING LABORATORIES

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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: July 17, 1997

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Sample ID : SPORT0474-6

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	P8080	0.00*	(45.8 - 148.)
Dibutylchloroendate	P8080	0.00*	(30.7 - 143.)

M = Method	Method-Description
M 1	EPA 8080
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).

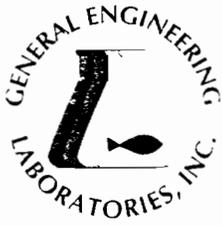
U indicates that the analyte was not detected at a concentration greater than the detection limit.

\* 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, Karen Blakeney at (803) 769-7386.

  
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NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion  
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 North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers  
 Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: July 17, 1997

Page 1 of 2

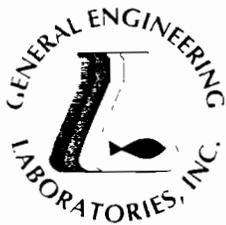
Sample ID : SPORT0474-7  
 Lab ID : 9707141-07  
 Matrix : Soil  
 Date Collected : 07/08/97  
 Date Received : 07/08/97  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Method 8080 - Organochlorine Pesticides - 19 items</i>											
4,4'-DDD		473	33.2	66.4	ug/kg	50.	TLD	07/16/97	1648	104721	1
4,4'-DDE		281	33.2	66.4	ug/kg	50.					
4,4'-DDT	J	54.8	33.2	66.4	ug/kg	50.					
Aldrin	U	0.00	16.6	33.2	ug/kg	50.					
Chlordane	U	0.00	208	415	ug/kg	50.					
Dieldrin	U	0.00	33.2	66.4	ug/kg	50.					
Endosulfan I	J	25.7	16.6	33.2	ug/kg	50.					
Endosulfan II	U	0.00	33.2	66.4	ug/kg	50.					
Endosulfan sulfate	U	0.00	33.2	66.4	ug/kg	50.					
Endrin	U	0.00	33.2	66.4	ug/kg	50.					
Endrin aldehyde	U	0.00	33.2	66.4	ug/kg	50.					
Heptachlor	U	0.00	16.6	33.2	ug/kg	50.					
Heptachlor epoxide	U	0.00	16.6	33.2	ug/kg	50.					
Methoxychlor	U	0.00	166	332	ug/kg	50.					
Toxaphene	U	0.00	830	1660	ug/kg	50.					
alpha-BHC	U	0.00	16.6	33.2	ug/kg	50.					
beta-BHC	U	0.00	16.6	33.2	ug/kg	50.					
delta-BHC	U	0.00	16.6	33.2	ug/kg	50.					
gamma-BHC	U	0.00	16.6	33.2	ug/kg	50.					

The following prep procedures were performed:  
 Pesticides

HDB 07/11/97 1000 104721 2





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## Laboratory Certifications

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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 17, 1997

Page 2 of 2

Sample ID : SPORT0474-7

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	P8080	0.00*	(45.8 - 148.)
Dibutylchloroendate	P8080	0.00*	(30.7 - 143.)

M = Method	Method-Description
M 1	EPA 8080
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, Karen Blakeney at (803) 769-7386.

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NC	233	
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TN	02934	02934

Client: Supervisor of Ship Building & Conversion  
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North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: July 17, 1997

Page 1 of 2

Sample ID : SPORT0474-8  
Lab ID : 9707141-08  
Matrix : Soil  
Date Collected : 07/08/97  
Date Received : 07/08/97  
Priority : Routine  
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Method 8080 - Organochlorine Pesticides - 19 items</i>											
4,4'-DDD		464	32.7	65.4	ug/kg	50.	TLD	07/16/97	1832	104721	1
4,4'-DDE		253	32.7	65.4	ug/kg	50.					
4,4'-DDT		373	32.7	65.4	ug/kg	50.					
Aldrin	J	21.3	16.4	32.7	ug/kg	50.					
Chlordane	U	0.00	204	409	ug/kg	50.					
Dieldrin	U	0.00	32.7	65.4	ug/kg	50.					
Endosulfan I	J	25.0	16.4	32.7	ug/kg	50.					
Endosulfan II	U	0.00	32.7	65.4	ug/kg	50.					
Endosulfan sulfate	U	0.00	32.7	65.4	ug/kg	50.					
Endrin	U	0.00	32.7	65.4	ug/kg	50.					
Endrin aldehyde	U	0.00	32.7	65.4	ug/kg	50.					
Heptachlor	U	0.00	16.4	32.7	ug/kg	50.					
Heptachlor epoxide	U	0.00	16.4	32.7	ug/kg	50.					
Methoxychlor	U	0.00	164	327	ug/kg	50.					
Toxaphene	U	0.00	818	1640	ug/kg	50.					
alpha-BHC	U	0.00	16.4	32.7	ug/kg	50.					
beta-BHC	U	0.00	16.4	32.7	ug/kg	50.					
delta-BHC	U	0.00	16.4	32.7	ug/kg	50.					
gamma-BHC	U	0.00	16.4	32.7	ug/kg	50.					

The following prep procedures were performed:  
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SC	10120	10582
TN	02934	02934

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North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: July 17, 1997

Page 2 of 2

Sample ID : SPORT0474-8

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	P8080	0.00*	(45.8 - 148.)
Dibutylchloroendate	P8080	0.00*	(30.7 - 143.)

M = Method	Method-Description
M 1	EPA 8080
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.

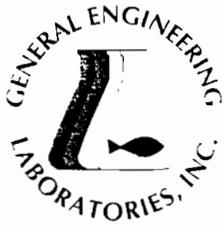
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

U indicates that the analyte was not detected at a concentration greater than the detection limit.

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SC	10120	10582
TN	02934	02934

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1899 North Hobson Ave.  
North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: July 17, 1997

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Sample ID : SPORT0474-9  
Lab ID : 9707141-09  
Matrix : Soil  
Date Collected : 07/08/97  
Date Received : 07/08/97  
Priority : Routine  
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Method 8080 - Organochlorine Pesticides - 19 items</i>											
4,4'-DDD		5270	325	650	ug/kg	500	TLD	07/17/97	1533	104721	1
4,4'-DDE		1040	325	650	ug/kg	500					
4,4'-DDT		3540	325	650	ug/kg	500					
Aldrin	U	0.00	163	325	ug/kg	500					
Chlordane	U	0.00	2030	4060	ug/kg	500					
Dieldrin	U	0.00	325	650	ug/kg	500					
Endosulfan I	U	0.00	163	325	ug/kg	500					
Endosulfan II	U	0.00	325	650	ug/kg	500					
Endosulfan sulfate	U	0.00	325	650	ug/kg	500					
Endrin	U	0.00	325	650	ug/kg	500					
Endrin aldehyde	U	0.00	325	650	ug/kg	500					
Heptachlor	U	0.00	163	325	ug/kg	500					
Heptachlor epoxide	U	0.00	163	325	ug/kg	500					
Methoxychlor	U	0.00	1630	3250	ug/kg	500					
Toxaphene	U	0.00	8130	16300	ug/kg	500					
alpha-BHC	U	0.00	163	325	ug/kg	500					
beta-BHC	U	0.00	163	325	ug/kg	500					
delta-BHC	J	201	163	325	ug/kg	500					
gamma-BHC	U	0.00	163	325	ug/kg	500					

### The following prep procedures were performed:

Pesticides

HDB 07/11/97 1000 104721 2

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\*9707141-09\*



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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 17, 1997

Page 2 of 2

Sample ID : SPORT0474-9

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	P8080	0.00*	(45.8 - 148.)
Dibutylchloroendate	P8080	0.00*	(30.7 - 143.)

M = Method	Method-Description
M 1	EPA 8080
M 2	EPA 3550

### 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.

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 standard operating procedures. Please direct  
 any questions to your Project Manager, Karen Blakeney at (803) 769-7386.

  
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# GENERAL ENGINEERING LABORATORIES

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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: July 17, 1997

Page 1 of 2

Sample ID : SPORT0474-10  
 Lab ID : 9707141-10  
 Matrix : Soil  
 Date Collected : 07/08/97  
 Date Received : 07/08/97  
 Priority : Routine  
 Collector : Client

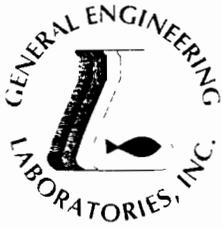
Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Method 8080 - Organochlorine Pesticides - 19 items</i>											
4,4'-DDD		41500	6580	13200	ug/kg	10000	TLD	07/17/97	1608	104721	1
4,4'-DDE	U	0.00	6580	13200	ug/kg	10000					
4,4'-DDT		116000	6580	13200	ug/kg	10000					
Aldrin	U	0.00	3290	6580	ug/kg	10000					
Chlordane	U	0.00	41100	82300	ug/kg	10000					
Dieldrin	U	0.00	6580	13200	ug/kg	10000					
Endosulfan I	U	0.00	3290	6580	ug/kg	10000					
Endosulfan II	U	0.00	6580	13200	ug/kg	10000					
Endosulfan sulfate	U	0.00	6580	13200	ug/kg	10000					
Endrin	U	0.00	6580	13200	ug/kg	10000					
Endrin aldehyde	U	0.00	6580	13200	ug/kg	10000					
Heptachlor	U	0.00	3290	6580	ug/kg	10000					
Heptachlor epoxide	U	0.00	3290	6580	ug/kg	10000					
Methoxychlor	U	0.00	32900	65800	ug/kg	10000					
Toxaphene	U	0.00	165000	329000	ug/kg	10000					
alpha-BHC	U	0.00	3290	6580	ug/kg	10000					
beta-BHC	U	0.00	3290	6580	ug/kg	10000					
delta-BHC	U	0.00	3290	6580	ug/kg	10000					
gamma-BHC	U	0.00	3290	6580	ug/kg	10000					

The following prep procedures were performed:

Pesticides

HDB 07/11/97 1000 104721 2





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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: NPWC00197

Report Date: July 17, 1997

Page 2 of 2

Sample ID : SPORT0474-10

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	P8080	0.00*	(45.8 - 148.)
Dibutylchlorendate	P8080	0.00*	(30.7 - 143.)

M = Method	Method-Description
M 1	EPA 8080
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.

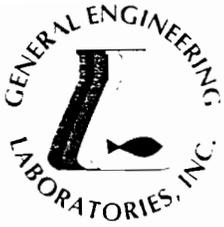
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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.

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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 17, 1997

Page 1 of 2

Sample ID : SPORT0474-11  
 Lab ID : 9707141-11  
 Matrix : Soil  
 Date Collected : 07/08/97  
 Date Received : 07/08/97  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Method 8080 - Organochlorine Pesticides - 19 items</i>											
4,4'-DDD		20300	1310	2620	ug/kg	2000	TLD	07/17/97	1643	104721	1
4,4'-DDE	J	1900	1310	2620	ug/kg	2000					
4,4'-DDT		26200	1310	2620	ug/kg	2000					
Aldrin	U	0.00	654	1310	ug/kg	2000					
Chlordane	U	0.00	8180	16400	ug/kg	2000					
Dieldrin	U	0.00	1310	2620	ug/kg	2000					
Endosulfan I	U	0.00	654	1310	ug/kg	2000					
Endosulfan II	U	0.00	1310	2620	ug/kg	2000					
Endosulfan sulfate	U	0.00	1310	2620	ug/kg	2000					
Endrin	U	0.00	1310	2620	ug/kg	2000					
Endrin aldehyde	U	0.00	1310	2620	ug/kg	2000					
Heptachlor	U	0.00	654	1310	ug/kg	2000					
Heptachlor epoxide	U	0.00	654	1310	ug/kg	2000					
Methoxychlor	U	0.00	6540	13100	ug/kg	2000					
Toxaphene	U	0.00	32700	65400	ug/kg	2000					
alpha-BHC	U	0.00	654	1310	ug/kg	2000					
beta-BHC	U	0.00	654	1310	ug/kg	2000					
delta-BHC	U	0.00	654	1310	ug/kg	2000					
gamma-BHC	U	0.00	654	1310	ug/kg	2000					

The following prep procedures were performed:  
 Pesticides

HDB 07/11/97 1000 104721 2





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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  
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1899 North Hobson Ave.  
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Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: July 17, 1997

Page 2 of 2

Sample ID : SPORT0474-11

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	P8080	0.00*	(45.8 - 148.)
Dibutylchlorendate	P8080	0.00*	(30.7 - 143.)

M = Method	Method-Description
M 1	EPA 8080
M 2	EPA 3550

### Notes:

The qualifiers in this report are defined as follows:

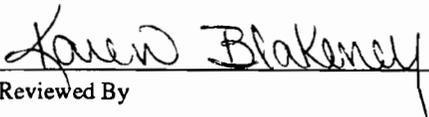
ND indicates that the analyte was not detected at a concentration greater than the detection limit.

J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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# CHAIN OF CUSTODY RECORD

Page 1 of 1

9707141

Client Name/Facility Name			Collected by/Company			# OF CONTAINERS	SAMPLE ANALYSIS REQUIRED (X) - use remarks area to specify specific compounds or methods																Use F or P in the boxes to indicate whether sample was filtered and/or preserved CCL 27960
SPORTENVDETHASN			SMALLS SPORTENVDETHASN				pH. conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	METALS - specify	HERBICIDE	Total Phenol	Acid Extractables	B/A Extractables	PCB's	Cyanide	Coliform - specify type	Remarks		
SAMPLE ID	DATE	TIME	WELL	SOIL	COMIP	GRAB																	
01	SPORT474-1	7/8/97	0950	X	X						X										NBCA038S000101		
02	SPORT474-2	7/8/97	0957	X	X						X										NBCA038S000201		
03	SPORT474-3	7/8/97	1003	X	X						X										NBCA038S000301		
04	SPORT474-4	7/8/97	1009	X	X						X										NBCA038S000401		
05	SPORT474-5	7/8/97	1014	X	X						X										NBCA038S000504		
06	SPORT474-6	7/8/97	1020	X	X						X										NBCA038S000601		
07	SPORT474-7	7/8/97	1024	X	X						X										NBCA038S000701		
08	SPORT474-8	7/8/97	1028	X	X						X										NBCA038S000801		
09	SPORT474-9	7/8/97	1032	X	X						X										NBCA038S000901		
10	SPORT474-10	7/8/97	1036	X	X						X										NBCA038S001002		
11	SPORT474-11	7/8/97	1040	X	X						X										NBCA038C001102		

Relinquished by: <i>William W. [Signature]</i>	Date: 7/8/97	Time: 1110	Received by: <i>[Signature]</i>	Relinquished by: <i>[Signature]</i>	Date: 7/8/97	Time: 1450	Received by: <i>Catharine [Signature]</i>
Relinquished by: <i>Catharine [Signature]</i>	Date: 7/8/97	Time: 1455	Received by lab by: <i>Queen Blakemey</i>	Date: 7/8/97	Time: 1455	Remarks:	

White = sample collector    Yellow = file    Pink = with report



# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 1 of 2

Sample ID : SPORT0783-1  
 Lab ID : 9808831-01  
 Matrix : Soil  
 Date Collected : 08/24/98  
 Date Received : 08/24/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		19000	3100	13300	ug/kg	10000	SJ	09/01/98	1643	129526	1
4,4'-DDE	U	ND	1300	13300	ug/kg	10000					
4,4'-DDT		41600	1500	13300	ug/kg	10000					
Aldrin	U	ND	1700	6660	ug/kg	10000					
Dieldrin	U	ND	2500	13300	ug/kg	10000					
Endosulfan I	U	ND	5590	66600	ug/kg	100000					
Endosulfan II	U	ND	1800	13300	ug/kg	10000					
Endosulfan sulfate	U	ND	3600	6660	ug/kg	10000					
Endrin	U	ND	2500	13300	ug/kg	10000					
Endrin aldehyde	U	ND	4800	13300	ug/kg	10000					
Heptachlor	U	ND	889	6660	ug/kg	10000					
Heptachlor epoxide	U	ND	1300	6660	ug/kg	10000					
Methoxychlor	U	ND	26500	66600	ug/kg	10000					
Toxaphene	U	ND	87600	333000	ug/kg	10000					
alpha-BHC	U	ND	1500	6660	ug/kg	10000					
alpha-Chlordane	U	ND	1300	6660	ug/kg	10000					
beta-BHC	U	ND	2000	6660	ug/kg	10000					
delta-BHC	U	ND	1600	6660	ug/kg	10000					
gamma-BHC	U	ND	14000	66600	ug/kg	100000					
gamma-Chlordane	U	ND	1700	6660	ug/kg	10000					

**The following prep procedures were performed:**

Pesticides

RDH 08/25/98 2300 129526 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 2 of 2

Sample ID : SPORT0783-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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, Karen Blakeney at (803) 769-7386.

  
Reviewed By



# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 1 of 2

Sample ID : SPORT0783-2  
Lab ID : 9808831-02  
Matrix : Soil  
Date Collected : 08/24/98  
Date Received : 08/24/98  
Priority : Routine  
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		123000	12400	53300	ug/kg	40000	SJ	09/01/98	1616	129526	1
4,4'-DDE	U	ND	5190	53300	ug/kg	40000					
4,4'-DDT		388000	5990	53300	ug/kg	40000					
Aldrin	U	ND	6790	26600	ug/kg	40000					
Dieldrin	U	ND	9990	53300	ug/kg	40000					
Endosulfan I	U	ND	2240	26600	ug/kg	40000					
Endosulfan II	U	ND	7190	53300	ug/kg	40000					
Endosulfan sulfate	U	ND	14400	26600	ug/kg	40000					
Endrin	U	ND	9990	53300	ug/kg	40000					
Endrin aldehyde	U	ND	19200	53300	ug/kg	40000					
Heptachlor	U	ND	3560	26600	ug/kg	40000					
Heptachlor epoxide	U	ND	5190	26600	ug/kg	40000					
Methoxychlor	U	ND	106000	266000	ug/kg	40000					
Toxaphene	U	ND	3500000	13300000	ug/kg	400000					
alpha-BHC	U	ND	5990	26600	ug/kg	40000					
alpha-Chlordane	U	ND	5190	26600	ug/kg	40000					
beta-BHC	U	ND	7990	26600	ug/kg	40000					
delta-BHC	U	ND	6390	26600	ug/kg	40000					
gamma-BHC	U	ND	5590	26600	ug/kg	40000					
gamma-Chlordane	U	ND	6790	26600	ug/kg	40000					

### The following prep procedures were performed:

Pesticides

RDH 08/25/98 2300 129526 2

### Comments:





# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 2 of 2

Sample ID : SPORT0783-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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, Karen Blakeney at (803) 769-7386.

  
Reviewed By



# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 1 of 2

Sample ID : SPORT0783-3  
 Lab ID : 9808831-03  
 Matrix : Soil  
 Date Collected : 08/24/98  
 Date Received : 08/24/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	J	992	619	2660	ug/kg	2000	JLS	08/30/98	1527	129526	1
4,4'-DDE	U	ND	260	2660	ug/kg	2000					
4,4'-DDT		4630	300	2660	ug/kg	2000					
Aldrin	U	ND	340	1330	ug/kg	2000					
Dieldrin	U	ND	500	2660	ug/kg	2000					
Endosulfan I	U	ND	112	1330	ug/kg	2000					
Endosulfan II	U	ND	360	2660	ug/kg	2000					
Endosulfan sulfate	U	ND	719	1330	ug/kg	2000					
Endrin	U	ND	500	2660	ug/kg	2000					
Endrin aldehyde	U	ND	959	2660	ug/kg	2000					
Heptachlor	U	ND	178	1330	ug/kg	2000					
Heptachlor epoxide	U	ND	260	1330	ug/kg	2000					
Methoxychlor	U	ND	5290	13300	ug/kg	2000					
Toxaphene	U	ND	17500	66600	ug/kg	2000					
alpha-BHC	U	ND	300	1330	ug/kg	2000					
alpha-Chlordane	U	ND	260	1330	ug/kg	2000					
beta-BHC	U	ND	400	1330	ug/kg	2000					
delta-BHC	U	ND	320	1330	ug/kg	2000					
gamma-BHC	U	ND	280	1330	ug/kg	2000					
gamma-Chlordane	U	ND	340	1330	ug/kg	2000					

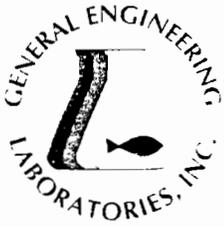
**The following prep procedures were performed:**

Pesticides

RDH 08/25/98 2300 129526 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 2 of 2

Sample ID : SPORT0783-3

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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, Karen Blakeney at (803) 769-7386.

*Karen Blakeney*  
 Reviewed By

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Lab. Sample ID: 9808831%

Report Date: September 08, 1998

Page 1 of 2

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
<b>Extractable Organics</b>													
QC535581	BLANK	129526											
4,4'-DDT						0.00	ug/kg				JLS	08/26/98	1512
Aldrn						0.00	ug/kg						
Dieldrn						0.00	ug/kg						
Endrn						0.00	ug/kg						
Heptachlor						0.00	ug/kg						
gamma-BHC						0.00	ug/kg						
*4CMX							ug/kg		96.4	(41.0 - 133.)			
*Decachlorobiphenyl							ug/kg		111	(47.0 - 125.)			
4,4'-DDD						0.00	ug/kg						
4,4'-DDE						0.00	ug/kg						
Endosulfan I						0.00	ug/kg						
Endosulfan II						0.00	ug/kg						
Endosulfan sulfate						0.00	ug/kg						
Endrn aldehyde						0.00	ug/kg						
Heptachlor epoxide						0.00	ug/kg						
Methoxychlor						0.00	ug/kg						
Toxaphene						0.00	ug/kg						
alpha-BHC						0.00	ug/kg						
alpha-Chlordane						0.00	ug/kg						
beta-BHC						0.00	ug/kg						
delta-BHC						0.00	ug/kg						
gamma-Chlordane						0.00	ug/kg						
QC535582	LCS	129526											
4,4'-DDT			8.33			5.93	ug/kg		71.2	(55.0 - 127.)	JLS	08/26/98	1538
Aldrn			3.33			2.90	ug/kg		87.1	(48.0 - 129.)			
Dieldrn			8.33			6.67	ug/kg		80.0	(51.0 - 122.)			
Endrn			8.33			8.20	ug/kg		98.4	(53.0 - 132.)			
Heptachlor			3.33			3.24	ug/kg		97.3	(52.0 - 133.)			
gamma-BHC			3.33			2.81	ug/kg		84.4	(55.0 - 118.)			
*4CMX			6.67			5.63	ug/kg		84.4	(41.0 - 133.)			
*Decachlorobiphenyl			6.67			6.10	ug/kg		91.4	(47.0 - 125.)			
QC535583	9808782-07MS	129526											
4,4'-DDT			8.33	0.00		8.55	ug/kg		87.2	(50.0 - 140.)	JLS	08/26/98	1604
Aldrn			3.33	0.00		3.90	ug/kg		99.6	(46.0 - 143.)			
Dieldrn			8.33	0.00		8.31	ug/kg		84.8	(45.0 - 132.)			
Endrn			8.33	0.00		11.3	ug/kg		116	(47.0 - 144.)			
Heptachlor			3.33	0.00		4.20	ug/kg		107	(48.0 - 141.)			
gamma-BHC			3.33	0.00		3.59	ug/kg		91.7	(49.0 - 145.)			

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Lab. Sample ID: 9808831%

Report Date: September 08, 1998

Page 2 of 2

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
*4CMX			6.67			6.51	ug/kg		83.0	(41.0 - 133.)	JLS	08/26/98	1604
*Decachlorobiphenyl			6.67			8.24	ug/kg		105	(47.0 - 125.)			
QC535584		9808782-07MSD 129526											
4,4'-DDT			8.33	0.00		6.94	ug/kg	20.8	70.8	(0.00 - 40.0)	JLS	08/26/98	1629
Aldrin			3.33	0.00		3.71	ug/kg	4.94	94.8	(0.00 - 41.0)			
Dieldrin			8.33	0.00		7.73	ug/kg	7.33	78.8	(0.00 - 32.0)			
Endrin			8.33	0.00		10.3	ug/kg	9.80	105	(0.00 - 33.0)			
Heptachlor			3.33	0.00		3.80	ug/kg	9.80	97.1	(0.00 - 34.0)			
gamma-BHC			3.33	0.00		3.29	ug/kg	8.66	84.1	(0.00 - 31.0)			
*4CMX			6.67			6.24	ug/kg		79.5	(41.0 - 133.)			
*Decachlorobiphenyl			6.67			7.06	ug/kg		90.0	(47.0 - 125.)			

Notes:

The qualifiers in this report are defined as follows

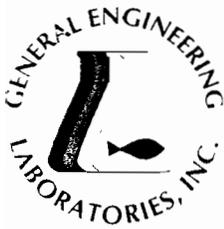
J indicates presence of analyte < RL (Report Limit)

U indicates presence of analyte < DL (Detect Limit)

n/a indicates that spike recovery limits do not apply when

sample concentration exceeds spike conc by a factor of 4 or more





# GENERAL ENGINEERING LABORATORIES

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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: September 09, 1998

Page 1 of 2

Sample ID : SPORT0886-1  
 Lab ID : 9808778-01  
 Matrix : Soil  
 Date Collected : 08/20/98  
 Date Received : 08/21/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		1.69	0.592	1.33	ug/kg	1.0	SJ	09/01/98	0741	129863	1
4,4'-DDE		12.7	0.553	1.33	ug/kg	1.0					
4,4'-DDT	U	ND	40.1	66.2	ug/kg	50.	SJ	09/08/98	1434	129863	1
Aldrin	U	ND	0.261	0.670	ug/kg	1.0	SJ	09/01/98	0741	129863	1
Dieldrin	U	ND	0.738	1.33	ug/kg	1.0					
Endosulfan I	U	ND	0.457	0.670	ug/kg	1.0					
Endosulfan II	U	ND	0.685	1.33	ug/kg	1.0					
Endosulfan sulfate	U	ND	0.917	0.917	ug/kg	1.0					
Endrin	U	ND	0.685	1.33	ug/kg	1.0					
Endrin aldehyde	U	ND	1.00	1.33	ug/kg	1.0					
Heptachlor	U	ND	0.437	0.670	ug/kg	1.0					
Heptachlor epoxide	U	ND	0.218	0.670	ug/kg	1.0					
Methoxychlor	U	ND	3.57	6.67	ug/kg	1.0					
Toxaphene	U	ND	11.0	33.3	ug/kg	1.0					
alpha-BHC	U	ND	0.265	0.670	ug/kg	1.0					
alpha-Chlordane	U	ND	0.444	0.670	ug/kg	1.0					
beta-BHC	U	ND	0.391	0.670	ug/kg	1.0					
delta-BHC	U	ND	0.285	0.670	ug/kg	1.0					
gamma-BHC	U	ND	0.351	0.670	ug/kg	1.0					
gamma-Chlordane	U	ND	0.470	0.670	ug/kg	1.0					

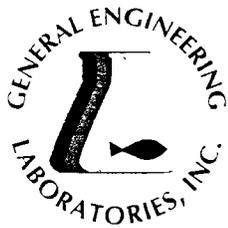
**The following prep procedures were performed:**

Pesticides

MAL 08/28/98 1910 129863 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: September 09, 1998

Page 2 of 2

Sample ID : SPORT0886-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	PEST-8081A	69.5	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	130.*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
M 2	EPA 3550

### Notes:

The qualifiers in this report are defined as follows:

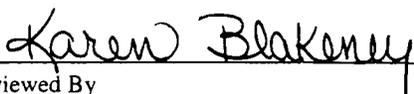
ND indicates that the analyte was not detected at a concentration greater than the detection limit.

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, Karen Blakeney at (803) 769-7386.

  
Reviewed By





# GENERAL ENGINEERING LABORATORIES

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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: September 09, 1998

Page 1 of 2

Sample ID : SPORT0886-2  
Lab ID : 9808778-02  
Matrix : Soil  
Date Collected : 08/20/98  
Date Received : 08/21/98  
Priority : Routine  
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	U	ND	29.6	66.2	ug/kg	50.	SJ	09/08/98	1501	129863	1
4,4'-DDE	U	ND	27.6	66.2	ug/kg	50.					
4,4'-DDT	U	ND	40.1	66.2	ug/kg	50.					
Aldrin	U	ND	13.1	33.1	ug/kg	50.					
Dieldrin	U	ND	36.9	66.2	ug/kg	50.					
Endosulfan I	U	ND	22.8	33.1	ug/kg	50.					
Endosulfan II	U	ND	34.3	66.2	ug/kg	50.					
Endosulfan sulfate	U	ND	45.8	45.8	ug/kg	50.					
Endrin	U	ND	34.3	66.2	ug/kg	50.					
Endrin aldehyde	U	ND	50.0	66.2	ug/kg	50.					
Heptachlor	U	ND	21.8	33.1	ug/kg	50.					
Heptachlor epoxide	U	ND	10.9	33.1	ug/kg	50.					
Methoxychlor	U	ND	179	331	ug/kg	50.					
Toxaphene	U	ND	550	1660	ug/kg	50.					
alpha-BHC	U	ND	13.2	33.1	ug/kg	50.					
alpha-Chlordane	U	ND	22.2	33.1	ug/kg	50.					
beta-BHC	U	ND	19.5	33.1	ug/kg	50.					
delta-BHC	U	ND	14.2	33.1	ug/kg	50.					
gamma-BHC	U	ND	17.5	33.1	ug/kg	50.					
gamma-Chlordane	U	ND	23.5	33.1	ug/kg	50.					

### The following prep procedures were performed:

Pesticides

MAL 08/28/98 1910 129863 2

### Comments:

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\*9808778-02\*



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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: September 09, 1998

Page 2 of 2

Sample ID : SPORT0886-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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).

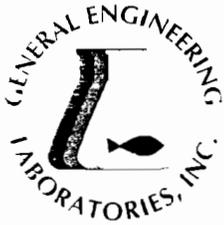
U indicates that the analyte was not detected at a concentration greater than the detection limit.

\* 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, Karen Blakeney at (803) 769-7386.

  
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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: September 04, 1998

Page 1 of 2

Sample ID : SPORT0886-3  
 Lab ID : 9808778-03  
 Matrix : Soil  
 Date Collected : 08/20/98  
 Date Received : 08/21/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		84.7	29.6	66.2	ug/kg	50.	SJ	09/01/98	0835	129863	1
4,4'-DDE	U	ND	27.6	66.2	ug/kg	50.					
4,4'-DDT		619	40.1	66.2	ug/kg	50.					
Aldrin	U	ND	13.1	33.1	ug/kg	50.					
Dieldrin	U	ND	36.9	66.2	ug/kg	50.					
Endosulfan I	U	ND	22.8	33.1	ug/kg	50.					
Endosulfan II	U	ND	34.3	66.2	ug/kg	50.					
Endosulfan sulfate	U	ND	45.8	45.8	ug/kg	50.					
Endrin	U	ND	34.3	66.2	ug/kg	50.					
Endrin aldehyde	U	ND	50.0	66.2	ug/kg	50.					
Heptachlor	U	ND	21.8	33.1	ug/kg	50.					
Heptachlor epoxide	U	ND	10.9	33.1	ug/kg	50.					
Methoxychlor	U	ND	179	331	ug/kg	50.					
Toxaphene	U	ND	550	1660	ug/kg	50.					
alpha-BHC	U	ND	13.2	33.1	ug/kg	50.					
alpha-Chlordane	U	ND	22.2	33.1	ug/kg	50.					
beta-BHC	U	ND	19.5	33.1	ug/kg	50.					
delta-BHC	U	ND	14.2	33.1	ug/kg	50.					
gamma-BHC	U	ND	17.5	33.1	ug/kg	50.					
gamma-Chlordane	U	ND	23.5	33.1	ug/kg	50.					

**The following prep procedures were performed:**

Pesticides

MAL 08/28/98 1910 129863 2

**Comments:**





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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: September 04, 1998

Page 2 of 2

Sample ID : SPORT0886-3

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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.

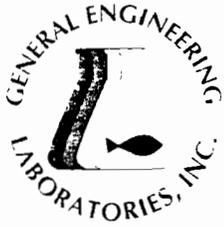
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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.

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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: September 04, 1998

Page 1 of 2

Sample ID : SPORT0886-4  
Lab ID : 9808778-04  
Matrix : Soil  
Date Collected : 08/20/98  
Date Received : 08/21/98  
Priority : Routine  
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	J	43.4	29.6	66.2	ug/kg	50.	SJ	09/01/98	0902	129863	1
4,4'-DDE	U	ND	27.6	66.2	ug/kg	50.					
4,4'-DDT		319	40.1	66.2	ug/kg	50.					
Aldrin	U	ND	13.1	33.1	ug/kg	50.					
Dieldrin	U	ND	36.9	66.2	ug/kg	50.					
Endosulfan I	U	ND	22.8	33.1	ug/kg	50.					
Endosulfan II	U	ND	34.3	66.2	ug/kg	50.					
Endosulfan sulfate	U	ND	45.8	45.8	ug/kg	50.					
Endrin	U	ND	34.3	66.2	ug/kg	50.					
Endrin aldehyde	U	ND	50.0	66.2	ug/kg	50.					
Heptachlor	U	ND	21.8	33.1	ug/kg	50.					
Heptachlor epoxide	U	ND	10.9	33.1	ug/kg	50.					
Methoxychlor	U	ND	179	331	ug/kg	50.					
Toxaphene	U	ND	550	1660	ug/kg	50.					
alpha-BHC	U	ND	13.2	33.1	ug/kg	50.					
alpha-Chlordane	U	ND	22.2	33.1	ug/kg	50.					
beta-BHC	U	ND	19.5	33.1	ug/kg	50.					
delta-BHC	U	ND	14.2	33.1	ug/kg	50.					
gamma-BHC	U	ND	17.5	33.1	ug/kg	50.					
gamma-Chlordane	U	ND	23.5	33.1	ug/kg	50.					

### The following prep procedures were performed:

Pesticides

MAL 08/28/98 1910 129863 2

### Comments:

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\*9808778-04\*



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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: September 04, 1998

Page 2 of 2

Sample ID : SPORT0886-4

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
M 2	EPA 3550

### Notes:

The qualifiers in this report are defined as follows:

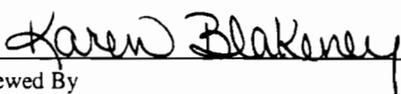
ND indicates that the analyte was not detected at a concentration greater than the detection limit.

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, Karen Blakeney at (803) 769-7386.

  
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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: September 04, 1998

Page 1 of 2

Sample ID : SPORT0886-5  
 Lab ID : 9808778-05  
 Matrix : Soil  
 Date Collected : 08/20/98  
 Date Received : 08/21/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	U	ND	29.6	66.2	ug/kg	50.	SJ	09/01/98	0929	129863	1
4,4'-DDE	J	33.1	27.6	66.2	ug/kg	50.					
4,4'-DDT	J	51.3	40.1	66.2	ug/kg	50.					
Aldrin	U	ND	13.1	33.1	ug/kg	50.					
Dieldrin	U	ND	36.9	66.2	ug/kg	50.					
Endosulfan I	U	ND	22.8	33.1	ug/kg	50.					
Endosulfan II	U	ND	34.3	66.2	ug/kg	50.					
Endosulfan sulfate	U	ND	45.8	45.8	ug/kg	50.					
Endrin	U	ND	34.3	66.2	ug/kg	50.					
Endrin aldehyde	U	ND	50.0	66.2	ug/kg	50.					
Heptachlor	U	ND	21.8	33.1	ug/kg	50.					
Heptachlor epoxide	U	ND	10.9	33.1	ug/kg	50.					
Methoxychlor	U	ND	179	331	ug/kg	50.					
Toxaphene	U	ND	550	1660	ug/kg	50.					
alpha-BHC	U	ND	13.2	33.1	ug/kg	50.					
alpha-Chlordane	U	ND	22.2	33.1	ug/kg	50.					
beta-BHC	U	ND	19.5	33.1	ug/kg	50.					
delta-BHC	U	ND	14.2	33.1	ug/kg	50.					
gamma-BHC	U	ND	17.5	33.1	ug/kg	50.					
gamma-Chlordane	U	ND	23.5	33.1	ug/kg	50.					

**The following prep procedures were performed:**

Pesticides

MAL 08/28/98 1910 129863 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 2 of 2

Sample ID : SPORT0886-5

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081 A
M 2	EPA 3550

### Notes:

The qualifiers in this report are defined as follows:

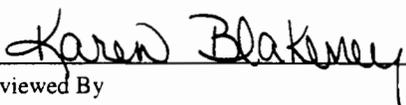
ND indicates that the analyte was not detected at a concentration greater than the detection limit.

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, Karen Blakeney at (803) 769-7386.

  
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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: September 04, 1998

Page 1 of 2

Sample ID : SPORT0886-6  
 Lab ID : 9808778-06  
 Matrix : Soil  
 Date Collected : 08/20/98  
 Date Received : 08/21/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	U	ND	29.6	66.2	ug/kg	50.	SJ	09/01/98	0956	129863	1
4,4'-DDE	U	ND	27.6	66.2	ug/kg	50.					
4,4'-DDT	U	ND	40.1	66.2	ug/kg	50.					
Aldrin	U	ND	13.1	33.1	ug/kg	50.					
Dieldrin	U	ND	36.9	66.2	ug/kg	50.					
Endosulfan I	U	ND	22.8	33.1	ug/kg	50.					
Endosulfan II	U	ND	34.3	66.2	ug/kg	50.					
Endosulfan sulfate	U	ND	45.8	45.8	ug/kg	50.					
Endrin	U	ND	34.3	66.2	ug/kg	50.					
Endrin aldehyde	U	ND	50.0	66.2	ug/kg	50.					
Heptachlor	U	ND	21.8	33.1	ug/kg	50.					
Heptachlor epoxide	U	ND	10.9	33.1	ug/kg	50.					
Methoxychlor	U	ND	179	331	ug/kg	50.					
Toxaphene	U	ND	550	1660	ug/kg	50.					
alpha-BHC	U	ND	13.2	33.1	ug/kg	50					
alpha-Chlordane	U	ND	22.2	33.1	ug/kg	50.					
beta-BHC	U	ND	19.5	33.1	ug/kg	50.					
delta-BHC	U	ND	14.2	33.1	ug/kg	50.					
gamma-BHC	U	ND	17.5	33.1	ug/kg	50.					
gamma-Chlordane	U	ND	23.5	33.1	ug/kg	50.					

**The following prep procedures were performed:**

Pesticides

MAL 08/28/98 1910 129863 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 2 of 2

Sample ID : SPORT0886-6

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
M 2	EPA 3550

### Notes:

The qualifiers in this report are defined as follows:

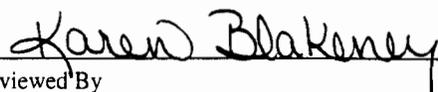
ND indicates that the analyte was not detected at a concentration greater than the detection limit.

J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

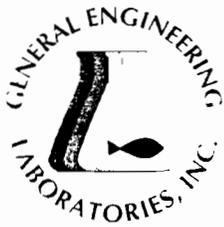
U indicates that the analyte was not detected at a concentration greater than the detection limit.

\* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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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: September 04, 1998

Page 1 of 2

Sample ID : SPORT0886-7  
 Lab ID : 9808778-07  
 Matrix : Soil  
 Date Collected : 08/20/98  
 Date Received : 08/21/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	U	ND	29.6	66.2	ug/kg	50.	SJ	09/01/98	1023	129863	1
4,4'-DDE	U	ND	27.6	66.2	ug/kg	50.					
4,4'-DDT	U	ND	40.1	66.2	ug/kg	50.					
Aldrin	U	ND	13.1	33.1	ug/kg	50.					
Dieldrin	U	ND	36.9	66.2	ug/kg	50.					
Endosulfan I	U	ND	22.8	33.1	ug/kg	50.					
Endosulfan II	U	ND	34.3	66.2	ug/kg	50.					
Endosulfan sulfate	U	ND	45.8	45.8	ug/kg	50.					
Endrin	U	ND	34.3	66.2	ug/kg	50.					
Endrin aldehyde	U	ND	50.0	66.2	ug/kg	50.					
Heptachlor	U	ND	21.8	33.1	ug/kg	50.					
Heptachlor epoxide	U	ND	10.9	33.1	ug/kg	50.					
Methoxychlor	U	ND	179	331	ug/kg	50.					
Toxaphene	U	ND	550	1660	ug/kg	50.					
alpha-BHC	U	ND	13.2	33.1	ug/kg	50.					
alpha-Chlordane	U	ND	22.2	33.1	ug/kg	50.					
beta-BHC	U	ND	19.5	33.1	ug/kg	50.					
delta-BHC	U	ND	14.2	33.1	ug/kg	50.					
gamma-BHC	U	ND	17.5	33.1	ug/kg	50.					
gamma-Chlordane	U	ND	23.5	33.1	ug/kg	50.					

**The following prep procedures were performed:**

Pesticides

MAL 08/28/98 1910 129863 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

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Sample ID : SPORT0886-7

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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.

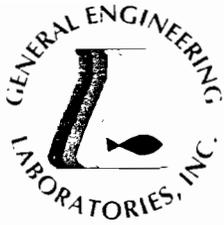
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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, Karen Blakeney at (803) 769-7386.

  
Reviewed By



# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

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Sample ID : SPORT0886-8  
 Lab ID : 9808778-08  
 Matrix : Soil  
 Date Collected : 08/20/98  
 Date Received : 08/21/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	U	ND	29.6	66.2	ug/kg	50.	SJ	09/01/98	1051	129863	1
4,4'-DDE	U	ND	27.6	66.2	ug/kg	50.					
4,4'-DDT	U	ND	40.1	66.2	ug/kg	50.					
Aldrin	U	ND	13.1	33.1	ug/kg	50.					
Dieldrin	U	ND	36.9	66.2	ug/kg	50.					
Endosulfan I	U	ND	22.8	33.1	ug/kg	50.					
Endosulfan II	U	ND	34.3	66.2	ug/kg	50.					
Endosulfan sulfate	U	ND	45.8	45.8	ug/kg	50.					
Endrin	U	ND	34.3	66.2	ug/kg	50.					
Endrin aldehyde	U	ND	50.0	66.2	ug/kg	50.					
Heptachlor	U	ND	21.8	33.1	ug/kg	50.					
Heptachlor epoxide	U	ND	10.9	33.1	ug/kg	50.					
Methoxychlor	U	ND	179	331	ug/kg	50.					
Toxaphene	U	ND	550	1660	ug/kg	50.					
alpha-BHC	U	ND	13.2	33.1	ug/kg	50.					
alpha-Chlordane	U	ND	22.2	33.1	ug/kg	50.					
beta-BHC	U	ND	19.5	33.1	ug/kg	50.					
delta-BHC	U	ND	14.2	33.1	ug/kg	50.					
gamma-BHC	U	ND	17.5	33.1	ug/kg	50.					
gamma-Chlordane	U	ND	23.5	33.1	ug/kg	50.					

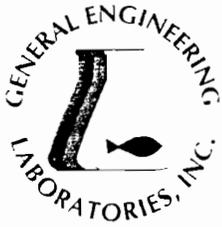
**The following prep procedures were performed:**

Pesticides

MAL 08/28/98 1910 129863 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

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Sample ID : SPORT0886-8

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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.

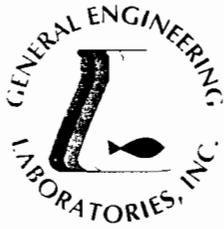
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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, Karen Blakeney at (803) 769-7386.

  
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# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

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Sample ID : SPORT0886-9  
 Lab ID : 9808778-09  
 Matrix : Soil  
 Date Collected : 08/20/98  
 Date Received : 08/21/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	U	ND	29.6	66.2	ug/kg	50.	SJ	09/01/98	1118	129863	1
4,4'-DDE	U	ND	27.6	66.2	ug/kg	50.					
4,4'-DDT	U	ND	40.1	66.2	ug/kg	50.					
Aldrin	U	ND	13.1	33.1	ug/kg	50.					
Dieldrn	U	ND	36.9	66.2	ug/kg	50.					
Endosulfan I	U	ND	22.8	33.1	ug/kg	50.					
Endosulfan II	U	ND	34.3	66.2	ug/kg	50.					
Endosulfan sulfate	U	ND	45.8	45.8	ug/kg	50.					
Endrn	U	ND	34.3	66.2	ug/kg	50.					
Endrn aldehyde	U	ND	50.0	66.2	ug/kg	50.					
Heptachlor	U	ND	21.8	33.1	ug/kg	50.					
Heptachlor epoxide	U	ND	10.9	33.1	ug/kg	50.					
Methoxychlor	U	ND	179	331	ug/kg	50.					
Toxaphene	U	ND	550	1660	ug/kg	50.					
alpha-BHC	U	ND	13.2	33.1	ug/kg	50.					
alpha-Chlordane	U	ND	22.2	33.1	ug/kg	50.					
beta-BHC	U	ND	19.5	33.1	ug/kg	50.					
delta-BHC	U	ND	14.2	33.1	ug/kg	50.					
gamma-BHC	U	ND	17.5	33.1	ug/kg	50.					
gamma-Chlordane	U	ND	23.5	33.1	ug/kg	50.					

**The following prep procedures were performed:**

Pesticides

MAL 08/28/98 1910 129863 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

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Sample ID : SPORT0886-9

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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, Karen Blakeney at (803) 769-7386.

  
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# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

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Sample ID : SPORT0886-10  
 Lab ID : 9808778-10  
 Matrix : Soil  
 Date Collected : 08/20/98  
 Date Received : 08/21/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	U	ND	29.6	66.2	ug/kg	50.	SJ	09/01/98	1145	129863	1
4,4'-DDE	U	ND	27.6	66.2	ug/kg	50.					
4,4'-DDT	U	ND	40.1	66.2	ug/kg	50.					
Aldrin	U	ND	13.1	33.1	ug/kg	50.					
Dieldrin	U	ND	36.9	66.2	ug/kg	50.					
Endosulfan I	U	ND	22.8	33.1	ug/kg	50.					
Endosulfan II	U	ND	34.3	66.2	ug/kg	50.					
Endosulfan sulfate	U	ND	45.8	45.8	ug/kg	50.					
Endrin	U	ND	34.3	66.2	ug/kg	50.					
Endrin aldehyde	U	ND	50.0	66.2	ug/kg	50.					
Heptachlor	U	ND	21.8	33.1	ug/kg	50.					
Heptachlor epoxide	U	ND	10.9	33.1	ug/kg	50.					
Methoxychlor	U	ND	179	331	ug/kg	50.					
Toxaphene	U	ND	550	1660	ug/kg	50.					
alpha-BHC	U	ND	13.2	33.1	ug/kg	50.					
alpha-Chlordane	U	ND	22.2	33.1	ug/kg	50.					
beta-BHC	U	ND	19.5	33.1	ug/kg	50.					
delta-BHC	U	ND	14.2	33.1	ug/kg	50.					
gamma-BHC	U	ND	17.5	33.1	ug/kg	50.					
gamma-Chlordane	U	ND	23.5	33.1	ug/kg	50.					

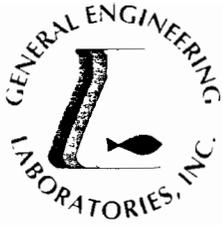
**The following prep procedures were performed:**

Pesticides

MAL 08/28/98 1910 129863 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

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Sample ID : SPORT0886-10

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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.

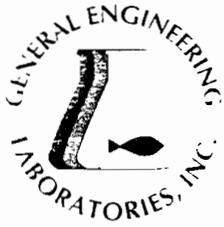
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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, Karen Blakeney at (803) 769-7386.

  
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# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 1 of 2

Sample ID : SPORT0886-11  
 Lab ID : 9808778-11  
 Matrix : Soil  
 Date Collected : 08/20/98  
 Date Received : 08/21/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		134	29.6	66.2	ug/kg	50.	SJ	09/01/98	1239	129863	1
4,4'-DDE	U	ND	27.6	66.2	ug/kg	50.					
4,4'-DDT	U	ND	40.1	66.2	ug/kg	50.					
Aldrin	U	ND	13.1	33.1	ug/kg	50.					
Dieldrin	U	ND	36.9	66.2	ug/kg	50.					
Endosulfan I	U	ND	22.8	33.1	ug/kg	50.					
Endosulfan II	U	ND	34.3	66.2	ug/kg	50.					
Endosulfan sulfate	U	ND	45.8	45.8	ug/kg	50.					
Endrin	U	ND	34.3	66.2	ug/kg	50.					
Endrin aldehyde	U	ND	50.0	66.2	ug/kg	50.					
Heptachlor	U	ND	21.8	33.1	ug/kg	50.					
Heptachlor epoxide	U	ND	10.9	33.1	ug/kg	50.					
Methoxychlor	U	ND	179	331	ug/kg	50.					
Toxaphene	U	ND	550	1660	ug/kg	50.					
alpha-BHC	U	ND	13.2	33.1	ug/kg	50.					
alpha-Chlordane	U	ND	22.2	33.1	ug/kg	50.					
beta-BHC	U	ND	19.5	33.1	ug/kg	50.					
delta-BHC	U	ND	14.2	33.1	ug/kg	50.					
gamma-BHC	U	ND	17.5	33.1	ug/kg	50.					
gamma-Chlordane	U	ND	23.5	33.1	ug/kg	50.					

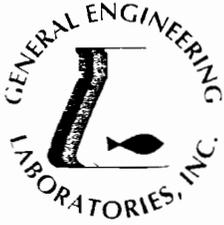
**The following prep procedures were performed:**

Pesticides

MAL 08/28/98 1910 129863 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 2 of 2

Sample ID : SPORT0886-11

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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.

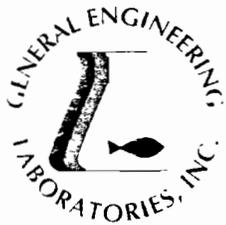
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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.

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# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 1 of 2

Sample ID : SPORT0886-12  
Lab ID : 9808778-12  
Matrix : Soil  
Date Collected : 08/20/98  
Date Received : 08/21/98  
Priority : Routine  
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	U	ND	29.6	66.2	ug/kg	50.	SJ	09/01/98	1306	129863	1
4,4'-DDE	U	ND	27.6	66.2	ug/kg	50.					
4,4'-DDT	U	ND	40.1	66.2	ug/kg	50.					
Aldrin	U	ND	13.1	33.1	ug/kg	50.					
Dieldrin	U	ND	36.9	66.2	ug/kg	50.					
Endosulfan I	U	ND	22.8	33.1	ug/kg	50.					
Endosulfan II	U	ND	34.3	66.2	ug/kg	50.					
Endosulfan sulfate	U	ND	45.8	45.8	ug/kg	50.					
Endrin	U	ND	34.3	66.2	ug/kg	50.					
Endrin aldehyde	U	ND	50.0	66.2	ug/kg	50.					
Heptachlor	U	ND	21.8	33.1	ug/kg	50.					
Heptachlor epoxide	U	ND	10.9	33.1	ug/kg	50.					
Methoxychlor	U	ND	179	331	ug/kg	50.					
Toxaphene	U	ND	550	1660	ug/kg	50.					
alpha-BHC	U	ND	13.2	33.1	ug/kg	50.					
alpha-Chlordane	U	ND	22.2	33.1	ug/kg	50.					
beta-BHC	U	ND	19.5	33.1	ug/kg	50.					
delta-BHC	U	ND	14.2	33.1	ug/kg	50.					
gamma-BHC	U	ND	17.5	33.1	ug/kg	50.					
gamma-Chlordane	U	ND	23.5	33.1	ug/kg	50.					

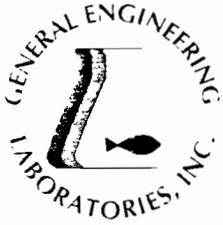
### The following prep procedures were performed:

Pesticides

MAL 08/28/98 1910 129863 2

### Comments:





# 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: September 04, 1998

Page 2 of 2

Sample ID : SPORT0886-12

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
M 2	EPA 3550

### Notes:

The qualifiers in this report are defined as follows:

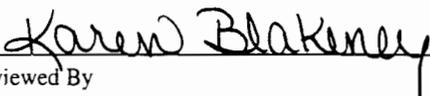
ND indicates that the analyte was not detected at a concentration greater than the detection limit.

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, Karen Blakeney at (803) 769-7386.

  
Reviewed By

QC Summary Report

Project Description SUPSHIP-Portsmouth Detachment

CC NPWC00197

Lab Sample ID: 98087787

Report Date: September 10, 1998

Page 1 of 2

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
<b>Extractable Organics</b>													
QC536883	BLANK	129863											
4,4'-DDT						0.00	ug/kg				SJ	09/01/98	0217
Aldrin						0.00	ug/kg						
Dieldrin						0.00	ug/kg						
Endrin						0.00	ug/kg						
Heptachlor						0.00	ug/kg						
gamma-BHC						0.00	ug/kg						
*4CMX							ug/kg		55.0	(41.0 - 133)			
*Decachlorobiphenyl							ug/kg		120	(47.0 - 125)			
4,4'-DDD						0.00	ug/kg						
4,4'-DDE						0.00	ug/kg						
Endosulfan I						0.00	ug/kg						
Endosulfan II						0.00	ug/kg						
Endosulfan sulfate						0.00	ug/kg						
Endrin aldehyde						0.00	ug/kg						
Heptachlor epoxide						0.00	ug/kg						
Methoxychlor						0.00	ug/kg						
Toxaphene						0.00	ug/kg						
alpha-BHC						0.00	ug/kg						
alpha-Chlordane						0.00	ug/kg						
beta-BHC						0.00	ug/kg						
delta-BHC						0.00	ug/kg						
gamma-Chlordane						0.00	ug/kg						
QC536884	LCS	129863											
4,4'-DDT			8.28			6.72	ug/kg		81.2	(55.0 - 127)	SJ	09/01/98	0244
Aldrin			3.31			1.79	ug/kg		54.0	(48.0 - 129)			
Dieldrin			8.28			5.53	ug/kg		66.8	(51.0 - 122)			
Endrin			8.28			8.28	ug/kg		100	(53.0 - 132)			
Heptachlor			3.31			2.22	ug/kg		67.0	(52.0 - 133)			
gamma-BHC			3.31			1.85	ug/kg		56.0	(55.0 - 118)			
*4CMX			6.62			4.17	ug/kg		63.0	(41.0 - 133)			
*Decachlorobiphenyl			6.62			7.85	ug/kg		119	(47.0 - 125)			

QC Summary Report

Project Description SUPSHIP-Portsmouth Detachment

CC: NPWC(00197

Lab. Sample ID 9808778%

Report Date September 10, 1998

Page 2 of 2

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
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Notes

The qualifiers in this report are defined as follows.

J indicates presence of analyte < RL (Report Limit)

U indicates presence of analyte < DU (Detect Limit)

n/a indicates that spike recovery limits do not apply when

sample concentration exceeds spike conc by a factor of 4 or more





# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 1 of 2

Sample ID : SPORT0886-13  
Lab ID : 9808828-01  
Matrix : Soil  
Date Collected : 08/20/98  
Date Received : 08/24/98  
Priority : Routine  
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	U	ND	31.0	133	ug/kg	100	JLS	08/30/98	0953	129526	1
4,4'-DDE	U	ND	13.0	133	ug/kg	100					
4,4'-DDT	U	ND	15.0	133	ug/kg	100					
Aldrin	U	ND	17.0	66.6	ug/kg	100					
Dieldrin	U	ND	25.0	133	ug/kg	100					
Endosulfan I	U	ND	5.59	66.6	ug/kg	100					
Endosulfan II	U	ND	18.0	133	ug/kg	100					
Endosulfan sulfate	U	ND	36.0	66.6	ug/kg	100					
Endrin	U	ND	25.0	133	ug/kg	100					
Endrin aldehyde	U	ND	48.0	133	ug/kg	100					
Heptachlor	U	ND	8.89	66.6	ug/kg	100					
Heptachlor epoxide	U	ND	13.0	66.6	ug/kg	100					
Methoxychlor	U	ND	265	666	ug/kg	100					
Toxaphene	U	ND	876	3330	ug/kg	100					
alpha-BHC	U	ND	15.0	66.6	ug/kg	100					
alpha-Chlordane	U	ND	13.0	66.6	ug/kg	100					
beta-BHC	U	ND	20.0	66.6	ug/kg	100					
delta-BHC	U	ND	16.0	66.6	ug/kg	100					
gamma-BHC	U	ND	14.0	66.6	ug/kg	100					
gamma-Chlordane	U	ND	17.0	66.6	ug/kg	100					

### The following prep procedures were performed:

Pesticides

RDH 08/25/98 2300 129526 2

### Comments:

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

(843) 556-8171 • Fax (843) 766-1178



\*9808828-01\*



# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 2 of 2

Sample ID : SPORT0886-13

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	PEST-8081A	109.	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	143.*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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, Karen Blakeney at (803) 769-7386.

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# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 1 of 2

Sample ID : SPORT0886-14  
Lab ID : 9808828-02  
Matrix : Soil  
Date Collected : 08/20/98  
Date Received : 08/24/98  
Priority : Routine  
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	U	ND	31.0	133	ug/kg	100	JLS	08/30/98	1227	129526	1
4,4'-DDE	U	ND	13.0	133	ug/kg	100					
4,4'-DDT	U	ND	15.0	133	ug/kg	100					
Aldrin	U	ND	17.0	66.6	ug/kg	100					
Dieldrin	U	ND	25.0	133	ug/kg	100					
Endosulfan I	U	ND	5.59	66.6	ug/kg	100					
Endosulfan II	U	ND	18.0	133	ug/kg	100					
Endosulfan sulfate	U	ND	36.0	66.6	ug/kg	100					
Endrin	U	ND	25.0	133	ug/kg	100					
Endrin aldehyde	U	ND	48.0	133	ug/kg	100					
Heptachlor	U	ND	8.89	66.6	ug/kg	100					
Heptachlor epoxide	U	ND	13.0	66.6	ug/kg	100					
Methoxychlor	U	ND	265	666	ug/kg	100					
Toxaphene	U	ND	876	3330	ug/kg	100					
alpha-BHC	U	ND	15.0	66.6	ug/kg	100					
alpha-Chlordane	U	ND	13.0	66.6	ug/kg	100					
beta-BHC	U	ND	20.0	66.6	ug/kg	100					
delta-BHC	U	ND	16.0	66.6	ug/kg	100					
gamma-BHC	U	ND	14.0	66.6	ug/kg	100					
gamma-Chlordane	U	ND	17.0	66.6	ug/kg	100					

### The following prep procedures were performed:

Pesticides

RDH 08/25/98 2300 129526 2

### Comments:

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\*9808828-02\*



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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: September 04, 1998

Page 2 of 2

Sample ID : SPORT0886-14

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125)

M = Method	Method-Description
M 1	EPA 8081A
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.

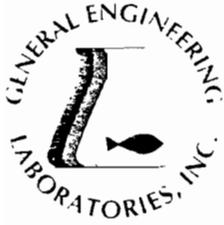
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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, Karen Blakeney at (803) 769-7386.

  
Reviewed By



# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 1 of 2

Sample ID : SPORT0886-15  
 Lab ID : 9808828-03  
 Matrix : Soil  
 Date Collected : 08/20/98  
 Date Received : 08/24/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	U	ND	31.0	133	ug/kg	100	JLS	08/30/98	1253	129526	1
4,4'-DDE	U	ND	13.0	133	ug/kg	100					
4,4'-DDT	U	ND	15.0	133	ug/kg	100					
Aldrin	U	ND	17.0	66.6	ug/kg	100					
Dieldrin	U	ND	25.0	133	ug/kg	100					
Endosulfan I	U	ND	5.59	66.6	ug/kg	100					
Endosulfan II	U	ND	18.0	133	ug/kg	100					
Endosulfan sulfate	U	ND	36.0	66.6	ug/kg	100					
Endrin	U	ND	25.0	133	ug/kg	100					
Endrin aldehyde	U	ND	48.0	133	ug/kg	100					
Heptachlor	U	ND	8.89	66.6	ug/kg	100					
Heptachlor epoxide	U	ND	13.0	66.6	ug/kg	100					
Methoxychlor	U	ND	265	666	ug/kg	100					
Toxaphene	U	ND	876	3330	ug/kg	100					
alpha-BHC	U	ND	15.0	66.6	ug/kg	100					
alpha-Chlordane	U	ND	13.0	66.6	ug/kg	100					
beta-BHC	U	ND	20.0	66.6	ug/kg	100					
delta-BHC	U	ND	16.0	66.6	ug/kg	100					
gamma-BHC	U	ND	14.0	66.6	ug/kg	100					
gamma-Chlordane	U	ND	17.0	66.6	ug/kg	100					

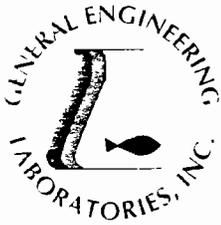
**The following prep procedures were performed:**

Pesticides

RDH 08/25/98 2300 129526 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 2 of 2

Sample ID : SPORT0886-15

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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, Karen Blakeney at (803) 769-7386.

*Karen Blakeney*  
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# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 1 of 2

Sample ID : SPORT0886-16  
 Lab ID : 9808828-04  
 Matrix : Soil  
 Date Collected : 08/20/98  
 Date Received : 08/24/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	U	ND	31.0	133	ug/kg	100	JLS	08/30/98	1318	129526	1
4,4'-DDE	U	ND	13.0	133	ug/kg	100					
4,4'-DDT	U	ND	15.0	133	ug/kg	100					
Aldrin	U	ND	17.0	66.6	ug/kg	100					
Dieldrin	U	ND	25.0	133	ug/kg	100					
Endosulfan I	U	ND	5.59	66.6	ug/kg	100					
Endosulfan II	U	ND	18.0	133	ug/kg	100					
Endosulfan sulfate	U	ND	36.0	66.6	ug/kg	100					
Endrin	U	ND	25.0	133	ug/kg	100					
Endrin aldehyde	U	ND	48.0	133	ug/kg	100					
Heptachlor	U	ND	8.89	66.6	ug/kg	100					
Heptachlor epoxide	U	ND	13.0	66.6	ug/kg	100					
Methoxychlor	U	ND	265	666	ug/kg	100					
Toxaphene	U	ND	876	3330	ug/kg	100					
alpha-BHC	U	ND	15.0	66.6	ug/kg	100					
alpha-Chlordane	U	ND	13.0	66.6	ug/kg	100					
beta-BHC	U	ND	20.0	66.6	ug/kg	100					
delta-BHC	U	ND	16.0	66.6	ug/kg	100					
gamma-BHC	U	ND	14.0	66.6	ug/kg	100					
gamma-Chlordane	U	ND	17.0	66.6	ug/kg	100					

**The following prep procedures were performed:**

Pesticides

RDH 08/25/98 2300 129526 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 2 of 2

Sample ID : SPORT0886-16

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
M 2	EPA 3550

### Notes:

The qualifiers in this report are defined as follows:

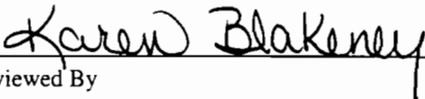
ND indicates that the analyte was not detected at a concentration greater than the detection limit.

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.

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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: September 04, 1998

Page 1 of 2

Sample ID : SPORT0886-17  
 Lab ID : 9808828-05  
 Matrix : Soil  
 Date Collected : 08/20/98  
 Date Received : 08/24/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		7630	310	1330	ug/kg	1000	JLS	08/30/98	1344	129526	1
4,4'-DDE	J	305	130	1330	ug/kg	1000					
4,4'-DDT	J	170	150	1330	ug/kg	1000					
Aldrin	U	ND	170	666	ug/kg	1000					
Dieldrin	U	ND	250	1330	ug/kg	1000					
Endosulfan I	U	ND	55.9	666	ug/kg	1000					
Endosulfan II	U	ND	180	1330	ug/kg	1000					
Endosulfan sulfate	U	ND	360	666	ug/kg	1000					
Endrin	U	ND	250	1330	ug/kg	1000					
Endrin aldehyde	U	ND	480	1330	ug/kg	1000					
Heptachlor	U	ND	88.9	666	ug/kg	1000					
Heptachlor epoxide	U	ND	130	666	ug/kg	1000					
Methoxychlor	U	ND	2650	6660	ug/kg	1000					
Toxaphene	U	ND	8760	33300	ug/kg	1000					
alpha-BHC	U	ND	150	666	ug/kg	1000					
alpha-Chlordane	U	ND	130	666	ug/kg	1000					
beta-BHC	U	ND	200	666	ug/kg	1000					
delta-BHC	U	ND	160	666	ug/kg	1000					
gamma-BHC	U	ND	140	666	ug/kg	1000					
gamma-Chlordane	U	ND	170	666	ug/kg	1000					

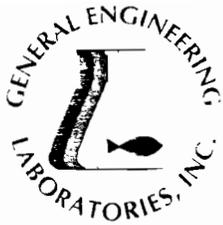
**The following prep procedures were performed:**

Pesticides

RDH 08/25/98 2300 129526 2

**Comments:**





# 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: September 04, 1998

Page 2 of 2

Sample ID : SPORT0886-17

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	---

A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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, Karen Blakeney at (803) 769-7386.

  
 Reviewed By



# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 1 of 2

Sample ID : SPORT0886-18  
 Lab ID : 9808828-06  
 Matrix : Soil  
 Date Collected : 08/20/98  
 Date Received : 08/24/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	J	61.6	31.0	133	ug/kg	100	JLS	08/30/98	1410	129526	1
4,4'-DDE	U	ND	13.0	133	ug/kg	100					
4,4'-DDT	U	ND	15.0	133	ug/kg	100					
Aldrin	U	ND	17.0	66.6	ug/kg	100					
Dieldrin	U	ND	25.0	133	ug/kg	100					
Endosulfan I	U	ND	5.59	66.6	ug/kg	100					
Endosulfan II	U	ND	18.0	133	ug/kg	100					
Endosulfan sulfate	U	ND	36.0	66.6	ug/kg	100					
Endrin	U	ND	25.0	133	ug/kg	100					
Endrin aldehyde	U	ND	48.0	133	ug/kg	100					
Heptachlor	U	ND	8.89	66.6	ug/kg	100					
Heptachlor epoxide	U	ND	13.0	66.6	ug/kg	100					
Methoxychlor	U	ND	265	666	ug/kg	100					
Toxaphene	U	ND	876	3330	ug/kg	100					
alpha-BHC	U	ND	15.0	66.6	ug/kg	100					
alpha-Chlordane	U	ND	13.0	66.6	ug/kg	100					
beta-BHC	U	ND	20.0	66.6	ug/kg	100					
delta-BHC	U	ND	16.0	66.6	ug/kg	100					
gamma-BHC	U	ND	14.0	66.6	ug/kg	100					
gamma-Chlordane	U	ND	17.0	66.6	ug/kg	100					

**The following prep procedures were performed:**

Pesticides

RDH 08/25/98 2300 129526 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: September 04, 1998

Page 2 of 2

Sample ID : SPORT0886-18

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	---

A dilution was required for the Pesticides analysis due to matrix interference. As a result, the detection limits are elevated.

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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.

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\* 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.

Reviewed By Karen Blakeney

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Lab. Sample ID: 9808828%

Report Date: September 14, 1998

Page 1 of 2

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
<b>Extractable Organics</b>													
QC535581	BLANK	129526											
4,4'-DDT						0.00	ug/kg				JLS	08/26/98	1512
Aldnn						0.00	ug/kg						
Dieldnn						0.00	ug/kg						
Endnn						0.00	ug/kg						
Heptachlor						0.00	ug/kg						
gamma-BHC						0.00	ug/kg						
*4CMX							ug/kg		96.4	(41.0 - 133.)			
*Decachlorobiphenyl							ug/kg		111	(47.0 - 125.)			
4,4'-DDD						0.00	ug/kg						
4,4'-DDE						0.00	ug/kg						
Endosulfan I						0.00	ug/kg						
Endosulfan II						0.00	ug/kg						
Endosulfan sulfate						0.00	ug/kg						
Endnn aldehyde						0.00	ug/kg						
Heptachlor epoxide						0.00	ug/kg						
Methoxychlor						0.00	ug/kg						
Toxaphene						0.00	ug/kg						
alpha-BHC						0.00	ug/kg						
alpha-Chlordane						0.00	ug/kg						
beta-BHC						0.00	ug/kg						
delta-BHC						0.00	ug/kg						
gamma-Chlordane						0.00	ug/kg						
QC535582	LCS	129526											
4,4'-DDT			8.33			5.93	ug/kg		71.2	(55.0 - 127.)	JLS	08/26/98	1538
Aldnn			3.33			2.90	ug/kg		87.1	(48.0 - 129.)			
Dieldnn			8.33			6.67	ug/kg		80.0	(51.0 - 122.)			
Endnn			8.33			8.20	ug/kg		98.4	(53.0 - 132.)			
Heptachlor			3.33			3.24	ug/kg		97.3	(52.0 - 133.)			
gamma-BHC			3.33			2.81	ug/kg		84.4	(55.0 - 118.)			
*4CMX			6.67			5.63	ug/kg		84.4	(41.0 - 133.)			
*Decachlorobiphenyl			6.67			6.10	ug/kg		91.4	(47.0 - 125.)			
QC535583	9808782-07MS	129526											
4,4'-DDT			8.33	0.00		8.55	ug/kg		87.2	(50.0 - 140.)	JLS	08/26/98	1604
Aldnn			3.33	0.00		3.90	ug/kg		99.6	(46.0 - 143.)			
Dieldnn			8.33	0.00		8.31	ug/kg		84.8	(45.0 - 132.)			
Endnn			8.33	0.00		11.3	ug/kg		116	(47.0 - 144.)			
Heptachlor			3.33	0.00		4.20	ug/kg		107	(48.0 - 141.)			
gamma-BHC			3.33	0.00		3.59	ug/kg		91.7	(49.0 - 145.)			

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Lab. Sample ID: 9808828%

Report Date: September 14, 1998

Page 2 of 2

Sample/Parameter	Type	Batch	NOM	Sample	Quai	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
*4CMX			6.67			6.51	ug/kg		83.0	(41.0 - 133.)	JLS	08/26/98	1604
*Decachlorobiphenyl			6.67			8.24	ug/kg		105	(47.0 - 125.)			
QC535584		9808782-07MSD	129526										
4,4'-DDT			8.33	0.00		6.94	ug/kg	20.8	70.8	(0.00 - 40.0)	JLS	08/26/98	1629
Aldrin			3.33	0.00		3.71	ug/kg	4.94	94.8	(0.00 - 41.0)			
Dieldrin			8.33	0.00		7.73	ug/kg	7.33	78.8	(0.00 - 32.0)			
Endrin			8.33	0.00		10.3	ug/kg	9.80	105	(0.00 - 33.0)			
Heptachlor			3.33	0.00		3.80	ug/kg	9.80	97.1	(0.00 - 34.0)			
gamma-BHC			3.33	0.00		3.29	ug/kg	8.66	84.1	(0.00 - 31.0)			
*4CMX			6.67			6.24	ug/kg		79.5	(41.0 - 133.)			
*Decachlorobiphenyl			6.67			7.06	ug/kg		90.0	(47.0 - 125.)			

Notes:

The qualifiers in this report are defined as follows:

J indicates presence of analyte < RL (Report Limit)

U indicates presence of analyte < DL (Detect Limit)

n/a indicates that spike recovery limits do not apply when

sample concentration exceeds spike conc by a factor of 4 or more



KBB

N<sup>o</sup> NC 00197

General Engineering Lab. Services, Inc.  
2040 Savage Road  
Charleston, South Carolina 29407  
P.O. Box 30712  
Charleston, South Carolina 29417  
(803) 556-8171

Page 1 of 2

# CHAIN OF CUSTODY RECORD

9808778<sup>o</sup> 6

Client Name/Facility Name SPORTEN V DETCHASN				# OF CONTAINERS	SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods														Use F or P in the boxes to indicate whether sample was filtered and/or preserved  <b>CCL 34874</b>  <b>Remarks</b>	
Collected by/Company SPORTEN V DETCHASN					pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method Required	METALS - specify	ORGANIC CHLORINE Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide		Coliform - specify type
SAMPLE ID	DATE	TIME	WELL SOIL COMP GRAB																	
01 SPURTO 886-1	8-20-98	1102	X	X	1						X								NBCA 0385012	
02 SPURTO 886-2	8-20-98	1115	X	X	1						X								NBCA 0385013	
03 SPURTO 886-3	8-20-98	1124	X	X	1						X								NBCA 0385014	
04 SPURTO 886-4	8-20-98	1130	X	X	1						X								NBCA 0385015	
05 SPURTO 886-5	8-20-98	1139	X	X	1						X								NBCA 0385016	
06 SPURTO 886-6	8-20-98	1144	X	X	1						X								NBCA 0385017	
07 SPURTO 886-7	8-20-98	1152	X	X	1						X								NBCA 0385018	
08 SPURTO 886-8	8-20-98	1200	X	X	1						X								NBCA 0385019	
09 SPURTO 886-9	8-20-98	1209	X	X	1						X								NBCA 0385020	
10 SPURTO 886-10	8-20-98	1215	X	X	1						X								NBCA 0385021	
11 SPURTO 886-11	8-20-98	1347	X	X	1						X								NBCA 0385022	
12 SPURTO 886-12	8-20-98	1351	X	X	1						X								NBCA 0385023	
Relinquished by:		Date:	Time:	Received by:		Relinquished by:		Date:	Time:	Received by:										
[Signature]		8/21/98	1515	[Signature]		[Signature]		8/21/98	1525	[Signature]										
Relinquished by:		Date:	Time:	Received by lab by:		Date:	Time:	Remarks:												
[Signature]		8/21/98	1525	Karen Blakemey		8/21/98	1525													

White = sample collector    Yellow = file    Pink = with report

Z  
BB

NPWC00197

General Engineering Laboratories, Inc.  
2040 Savage Road  
Charleston, South Carolina 29407  
P.O. Box 30712  
Charleston, South Carolina 29417  
(803) 556-8171

# CHAIN OF CUSTODY RECORD

9808878%

Page 2 of 2 UV

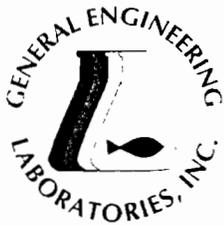
Client Name/Facility Name SPORTS ENNU DETCHASW		SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods														Use F or P in the boxes to indicate whether sample was filtered and/or preserved	
Collected by/Company SPORTS ENNU DETCHASW		pH, conductivity	TOC/DOC	TOX	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
SAMPLE ID	DATE															TIME	
SPORT0886-13	08-20-98	1334	X	X					X								NOCA 3850 24 1
SPORT0886-14	8-20-98	1339	X	X					X								NOCA 3850 25 1
SPORT0886-15	8-20-98	1319	X	X					X								NOCA 3850 26 1
SPORT0886-16	8-20-98	1339	X	X					X								NOCA 3850 27 1
SPORT0886-17	8-20-98	1304	X	X					X								NOCA 3850 28 1
SPORT0886-18	8-20-98	1314	X	X					X								NOCA 3850 29 1

CCL 34874

1  
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6

Relinquished by: <i>[Signature]</i>	Date: 8/20/98	Time: 12:15	Received by: <i>[Signature]</i>	Relinquished by: <i>[Signature]</i>	Date: 8/24/98	Time: 1:50	Received by: <i>[Signature]</i>
Relinquished by: <i>[Signature]</i>	Date: 8/24/98	Time: 1:00	Received by lab by: <i>[Signature]</i>	Date: 8/24/98	Time: 1:00	Remarks:	

White = sample collector    Yellow = file    Pink = with report



# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

Page 1 of 2

Sample ID : 99 SPORT0015-01  
 Lab ID : 9810853-01  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	J	99.9	59.6	133	ug/kg	100	JLS	11/02/98	2135	134429	1
4,4'-DDE		546	55.6	133	ug/kg	100					
4,4'-DDT		376	80.6	133	ug/kg	100					
Aldrin	U	ND	26.3	66.6	ug/kg	100					
Dieldrin	U	ND	74.3	133	ug/kg	100					
Endosulfan I	U	ND	46.0	66.6	ug/kg	100					
Endosulfan II	U	ND	68.9	133	ug/kg	100					
Endosulfan sulfate	U	ND	92.2	92.2	ug/kg	100					
Endrin	U	ND	68.9	133	ug/kg	100					
Endrin aldehyde	U	ND	101	133	ug/kg	100					
Heptachlor	U	ND	44.0	66.6	ug/kg	100					
Heptachlor epoxide	U	ND	22.0	66.6	ug/kg	100					
Methoxychlor	U	ND	359	666	ug/kg	100					
Toxaphene	U	ND	1110	3330	ug/kg	100					
alpha-BHC	U	ND	26.6	66.6	ug/kg	100					
alpha-Chlordane	U	ND	44.6	66.6	ug/kg	100					
beta-BHC	U	ND	39.3	66.6	ug/kg	100					
delta-BHC	U	ND	28.6	66.6	ug/kg	100					
gamma-BHC	U	ND	35.3	66.6	ug/kg	100					
gamma-Chlordane	U	ND	47.3	66.6	ug/kg	100					

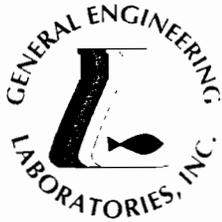
**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

Page 2 of 2

Sample ID : 99 SPORT0015-01

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	---

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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.

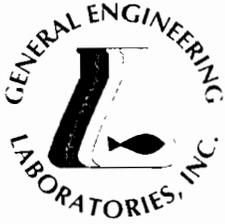
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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, Karen Blakeney at (843) 769-7386.

*Karen Blakeney*  
 Reviewed By



# 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: November 03, 1998

Page 1 of 2

Sample ID : 99 SPORT0015-02  
 Lab ID : 9810853-02  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	J	24.0	11.9	26.6	ug/kg	20.	JLS	11/02/98	2201	134429	1
4,4'-DDE		30.6	11.1	26.6	ug/kg	20.					
4,4'-DDT		160	16.1	26.6	ug/kg	20.					
Aldrin	U	ND	5.26	13.3	ug/kg	20.					
Dieldrin	U	ND	14.9	26.6	ug/kg	20.					
Endosulfan I	U	ND	9.19	13.3	ug/kg	20.					
Endosulfan II	U	ND	13.8	26.6	ug/kg	20.					
Endosulfan sulfate	U	ND	18.4	18.4	ug/kg	20.					
Endrin	U	ND	13.8	26.6	ug/kg	20.					
Endrin aldehyde	U	ND	20.1	26.6	ug/kg	20.					
Heptachlor	U	ND	8.79	13.3	ug/kg	20.					
Heptachlor epoxide	U	ND	4.40	13.3	ug/kg	20.					
Methoxychlor	U	ND	71.9	133	ug/kg	20.					
Toxaphene	U	ND	222	666	ug/kg	20.					
alpha-BHC	U	ND	5.33	13.3	ug/kg	20.					
alpha-Chlordane	U	ND	8.92	13.3	ug/kg	20.					
beta-BHC	U	ND	7.86	13.3	ug/kg	20.					
delta-BHC	U	ND	5.73	13.3	ug/kg	20.					
gamma-BHC	U	ND	7.06	13.3	ug/kg	20.					
gamma-Chlordane	U	ND	9.46	13.3	ug/kg	20.					

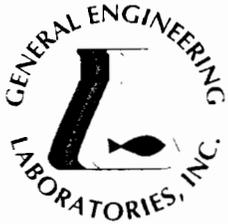
**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

Page 2 of 2

Sample ID : 99 SPORT0015-02

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	86.0	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	91.0	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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.

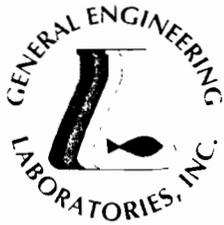
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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, Karen Blakeney at (843) 769-7386.

*Karen Blakeney*  
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# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

Page 1 of 2

Sample ID : 99 SPORT0015-03  
 Lab ID : 9810853-03  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	J	13.0	5.96	13.3	ug/kg	10.	JLS	11/02/98	2228	134429	1
4,4'-DDE		63.9	5.56	13.3	ug/kg	10.					
4,4'-DDT		46.0	8.06	13.3	ug/kg	10.					
Aldrin	U	ND	2.63	6.66	ug/kg	10.					
Dieldrin	U	ND	7.43	13.3	ug/kg	10.					
Endosulfan I	U	ND	4.60	6.66	ug/kg	10.					
Endosulfan II	U	ND	6.89	13.3	ug/kg	10.					
Endosulfan sulfate	U	ND	9.22	9.22	ug/kg	10.					
Endrin	U	ND	6.89	13.3	ug/kg	10.					
Endrin aldehyde	U	ND	10.1	13.3	ug/kg	10.					
Heptachlor	U	ND	4.40	6.66	ug/kg	10.					
Heptachlor epoxide	U	ND	2.20	6.66	ug/kg	10.					
Methoxychlor	U	ND	35.9	66.6	ug/kg	10.					
Toxaphene	U	ND	111	333	ug/kg	10.					
alpha-BHC	U	ND	2.66	6.66	ug/kg	10.					
alpha-Chlordane	U	ND	4.46	6.66	ug/kg	10.					
beta-BHC	U	ND	3.93	6.66	ug/kg	10.					
delta-BHC	U	ND	2.86	6.66	ug/kg	10.					
gamma-BHC	U	ND	3.53	6.66	ug/kg	10.					
gamma-Chlordane	J	5.00	4.73	6.66	ug/kg	10.					

**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

Page 2 of 2

Sample ID : 99 SPORT0015-03

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	PEST-8081A	64.0	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	59.0	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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.

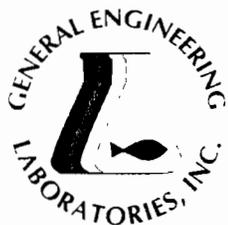
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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, Karen Blakeney at (843) 769-7386.

  
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# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

Page 1 of 2

Sample ID : 99 SPORT0015-04  
 Lab ID : 9810853-04  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	U	ND	5.96	13.3	ug/kg	10.	JLS	11/02/98	2254	134429	1
4,4'-DDE	U	ND	5.56	13.3	ug/kg	10.					
4,4'-DDT	U	ND	8.06	13.3	ug/kg	10.					
Aldrin	U	ND	2.63	6.66	ug/kg	10.					
Dieldrin	U	ND	7.43	13.3	ug/kg	10.					
Endosulfan I	U	ND	4.60	6.66	ug/kg	10.					
Endosulfan II	U	ND	6.89	13.3	ug/kg	10.					
Endosulfan sulfate	U	ND	9.22	9.22	ug/kg	10.					
Endrin	U	ND	6.89	13.3	ug/kg	10.					
Endrin aldehyde	U	ND	10.1	13.3	ug/kg	10.					
Heptachlor	U	ND	4.40	6.66	ug/kg	10.					
Heptachlor epoxide	U	ND	2.20	6.66	ug/kg	10.					
Methoxychlor	U	ND	35.9	66.6	ug/kg	10.					
Toxaphene	U	ND	111	333	ug/kg	10.					
alpha-BHC	U	ND	2.66	6.66	ug/kg	10.					
alpha-Chlordane	U	ND	4.46	6.66	ug/kg	10.					
beta-BHC	U	ND	3.93	6.66	ug/kg	10.					
delta-BHC	U	ND	2.86	6.66	ug/kg	10.					
gamma-BHC	U	ND	3.53	6.66	ug/kg	10.					
gamma-Chlordane	U	ND	4.73	6.66	ug/kg	10.					

**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

Page 2 of 2

Sample iD : 99 SPORT0015-04

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	68.0	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	75.0	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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.

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*Karen Blakeney*  
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# GENERAL ENGINEERING LABORATORIES

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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 Shp 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: November 03, 1998

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Sample ID : 99 SPORT0015-05  
 Lab ID : 9810853-05  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		66.6	29.8	66.6	ug/kg	50.	JLS	11/02/98	2321	134429	1
4,4'-DDE		123	27.8	66.6	ug/kg	50.					
4,4'-DDT		338	40.3	66.6	ug/kg	50.					
Aldrin	U	ND	13.2	33.3	ug/kg	50.					
Dieldrin	U	ND	37.1	66.6	ug/kg	50.					
Endosulfan I	U	ND	23.0	33.3	ug/kg	50.					
Endosulfan II	U	ND	34.5	66.6	ug/kg	50.					
Endosulfan sulfate	U	ND	46.1	46.1	ug/kg	50.					
Endrin	U	ND	34.5	66.6	ug/kg	50.					
Endrin aldehyde	U	ND	50.3	66.6	ug/kg	50.					
Heptachlor	U	ND	22.0	33.3	ug/kg	50.					
Heptachlor epoxide	U	ND	11.0	33.3	ug/kg	50.					
Methoxychlor	U	ND	180	333	ug/kg	50.					
Toxaphene	U	ND	554	1670	ug/kg	50.					
alpha-BHC	U	ND	13.3	33.3	ug/kg	50.					
alpha-Chlordane	U	ND	22.3	33.3	ug/kg	50.					
beta-BHC	U	ND	19.6	33.3	ug/kg	50.					
delta-BHC	U	ND	14.3	33.3	ug/kg	50.					
gamma-BHC	U	ND	17.6	33.3	ug/kg	50.					
gamma-Chlordane	U	ND	23.6	33.3	ug/kg	50.					

**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

Page 2 of 2

Sample ID : 99 SPORT0015-05

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	85.0	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	110.	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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.

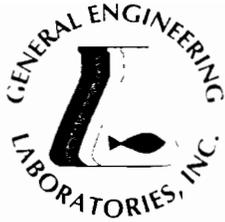
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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.

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# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

Page 1 of 2

Sample ID : 99 SPORT0015-06  
 Lab ID : 9810853-06  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		783	298	666	ug/kg	500	JLS	11/02/98	2347	134429	1
4,4'-DDE	U	ND	278	666	ug/kg	500					
4,4'-DDT	J	599	403	666	ug/kg	500					
Aldrin	U	ND	132	333	ug/kg	500					
Dieldrn	U	ND	371	666	ug/kg	500					
Endosulfan I	U	ND	230	333	ug/kg	500					
Endosulfan II	U	ND	345	666	ug/kg	500					
Endosulfan sulfate	U	ND	461	461	ug/kg	500					
Endrn	U	ND	345	666	ug/kg	500					
Endrin aldehyde	U	ND	503	666	ug/kg	500					
Heptachlor	U	ND	220	333	ug/kg	500					
Heptachlor epoxide	U	ND	110	333	ug/kg	500					
Methoxychlor	U	ND	1800	3330	ug/kg	500					
Toxaphene	U	ND	5540	16700	ug/kg	500					
alpha-BHC	U	ND	133	333	ug/kg	500					
alpha-Chlordane	U	ND	223	333	ug/kg	500					
beta-BHC	U	ND	196	333	ug/kg	500					
delta-BHC	U	ND	143	333	ug/kg	500					
gamma-BHC	U	ND	176	333	ug/kg	500					
gamma-Chlordane	U	ND	236	333	ug/kg	500					

**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

Page 2 of 2

Sample ID : 99 SPORT0015-06

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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.

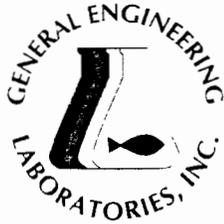
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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.

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*Karen Blakeney*  
 \_\_\_\_\_  
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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: November 03, 1998

Page 1 of 2

Sample ID : 99 SPORT0015-07  
 Lab ID : 9810853-07  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		193	59.6	133	ug/kg	100	JLS	11/03/98	0040	134429	1
4,4'-DDE		523	55.6	133	ug/kg	100					
4,4'-DDT		713	80.6	133	ug/kg	100					
Aldrin	U	ND	26.3	66.6	ug/kg	100					
Dieldrin	U	ND	74.3	133	ug/kg	100					
Endosulfan I	U	ND	46.0	66.6	ug/kg	100					
Endosulfan II	U	ND	68.9	133	ug/kg	100					
Endosulfan sulfate	U	ND	92.2	92.2	ug/kg	100					
Endrin	U	ND	68.9	133	ug/kg	100					
Endrin aldehyde	U	ND	101	133	ug/kg	100					
Heptachlor	U	ND	44.0	66.6	ug/kg	100					
Heptachlor epoxide	U	ND	22.0	66.6	ug/kg	100					
Methoxychlor	U	ND	359	666	ug/kg	100					
Toxaphene	U	ND	1110	3330	ug/kg	100					
alpha-BHC	U	ND	26.6	66.6	ug/kg	100					
alpha-Chlordane	U	ND	44.6	66.6	ug/kg	100					
beta-BHC	U	ND	39.3	66.6	ug/kg	100					
delta-BHC	U	ND	28.6	66.6	ug/kg	100					
gamma-BHC	U	ND	35.3	66.6	ug/kg	100					
gamma-Chlordane	J	50.9	47.3	66.6	ug/kg	100					

**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

Page 2 of 2

Sample ID : 99 SPORT0015-07

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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.

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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: November 03, 1998

Page 1 of 2

Sample ID : 99 SPORT0015-08  
 Lab ID : 9810853-08  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	J	5.98	2.98	6.66	ug/kg	5.0	JLS	11/03/98	0107	134429	1
4,4'-DDE		7.83	2.78	6.66	ug/kg	5.0					
4,4'-DDT		29.1	4.03	6.66	ug/kg	5.0					
Aldrin	U	ND	1.32	3.33	ug/kg	5.0					
Dieldrin	U	ND	3.71	6.66	ug/kg	5.0					
Endosulfan I	U	ND	2.30	3.33	ug/kg	5.0					
Endosulfan II	U	ND	3.45	6.66	ug/kg	5.0					
Endosulfan sulfate	U	ND	4.61	4.61	ug/kg	5.0					
Endrin	U	ND	3.45	6.66	ug/kg	5.0					
Endrin aldehyde	U	ND	5.03	6.66	ug/kg	5.0					
Heptachlor	U	ND	2.20	3.33	ug/kg	5.0					
Heptachlor epoxide	U	ND	1.10	3.33	ug/kg	5.0					
Methoxychlor	U	ND	18.0	33.3	ug/kg	5.0					
Toxaphene	U	ND	55.4	167	ug/kg	5.0					
alpha-BHC	U	ND	1.33	3.33	ug/kg	5.0					
alpha-Chlordane	U	ND	2.23	3.33	ug/kg	5.0					
beta-BHC	U	ND	1.96	3.33	ug/kg	5.0					
delta-BHC	U	ND	1.43	3.33	ug/kg	5.0					
gamma-BHC	U	ND	1.76	3.33	ug/kg	5.0					
gamma-Chlordane	U	ND	2.36	3.33	ug/kg	5.0					

The following prep procedures were performed:

Pesticides

RDH 10/26/98 1000 134429 2

Comments:





# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

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Sample ID : 99 SPORT0015-08

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	PEST-8081A	81.2	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	82.5	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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.

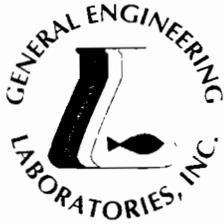
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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, Karen Blakeney at (843) 769-7386.

  
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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: November 03, 1998

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Sample ID : 99 SPORT0015-09  
 Lab ID : 9810853-09  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		8040	2980	6660	ug/kg	5000	JLS	11/03/98	1237	134429	1
4,4'-DDE	J	5880	2780	6660	ug/kg	5000					
4,4'-DDT		50900	4030	6660	ug/kg	5000					
Aldrin	U	ND	1320	3330	ug/kg	5000					
Dieldrin	U	ND	3710	6660	ug/kg	5000					
Endosulfan I	U	ND	2300	3330	ug/kg	5000					
Endosulfan II	U	ND	3450	6660	ug/kg	5000					
Endosulfan sulfate	U	ND	4610	4610	ug/kg	5000					
Endrin	U	ND	3450	6660	ug/kg	5000					
Endrin aldehyde	U	ND	5030	6660	ug/kg	5000					
Heptachlor	U	ND	2200	3330	ug/kg	5000					
Heptachlor epoxide	U	ND	1100	3330	ug/kg	5000					
Methoxychlor	U	ND	18000	33300	ug/kg	5000					
Toxaphene	U	ND	55400	167000	ug/kg	5000					
alpha-BHC	U	ND	1330	3330	ug/kg	5000					
alpha-Chlordane	U	ND	2230	3330	ug/kg	5000					
beta-BHC	U	ND	1960	3330	ug/kg	5000					
delta-BHC	U	ND	1430	3330	ug/kg	5000					
gamma-BHC	U	ND	1760	3330	ug/kg	5000					
gamma-Chlordane	U	ND	2360	3330	ug/kg	5000					

**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

Page 2 of 2

Sample ID : 99 SPORT0015-09

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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, Karen Blakeney at (843) 769-7386.

*Karen Blakeney*  
 Reviewed By



# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

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Sample ID : 99 SPORT0015-10  
 Lab ID : 9810853-10  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		14.6	5.96	13.3	ug/kg	10.	JLS	11/03/98	1301	134429	1
4,4'-DDE	J	11.0	5.56	13.3	ug/kg	10.					
4,4'-DDT		103	8.06	13.3	ug/kg	10.					
Aldrin	U	ND	2.63	6.66	ug/kg	10					
Dieldrin	U	ND	7.43	13.3	ug/kg	10.					
Endosulfan I	U	ND	4.60	6.66	ug/kg	10.					
Endosulfan II	U	ND	6.89	13.3	ug/kg	10.					
Endosulfan sulfate	U	ND	9.22	9.22	ug/kg	10.					
Endrin	U	ND	6.89	13.3	ug/kg	10.					
Endrin aldehyde	U	ND	10.1	13.3	ug/kg	10.					
Heptachlor	U	ND	4.40	6.66	ug/kg	10.					
Heptachlor epoxide	U	ND	2.20	6.66	ug/kg	10.					
Methoxychlor	U	ND	35.9	66.6	ug/kg	10.					
Toxaphene	U	ND	111	333	ug/kg	10.					
alpha-BHC	U	ND	2.66	6.66	ug/kg	10.					
alpha-Chlordane	U	ND	4.46	6.66	ug/kg	10.					
beta-BHC	U	ND	3.93	6.66	ug/kg	10.					
delta-BHC	U	ND	2.86	6.66	ug/kg	10.					
gamma-BHC	U	ND	3.53	6.66	ug/kg	10.					
gamma-Chlordane	U	ND	4.73	6.66	ug/kg	10.					

**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





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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: November 03, 1998

Page 2 of 2

Sample ID : 99 SPORT0015-10

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	PEST-8081A	79.0	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	111.	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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.

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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: November 03, 1998

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Sample ID : 99 SPORT0015-11  
 Lab ID : 9810853-11  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		47.9	14.9	33.3	ug/kg	25.	JLS	11/03/98	1324	134429	1
4,4'-DDE		115	13.9	33.3	ug/kg	25.					
4,4'-DDT		250	20.1	33.3	ug/kg	25.					
Aldrin	U	ND	6.58	16.7	ug/kg	25.					
Dieldrin	U	ND	18.6	33.3	ug/kg	25.					
Endosulfan I	U	ND	11.5	16.7	ug/kg	25.					
Endosulfan II	U	ND	17.2	33.3	ug/kg	25.					
Endosulfan sulfate	U	ND	23.1	23.1	ug/kg	25.					
Endrin	U	ND	17.2	33.3	ug/kg	25.					
Endrin aldehyde	U	ND	25.1	33.3	ug/kg	25.					
Heptachlor	U	ND	11.0	16.7	ug/kg	25.					
Heptachlor epoxide	U	ND	5.49	16.7	ug/kg	25.					
Methoxychlor	U	ND	89.8	167	ug/kg	25.					
Toxaphene	U	ND	277	833	ug/kg	25.					
alpha-BHC	U	ND	6.66	16.7	ug/kg	25.					
alpha-Chlordane	U	ND	11.2	16.7	ug/kg	25.					
beta-BHC	U	ND	9.82	16.7	ug/kg	25.					
delta-BHC	U	ND	7.16	16.7	ug/kg	25.					
gamma-BHC	U	ND	8.82	16.7	ug/kg	25.					
gamma-Chlordane	U	ND	11.8	16.7	ug/kg	25.					

**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

Page 2 of 2

Sample ID : 99 SPORT0015-11

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	81.2	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	119.	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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.

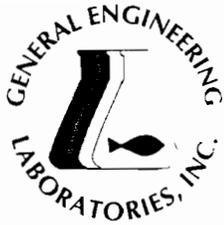
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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, Karen Blakeney at (843) 769-7386.

  
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# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

Page 1 of 2

Sample ID : 99 SPORT0015-12  
 Lab ID : 9810853-12  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		649	59.6	133	ug/kg	100	JLS	11/03/98	1347	134429	1
4,4'-DDE	U	ND	55.6	133	ug/kg	100					
4,4'-DDT	J	122	80.6	133	ug/kg	100					
Aldrin	U	ND	26.3	66.6	ug/kg	100					
Dieldrin	U	ND	74.3	133	ug/kg	100					
Endosulfan I	U	ND	46.0	66.6	ug/kg	100					
Endosulfan II	U	ND	68.9	133	ug/kg	100					
Endosulfan sulfate	U	ND	92.2	92.2	ug/kg	100					
Endrin	U	ND	68.9	133	ug/kg	100					
Endrin aldehyde	U	ND	101	133	ug/kg	100					
Heptachlor	U	ND	44.0	66.6	ug/kg	100					
Heptachlor epoxide	U	ND	22.0	66.6	ug/kg	100					
Methoxychlor	U	ND	359	666	ug/kg	100					
Toxaphene	U	ND	1110	3330	ug/kg	100					
alpha-BHC	U	ND	26.6	66.6	ug/kg	100					
alpha-Chlordane	U	ND	44.6	66.6	ug/kg	100					
beta-BHC	U	ND	39.3	66.6	ug/kg	100					
delta-BHC	U	ND	28.6	66.6	ug/kg	100					
gamma-BHC	U	ND	35.3	66.6	ug/kg	100					
gamma-Chlordane	U	ND	47.3	66.6	ug/kg	100					

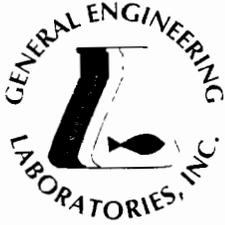
**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

Page 2 of 2

Sample ID : 99 SPORT0015-12

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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.

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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: November 03, 1998

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Sample ID : 99 SPORT0015-13  
 Lab ID : 9810853-13  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		57.3	5.96	13.3	ug/kg	10.	JLS	11/03/98	1411	134429	1
4,4'-DDE		13.3	5.56	13.3	ug/kg	10.					
4,4'-DDT		114	8.06	13.3	ug/kg	10.					
Aldrin	U	ND	2.63	6.66	ug/kg	10.					
Dieldrin	U	ND	7.43	13.3	ug/kg	10.					
Endosulfan I	U	ND	4.60	6.66	ug/kg	10.					
Endosulfan II	U	ND	6.89	13.3	ug/kg	10.					
Endosulfan sulfate	U	ND	9.22	9.22	ug/kg	10.					
Endrin	U	ND	6.89	13.3	ug/kg	10.					
Endrin aldehyde	U	ND	10.1	13.3	ug/kg	10.					
Heptachlor	U	ND	4.40	6.66	ug/kg	10.					
Heptachlor epoxide	U	ND	2.20	6.66	ug/kg	10.					
Methoxychlor	U	ND	35.9	66.6	ug/kg	10.					
Toxaphene	U	ND	111	333	ug/kg	10.					
alpha-BHC	U	ND	2.66	6.66	ug/kg	10.					
alpha-Chlordane	U	ND	4.46	6.66	ug/kg	10.					
beta-BHC	U	ND	3.93	6.66	ug/kg	10.					
delta-BHC	U	ND	2.86	6.66	ug/kg	10.					
gamma-BHC	U	ND	3.53	6.66	ug/kg	10.					
gamma-Chlordane	U	ND	4.73	6.66	ug/kg	10.					

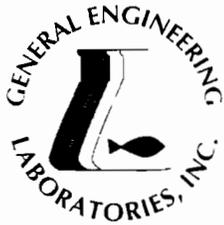
**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





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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-Fnv.  
 1899 North Hobson Ave.  
 North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: November 03, 1998

Page 2 of 2

Sample ID : 99 SPORT0015-13

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	70.5	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	103.	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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.

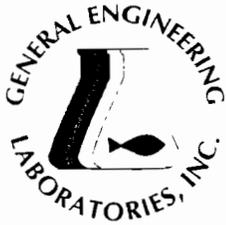
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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.

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*Karen Blakeney*  
 \_\_\_\_\_  
 Reviewed By



# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

Page 1 of 2

Sample ID : 99 SPORT0015-14  
 Lab ID : 9810853-14  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	J	0.829	0.596	1.33	ug/kg	1.0	JLS	11/03/98	0346	134429	1
4,4'-DDE	J	1.13	0.556	1.33	ug/kg	1.0					
4,4'-DDT		11.0	0.806	1.33	ug/kg	1.0					
Aldrin	U	ND	0.263	0.670	ug/kg	1.0					
Dieldrin	U	ND	0.743	1.33	ug/kg	1.0					
Endosulfan I	U	ND	0.460	0.670	ug/kg	1.0					
Endosulfan II	U	ND	0.689	1.33	ug/kg	1.0					
Endosulfan sulfate	U	ND	0.922	0.922	ug/kg	1.0					
Endrin	U	ND	0.689	1.33	ug/kg	1.0					
Endrin aldehyde	U	ND	1.01	1.33	ug/kg	1.0					
Heptachlor	U	ND	0.440	0.670	ug/kg	1.0					
Heptachlor epoxide	U	ND	0.220	0.670	ug/kg	1.0					
Methoxychlor	U	ND	3.59	6.67	ug/kg	1.0					
Toxaphene	U	ND	11.1	33.3	ug/kg	1.0					
alpha-BHC	U	ND	0.266	0.670	ug/kg	1.0					
alpha-Chlordane		0.859	0.446	0.670	ug/kg	1.0					
beta-BHC	U	ND	0.393	0.670	ug/kg	1.0					
delta-BHC	U	ND	0.286	0.670	ug/kg	1.0					
gamma-BHC	U	ND	0.353	0.670	ug/kg	1.0					
gamma-Chlordane		1.23	0.473	0.670	ug/kg	1.0					

**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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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: November 03, 1998

Page 2 of 2

Sample ID : 99 SPORT0015-14

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	PEST-8081A	82.5	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	105.	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
M 2	EPA 3550

**Notes:**

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- 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).
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- \* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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*Karen Blakeney*  
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# GENERAL ENGINEERING LABORATORIES

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## Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
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 SUPSHIP-Portsmouth Detachment-Env.  
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 North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: November 03, 1998

Page 1 of 2

Sample ID : 99 SPORT0015-15  
 Lab ID : 9810853-15  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		2250	298	666	ug/kg	500	JLS	11/03/98	1434	134429	1
4,4'-DDE	U	ND	278	666	ug/kg	500					
4,4'-DDT	J	639	403	666	ug/kg	500					
Aldrin	U	ND	132	333	ug/kg	500					
Dieldrin	U	ND	371	666	ug/kg	500					
Endosulfan I	U	ND	230	333	ug/kg	500					
Endosulfan II	U	ND	345	666	ug/kg	500					
Endosulfan sulfate	U	ND	461	461	ug/kg	500					
Endrin	U	ND	345	666	ug/kg	500					
Endrin aldehyde	U	ND	503	666	ug/kg	500					
Heptachlor	U	ND	220	333	ug/kg	500					
Heptachlor epoxide	U	ND	110	333	ug/kg	500					
Methoxychlor	U	ND	1800	3330	ug/kg	500					
Toxaphene	U	ND	5540	16700	ug/kg	500					
alpha-BHC	U	ND	133	333	ug/kg	500					
alpha-Chlordane	U	ND	223	333	ug/kg	500					
beta-BHC	U	ND	196	333	ug/kg	500					
delta-BHC	U	ND	143	333	ug/kg	500					
gamma-BHC	U	ND	176	333	ug/kg	500					
gamma-Chlordane	U	ND	236	333	ug/kg	500					

**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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### Laboratory Certifications

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TN	02934	02934

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Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: November 03, 1998

Page 2 of 2

Sample ID : 99 SPORT0015-15

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
M 2	EPA 3550

**Notes:**

The qualifiers in this report are defined as follows:

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*Karen Blakeney*  
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NC	233	
SC	10120	10582
TN	02934	02934

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

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc. NPWC00197

Report Date: November 03, 1998

Page 1 of 2

Sample ID : 99 SPORT0015-16  
 Lab ID : 9810853-16  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		2.16	0.596	1.33	ug/kg	1.0	JLS	11/03/98	1521	134429	1
4,4'-DDE		4.56	0.556	1.33	ug/kg	1.0					
4,4'-DDT		6.33	0.806	1.33	ug/kg	1.0					
Aldrin	U	ND	0.263	0.670	ug/kg	1.0					
Dieldrin	U	ND	0.743	1.33	ug/kg	1.0					
Endosulfan I	U	ND	0.460	0.670	ug/kg	1.0					
Endosulfan II	U	ND	0.689	1.33	ug/kg	1.0					
Endosulfan sulfate	U	ND	0.922	0.922	ug/kg	1.0					
Endrin	U	ND	0.689	1.33	ug/kg	1.0					
Endrin aldehyde	U	ND	1.01	1.33	ug/kg	1.0					
Heptachlor	U	ND	0.440	0.670	ug/kg	1.0					
Heptachlor epoxide	U	ND	0.220	0.670	ug/kg	1.0					
Methoxychlor	U	ND	3.59	6.67	ug/kg	1.0					
Toxaphene	U	ND	11.1	33.3	ug/kg	1.0					
alpha-BHC	U	ND	0.266	0.670	ug/kg	1.0					
alpha-Chlordane	J	0.629	0.446	0.670	ug/kg	1.0					
beta-BHC	U	ND	0.393	0.670	ug/kg	1.0					
delta-BHC	U	ND	0.286	0.670	ug/kg	1.0					
gamma-BHC	U	ND	0.353	0.670	ug/kg	1.0					
gamma-Chlordane		0.849	0.473	0.670	ug/kg	1.0					

**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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### Laboratory Certifications

STATE	GEL	EPI
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NC	233	
SC	10120	10582
TN	02934	02934

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Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: November 03, 1998

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Sample ID : 99 SPORT0015-16

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	80.0	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	128.*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
M 2	EPA 3550

**Notes:**

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*Karen Blakeney*  
 \_\_\_\_\_  
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TN	02934	02934

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 North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers  
 Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: November 03, 1998

Page 1 of 2

Sample ID : 99 SPORT0015-17  
 Lab ID : 9810853-17  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD	J	0.679	0.596	1.33	ug/kg	1.0	JLS	11/03/98	0532	134429	1
4,4'-DDE		4.23	0.556	1.33	ug/kg	1.0					
4,4'-DDT		2.90	0.806	1.33	ug/kg	1.0					
Aldrin	U	ND	0.263	0.670	ug/kg	1.0					
Dieldrin	U	ND	0.743	1.33	ug/kg	1.0					
Endosulfan I	U	ND	0.460	0.670	ug/kg	1.0					
Endosulfan II	U	ND	0.689	1.33	ug/kg	1.0					
Endosulfan sulfate	U	ND	0.922	0.922	ug/kg	1.0					
Endrin	U	ND	0.689	1.33	ug/kg	1.0					
Endrin aldehyde	U	ND	1.01	1.33	ug/kg	1.0					
Heptachlor	U	ND	0.440	0.670	ug/kg	1.0					
Heptachlor epoxide	U	ND	0.220	0.670	ug/kg	1.0					
Methoxychlor	U	ND	3.59	6.67	ug/kg	1.0					
Toxaphene	U	ND	11.1	33.3	ug/kg	1.0					
alpha-BHC	U	ND	0.266	0.670	ug/kg	1.0					
alpha-Chlordane	U	ND	0.446	0.670	ug/kg	1.0					
beta-BHC	U	ND	0.393	0.670	ug/kg	1.0					
delta-BHC	U	ND	0.286	0.670	ug/kg	1.0					
gamma-BHC	U	ND	0.353	0.670	ug/kg	1.0					
gamma-Chlordane	U	ND	0.473	0.670	ug/kg	1.0					

**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





# GENERAL ENGINEERING LABORATORIES

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## Laboratory Certifications

STATE	GEL	EPI
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NC	233	
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion  
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Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: November 03, 1998

Page 2 of 2

Sample ID : 99 SPORT0015-17

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent %	Acceptable Limits
4CMX	PEST-8081A	79.0	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	79.0	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
M 2	EPA 3550

### Notes:

The qualifiers in this report are defined as follows:

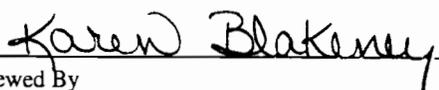
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J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).

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Reviewed By



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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: November 03, 1998

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Sample ID : 99 SPORT0015-18  
 Lab ID : 9810853-18  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		73.9	11.9	26.6	ug/kg	20.	JLS	11/03/98	0558	134429	1
4,4'-DDE		99.9	11.1	26.6	ug/kg	20.					
4,4'-DDT		34.8	16.1	26.6	ug/kg	20.					
Aldrin	U	ND	5.26	13.3	ug/kg	20.					
Dieldrin	U	ND	14.9	26.6	ug/kg	20.					
Endosulfan I	U	ND	9.19	13.3	ug/kg	20.					
Endosulfan II	U	ND	13.8	26.6	ug/kg	20.					
Endosulfan sulfate	U	ND	18.4	18.4	ug/kg	20.					
Endrin	U	ND	13.8	26.6	ug/kg	20.					
Endrin aldehyde	U	ND	20.1	26.6	ug/kg	20.					
Heptachlor	U	ND	8.79	13.3	ug/kg	20.					
Heptachlor epoxide	U	ND	4.40	13.3	ug/kg	20.					
Methoxychlor	U	ND	71.9	133	ug/kg	20.					
Toxaphene	U	ND	222	666	ug/kg	20.					
alpha-BHC	U	ND	5.33	13.3	ug/kg	20.					
alpha-Chlordane	U	ND	8.92	13.3	ug/kg	20.					
beta-BHC	U	ND	7.86	13.3	ug/kg	20.					
delta-BHC	U	ND	5.73	13.3	ug/kg	20.					
gamma-BHC	U	ND	7.06	13.3	ug/kg	20.					
gamma-Chlordane	U	ND	9.46	13.3	ug/kg	20.					

**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





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TN	02934	02934

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Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: November 03, 1998

Page 2 of 2

Sample ID : 99 SPORT0015-18

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
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Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	0.00*	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	0.00*	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
M 2	EPA 3550

### Notes:

The qualifiers in this report are defined as follows:

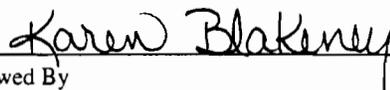
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TN	02934	02934

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 North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Report Date: November 03, 1998

Page 1 of 2

Sample ID : 99 SPORT0015-19  
 Lab ID : 9810853-19  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		165	11.9	26.6	ug/kg	20.	JLS	11/03/98	1654	134429	1
4,4'-DDE		38.6	11.1	26.6	ug/kg	20.					
4,4'-DDT		153	16.1	26.6	ug/kg	20.					
Aldrin	U	ND	5.26	13.3	ug/kg	20.					
Dieldrin	U	ND	14.9	26.6	ug/kg	20.					
Endosulfan I	U	ND	9.19	13.3	ug/kg	20.					
Endosulfan II	U	ND	13.8	26.6	ug/kg	20.					
Endosulfan sulfate	U	ND	18.4	18.4	ug/kg	20.					
Endrin	U	ND	13.8	26.6	ug/kg	20.					
Endrin aldehyde	U	ND	20.1	26.6	ug/kg	20.					
Heptachlor	U	ND	8.79	13.3	ug/kg	20.					
Heptachlor epoxide	U	ND	4.40	13.3	ug/kg	20.					
Methoxychlor	U	ND	71.9	133	ug/kg	20.					
Toxaphene	U	ND	222	666	ug/kg	20.					
alpha-BHC	U	ND	5.33	13.3	ug/kg	20.					
alpha-Chlordane	U	ND	8.92	13.3	ug/kg	20.					
beta-BHC	U	ND	7.86	13.3	ug/kg	20.					
delta-BHC	U	ND	5.73	13.3	ug/kg	20.					
gamma-BHC	U	ND	7.06	13.3	ug/kg	20.					
gamma-Chlordane	U	ND	9.46	13.3	ug/kg	20.					

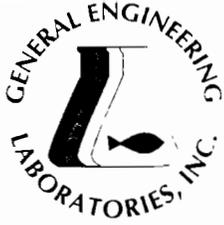
**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





# 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: November 03, 1998

Page 2 of 2

Sample ID : 99 SPORT0015-19

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	---

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	83.2	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	99.0	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
M 2	EPA 3550

### Notes:

The qualifiers in this report are defined as follows:

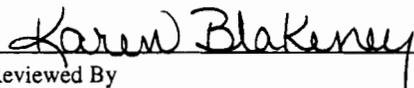
ND indicates that the analyte was not detected at a concentration greater than the detection limit.

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, Karen Blakeney at (843) 769-7386.

  
Reviewed By



# 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: November 03, 1998

Page 1 of 2

Sample ID : 99 SPORT0015-20  
 Lab ID : 9810853-20  
 Matrix : Soil  
 Date Collected : 10/23/98  
 Date Received : 10/23/98  
 Priority : Routine  
 Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
<b>Extractable Organics</b>											
<i>Pesticides - 20 items</i>											
4,4'-DDD		18.0	2.98	6.66	ug/kg	5.0	JLS	11/03/98	1544	134429	1
4,4'-DDE		8.79	2.78	6.66	ug/kg	5.0					
4,4'-DDT		45.3	4.03	6.66	ug/kg	5.0					
Aldrin	U	ND	1.32	3.33	ug/kg	5.0					
Dieldrin	U	ND	3.71	6.66	ug/kg	5.0					
Endosulfan I	U	ND	2.30	3.33	ug/kg	5.0					
Endosulfan II	U	ND	3.45	6.66	ug/kg	5.0					
Endosulfan sulfate	U	ND	4.61	4.61	ug/kg	5.0					
Endrin	U	ND	3.45	6.66	ug/kg	5.0					
Endrin aldehyde	U	ND	5.03	6.66	ug/kg	5.0					
Heptachlor	U	ND	2.20	3.33	ug/kg	5.0					
Heptachlor epoxide	U	ND	1.10	3.33	ug/kg	5.0					
Methoxychlor	U	ND	18.0	33.3	ug/kg	5.0					
Toxaphene	U	ND	55.4	167	ug/kg	5.0					
alpha-BHC	U	ND	1.33	3.33	ug/kg	5.0					
alpha-Chlordane	U	ND	2.23	3.33	ug/kg	5.0					
beta-BHC	U	ND	1.96	3.33	ug/kg	5.0					
delta-BHC	U	ND	1.43	3.33	ug/kg	5.0					
gamma-BHC	U	ND	1.76	3.33	ug/kg	5.0					
gamma-Chlordane		6.81	2.36	3.33	ug/kg	5.0					

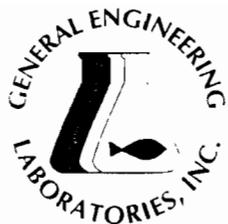
**The following prep procedures were performed:**

Pesticides

RDH 10/26/98 1000 134429 2

**Comments:**





# 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: November 03, 1998

Page 2 of 2

Sample ID : 99 SPORT0015-20

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
-----------	-----------	--------	----	----	-------	----	---------	------	------	-------	---

Data reported in mass/mass units is reported 'as received'.

Surrogate Recovery	Test	Percent%	Acceptable Limits
4CMX	PEST-8081A	87.0	(41.0 - 133.)
Decachlorobiphenyl	PEST-8081A	105.	(47.0 - 125.)

M = Method	Method-Description
M 1	EPA 8081A
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, Karen Blakeney at (843) 769-7386.

*Karen Blakeney*  
 Reviewed By

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Lab. Sample ID: 9810853%

Report Date: November 04, 1998

Page 1 of 2

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
<b>Extractable Organics</b>													
QC554942	BLANK	134429											
4,4'-DDT						0.00	ug/kg				JLS	11/02/98	1949
Aldrin						0.00	ug/kg						
Dieldrin						0.00	ug/kg						
Endrin						0.00	ug/kg						
Heptachlor						3.10	ug/kg						
gamma-BHC						0.00	ug/kg						
*4CMX							ug/kg		86.4	(41.0 - 133.)			
*Decachlorobiphenyl							ug/kg		126**	(47.0 - 125.)			
4,4'-DDD						0.00	ug/kg						
4,4'-DDE						0.00	ug/kg						
Endosulfan I						0.00	ug/kg						
Endosulfan II						0.00	ug/kg						
Endosulfan sulfate						0.00	ug/kg						
Endrin aldehyde						0.00	ug/kg						
Heptachlor epoxide						0.00	ug/kg						
Methoxychlor						0.00	ug/kg						
Toxaphene						0.00	ug/kg						
alpha-BHC						0.00	ug/kg						
alpha-Chlordane						7.30	ug/kg						
beta-BHC						0.00	ug/kg						
delta-BHC						0.00	ug/kg						
gamma-Chlordane						9.30	ug/kg						
QC554943	LCS	134429											
4,4'-DDT			8.33			8.33	ug/kg		100	(55.0 - 127.)	JLS	11/02/98	2015
Aldrin			3.33			2.20	ug/kg		66.1	(48.0 - 129.)			
Dieldrin			8.33			5.13	ug/kg		61.6	(51.0 - 122.)			
Endrin			8.33			8.33	ug/kg		100	(53.0 - 132.)			
Heptachlor			3.33			2.79	ug/kg		83.9	(52.0 - 133.)			
gamma-BHC			3.33			2.17	ug/kg		65.1	(55.0 - 118.)			
*4CMX			6.67			4.43	ug/kg		66.5	(41.0 - 133.)			
*Decachlorobiphenyl			6.67			6.70	ug/kg		100	(47.0 - 125.)			
QC554944	9810853-01MS	134429											
4,4'-DDT			8.33	377		717	ug/kg		4080**	(50.0 - 140.)	JLS	11/02/98	2042
Aldrin			3.33	0.00		0.00	ug/kg		0.00**	(46.0 - 143.)			
Dieldrin			8.33	0.00		0.00	ug/kg		0.00**	(45.0 - 132.)			
Endrin			8.33	0.00		0.00	ug/kg		0.00**	(47.0 - 144.)			
Heptachlor			3.33	0.00		0.00	ug/kg		0.00**	(48.0 - 141.)			
gamma-BHC			3.33	0.00		0.00	ug/kg		0.00**	(49.0 - 145.)			

QC Summary Report

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197

Lab. Sample ID: 9810853%

Report Date: November 04, 1998

Page 2 of 2

Sample/Parameter	Type	Batch	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Analyst	Date	Time
*4CMX			6.67			0.00	ug/kg		0.00**	(41.0 - 133.)	JLS	11/02/98	2042
*Decachlorobiphenyl			6.67			0.00	ug/kg		0.00**	(47.0 - 125.)			
QC554945		9810853-01MSD 134429											
4,4'-DDT			8.33	377		620	ug/kg	33.1	2920	(0.00 - 40.0)	JLS	11/02/98	2108
Aldrin			3.33	0.00		0.00	ug/kg	0.00	0.00	(0.00 - 41.0)			
Dieldrin			8.33	0.00		0.00	ug/kg	0.00	0.00	(0.00 - 32.0)			
Endrin			8.33	0.00		0.00	ug/kg	0.00	0.00	(0.00 - 33.0)			
Heptachlor			3.33	0.00		0.00	ug/kg	0.00	0.00	(0.00 - 34.0)			
gamma-BHC			3.33	0.00		0.00	ug/kg	0.00	0.00	(0.00 - 31.0)			
*4CMX			6.67			0.00	ug/kg		0.00**	(41.0 - 133.)			
*Decachlorobiphenyl			6.67			0.00	ug/kg		0.00**	(47.0 - 125.)			

Notes:

The qualifiers in this report are defined as follows:

J indicates presence of analyte < RL (Report Limit)

U indicates presence of analyte < DL (Detect Limit)

n/a indicates that spike recovery limits do not apply when  
sample concentration exceeds spike conc by a factor of 4 or more

NPWC 00197  
KBB

General Engineering Laboratories, Inc.  
2040 Savage Road  
Charleston, South Carolina 29407  
P.O. Box 30712  
Charleston, South Carolina 29417  
(803) 556-8171

# CHAIN OF CUSTODY RECORD

Page 1 of 2

9810853%

Client Name/Facility Name SPORTSMET CHASU				SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods																Use F or P in the boxes to indicate whether sample was filtered and/or preserved		
Collected by/Company SPORTSMET CHASU				# OF CONTAINERS	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	Remarks		
SAMPLE ID	DATE	TIME	WELL																		SOIL	COMP
99 SPORT0015-01	10/23/98	10:58	X	X								X									NBCA 038 033 01	
99 SPORT0015-02	10/23/98	11:00	X	X								X										NBCA 038 033 02
99 SPORT0015-03	10/23/98	11:03	X	X								X										NBCA 038 034 01
99 SPORT0015-04	10/23/98	11:05	X	X								X										NBCA 038 034 02
99 SPORT0015-05	10/23/98	11:09	X	X								X										NBCA 038 035 01
99 SPORT0015-06	10/23/98	11:11	X	X								X										NBCA 038 035 02
99 SPORT0015-07	10/23/98	11:13	X	X								X										NBCA 038 036 01
99 SPORT0015-08	10/23/98	11:16	X	X								X										NBCA 038 036 02
99 SPORT0015-09	10/23/98	11:19	X	X								X										NBCA 038 037 01
99 SPORT0015-10	10/23/98	11:21	X	X								X										NBCA 038 037 02
99 SPORT0015-11	10/23/98	11:22	X	X								X										NBCA 038 034 03 38 01
99 SPORT0015-12	10/23/98	11:24	X	X								X										NBCA 038 037 03 38 02
99 SPORT0015-13	10/23/98	14:00	X	X								X										NBCA 038 039 03
Relinquished by: <i>Math W. Jeff</i>				Date: 10/23/98	Time: 15:05	Received by: <i>Vivian C. Anderson</i>				Relinquished by: <i>Vivian C. Anderson</i>				Date: 10/23/98	Time: 15:15	Received by: <i>W. H. H. H.</i>						
Relinquished by: <i>John W. Jeff</i>				Date: 10/23/98	Time: 15:00	Received by lab by: <i>Karen Blakemey</i>				Date: 10/23/98	Time: 15:50	Remarks:										

White = sample collector    Yellow = file    Pink = with report

# CHAIN OF CUSTODY RECORD

Client Name/Facility Name		SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods										Remarks						
SPORTEN VDET CHASN		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	
Collected by/Company		WELL	SOIL	COMP	GRAB	# OF CONTAINERS											Use F or P in the boxes to indicate whether sample was filtered and/or preserved	
SPORTEN VDET CHASN																		
SAMPLE ID	DATE	TIME																
SPORT0015-14	10/23/98	13:15	X	X					X									NBCA 03804003
SPORT0015-15	10/23/98	13:27	X	X					X									NBCA 03804103
SPORT0015-16	10/23/98	13:37	X	X					X									NBCA 03804203
SPORT0015-17	10/23/98	11:30	X	X					X									NBCA 03804301
SPORT0015-18	10/23/98	11:35	X	X					X									NBCA 03804302
SPORT0015-19	10/23/98	14:20	X	X					X									NBCA 03803403
SPORT0015-20	10/23/98	14:20	X	X					X									NBCA 03803703
Relinquished by:		Date:	Time:	Received by:		Relinquished by:		Date:	Time:	Received by:								
Matt W. Jeff		10/23/98	15:05	Vivian W. Hertz		Vivian W. Hertz		10/23/98	15:15	Stu Kocher								
Relinquished by:		Date:	Time:	Received by lab by:		Date:	Time:	Remarks:										
Stu Kocher		10/23/98	15:00	Karen Blakemey		10/23/98	15:50											

White = sample collector    Yellow = file    Pink = with report

# **APPENDIX E**

# **PHOTOGRAPHS**



INITIAL SITE EXCAVATION



EXCAVATIONS AT SOIL BORINGS 038-S-B001 AND 038-S-B003



FINAL EXCAVATION EXTENDING BETWEEN AND BEYOND INITIAL EXCAVATION



CLEAN FILL BEING ADDED TO EXCAVATION SITE



SITE FINISHED AND GRADED - VIEW TO WEST



SITE FINISHED AND GRADED - VIEW TO EAST

**APPENDIX F**

**SHIPPING**

**MANIFEST**



# South Carolina Department of Health and Environmental Control

7213HH01

Bureau of Solid & Hazardous Waste Mgt.  
2600 Bull Street, Columbia, SC 29201  
Phone: (803) 734-5200  
Emergency & Holidays: (803)253-6488

PLEASE PRINT or TYPE (Form designed for use on elite (12-pitch) typewriter) Form Approved OMB No 2050-0039 Expires 9-30-91

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's U.S. EPA ID No <b>SC017002256013228</b>		Manifest Document No.	2. Page 1 of 1		Information in the shaded areas is not required by Federal law, but is by State law.					
3. Generator's Name and Mailing Address <b>SOUTHDIYNAVACENON CARETAKER SITE OFFICE P.O. BOX 190010, CHARLESTON, SC 29419/9010</b>							A. State Manifest Document Number					
4. Generator's Phone (803) 743-4771 ext 9985 ext 53 RKE NIELSON							B. State Generator's ID					
5. Transporter 1 Company Name <b>LAIDLAW ENVIRONMENTAL SERVICES (TG) INC</b>				6. U.S. EPA ID Number <b>SCD987574647</b>		C. State Transporter's ID		D. Transporter's Phone (803) 587-1999				
7. Transporter 2 Company Name							E. State Transporter's ID					
9. Designated Facility Name and Site Address <b>LAIDLAW ENVIRONMENTAL SERVICES (TS), INC. 208 WATLINGTON INDUSTRIAL DR. REIDSVILLE, NC 27320-</b>							10. U.S. EPA ID Number <b>NCDO00648451</b>		G. State Facility's ID		H. Facility's Phone <b>(910) 342-6106</b>	
11. U.S. DOT Description (including Proper Shipping Name, Hazard Class, and ID Number) <b>HAZARDOUS WASTE, SOLID, N.O.S., (DDT, DDD, DDE), 9, WA3077, III, RQ(U060, U061)</b>					12. Containers No. Type <b>001 CM</b>		13. Total Quantity <b>368.60 P</b>		14. Unit Wt/Vol		1. Waste Number <b>U060 U061</b>	
J. Additional Descriptions for Materials Listed Above							K. Handling Codes for Wastes Listed Above					
15. Special Handling Instructions and Additional Information <b>A. RYRXH 101 TG WAYBILL # 92690</b>							Public reporting burden for this collection of information is estimated to average 37 minutes for generators, 15 minutes for transporters, and 10 minutes for treatment storage and disposal facilities. This includes time for reviewing instructions, gathering data, and completing and reviewing the form. Send comments regarding the burden estimate including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M St., S.W., Washington, D.C. 20460 and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503.					
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and the laws of the State of South Carolina. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.												
Printed/Typed Name <b>RICHARD G. NIELSON</b>				Signature <i>Richard G. Nielson</i>				Month Day Year <b>10 8 12 97</b>				
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name <b>MARK C. BRYANT</b>				Signature <i>Mark C. Bryant</i>				Month Day Year <b>10 8 12 97</b>				
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name				Signature				Month Day Year				
Discrepancy Indication Space												
a. _____ lbs. c. _____ lbs.												
b. _____ lbs. d. _____ lbs.												
20. Facility Owner or Operator, Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19												

GENERATOR

TRANSPORTER

FACILITY





**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2183 Highway 78  
POB 146  
Dorchester, NC 29437  
Tel: 843-863-2687  
Fax: 843-863-4198

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38 N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237 Contact: TODD DAILEY**

**Generator Signature:** *[Signature]* **DATE:** 08-18-98

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 8-18-98 **Truck #** 34

**Driver Signature:** *[Signature]*

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

**Disposal Site: Oakridge Landfill DPW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 23638 **Tonnage:** 33.52

**Received By:** *[Signature]*



**OAKRIDGE LANDFILL**  
WASTE MANAGEMENT, INC. COMPANY

2183 Highway 78  
POB 148  
Dorchester, NC 29437  
Tel: 843-663-3807  
Fax: 843-663-4198

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38 N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237 Contact: TODD DAILEY**

**Generator Signature:** *Jay L. Stutes* **DATE:** 08-18-98

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 8-18-98 **Truck #** 23

**Driver Signature:** *A.C. Richardson*

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

**Disposal Site: Oakridge Landfill DPW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 23640 **Tonnage:** 28.61

**Received By:** *[Signature]*



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2188 Highway 78  
POB 148  
Dorchester, NC 29437  
Tel: 843-863-3007  
Fax: 843-863-4130

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38**

**N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237**

**Contact: TODD DAILEY**

**Generator Signature:**

**DATE: 08-18-98**

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date: 8-18-98**

**Truck # 19**

**Driver Signature:**

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

**Disposal Site: Oakridge Landfill DFW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number: 73653**

**Tonnage: 33.56**

**Received By:**



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2103 Highway 78  
POB 148  
Dorchester, NC 29437  
Tel: 843-663-3007  
Fax: 843-663-4198

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38 N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237 Contact: TODD DAILEY**

**Generator Signature:** *[Signature]* **DATE:** 08-18-98

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 8-18-98 **Truck #** 75

**Driver Signature:** *[Signature]*

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

**Disposal Site: Oakridge Landfill DPW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 73656 **Tonnage:** 28.03

**Received By:** *[Signature]*



**OAKRIDGE LANDFILL**  
WASTE MANAGEMENT, INC. COMPANY

2183 Highway 78  
POB 146  
Durham, NC 27637  
Tel: 843-843-3497  
Fax: 843-843-4128

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38 N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237 Contact: TODD DAILEY**

**Generator Signature: \_\_\_\_\_ DATE: \_\_\_\_\_**

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date: 9-18-98 Truck # 34**

**Driver Signature: [Signature]**

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

**Disposal Site: Oakridge Landfill DPW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number: 73672 Tonnage: 32.36**

**Received By: [Signature]**



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2183 Highway 78  
POB 146  
Dorchester, NC 29437  
Tel: 843-643-2407  
Fax: 843-643-4198

**SPECIAL WASTE MANIFEST**

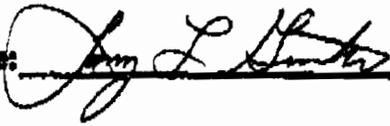
Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38 N CHARLESTON SC**

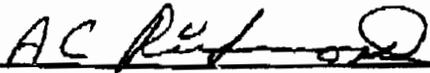
**Tele Number: 843-743-6777 EXT 237 Contact: TODD DAILEY**

**Generator Signature:**  **DATE:** 08-18-98

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 8-18-98 **Truck #** 73

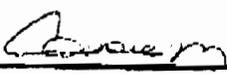
**Driver Signature:** 

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

**Disposal Site: Oakridge Landfill DPW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 73675 **Tonnage:** 27.87

**Received By:** 



**OAKRIDGE LANDFILL**  
WASTE MANAGEMENT, INC. COMPANY

2183 Highway 78  
POB 148  
Dorchester, SC 29437  
Tel: 843-643-1607  
Fax: 843-643-4198

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38 N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237 Contact: TODD DAILEY**

**Generator Signature:** *Jerry L. [Signature]* **DATE:** 08-18-98

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 8-18-98 **Truck #** 19

**Driver Signature:** *Deroy McFyil*

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

**Disposal Site: Oakridge Landfill DPW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 23679 **Tonnage:** 24.76

**Received By:** *[Signature]*



**OAKRIDGE LANDFILL**  
WASTE MANAGEMENT, INC. COMPANY

2100 Highway 78  
POB 146  
Dorchester, NC 29437  
Tel: 843-863-3007  
Fax: 843-863-4150

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38**

**N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237**

**Contact: TODD DAILEY**

**Generator Signature:** *[Signature]* **DATE:** 08-18-98



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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 7-18-98

**Truck #** 35

**Driver Signature:** *[Signature]*



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

**Disposal Site: Oakridge Landfill DPW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 73683

**Tonnage:** 25.57

**Received By:** *[Signature]*



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2125 Highway 78  
POB 145  
Dorchester, NC 29437  
Tel: 843-663-3697  
Fax: 843-663-4128

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38 N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237 Contact: TODD DAILEY**

**Generator Signature:** *Jerry L. Luster* **DATE:** 08-18-98

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 8-18-98 **Truck #** 34

**Driver Signature:** *W. Pate*

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

**Disposal Site: Oakridge Landfill DPW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 231291 **Tonnage:** 31.46

**Received By:** *Francois Calhoun*



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2183 Highway 78  
POB 148  
Derham, NC 27437  
Tel: 843-843-3697  
Fax: 843-843-4198

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38**

**N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237**

**Contact: TODD DAILEY**

**Generator Signature:** *Jay L. Hunter* **DATE:** 08-18-98

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 8-18-98 **Truck #** FB

**Driver Signature:** *A.C. Richardson*

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

**Disposal Site: Oakridge Landfill DPW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 73696 **Tonnage:** 27.85

**Received By:** *Cowen*



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2183 Highway 78  
POB 148  
Durham, NC 29437  
Tel: 843-843-3607  
Fax: 843-843-4188

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38 N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237 Contact: TODD DAILEY**

**Generator Signature:** *Long L. Santa* **DATE:** 08-19-98

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 8.18.98 **Truck #** 19

**Driver Signature:** *Leroy White*

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

**Disposal Site: Oakridge Landfill DPW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 73701 **Tonnage:** 33.50

**Received By:** *Cassie M*



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2185 Highway 78  
POB 148  
Dorchester, NC 29437  
Tel: 843-863-2607  
Fax: 843-863-4158

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38 N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237 Contact: TODD DAILEY**

**Generator Signature:** *Jimmy L. [Signature]* **DATE:** 08-18-98

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 8-18-98 **Truck #** 25

**Driver Signature:** *Mack Hamilton*

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

**Disposal Site: Oakridge Landfill DPW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 23202 **Tonnage:** 27.89

**Received By:** *Ross M*



**OAKRIDGE LANDFILL**  
WASTE MANAGEMENT, INC. COMPANY

2183 Highway 78  
POB 148  
Dorchester, NC 29437  
Tel: 843-843-3807  
Fax: 843-843-4198

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

Generator: **ENVIRONMENTAL DETACHMENT CHARLESTON**

Account Number: **490-189**

Location/Address: **SWMU 38** **N CHARLESTON SC**

Tele Number: **843-743-6777 EXT 237** Contact: **TODD DAILEY**

Generator Signature: *[Signature]* DATE: 02-18-98

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

Transporter of Waste: **BUTLER WARE TRUCKING**

Date: 8/8-98 Truck # 34

Driver Signature: *[Signature]*

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

Disposal Site: **Oakridge Landfill DPW 130**

Description of Waste: **SOL / CONTAMINATED SOIL**

Ticket Number: 23712 Tonnage: 32.40

Received By: *[Signature]*



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2185 Highway 78  
POB 145  
Dorchester, SC 29437  
Tel: 843-863-3007  
Fax: 843-863-4188

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38 N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237 Contact: TODD DAILEY**

**Generator Signature:** *[Signature]* **DATE:** 08-18-98

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 8-18-98 **Truck #** 73

**Driver Signature:** *[Signature]*

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

**Disposal Site: Oakridge Landfill DFW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 73714 **Tonnage:** 27.73

**Received By:** *[Signature]*



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

3185 Highway 78  
POB 148  
Durham, NC 27437  
Tel: 919-883-3007  
Fax: 919-883-4188

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

Generator: **ENVIRONMENTAL DETACHMENT CHARLESTON**

Account Number: **490-189**

Location/Address: **SWMU 38** **N CHARLESTON SC**

Tele Number: **843-743-6777 EXT 237** Contact: **TODD DAILEY**

Generator Signature: *James L. Butler* DATE: 08-18-98

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

Transporter of Waste: **BUTLER WARE TRUCKING**

Date: 8.18.98 Truck # 19

Driver Signature: *Leroy McNeil*

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

Disposal Site: **Oakridge Landfill DPW 130**

Description of Waste: **SOL / CONTAMINATED SOIL**

Ticket Number: 75721 Tonnage: 3290

Received By: *Cassie M*



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2183 Highway 78  
POB 148  
Dorchester, NC 29437  
Tel: 843-863-2607  
Fax: 843-863-4188

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38 N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237 Contact: TODD DAILEY**

**Generator Signature:** *Terry L. Smith* **DATE:** 08-18-98

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 9-18-98 **Truck #** 95

**Driver Signature:** *Michael Hamilton*

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

**Disposal Site: Oakridge Landfill DPW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 73704 **Tonnage:** 27.62

**Received By:** *C. W. Smith*



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2185 Highway 78  
POB 145  
Durham, NC 27417  
Tel: 843-843-3607  
Fax: 843-843-4198

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

Generator: **ENVIRONMENTAL DETACHMENT CHARLESTON**

Account Number: **490-189**

Location/Address: **SWMU 38** **N CHARLESTON SC**

Tele Number: **843-743-6777 EXT 237** Contact: **TODD DAILEY**

Generator Signature: *Todd Dailey* DATE: 08-19-98

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

Transporter of Waste: **BUTLER WARE TRUCKING**

Date: 8-19-98 Truck # 73

Driver Signature: *A C P...*

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

Disposal Site: **Oakridge Landfill DPW 130**

Description of Waste: **SOL / CONTAMINATED SOIL**

Ticket Number: \_\_\_\_\_ Tonnage: 2831

Received By: *[Signature]*



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2183 Highway 78  
POB 148  
Dorchester, NC 29437  
Tel: 843-643-3697  
Fax: 843-643-4198

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

Generator: **ENVIRONMENTAL DETACHMENT CHARLESTON**

Account Number: **490-189**

Location/Address: **SWMU 38** **N CHARLESTON SC**

Tele Number: **843-743-6777 EXT 237** Contact: **TODD DAILEY**

Generator Signature: *Jerry L Hunter* DATE: 08-19-98

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

Transporter of Waste: **BUTLER WARE TRUCKING**

Date: 8-19-98 Truck # 34

Driver Signature: *W. White*

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

Disposal Site: **Oakridge Landfill DPW 130**

Description of Waste: **SOL / CONTAMINATED SOIL**

Ticket Number: 93781 Tonnage: 30.45

Received By: *C. S. M.*



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2185 Highway 78  
POB 148  
Dorchester, NC 29437  
Tel: 843-663-3607  
Fax: 843-663-4198

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38 N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237 Contact: TODD DAILEY**

**Generator Signature:** *Todd Dailey* **DATE:** 08-19-98

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 8-19-98 **Truck #** 35

**Driver Signature:** *McTeer Hamilton*

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

**Disposal Site: Oakridge Landfill DPW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 73782 **Tonnage:** 23.78

**Received By:** *Cosie M*



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2122 Highway 78  
POB 148  
Dorchester, NC 29437  
Tel: 843-843-3097  
Fax: 843-843-4198

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

Generator: **ENVIRONMENTAL DETACHMENT CHARLESTON**

Account Number: **490-189**

Location/Address: **SWMU 38** **N CHARLESTON SC**

Tele Number: **843-743-6777 EXT 237** Contact: **TODD DAILEY**

Generator Signature: *Jerry L. Smith* DATE: 08-19-98

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

Transporter of Waste: **BUTLER WARE TRUCKING**

Date: 8-19-98 Truck # 19

Driver Signature: *Leroy M. [unclear]*

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

Disposal Site: **Oakridge Landfill DPW 130**

Description of Waste: **SOL / CONTAMINATED SOIL**

Ticket Number: 73787 Tonnage: 2886

Received By: *Cassie M.*



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2183 Highway 78  
POB 146  
Dorchester, NC 29437  
Tel: 843-843-3007  
Fax: 843-843-4198

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38 N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237 Contact: TODD DAILEY**

**Generator Signature:** *Jerry L. Stute* **DATE:** 08-19-98

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 8-19-98 **Truck #** 53

**Driver Signature:** *A.C. Richardson*

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

**Disposal Site: Oakridge Landfill DPW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 73801 **Tonnage:** 28.51

**Received By:** *Cassie M*



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2183 Highway 78  
POB 148  
Dorchester, NC 29437  
Tel: 843-863-3607  
Fax: 843-863-4198

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38 N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237 Contact: TODD DAILEY**

**Generator Signature:** *Tony L. Hunter* **DATE:** 08-19-98

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 8-19-98 **Truck #** 34

**Driver Signature:** *White*

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

**Disposal Site: Oakridge Landfill DPW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 73810 **Tonnage:** 2706

**Received By:** *Cassie*



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2183 Highway 78  
POB 145  
Dorchester, SC 29437  
Tel: 843-863-3607  
Fax: 843-863-4188

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38 N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237 Contact: TODD DAILEY**

**Generator Signature:** *Lang L. Smith* **DATE:** 03-19-98

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 8-19-98 **Truck #** 35

**Driver Signature:** *McKen Hamilton*

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

**Disposal Site: Oakridge Landfill DPW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 73813 **Tonnage:** 25.19

**Received By:** *C. J. ...*



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

3183 Highway 78  
POB 148  
Dorchester, NC 29437  
Tel: 843-883-3607  
Fax: 843-863-4198

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38**

**N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237**

**Contact: TODD DAILEY**

**Generator Signature:** *James L. Hunter* **DATE:** 08-19-98

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 9.19.98 **Truck #** 19

**Driver Signature:** *Seroy McKend*

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

**Disposal Site: Oakridge Landfill DFW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 73819 **Tonnage:** 283.1

**Received By:** *Cassie m*



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2183 Highway 78  
POB 148  
Dorchester, NC 29437  
Tel: 843-863-2007  
Fax: 843-863-4198

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38 N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237 Contact: TODD DAILEY**

**Generator Signature:** *Long L. Hunter* **DATE:** 08-19-98

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 8-19-98 **Truck #** 23

**Driver Signature:** *A C Rink*

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

**Disposal Site: Oakridge Landfill DPW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 73429 **Tonnage:** 30.55

**Received By:** *Cassie M*



**OAKRIDGE LANDFILL**  
A WASTE MANAGEMENT, INC. COMPANY

2183 Highway 78  
POB 148  
Dorchester, NC 29427  
Tel: 843-683-2807  
Fax: 843-683-4158

**SPECIAL WASTE MANIFEST**

Approval # **OR 9807021**  
Expiration **10/30/98**

**Generator: ENVIRONMENTAL DETACHMENT CHARLESTON**

**Account Number: 490-189**

**Location/Address: SWMU 38 N CHARLESTON SC**

**Tele Number: 843-743-6777 EXT 237 Contact: TODD DAILEY**

**Generator Signature:** *Samuel L. Butler* **DATE:** 08-19-98

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

**Transporter of Waste: BUTLER WARE TRUCKING**

**Date:** 8-19-98 **Truck #** 34

**Driver Signature:** *W. P. [Signature]*

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

**Disposal Site: Oakridge Landfill DPW 130**

**Description of Waste: SOL / CONTAMINATED SOIL**

**Ticket Number:** 73746 **Tonnage:** 2590

**Received By:** *C. S. [Signature]*