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CORRECTIVE MEASURES STUDY WORK PLAN/IM COMPLETION REPORT SOLID WASTE MANAGEMENT UNIT 14 (SWMU 14) CNC CHARLESTON SC
4/18/2003
CH2M HILL

CMS WORK PLAN/IM COMPLETION REPORT

Combined SWMU 14, Zone H

Charleston Naval Complex
North Charleston, South Carolina

SUBMITTED TO
U.S. Navy Southern Division
Naval Facilities Engineering Command

CH2M-Jones

April 2003

Revision No. 1
Contract N62467-99-C-0960

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April 18, 2003

Mr. David Scaturo
South Carolina Department of Health and
Environmental Control
Bureau of Land and Waste Management
2600 Bull Street
Columbia, SC 29201

Re: CMS Work Plan/ IM Completion Report (Revision 1) — Combined SWMU 14, Zone H

Dear Mr. Scaturo:

Enclosed please find four copies of the CMS Work Plan/ IM Completion Report (Revision 1) for Combined SWMU 14 in Zone H of the Charleston Naval Complex (CNC). This report has been prepared pursuant to agreements by the CNC BRAC Cleanup Team for completing the RCRA Corrective Action process.

The following materials are provided as follows:

- Revision 1 - 2.5-inch binder with cover/spine, flysheet, and signed/sealed certification page. Revision 0 material should be inserted into this new binder, and the appropriate Revision 1 pages, tables, figures, and appendices (see below) should be replaced within.
- Revised Table of Contents; Pages 3-2 and 3-3; Section 5.0; Pages 7-11 and 7-1; Figures 7-1 and 7-3; New Appendices G, H, and I.

The principal author of this document is Sam Naik. Please contact him at (770) 604-9095, extension 255, if you have any questions or comments.

Sincerely,

CH2M HILL

Dean Williamson, P.E.

cc: Dann Spariosu/USEPA, w/att
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April 05, 2002

Mr. David Scaturo
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South Carolina Department of Health and
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Bureau of Land and Waste Management
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Columbia, SC 29201

Re: CMS Work Plan/ IM Completion Report for Combined SWMU 14, Zone H

Dear Mr. Scaturo:

Enclosed please find four copies of the CMS Work Plan/ IM Completion Report for Combined SWMU 14 in Zone H of the Charleston Naval Complex (CNC). This report has been prepared pursuant to agreements by the CNC BRAC Cleanup Team for completing the RCRA Corrective Action process.

The principal author of this document is Sam Naik. Please contact him at (770) 604-9095, extension 255, if you have any questions or comments.

Sincerely,

CH2M HILL

Dean Williamson, P.E.

cc: Rob Harrell/Navy, w/att
Gary Foster/CH2M HILL, w/att

CMS WORK PLAN/IM COMPLETION REPORT

Combined SWMU 14, Zone H

Charleston Naval Complex
North Charleston, South Carolina

SUBMITTED TO
U.S. Navy Southern Division
Naval Facilities Engineering Command

PREPARED BY
CH2M-Jones

April 2003

Revision 1
Contract N62467-99-C-0960
158814.ZH.PR.08

Certification Page for CMS Work Plan/ IM Completion Report (Revision 1) – Combined SWMU 14, Zone H

I, Dean Williamson, certify that this report has been prepared under my direct supervision. The data and information are, to the best of my knowledge, accurate and correct, and the report has been prepared in accordance with current standards of practice for engineering.

South Carolina

P.E. No. 21428

Dean Williamson, P.E.

4/8/2003

Date

Contents

Section Page

Acronyms and Abbreviations vi

1.0 Introduction 1-1

1.1 Background and Summary for the CMSWP/IMCR 1-1
1.2 Purpose of the CMSWP/IMCR 1-2
1.3 Site Background and Setting 1-2
1.4 Report Organization 1-3
Figure 1-1 Location of Combined SWMU 14 in Zone H 1-5
Figure 1-2 Aerial Photograph of Combined SWMU 14 1-6

2.0 Summary of Previous Investigations at Combined SWMU 14 2-1

2.1 1992 Geophysical and Soil Gas Survey 2-2
2.2 RFI Sampling (1994 – 1995) 2-3
2.2.1 RFI Soil Sampling 2-3
2.2.2 RFI Groundwater Sampling 2-5
2.2.3 RFI Sediment Sampling 2-6
2.2.3 RFI Surface Water Sampling 2-6
2.3 Conclusions and Recommendations from the *Zone H RFI Report, Rev.0* . 2-7
Figure 2-1 RFI Sampling Locations at Combined SWMU 14 2-8

3.0 Summary of Interim Measures at Combined SWMU 14 3-1

3.1 DET Interim Measures (1997) 3-1
3.1.1 Outcome of the DET Interim Measures 3-2
3.2 Soil Removal Interim Measure (CH2M-Jones, 2001-2002) 3-2

4.0 Summary of Additional Investigations 4-1

4.1 Lead Shot Investigation (July 1998) 4-1
4.2 CMS Investigation (1999) 4-1
4.3 Interim Measure Groundwater Sampling (July 2000) 4-2

5.0 COPC/COC Refinement 5-1

5.1 Introduction 5-1

Contents, Continued

5.2 COCs in Soil 5-1
5.2.1 Surface Soil 5-1
5.2.2 Subsurface Soil 5-6
5.2.3 Soil VOC Rescreening using SSL at DAF=1 5-6
5.3 COCs in Groundwater 5-7
5.3.1 Shallow Groundwater 5-7
5.3.2 Deep Groundwater 5-9
Table 5-1 Surface Soil Analytical Results for COCs (RFI Sampling) 5-11
Table 5-2 Subsurface Soil Analytical Results for COCs (RFI Sampling) 5-23
Table 5-3 Surface Soil Concentrations of Selected COPCs 5-34
Table 5-4 Detections of VOCs in Surface Soil 5-45
Table 5-5 Detections of VOCs in Subsurface Soil 5-49
Table 5-6 Summary of Detected Concentrations of Selected COPCs (GW) 5-53
Figure 5-1 Soil COCs and IM Target Locations at Combined SWMU 14 5-73

6.0 Summary of Information Related to Site Closeout Issues 6-1

6.1 Presence of Inorganics in Groundwater 6-1
6.2 Potential Linkage to Investigated Sanitary Sewers (SWMU 37) 6-1
6.3 Potential Linkage to Investigated Storm Sewers (AOC 699) 6-1
6.4 Potential Linkage to AOC 504, Investigated Railroad Lines 6-2
6.5 Potential Migration Pathways to Surface Water Bodies at the CNC 6-2
6.6 Potential Contamination in Oil/Water Separators 6-2
6.7 Land Use Controls 6-2

7.0 Interim Measure Completion Report 7-1

7.1 Technical Approach of the Interim Measure 7-1
7.1.1 Target Cleanup Goals 7-1
7.2 Pre-Excavation Sampling and Contaminant Delineation 7-2
7.3 Excavation of Soils 7-3
7.3.1 Technical Approach to Excavation 7-3
7.3.2 Excavation at Hotspots 7-4
7.3.3 Excavation at Areas 1 and 2 7-5

Contents, Continued

7.4 Residual Site Concentrations of COCs 7-6
Table 7-1 Post-Excav. Residual Concentrations of Targeted Surface Soil COCs 7-8
Figure 7-1 Pre-Excavation Delineation Sampling Locations with Exceedances of Screening Criteria 7-21
Figure 7-2 October 2001 Delineation Sampling Locations 7-22
Figure 7-3 October 2001 Delineation Sampling Results 7-23
Figure 7-4 IM Excavation Areas 7-24
Figure 7-5 Confirmatory Soil Sample Locations 7-25

8.0 Recommendations 8-1

9.0 References 9-1

Appendices

A Figure Plate 2 from the 1992 Geophysical Survey at Combined SWMU 14

B Summary Table of Geophysical Anomalies Detected during the 1992 Geophysical Survey at Combined SWMU 14, Copy of the *Interim Measure Completion Report for SWMU 14* (DET, 1998)

C Excerpts from the *Zone H RFI Report, Revision 0* (EnSafe, 1998), Figure C-1: *Shallow Groundwater Elevation Contours* (April 2002)

D Figure 2.10 and Table 2.6 from the *Draft CMS Report for Combined SWMU 14* (EnSafe, 1999)

E Analytical Summary Tables and Data Validation Reports, Copies of the Waste Profile and Waste Manifests

F Photographs of the IM Field Activities at Combined SWMU 14

G CH2M-Jones' Responses to SCDHEC Comments on the *Interim Measure Completion Report and CMS Work Plan, Combined SWMU 14*, Zone H, Revision 0

H Technical Memorandum, Analytical Data Summaries, and Data Validation Report for Additional Sampling Conducted March 2003

I Methylene Chloride Detections in Field Blank Data; Analytical Results and Data Validation Report for SDG CHS14

1.0 Introduction

In 1993, Naval Base (NAVBASE) Charleston was added to the list of bases scheduled for closure as part of the Defense Base Realignment and Closure Act (BRAC), which regulates closure and transition of property to the community. The Charleston Naval Complex (CNC) was formed as a result of the dis-establishment of the Charleston Naval Shipyard and NAVBASE on April 1, 1996.

Corrective Action (CA) activities are being conducted under the Resource Conservation and Recovery Act (RCRA), with the South Carolina Department of Health and Environmental Control (SCDHEC) as the lead agency for CA activities at the CNC. All RCRA CA activities are performed in accordance with the Final Permit (Permit No. SC0 170 022 560).

1.1 Background and Summary for the CMS Work Plan/IM Completion Report

As part of the RCRA CA activities, a RCRA Facility Investigation (RFI) was conducted in Zone H at the CNC (EnSafe Inc. [EnSafe], 1998). Four adjacent sites in Zone H— Solid Waste Management Unit (SWMU) 14, SWMU 15, Area of Concern (AOC) 670, and AOC 684—were combined for evaluation. The combined site is termed "Combined SWMU 14." Figure 1-1 shows the location of Combined SWMU 14 within Zone H at the CNC. Figure 1-2 shows an aerial photograph of the site within Zone H.

After the initial RFI, additional investigations and remedial activities were conducted as part of the interim measures (IMs) conducted by the U.S. Navy Environmental Detachment (DET) and the U.S. Navy/EnSafe team. These IMs included geophysical surveys, excavation and disposal of contaminated material, and additional soil and groundwater sampling for residual chemicals. At the conclusion of these activities, surface soil chemicals of concern (COCs) were identified at several locations within Combined SWMU 14 and were targeted for removal during the IM, which was completed by CH2M-Jones during December 2001 and January 2002. The IM activities are described in detail in later sections of this report.

This Corrective Measures Study (CMS) Work Plan/IM Completion Report (CMSWP/IMCR) concludes that no further action (NFA) is appropriate for this site.

1.2 Purpose of the CMS Work Plan/IM Completion Report

This CMSWP/IMCR provides information to support the recommendation of NFA at Combined SWMU 14 in Zone H of the CNC.

Prior to changing the status of any site in the CNC RCRA CA permit, the BRAC Cleanup Team (BCT) agreed that the following issues should be addressed:

- Status of the RFI
- Presence of metals (inorganics) in groundwater
- Potential linkage of SWMU/ AOC to SWMU 37 (investigated sanitary sewers)
- Potential linkage of SWMU/AOC to AOC 699 (investigated stormwater sewers)
- Potential linkage of SWMU/AOC to AOC 504 (investigated railroad lines)
- Potential migration pathways to surface water bodies (Zone J)
- Potential contamination associated with oil/water separators (OWSs)
- Relevance or need for land use controls (LUCs) at the site

Information regarding these issues is provided in this CMSWP/IMCR to expedite evaluation of closure of the site.

1.3 Site Background and Setting

Combined SWMU 14 is located in the eastern portion of Zone H at the CNC. The Combined SWMU 14 area encompasses SWMU 14, SWMU 15, AOC 670, and AOC 684. The locations of these SWMUs and AOCs are shown on Figure 1-2. Each site is described as follows:

- SWMU 14 is an area where miscellaneous chemicals and possibly industrial wastes were reported to have been buried.
- SWMU 15 is the site of a former propane-fired incinerator, which was reportedly used to destroy classified documents. The only remnant of the past operations is a concrete slab that was found at the site.
- AOC 670 is a former outdoor trap and skeet range that was in operation from 1960 until the late 1970s. Buildings 1887, 1893, and 1896 remain in the AOC 670 area. Building 1897, which was inside the footprint of AOC 670, was demolished during an IM performed by the DET during 1997.
- AOC 684 is a former outdoor pistol range that was in operation from the early 1960s until 1981.

1.4 Report Organization

This CMSWP/IMCR consists of the following sections, including this introductory section:

1.0 Introduction – Presents the purpose of the report and background information relating to the CMSWP/IMCR.

2.0 Summary of Previous Investigations at Combined SWMU 14– Summarizes the conclusions from the geophysical surveys, the RFI, and risk evaluations for Combined SWMU 14 as presented in the *Zone H RFI Report, Revision 0* (EnSafe, 1998).

3.0 Summary of Interim Measures at Combined SWMU 14– Provides information regarding the IMs conducted at the site during 1997 by the DET.

4.0 Summary of Additional Investigations – Summarizes the results of a lead shot investigation conducted during 1998 and a CMS investigation conducted during 1999 after completion of the *Zone H RFI Report, Revision 0*.

5.0 COPC/COC Refinement – Provides further evaluation of chemicals of potential concern (COPCs) based on the RFI and additional data to assess them as chemicals of concern (COCs).

6.0 Summary of Information Related to Site Closeout Issues – Discusses the various site closeout issues that the BCT agreed to evaluate prior to site closeout.

7.0 Interim Measure Completion Report - Presents the results of the IM that was completed by CH2M-Jones during December 2001 and January 2002.

8.0 Recommendations – Provides recommendations for proceeding with site closure.

9.0 References – Lists the references used in this document.

Appendix A contains a copy of figure Plate 2 from the 1992 geophysical survey that was conducted at Combined SWMU 14, showing the layout of the survey grids and detected anomalies.

Appendix B contains a table that lists the geophysical anomalies detected during the 1992 geophysical survey. The appendix also contains a copy of the *Interim Measure Completion Report for SWMU 14* prepared by the U.S. Navy Environmental Detachment (DET, 1998).

Appendix C contains excerpts from the *Zone H RFI Report, Revision 0* that summarize the detected site constituents in the various media, and Figure C-1, which depicts shallow groundwater elevation contours from measurements conducted during April 2002.

- **Appendix D** contains Figure 2.10 and Table 2.6 from the *Draft CMS Report for Combined SWMU 14* (EnSafe, 1999).

Appendix E contains copies of analytical results from the pre-excavation delineation sampling, post-excavation confirmatory soil sampling, and waste characterization sampling, along with the data validation narratives. The appendix also includes copies of the waste profile and waste manifests.

Appendix F contains selected photographs of the IM field activities.

All figures and tables appear at the end of their respective sections.

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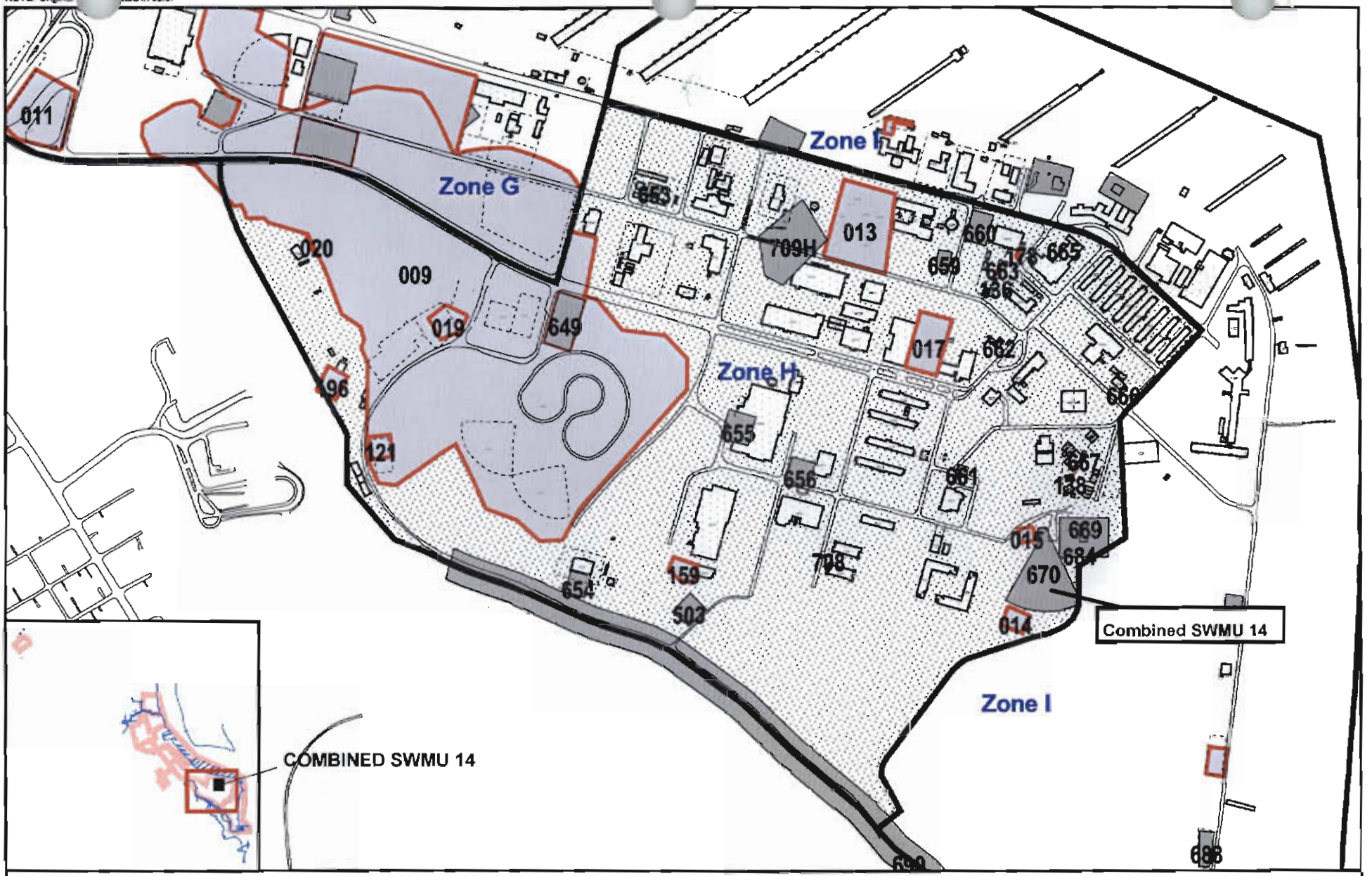

Zone H
Zone Boundary
AOC Boundary
SWMU Boundary
Buildings

N

0 500 1000 Feet

1 inch = 620 feet

Figure 1-1
Zone H within CNC
Charleston Naval Complex

CH2MHILL

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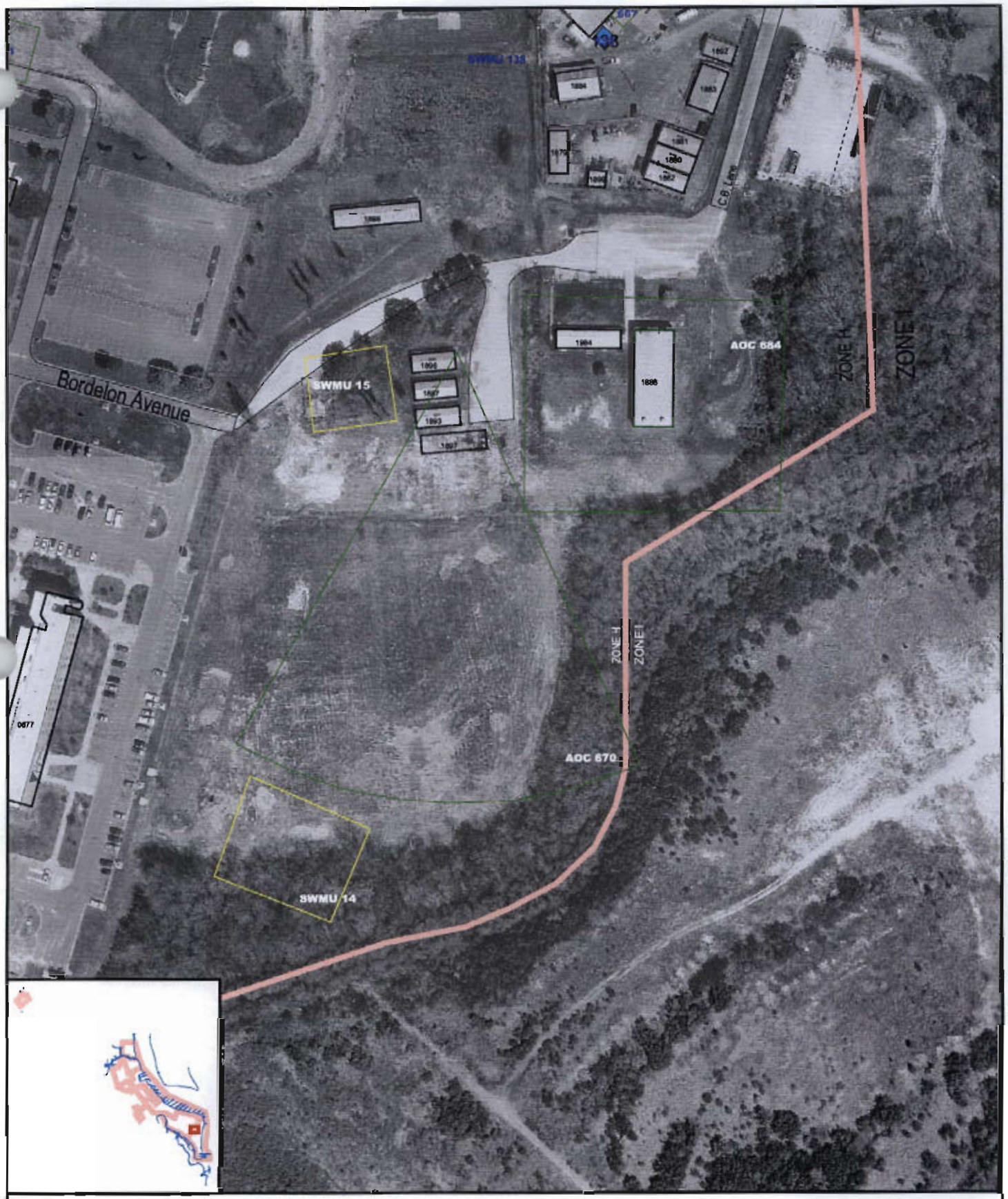

AOC Boundary
SWMU Boundary
Buildings
Zone Boundary

N

0 100 200 Feet

Note: Original figure produced in color.
Aerial photograph dated 1996.

Figure 1-2
Site Location
Combined SWMU 14, Zone H
Charleston Naval Complex

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2.0 Summary of Previous Investigations at Combined SWMU 14

The chronological sequence of the previous investigations at Combined SWMU 14 is the following:

1992 – Geophysical survey conducted prior to the RFI to investigate the presence of suspected buried chemical containers and to guide the RFI sampling approach. The survey identified 34 subsurface anomalies.

1994-1995 – RFI soil, groundwater, and sediment sampling. Soil samples were collected at 73 soil sampling locations guided by anomaly detections and placed on a 50 ft x 50 ft grid to cover the Combined SWMU 14 area. Five groundwater monitoring well pairs were installed and sampled. Each well pair consisted of a shallow and a deep well.

1997 – IM by DET, which included a second geophysical survey. The second survey identified some buried DANC (decontaminating agent non-corrosive) chemical containers adjacent to and under Building 1897 in AOC 670, along with 24 additional anomalies (numbered A through Y) at several locations in Combined SWMU 14. As part of this IM, Building 1897 was demolished and the DANC containers and associated contaminated soil were excavated and transported to offsite disposal facilities.

1998 – Lead Shot Investigation. The southern side of Combined SWMU 14 was investigated for surface soil impacts from lead shot use at the former trap and skeet range located at AOC 670.

1999 – CMS investigation. Three additional monitoring wells (two shallow and one deep) were installed to verify contamination at and downgradient from the former DANC burial area. Additional groundwater investigations were conducted to address comments from SCDHEC's review of the *Zone H RFI Report, Revision 0* (EnSafe, 1998) and the DET IM.

2000 -- CH2M-Jones groundwater monitoring. Sampling was conducted to verify the presence or absence of volatile organic compounds (VOCs) in groundwater at well H014GW006 in Combined SWMU 14.

2001-2002 – CH2M-Jones conducted an IM to remove contaminated soil from Combined SWMU 14 at hotspots and areas that were identified during RFI soil sampling and

subsequent pre-excavation delineation sampling. Details of these efforts are described in further detail in this report.

The above investigations are summarized in this report, beginning with a summary of the RFI activities and conclusions from the *Zone H RFI Report, Revision 0* in the following subsections. Section 3.0 provides a summary of the 1997 DET IMs. Section 4.0 provides summaries of the 1998 lead shot investigation conducted by the Navy/EnSafe team, the 1999 CMS investigation conducted by the Navy/EnSafe team, and the 2000 IM groundwater monitoring conducted by CH2M-Jones. Finally, Section 7.0 describes in detail the soil removal IM conducted by CH2M-Jones during December 2001 and January 2002.

2.1 1992 Geophysical and Soil Gas Survey

During 1992, the Navy/EnSafe team conducted a geophysical and soil gas survey at Combined SWMU 14 as part of a preliminary RFI (EnSafe, 1996) to identify potential locations of chemical containers suspected to buried in the subsurface at SWMU 14 and adjacent areas. Areas where detected subsurface anomalies suggested possible buried containers were sampled for soil gas analyses.

The geophysical survey was conducted after laying out a 100 ft x 100 ft grid over a large area encompassing Combined SWMU 14. Details of the survey methodology are found in the *Final Technical Memorandum: Soil Gas and Geophysics Surveys* (EnSafe, 1995). Appendix A of this report includes a copy of Plate 2 from the Technical Memorandum, which shows the general layout of the geophysical survey grids and the mapping of anomalies detected during the survey.

The magnetics geophysical survey identified anomalies at 34 locations with characteristics suggesting the possibility of buried metal objects. Nine of the more well-defined geophysical anomalies were tested by soil gas analyses for chlorinated VOCs, total VOCs, and benzene, toluene, ethylbenzene, toluene (BTEX). Only five of these anomaly locations showed total VOCs exceeding the detection limits, and only one location showed slightly elevated VOC concentrations (slightly over 20 micrograms per liter [µg/L]) in soil gas. Individual volatile analytes did not show levels above the detection limit except at one location, which showed xylenes at 1.6 µg/L. Appendix B of this report includes a table listing the findings of the 34 anomalies.

No drums, containers, or other sources of contamination were observed on the ground surface at Combined SWMU 14 during the 1992 geophysical survey. A copy of the geophysical survey report was included as Appendix E of the *Zone H RFI Report, Revision 0*.

2.2 RFI Sampling (1994 – 1995)

Soil, groundwater, sediment, and surface water were sampled during the RFI to determine whether contamination resulted from chemical and other waste disposal activities in the Combined SWMU 14 area, and whether residual contamination resulted from firearm discharges in the vicinity of AOCs 670 and 684. Sample locations were selected to spatially cover the anomaly locations detected in the 1992 geophysical survey and the areas suspected to be impacted by previous site use. These soil, sediment, surface water, and groundwater sample locations were presented in the *Zone H RFI Work Plan* (EnSafe, 1994) and were approved by SCDHEC after review of the sampling approach.

2.2.1 RFI Soil Sampling

During the first RFI soil sampling event, 135 soil samples (72 surface and 63 subsurface) were collected from 72 locations within the Combined SWMU 14 area. These samples were analyzed for VOCs, semivolatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), metals, and cyanide. In addition, approximately 10 percent of these samples were analyzed for the full suite of parameters (herbicides, organo-phosphate pesticides, hexavalent chromium, dioxins, and additional VOCs and SVOCs). During the second sampling event, 25 additional samples (19 surface and 6 subsurface) were collected and analyzed for metals, SVOCs and PCBs. During the third sampling event, 16 additional samples (8 surface and 8 subsurface) were collected and analyzed for SVOCs. The RFI soil sample locations are shown on Figure 2-1.

During the RFI, the analytical results from the surface soil sampling were compared against the U.S. Environmental Protection Agency (EPA) Region III residential risk-based concentrations (RBCs), and for inorganics, against the background reference concentrations (BRCs). Analytical results from subsurface soil sampling were compared against soil screening levels (SSLs) with a dilution attenuation factor (DAF) of 10.

Analytes that exceeded the screening criteria were further evaluated in the risk assessment to determine which of them was considered a COC at Combined SWMU 14. Appendix C includes excerpts from the *Zone H RFI Report, Revision 0* that summarize the RFI detections of site constituents. The risk assessment included in the RFI report evaluated unrestricted

(residential) and industrial (site worker) future land use scenarios. The RFI report did not identify any COCs in subsurface soil.

The surface soil and groundwater COCs identified in the following subsections have been further evaluated in Section 5.0 of this CMSWP/IMCR. Several of the surface soil COCs were targeted for removal during the IM conducted by CH2M-Jones during December 2001 and January 2002, as is described in Section 7.0 of this CMSWP/IMCR.

Surface Soil

Based on the screening and risk assessments, the *Zone H RFI Report, Revision 0* identified six COCs in the surface soil of the Combined SWMU 14 area. These were 1,2,3-trichloropropane, aluminum, antimony, Aroclor-1254, Aroclor-1254, arsenic, benzo(a)pyrene equivalents (BEQs), thallium, and vanadium. The frequency of detection of these COCs in the surface soil at Combined SWMU 14 is summarized below.

1,2,3-Trichloropropane. 1,2,3-trichloropropane exceeded its residential RBC (91 micrograms per kilogram [µg/kg]) in only one surface soil sample location (at H014SB008). There were no detections of 1,2,3-trichloropropane in subsurface soil.

Aluminum. Aluminum exceeded its residential RBC of 7,800 milligrams per kilogram (mg/kg) (hazard index [HI]=0.1) and surface soil BRC (26,000 mg/kg) in one surface soil sample location (H014SB010).

Antimony. Antimony exceeded its residential RBC (3.1 mg/kg) in 10 surface soil samples: 670SB009, 670SB012,684SB009, 684SB012, 684SB013, 684SB014, 684SB015, 684SB017, 684SB016, and 684SB018. There was no BRC developed for antimony in Zone H.

Aroclor-1260 and Aroclor-1254. Aroclor-1260 and Aroclor-1254 concentrations were compared with an RBC value of 83 µg/kg. Aroclor-1260 concentrations exceeded this criterion in only one surface soil sample location (at H684SB007). Aroclor-1254 concentrations exceeded this criterion in only one surface soil sample location (H684SB033).

Arsenic. Arsenic exceeded its residential RBC (0.43 mg/kg) and surface soil BRC (15.6 mg/kg) at five surface soil sample locations (H015SB004, H670SB012, H670SB023 and H670SB032, and H684SB026).

BEQs. BEQs were the only SVOC detected at concentrations that exceeded surface soil RBCs. BEQ concentrations exceeded residential RBCs at several surface soil sample locations.

Lead. Lead exceeded its target cleanup goal for unrestricted (residential) land use of 400 mg/kg at H014SB005, H014SB006, H014SB010, H670SB012, H670SB023, and H670SB026. The *Zone H RFI Report, Revision 0* considered the average lead concentrations for SWMU 14 and AOC 670 and compared these average concentrations with the adult lead model that had been developed by EPA Region IV at the time of writing of the *Zone H RFI Report, Revision 0*. The RFI report concluded that lead was not considered a COC. However, lead was included in the IM conducted by CH2M-Jones as a COC targeted for remediation based on exceedances of screening criteria at several hotspots within Combined SWMU 14, as explained in Sections 5.0 and 7.0 of this report.

Thallium. Thallium exceeded its RBC (0.55 mg/kg) and surface soil BRC of 1.1 mg/kg at five locations (H670SB023, H684SB009, H684SB014, H684SB015, and H684SB016).

Vanadium. Vanadium exceeded its RBC (55 mg/kg, HI=0.1) at 21 of 75 surface soil sample locations, with exceedances ranging from 56 mg/kg to 72 mg/kg.

Appendix C includes excerpts from the *Zone H RFI Report, Revision 0*, which show the detected concentrations of site constituents in soils from the RFI soil sampling.

2.2.2 RFI Groundwater Sampling

Five pairs of shallow and deep permanent monitoring wells (identified as H014GW001, H014GW001D, H014GW0002, H014GW0002D, H014GW0003, H014GW003D, H014GW0004, H014GW004D, H014GW0005, and H014GW005D) were installed during the RFI. During the first sampling event, groundwater samples were analyzed for the full suite of parameters (VOCs, SVOCs, pesticides, PCBs, herbicides, metals, dioxins, organo-chlorine pesticides, and total petroleum hydrocarbon [TPH]). During the second and third sampling events, groundwater samples were analyzed for VOCs, SVOCs, pesticides, herbicides, and metals. A fourth sampling event was conducted for VOCs only. Figure 2-1 shows the locations of the RFI groundwater monitoring well installations.

During the RFI, analytical results from groundwater sampling were compared with the respective maximum contaminant levels (MCLs) and BRCs. Where MCLs were absent for an analyte, the EPA Region III tap water RBC was used as a screening criterion.

The *Zone H RFI Report, Revision 0* identified aluminum, bis(2-ethylhexyl)phthalate (BEHP), tetrachlorodibenzo-p-dioxin (TCDD) equivalents (TEQ), and vanadium as shallow groundwater COCs, and TEQs, BEHP, heptachlor epoxide, and thallium as deep groundwater COCs. These constituents were identified as COCs based on detections in the first sampling event only. Appendix C includes excerpts from the *Zone H RFI Report,*

Revision 0, which show the detected concentrations of these constituents in groundwater from the RFI sampling.

2.2.3 RFI Sediment Sampling

Four samples were collected from the 0 to 1 foot below land surface (ft bls) depth interval in two converging ditches within AOCs 670 and 684 (east of Buildings 1887, 1893, and 1897). These intermittent drainage ditches have no outlet to Shipyard Creek, which is the nearest surface water body, and probably collect surface runoff from adjacent areas. Sediment samples from these ditches were analyzed for VOCs, SVOCs, pesticides, herbicides, TPH, and dioxin.

Contaminants detected in these samples were similar to those detected in nearby surface soil at AOCs 670 and 684. The most significant detections were for TPH at two locations (H684M001 and H684M002), with concentrations of 780 mg/kg and 2,100 mg/kg, respectively. This indicated that some of the organic compounds detected at these locations could be related to the presence of TPH in nearby soils. Figure 2-1 shows the sediment sampling locations.

The EPA Region IV sediment screening values were used as screening goals in the *Zone H RFI Report, Revision 0*. No COCs were identified in sediments during the risk assessment.

Appendix C includes an excerpt from the *Zone H RFI Report, Revision 0*, showing the detections of various analytes in sediment.

2.2.4 RFI Surface Water Sampling

One surface water sample was collected from one of the ditches west of AOC 684 near the location of one of the sediment samples. The only detections were for the herbicide 2,4,5-TP at 0.34 micrograms per liter (µg/L) and dioxins (TEQ) at 7.33 picograms per liter (pg/L). The *Zone H RFI Report, Revision 0* compared the detections with the EPA chronic marine surface water quality criteria. No COCs were identified in surface water during the RFI risk assessment. Figure 2-1 shows the surface water sampling location.

Appendix C includes an excerpt from the *Zone H RFI Report, Revision 0*, showing the detections of various analytes in the surface water.

2.3 Conclusions and Recommendations from the *Zone H RFI Report, Revision 0*

The *Zone H RFI Report, Revision 0* concluded that a CMS should be conducted at Combined SWMU 14 for surface soil and groundwater COCs. The surface soil COCs identified were aluminum, antimony, arsenic, Aroclor-1254, Aroclor-1260, BEQs, thallium, and vanadium.

The shallow groundwater COCs identified in the *Zone H RFI Report, Revision 0* were BEHP, TEQs, aluminum, and vanadium. The deep groundwater COCs identified were heptachlor epoxide, chloroform, cadmium, thallium and TEQs. The RFI report also concluded that the groundwater COCs were identified based on detections during the first sampling event only, and that analytical results from subsequent groundwater sampling events would need to be considered in order to further refine the list of groundwater COCs at Combined SWMU 14.

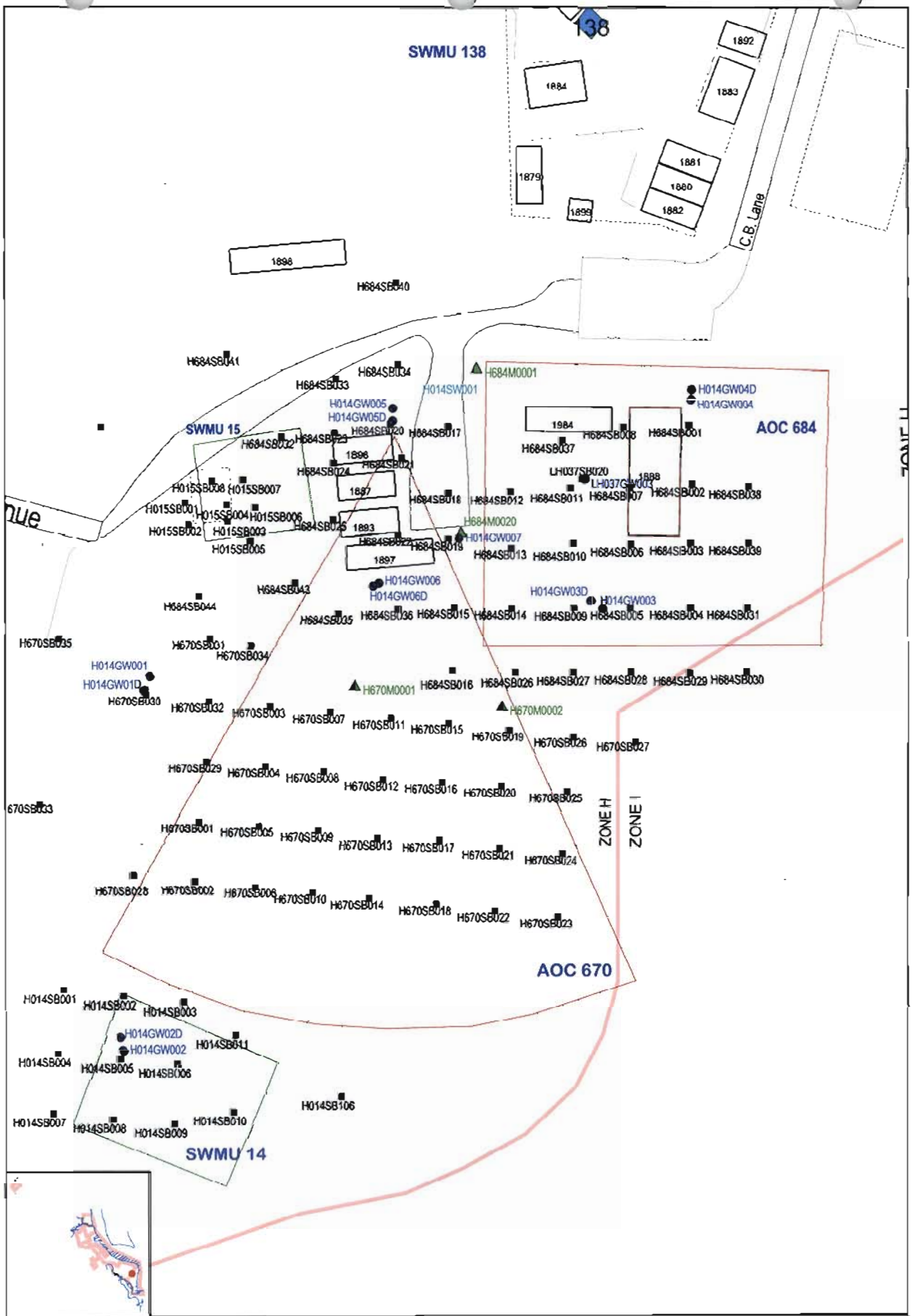


Figure 2-1
RFI Sampling Locations
Combined SWMU 14
Charleston Naval Complex

3.0 Summary of Interim Measures at Combined SWMU 14

The IM performed by the DET at Combined SWMU 14 was carried out in two phases. The first phase of the IM was a non-intrusive geophysical investigation using magnetic anomaly readings to survey the Combined SWMU 14 area, and to identify any buried objects or anomalies. The second phase of the DET IM was to excavate these anomalies. Details of these activities are summarized below.

3.1 DET Interim Measures (1997)

The IM conducted by DET in 1997 involved a geophysical investigation to identify additional anomalies and the excavation of areas where 34 anomalies had been previously detected during the 1992 pre-RFI geophysical survey.

The 1997 geophysical investigation identified 25 additional anomalies (Anomalies "A" through "Y"). Figure 2 from the *Completion Report, Interim Remedial Measure for SWMU 14* (DET, 1998), which is included in Appendix B of this report, shows the locations of these geophysical anomalies and their identification numbers. The IM effort then excavated all 59 anomalies, including those that had been identified during the previous geophysical investigations. The excavations found miscellaneous non-hazardous metallic objects, such as rebar, fence posts, strapping, welding rods, concrete footings, and horseshoes. Tables 1 and 2 from the DET IM Report (DET, 1998), which are included in Appendix B of this report, describe the anomalies found in the excavations conducted at these locations.

Excavations at one of the anomalies (Anomaly "G") found metal remnants of DANC containers. DANC is a decontaminating agent consisting primarily of the chlorinated solvents 1,1,2,2,-tetrachloroethane and trichloroethylene. Historic information indicated that DANC containers had been buried at Combined SWMU 14 (EnSafe, 1996). Anomaly G was detected within AOC 670, which is south of Building 1897. During the Anomaly G excavation, the metal remnants of 90 DANC containers were removed, then Building 1897 was demolished and the metal remnants of an additional 50 DANC containers were removed from under the footprint of the building. Figure B-1, presented in Appendix B of this report, shows the location of the DANC excavation at Combined SWMU 14. In addition to the DANC containers, the soil impacted by the DANC chemicals was also removed.

Approximately 200 tons of soil (characterized as hazardous) were transported and disposed of at an offsite disposal facility in Michigan. Approximately 440 tons of soil (characterized as non-hazardous) were disposed at a landfill in Dorchester, South Carolina.

After the DANC-related excavation was completed, a total of 30 screening and confirmatory soil samples were collected from the excavated area to verify that all contamination related to DANC had been removed. Low-level detections of 1,1,2,2-TCA were detected in the confirmatory soil samples collected from the sidewalls and bottom of the excavation, as indicated in Figure 4 of the DET IM Report (DET, 1998). A copy of this figure is included in Appendix B of this report.

A nested pair of shallow and deep groundwater monitoring wells (identified as H014GW006 and H014GW06D and shown in Figure 2-1) were installed within the DANC excavation footprint, after the excavation was backfilled. These wells were installed in the area with the highest possible residual concentrations of the chlorinated VOCs. Shallow well H014GW006 was sampled during three sampling events in July 1998, July 1999, and July 2000. Deep well H014GW06D was sampled during two sampling events, in July 1998 and March 1999. Shallow well H014GW007 was sampled during two sampling events, in March 1999 and July 1999. None of the samples in any of these wells in any of the sampling events showed a detection of 1,1,2,2-TCA above laboratory detection limits, indicating that the residual soil concentrations of 1,1,2,2-TCA in the DANC excavation have not leached into groundwater and do not pose a threat to groundwater at the site.

During consecutive groundwater sampling events, there were intermittent detections of acetone, carbon disulfide, chloroform, TCE, and vinyl chloride in the wells installed within and downgradient of the DANC excavation footprint. These detections were preceded and succeeded by detections below laboratory detection limits, thereby indicating that these residual concentrations of site constituents within the DANC excavation area do not pose a leaching concern. None of the other VOCs were detected above screening criteria in the samples these wells.

At locations other than the DANC excavation area within Combined SWMU 14, excavations were conducted to investigate the nature of the other subsurface anomalies. The uppermost 6 inches of soil were excavated and collected separately, under the assumption that the soil may have been impacted by lead shots from past site activities at AOCs 670 and 684. Approximately 40 cubic yards (yd^3) of soil accumulated from these excavations. This soil was analyzed for total metals and lead, using the toxicity characteristic leaching procedure (TCLP). Based on the analytical results, the soil was deemed non-hazardous. The non-

hazardous soil was backfilled into the excavations after receiving approval from SCDHEC. All these original anomaly excavation areas were re-screened with a magnetic detector after excavations of overburden soils to confirm that no subsurface anomalies still existed in the excavated areas.

3.1.1 Outcome of the DET Interim Measures

Following completion of the IMs by the DET, all DANC containers detected during the geophysical survey were removed and disposed of off site. Additionally, surrounding soils potentially impacted by the DANC chemicals were also removed and disposed of off site. Confirmatory soil sampling conducted after the DANC excavation showed that residual soil contamination does not pose a threat to groundwater at the site, and that the IMs were successful in removing the soil contamination.

Excavations from other anomaly locations were re-screened to confirm the absence of any other buried material. The soils from these excavations were characterized as non-hazardous.

3.2 Soil Removal Interim Measure (CH2M-Jones, 2001-2002)

From August 2001 to January 2002, CH2M-Jones conducted pre-excavation delineation sampling and excavation of contaminated soil from several areas of Combined SWMU 14 in order to remove soil that showed concentrations of COCs above unrestricted (residential) land use criteria.

The COCs targeted for removal were based on a screening of the RFI analytical data and COPC/COC refinement conducted by CH2M-Jones. The COC/COPC refinement process identified COCs in surface soil, including antimony, arsenic, BEQs, lead, and thallium. Surface soil with elevated concentrations of these COCs was targeted for removal during the IM. At the end of the IM, approximately 920 tons of soil were excavated from Combined SWMU 14. This soil was analyzed, characterized as non-hazardous, and disposed of off site. At the conclusion of this IM, the COCs were removed and cleanup objectives were achieved to levels that would allow unrestricted (residential) land use at this site.

The details of this IM effort are presented in Section 7.0 of this CMSWP/IMCR.

4.0 Summary of Additional Investigations

This section describes the investigations that were conducted at Combined SWMU 14 subsequent to the initial RFI. The chronology of these investigations was provided in Section 2.0.

4.1 Lead Shot Investigation (July 1998)

A separate lead-shot distribution sampling investigation was conducted by the Navy/EnSafe team during 1998 to determine the locations of lead impact due to firearm discharge from the pistol and skeet ranges. The investigation would also serve to estimate the volume of the lead-impacted soil in Combined SWMU 14. These sample locations covered gaps in the southern portion of the area of influence from the pistol range (i.e., the southern side of AOC 670) which had been identified during the RFI. No impacts from previous site use were reported in this area, except for surface soil impact from firearm discharge. More detailed information pertaining to this effort is contained in the *Draft CMS Report for Combined SWMU 14* (EnSafe, 1999).

Thirty-three surface soil samples were collected from the southern portion of Combined SWMU 14 as part of this sampling effort. Each sample location was excavated from a 1 ft x 1 ft x 4 inch-deep excavation area, sieve-analyzed, and tested for lead. Three of the 33 soil samples showed lead concentrations in excess of the 400 mg/kg goal. Figure 2.10 from the *Draft Zone H Combined SWMU 14 CMS Report* (EnSafe, 1999), which is included in Appendix D of this report, shows the locations of the lead shot distribution samples and the surface soil lead concentrations at these locations. A copy of Table 2.6 of the *Draft Zone H Combined SWMU 14 CMS Report*, which shows the analytical results of the lead shot sampling, is included in Appendix D of this report.

4.2 CMS Investigation (1999)

A CMS Investigation was conducted for Combined SWMU 14 by the Navy/EnSafe team after completion of the DET IMs to evaluate residual concentrations of site COCs, and to re-evaluate the presence of any new COCs remaining in the site soils after IM implementation.

The CMS investigation included installing and sampling a nested pair of shallow/deep groundwater monitoring wells (H014GW006/H014GW06D) within the footprint of the

DANC excavation conducted during the DET IMs. An additional shallow monitoring well (H014GW007) was installed directly downgradient of the DANC excavation area to evaluate the possibility of contaminant migration. Groundwater samples were analyzed for VOCs during three sampling events in July 1998, February 1999, and March 1999. Details of this investigation are included in the *Draft Zone H Combined SWMU 14 CMS Report*. During these sampling events, there were intermittent detections of the VOCs 4-methyl-2-pentanone, carbon disulfide, and acetone, below their respective tap water RBCs. Vinyl chloride was detected in well H014GW006 during the first sampling event in July 1998 at 17 µg/L (above its MCL of 2 µg/L), followed by no detections above the laboratory detection limits in two subsequent sampling events conducted in July 1999 and July 2000.

Soil and groundwater COCs identified during in the *Zone H RFI Report, Revision 0* were also re-evaluated during the CMS Investigation. A summary and discussion of the COPC/COC refinement is included in Section 5.0 of this report.

4.3 Interim Measure Groundwater Sampling (July 2000)

CH2M-Jones conducted groundwater monitoring of well H014GW006 for VOCs as part of a base-wide groundwater monitoring IM during July 2000. No VOCs were detected above laboratory detection limits in this well.

5.0 COPC/COC Refinement

5.1 Introduction

Using the current BCT approach for identifying COCs in soil and groundwater, this section presents an evaluation and refinement of the COCs which were identified in the *Zone H RFI Report, Revision 0* (EnSafe, 1998) and the draft CMS based on exceedances of screening criteria in use at the time of those investigations. As a result, some of these chemicals are no longer considered COCs. As is discussed in Section 7.0 of this report, chemicals identified in this section as final COCs for Combined SWMU 14 were addressed in the IM conducted by CH2M-Jones during December 2001 and January 2002. At the conclusion of the IM, the residual concentrations of chemicals remaining at the site were protective of human health and the environment, and the residual risks were within acceptable levels to allow unrestricted (residential) future land use at this site.

Due to historic burial and construction activities, along with past IMs, some of which brought in clean soil from off site, some intermixing of surface and subsurface soil may have occurred at Combined SWMU 14. Therefore, surface soil samples were compared with both surface and subsurface background levels.

Tables 5-1 and 5-2 show the detected concentrations of COCs in surface and subsurface soil samples.

5.2 COCs in Soil

5.2.1 Surface Soil

The *Zone H RFI Report, Revision 0* identified 1,2,3-trichloropropane, aluminum, antimony, arsenic, Aroclor-1254, Aroclor-1260, beryllium, BEQs, lead, thallium, and vanadium as surface soil COCs, as at least one soil sample from each parameter exceeded the screening criteria used at that time. These previously identified COCs are evaluated further in this section to determine if they are retained as COCs under current practices at the CNC. Based on the re-evaluation of these chemicals against current screening criteria, antimony, arsenic, BEQs, lead, and thallium in surface soil were retained as COCs and targeted for removal during the IM conducted by CH2M-Jones. 1,2,3-trichloropropane, aluminum, Aroclor-1254,

Aroclor-1260, beryllium, and vanadium are no longer considered COCs. The rationale for not selecting these chemicals as COCs is presented below.

Chemicals Eliminated as COCs

The following chemicals, which were identified during previous investigations as COCs at Combined SWMU 14, were eliminated from the list of COCs for the site based on current screening criteria.

1,2,3-Trichloropropane. 1,2,3-Trichloropropane exceeded its EPA Region III residential RBC of 91 μg/kg in only one of nine surface soil samples (at H014SB008) during the RFI. It was not detected in the other eight samples. This single detection of 91.2 μg/kg is essentially equivalent to the EPA Region III residential RBC. 1,2,3-Trichloropropane was originally retained during the RFI as a COC because its concentration at soil sampling location H014SB008 exceeded its soil-to-air volatilization screening level of 30 μg/kg. However, due to the limited extent of detections, impacts to ambient air related to 1,2,3-trichloropropane volatilization are unlikely to exceed acceptable risk-based air concentrations. This chemical has high volatility and is likely to reduce in concentration in surface soil within a short period of time. It is also highly soluble and mobile in soil, indicating a potential for leachability to groundwater. However, it was not detected in subsurface soil at the same location as the surface soil detection or in groundwater in downgradient wells H014GW02 and H014GW02D. None of the surrounding samples had detectable levels of 1,2,3-trichloropropane, indicating that the single detection may be an anomaly. Therefore, 1,2,3-trichloropropane is not considered a COC in soil at Combined SWMU 14.

Aluminum. Aluminum exceeded its EPA Region III residential RBC of 7,800 mg/kg (HI=0.1) and the Zone H surface soil BRC of 26,000 mg/kg that was in use at the time of the initial RFI effort in one of three surface soil sample locations (H014SB010) at SWMU 14. The maximum surface soil aluminum concentration detected was 29,600 mg/kg, which is below the upper limit of the range of the background values for aluminum in Zone H surface soil (32,700 mg/kg). The detected aluminum concentrations at SWMU 14 are within the range of background concentrations at Zone H and do not suggest a site-related release. Therefore, aluminum is not considered a COC in soil at Combined SWMU 14.

Aroclor-1254. Aroclor-1254 was originally retained as a COC because the Aroclor-1254 concentration of 160 μg/kg at one surface soil sample location (H684SB033) exceeded the industrial RBC of 83 μg/kg, which was used during the RFI. The 95-percent Upper Confidence Limit (UCL_{95}) calculations for Aroclor-1254 in surface soil of 0.02 and 0.04 mg/kg were calculated using a non-parametric and bootstrap method, respectively, as

shown in Appendix G. These UCL_{95} values are well below the current unrestricted (residential) land use-based RBC of 0.32 mg/kg. Table 5-3 presents a listing of site-wide Aroclor-1254 concentrations. None of the detected Aroclor-1254 concentrations exceeded the remediation goal of 1 mg/kg for high-occupancy areas as outlined in the *Code of Federal Regulations* (CFR) 40 CFR 761.120. The levels of Aroclor-1254 concentrations and their frequency of detection are not reflective of a release. Therefore, Aroclor-1254 is not considered a COC in soil at Combined SWMU 14.

Aroclor-1260. Aroclor-1260 was originally retained as a COC because the Aroclor-1260 concentration of 376 μg/kg at one surface soil sample location (H684SB007) exceeded the EPA Region III residential RBC of 83 μg/kg, which was used during the RFI. UCL_{95} estimates for Aroclor-1260 in surface soil of 0.025 and 0.046 mg/kg were calculated using non-parametric and bootstrap methods, respectively, as shown in Appendix G. These UCL_{95} values are well below the current unrestricted (residential) land use-based RBC of 0.32 mg/kg. Table 5-3 shows a listing of site-wide Aroclor-1260 concentrations. None of the detected Aroclor-1260 concentrations exceeded the remediation goal of 1 mg/kg for high-occupancy areas as outlined in 40 CFR 761.120. The levels of Aroclor-1260 concentrations and their frequency of detection are not reflective of a release. Therefore, Aroclor-1260 is not considered a COC in soil at Combined SWMU 14.

Beryllium. Beryllium was initially included in the *Zone H RFI Report, Revision 0* as a COC based on surface soil exceedances of the EPA Region III residential RBC of 0.16 mg/kg that was in use at the time of the initial RFI effort. Beryllium concentrations ranged between 0.13 mg/kg to 1.5 mg/kg in surface soil and 0.18 mg/kg to 1.5 mg/kg in subsurface soil. The range of background values for beryllium concentrations in surface soil in Zone H is from 0.04 mg/kg to 1.4 mg/kg and in subsurface soil are 0.06 mg/kg to 1.6 mg/kg. However, after the RFI was completed, the residential soil RBC (HI=1.0) for beryllium changed from 0.16 mg/kg to 160 mg/kg (EPA Region III RBC Table, 1998). None of the detected concentrations in site samples exceeded the range of background values for beryllium concentrations or the revised RBC of 160 mg/kg. As a result, beryllium is not considered a COC in soil at Combined SWMU 14.

Vanadium. Vanadium exceeded its EPA Region III RBC (55 mg/kg, HI=0.1) at 21 of 75 surface soil sample locations, with exceedances ranging from 56 mg/kg to 72 mg/kg. However, none of the detected vanadium concentrations exceeded the upper range of the background values for surface soil vanadium concentrations in Zone H, which is 75 mg/kg. Additionally, none of the subsurface soil samples exceeded the upper range of background

values for subsurface soil vanadium concentrations (103 mg/kg) or the SSL of 2,550 mg/kg for vanadium. Therefore, vanadium is not considered a COC in soil at Combined SWMU 14.

Chemicals Retained as COCs

The following chemicals were retained as COCs based on an evaluation against current screening criteria. Tables 5-1 and 5-2, respectively, show surface and subsurface soil concentrations of these chemicals from the RFI sampling. Table 5-3 presents the surface soil concentrations of selected COPCs at the site.

Antimony. Antimony was detected above its RBC (3.1 mg/kg) in 10 of 61 surface soil samples (at H670SB009, H670SB012, H684SB009, H684SB012, H684SB013, H684SB014, H684SB015, H684SB017, H684SB016, and H684SB018), with concentrations ranging from 4.6 mg/kg to 12.4 mg/kg. These concentrations are above the range of background values for antimony concentrations in Zone H. The RFI risk assessment indicated that antimony presents a hazard quotient of only 0.0071 for a potential future resident, which is significantly below the target HI of 1.0, indicating that the estimate of site average is much lower than the target RBC levels for antimony. Because the elevated concentrations of antimony detected in surface soil were above the residential RBC of 3.1 mg/kg (at HI=0.1) in selected locations at Combined SWMU 14, and the subsurface soil samples at some of these locations showed antimony detections above the COPC screening criteria, antimony was retained as a COC. These exceedance locations were targeted for removal during the IM, as is discussed in Section 7.0 of this report.

Arsenic. Arsenic was retained as a COC in surface soil due to elevated concentrations detected at two RFI boring locations (51.4 mg/kg at H015SB004, and 69 mg/kg at H670SB023). All other arsenic concentrations were below the next highest concentration of 23.7 mg/kg. The Zone H range of background values for surface soil arsenic is between 0.64 mg/kg and 18 mg/kg. The site-wide average for surface soil arsenic concentration is 9.5 mg/kg, which is well within the background range of values for surface soil arsenic in Zone H. The two locations where elevated arsenic concentrations were detected in surface soil were targeted for removal during the soil removal IM conducted by CH2M-Jones. Table 5-3 includes analytical results for arsenic from the RFI, with a calculation of the site average concentration for surface soil arsenic.

BEQs. BEQs in surface soil were retained as COCs due to elevated BEQ detections above the CNC BEQ site-wide reference screening goal of 1.304 mg/kg. BEQs in subsurface soil did not exceed the CNC BEQ site-wide reference screening goal of 1.4 mg/kg. Tables 5-1 and 5-2 present the sample-specific concentrations for BEQs in surface soil and subsurface soil,

respectively. Additional horizontal and vertical delineation of BEQ contamination in soils was done as part of the IM conducted by CH2M-Jones during 2001; surface soil that exceeded the CNC BEQ site-wide reference concentrations was excavated during this IM, as is described in greater detail in Section 7.0 of this report.

Lead. Lead was retained as a surface soil COC based on exceedance of the unrestricted (residential) land use screening goal of 400 mg/kg at seven locations from the RFI and lead shot investigations. The *Zone H RFI Report, Revision 0* considered the average lead concentrations for SWMU 14 and AOC 670, and compared these average concentrations with the adult lead model that had been developed by EPA Region IV at the time of the writing of the *Zone H RFI Report, Revision 0*. It was concluded that lead was not considered a COC. However, lead was included as a surface soil COC and targeted for remediation during the IM conducted by CH2M-Jones based on exceedances of screening criteria at several hotspots within Combined SWMU 14. Surface soil lead concentrations at six locations form the RFI exceeded the unrestricted (residential) land use screening goal of 400 mg/kg (at H014SB005, H014SB006, H014SB010 and H014SB012, H670SB023 and H670SB026). Three additional locations sampled during the lead shot investigation (at H014LSD016, H014LSD21 and H014LSD29) also exceeded this goal. Figure 5-1 presents the locations of lead exceedances in surface soil at the Combined SWMU 14 where surface soils were removed as part of the soil removal conducted by CH2M-Jones. All the sample locations where lead concentrations exceeded the unrestricted (residential) land use screening goal of 400 mg/kg were targeted for removal during the soil removal IM conducted by CH2M-Jones.

Thallium. Thallium was retained as a COC during the initial RFI as a result of exceedances of its unrestricted (residential) land-use-based RBC (0.55 mg/kg) and the surface soil BRC (1.1 mg/kg) at five of 50 surface soil sample locations (H670SB023, H684SB009, H684SB014, H684SB015, and H684SB016). Thallium concentrations in four of these five detections ranged from 1.2 mg/kg to 1.5 mg/kg, with the fifth detection at 2.9 mg/kg (at H684SB009). The range of surface soil background values for thallium in Zone H is between 0.12 mg/kg and 1.1 mg/kg. The majority of the thallium detections at Combined SWMU 14 were within this range. Additionally, the frequency of detection and concentrations of thallium are not indicative of a thallium release at the site. As shown in Table 5-3, the site-wide average concentration of thallium is 0.506 mg/kg, which is below human health protection levels (based on the RBC of 5.5 mg/kg at HI=1.0). However, thallium was retained as a COC due to the exceedances of the unrestricted (residential) land use criterion at the five locations indicated above. These five locations (shown on Figure 5-1) were selected for surface soil

removal during the IM conducted by CH2M-Jones. Subsurface thallium concentrations at this site did not exceed the range of background values in Zone H.

Figure 5-1 shows the Combined SWMU 14 surface soil locations that indicate the presence of the COCs identified above. These locations were targeted for soil removal during the IM conducted by CH2M-Jones in December 2001 and January 2002. The exceedances are highlighted in bold text and outlined within Table 5-1.

5.2.2 Subsurface Soil

The *Zone H RFI Report, Revision 0* did not identify subsurface soil COCs at Combined SWMU 14. No new COCs were identified in the additional investigations. Table 5-2 shows the detected subsurface soil concentrations for those chemicals identified as surface soil COCs in the above discussion. The subsurface concentrations of these chemicals are within their respective range of background values for Zone H subsurface soil.

5.2.3 Soil VOC Rescreening using SSL at DAF=1

During the RFI, soil VOC detections were not screened against an SSL based on a DAF=1. Per BCT agreements, a rescreening of surface and subsurface soil VOC detections against generic SSLs based on a DAF=1 was conducted during the preparation of this report. This rescreening showed that among the detected VOCs in surface and subsurface soils, the only VOC detections above the generic SSL (with a DAF=1) were dibromochloromethane and methylene chloride. Tables 5-4 and 5-5 show the surface and subsurface soil VOC detections, respectively, at Combined SWMU 14. VOC detections exceeding the SSL (DAF=1) are further discussed below.

Dibromochloromethane

There is no generic SSL published for dibromochloromethane. The reported detection of dibromochloromethane of 0.007 mg/kg at H670SB002 was compared with the risk-based SSL of 0.00004 mg/kg from the EPA Region III RBC Table (October 2000).

This was the only detection for this chemical in 87 surface soil samples. Additionally, there were no detections of this chemical above laboratory detection limits in any of the subsurface soil samples or groundwater samples at the site, indicating that this single detection in surface soil does not pose a concern for groundwater migration.

Based on these observations, dibromochloromethane does not appear to be site-related and is not considered a COC for the site.

Methylene Chloride

There were 13 methylene chloride detections out of 73 surface soil samples, and 12 detections out of 62 subsurface soil samples. All the methylene chloride detections exceeded the generic SSL value (DAF=1) of 0.001 mg/kg.

Methylene chloride detections in soil at Combined SWMU 14 appear to most likely be due to laboratory contamination. Methylene chloride has been widely reported in background (grid) and blank samples at CNC, particularly in sampling conducted in the mid 1990s.

Methylene chloride was detected in field and laboratory blank samples from the sample data groups (SDGs) for the surface and subsurface soil samples from Combined SWMU 14, which showed methylene chloride detections. The SDGs which contained the surface and subsurface soil samples with methylene chloride detections are CHS11, CHS14, APX04 and APX05. Appendix I contains a copy of the table showing the detections of methylene chloride in the field blanks. Methylene chloride detections in the blanks ranged from 1.1 µg/kg to 9.0 µg/kg.

Based on EPA's "ten times" rule, reported detections of methylene chloride up to 90 µg/kg in samples from the site should be considered as likely due to lab contamination. None of the reported detections of methylene chloride in soil samples at SWMU 14 were greater than 90 µg/kg. Therefore, methylene chloride is not considered a COC for surface or subsurface soil at Combined SWMU 14.

5.3 COCs in Groundwater

The *Zone H RFI Report, Revision 0* identified aluminum, BEHP, TEQs, and vanadium as shallow groundwater COCs; BEHP, TEQs, heptachlor epoxide, and thallium were identified as deep groundwater COCs at Combined SWMU 14. These constituents were identified as COCs based on detections during the first sampling event only. The nature and frequency of their occurrences are further discussed in this section. None of these chemicals has been retained as a groundwater COC at this site.

5.3.1 Shallow Groundwater

Aluminum

Table 5-6 presents the aluminum detections in shallow groundwater at Combined SWMU 14. There is no primary MCL for aluminum. The tap water RBC is 3,650 µg/L (HI=0.1). Three intermittent detections were found to exceed the maximum background aluminum concentration of 1,140 µg/L in shallow groundwater, but these detections were preceded or

followed by low detections either below the tap water RBC or below laboratory detection limits. Aluminum concentrations detected in surface and subsurface soils did not exceed the respective ranges of background values for Zone H, and aluminum is not considered a soil COC. There is no indication of an aluminum release at the site. Based on these observations, aluminum is not considered a COC at this site.

BEHP

Table 5-6 shows a summary of the BEHP concentrations in the shallow groundwater sampling events conducted at Combined SWMU 14. As indicated in the table, intermittent BEHP detections are preceded or followed by no detections above the laboratory detection limits. BEHP is a common laboratory contaminant. There were no detections of BEHP above the EPA Region III residential RBC in surface soil, or above the SSL in subsurface soil. There is no evidence of a site-release or site-related use of BEHP at Combined SWMU 14. Based on these observations, BEHP is not considered a groundwater COC at this site.

TEQs

Table 5-6 presents the calculated TEQ concentrations from RFI shallow groundwater analyses for dioxins at Combined SWMU 14. There were no exceedances in shallow groundwater of the MCL of 30 picograms per liter (pg/L) for 2,3,7,8-tetrachlorodibenzodioxin (2,3,7,8-TCDD). Therefore, TEQs are not considered COCs in shallow groundwater at Combined SWMU 14.

Vanadium

Table 5-6 presents the vanadium concentrations in shallow groundwater from the RFI sampling. There is no MCL for vanadium. There was only one detection in site groundwater samples from shallow wells that exceeded the tap water RBC of 25.5 μg/L for vanadium. This detection was in the second sampling event in monitoring well H014GW002 at 65.2 μg/L. This detection was followed by detections below the tap water RBC. There were no other detections in other site wells above the tap water RBC. The remainder of the vanadium detections in shallow groundwater at the site in all sampling events were below the tap water RBC. Additionally, vanadium did not exceed screening criteria in surface or subsurface soil and is not a soil COC. Based on these observations, vanadium is not considered a COC in the subsurface at Combined SWMU 14.

The CMS investigation conducted during 1999 included the installation of a shallow/deep pair of wells (H014GW006/H014GW06D) in the DANC excavation area, as well as another shallow well (H014GW007) downgradient of the DANC excavation area. These wells were

sampled for VOCs, and the following chemicals were detected in the analyses. Table 5-6 presents the analytical results from the RFI and additional investigations for these chemicals.

Acetone

Table 5-6 shows the detections of acetone in site wells. Acetone, which is a common laboratory contaminant, was detected in a sample from well HGW014006 at 4.79 μg/L during the July 1999 sampling event. This detected concentration is well below the tap water RBC of 61 μg/L. Acetone was not detected in any other groundwater samples collected during the RFI or the CMS Investigation at Combined SWMU 14. Based on these observations, acetone is not considered a COC in shallow groundwater.

Vinyl Chloride

During the first sampling event of the CMS investigation, the shallow groundwater sample from well H014GW006 contained a vinyl chloride concentration (17.0 μg/L) that exceeded its RBC and MCL of 2 μg/L. However, vinyl chloride was not detected in any samples from the second (March 1999), third (July 1999) and fourth (July 2000) sampling events conducted at this same well.

No VOCs were detected in deep well H014W06D or shallow well H014GW007, which is downgradient of well H014GW006 during the two CMS investigation sampling events. Figure C-1 in Appendix C of this report shows shallow groundwater elevation contours from measurements conducted during April 2002.

5.3.2 Deep Groundwater

TEQs

Table 5-6 shows calculated TEQ concentrations in deep groundwater. None of the TEQ values in deep groundwater exceeded the MCL of 30 pg/L. Therefore, TEQs are not considered deep groundwater COCs at this site.

BEHP

Table 5-6 presents a summary of the BEHP concentrations from the deep groundwater sampling events at Combined SWMU 14. As indicated in the table, intermittent BEHP detections in some wells are preceded or followed by no detections above the laboratory detection limits in the same wells. In the rest of the wells, all detections are below laboratory detection limits. BEHP is also a common laboratory contaminant, and could be the cause of these intermittent detections. There were no detections of BEHP above the EPA Region III

residential RBC in surface soil or above the SSL in subsurface soil. There is also no evidence of a site-release or site-related use of BEHP at Combined SWMU 14. Based on these observations, BEHP is not considered a groundwater COC at this site.

Heptachlor Epoxide

Table 5-6 presents the heptachlor epoxide detections in deep groundwater. There was only one detection of heptachlor epoxide in the first sampling event in deep well H014GW03D. There were no detections above the laboratory detection limits in subsequent sampling events conducted at this well, or in any of the four sampling events in other shallow or deep wells. Additionally, most of the heptachlor epoxide detections in surface and subsurface soils were below laboratory detection limits. Heptachlor epoxide is not considered a soil COC at this site. Based on these observations, heptachlor epoxide is not considered a groundwater COC at Combined SWMU 14.

Thallium

Table 5-6 presents the thallium detections in groundwater. The MCL for thallium is 2 µg/L. The majority of thallium detections in shallow and deep groundwater at the site were below laboratory detection limits. Thallium detections in deep groundwater exceeded the MCL in the third sampling event in all deep wells, and were preceded by detections below laboratory detection limits in the two preceding sampling events. With the exception of deep well H014GW05D, these exceedances in the third sampling event were followed by detections below laboratory detection limits in the fourth sampling event in all other deep wells at the site. Intermittent detections of thallium above the MCL have been found throughout the site in background wells. The frequency of thallium detections in shallow and deep groundwater are not indicative of a thallium release at the site. Therefore, thallium is not considered a COC in deep groundwater at this site.

Based on the above discussion, no groundwater COCs have been identified at Combined SWMU 14.

TABLE 5-1
Surface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	EPA Region III RBC[a] (HI=0.1)	SSL[b] (DAF=10)	Zone H Background Range of Concentrations
Antimony	670SB003	7.6	U	3.1	2.7	1.1 - 2.2
	670SB004	7.4	UJ			
	670SB005	1.6	UJ			
	670SB006	1.6	UJ			
	670SB007	7.8	UJ			
	670SB008	7.7	UJ			
	670SB009	**9.5**	J			
	670SB010	8.6	UJ			
	670SB012	**11.4**	J			
	670CB013	16.3	U			
	670SB014	17.2	UJ			
	670SB015	6.6	UJ			
	670CB015	8.4	UJ			
	670SB016	1.9	U			
	670SB017	12.6	U			
	670SB018	1.6	U			
	670SB019	13.8	U			
	670SB020	9.5	UJ			
	670SB021	11.0	U			
	670SB022	10.2	U			
	670SB024	1.2	U			
	670SB025	1.6	UJ			
	670SB026	12.0	UJ			
	670SB027	10.9	U			
	670SB032	1.3	UJ			
	684SB001	1.1	UJ			
	684SB002	1.4	UJ			
	684SB003	1.7	UJ			
	684SB004	1.8	UJ			

TABLE 5-1
Surface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	EPA Region III RBC[a] (HI=0.1)	SSL[b] (DAF=10)	Zone H Background Range of Concentrations
Antimony	684SB005	1.2	UJ	3.1	2.7	1.1 - 2.2
	684SB006	1.5	UJ			
	684SB007	1.6	UJ			
	684SB008	6.0	U			
	684SB009	**5.6**	J			
	684SB010	6.0	U			
	684SB011	6.0	U			
	684SB012	**6.2**	J			
	684SB013	**4.6**	J			
	684SB014	**12.4**	=			
	684SB015	**11.9**	=			
	684SB016	**5.3**	J			
	684SB017	**7.7**	=			
	684SB018	**10.1**	=			
	684SB019	11.3	UJ			
	684SB020	1.9	UJ			
	684SB021	1.8	UJ			
	684SB022	11.3	UJ			
	684SB023	1.6	UJ			
	684SB024	1.9	UJ			
	684SB025	1.5	UJ			
	684SB026	1.7	U			
	684SB027	1.4	U			
	684SB029	1.6	UJ			
	684SB030	9.0	UJ			
	684SB031	1.8	UJ			
Arsenic	014SB001	14.2	UJ	0.43	0.013	0.64 - 18
	014SB002	16.8	UJ			
	014SB003	11.0	UJ			

TABLE 5-1
Surface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	EPA Region III RBC[a] (HI=0.1)	SSL[b] (DAF=10)	Zone H Background Range of Concentrations
Arsenic	014-SB004	17.9	UJ	0.43	0.013	0.64 - 18
	014CB004	11.9	=			
	014SB005	19.2	UJ			
	014SB006	16.8	UJ			
	014SB007	13.2	UJ			
	014SB008	16.2	UJ			
	014SB009	13.8	UJ			
	014SB010	19.3	U			
	014SB011	10.7	U			
	014SB106	13.6	=			
	014SW001	20.3	UJ			
	015SB001	6.4	=			
	015SB002	3.6	J			
	015SB003	15.0	=			
	015SB004	**51.4**	=			
	670SB001	15.6	=			
	670SB002	9.7	=			
	670CB003	9.9	U			
	670SB004	11.3	=			
	670SB005	15.2	=			
	670SB006	13.8	=			
	670SB007	8.9	=			
	670SB008	9.7	=			
	670SB009	9.1	=			
	670SB010	10.4	=			
	670SB011	8.9	=			
	670SB012	**23.7**	=			
	670SB013	10.9	=			
	670CB013	9.3	U			
	670SB014	9.5	=			

TABLE 5-1
Surface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	EPA Region III RBC[a] (HI=0.1)	SSL[b] (DAF=10)	Zone H Background Range of Concentrations
Arsenic	670SB015	8.5	=	0.43	0.013	0.64 - 18
	670CB015	10.9	=			
	670SB016	12.1	J			
	670SB017	8.2	J			
	670SB018	10.1	J			
	670SB019	7.0	J			
	670SB020	8.4	=			
	670SB021	7.9	J			
	670SB022	9.3	J			
	670SB023	**69.0**	=			
	670SB024	13.0	J			
	670SB025	13.7	UJ			
	670SB026	12.3	J			
	670SB027	8.3	J			
	670SB032	17.2	=			
	684SB001	3.3	U			
	684SB002	1.9	U			
	684SB003	8.5	=			
	684SB004	12.7	=			
	684SB005	7.4	=			
	684SB006	0.6	U			
	684SB007	9.0	=			
	684SB008	1.9	=			
	684SB009	12.9	=			
	684SB010	5.2	=			
	684SB011	1.4	=			
	684SB012	0.9	J			
	684SB013	2.8	=			
	684SB014	11.7	=			
	684SB015	13.5	=			

TABLE 5-1
Surface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	EPA Region III RBC[a] (HI=0.1)	SSL[b] (DAF=10)	Zone H Background Range of Concentrations
Arsenic	684SB016	4.8	=	0.43	0.013	0.64 - 18
	684SB017	3.6	=			
	684SB018	6.4	=			
	684SB019	5.1	UJ			
	684SB020	11.3	UJ			
	684SB021	3.8	UJ			
	684SB022	5.1	UJ			
	684SB023	11.6	UJ			
	684SB024	16.2	UJ			
	684SB025	10.6	UJ			
	684SB026	16.3	J			
	684SB027	9.9	J			
	684SB028	11.2	UJ			
	684SB029	9.0	UJ			
	684SB030	7.5	UJ			
	684SB031	18.6	UJ			
Lead	014SB001	44.5	UJ	400[c]	400[c]	1.8 - 172
	014SB002	44.6	UJ			
	014SB003	24.8	UJ			
	014-SB004	72.5	=			
	014CB004	95.2	J			
	014SB005	**915**	=			
	014SB006	**808**	=			
	014SB007	83	=			
	014SB008	295	=			
	014SB009	164	=			
	014SB010	**656**	=			
	014SB011	134	=			
	014SB106	320	J			

TABLE 5-1
Surface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	EPA Region III RBC[a] (HI=0.1)	SSL[b] (DAF=10)	Zone H Background Range of Concentrations
Lead	014SW001	16.7	UJ	400[c]	400[c]	1.8 - 172
	015SB001	21.0	J			
	015SB002	7.3	U			
	015SB003	21.3	=			
	015SB004	83.7	J			
	670SB001	21.0	=			
	670SB002	94.2	=			
	670SB003	NS	=			
	670CB003	9.8	UJ			
	670SB004	9.5	UJ			
	670SB005	35.3	J			
	670SB006	39.6	J			
	670SB007	10.1	UJ			
	670SB008	20.4	J			
	670SB009	18.2	J			
	670SB010	26.8	J			
	670SB011	7.7	UJ			
	670SB012	**871**	J			
	670SB013	9.2	U			
	670CB013	20.6	UJ			
	670SB014	44.0	J			
	670SB015	18.6	J			
	670CB015	14.4	J			
	670SB016	68.8	=			
	670SB017	16.3	U			
	670SB018	45.0	=			
	670SB019	56.8	=			
	670SB020	12.2	UJ			
	670SB021	14.2	U			
	670SB022	51.2	=			

TABLE 5-1
Surface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	EPA Region III RBC[a] (HI=0.1)	SSL[b] (DAF=10)	Zone H Background Range of Concentrations
Lead	670SB023	**20,900**	=	400[c]	400[c]	1.8 - 172
	670SB024	63.1	=			
	670SB025	133.0	=			
	670SB026	**1,690**	J			
	670SB027	14.0	UJ			
	670SB032	44.4	=			
	684SB001	27.3	=			
	684SB002	10.3	=			
	684SB003	75.9	=			
	684SB004	67.9	=			
	684SB005	61.6	=			
	684SB006	3.9	J			
	684SB007	24.8	=			
	684SB008	11.2	=			
	684SB009	38.9	=			
	684SB010	117.0	=			
	684SB011	46.4	=			
	684SB012	4.1	=			
	684SB013	8.5	=			
	684SB014	35.1	=			
	684SB015	47.2	=			
	684SB016	4.0	=			
	684SB017	10.2	=			
	684SB018	22.3	=			
	684SB019	24.7	U			
	684SB020	57.2	=			
	684SB021	14.1	UJ			
	684SB022	16.1	UJ			
	684SB023	62.5	=			
	684SB024	39.0	=			

TABLE 5-1
Surface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	EPA Region III RBC[a] (HI=0.1)	SSL[b] (DAF=10)	Zone H Background Range of Concentrations
Lead	684SB025	50.7	=	400[c]	400[c]	1.8 - 172
	684SB026	50.8	=			
	684SB027	32.4	=			
	684SB028	21.6	UJ			
	684SB029	16.0	UJ			
	684SB030	11.5	UJ			
	684SB031	43.0	UJ			
Thallium	670SB001	2.3	U	0.55	0.18	0.12 - 1.1
	670SB001	2.3	U			
	670SB002	2.7	U			
	670CB003	1.8	U			
	670SB004	0.5	U			
	670SB005	0.5	U			
	670SB006	0.5	U			
	670SB007	0.5	=			
	670SB008	0.5	U			
	670SB009	0.5	U			
	670SB010	0.8	J			
	670SB011	2.0	U			
	670SB012	1.3	U			
	670SB013	1.7	U			
	670CB013	1.9	U			
	670SB014	0.5	U			
	670SB015	1.6	UJ			
	670CB015	2.0	UJ			
	670SB016	0.6	U			
	670SB017	0.6	U			
	670SB018	0.5	U			
	670SB019	2.3	UJ			

TABLE 5-1
Surface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	EPA Region III RBC[a] (HI=0.1)	SSL[b] (DAF=10)	Zone H Background Range of Concentrations
Thallium	670SB020	2.2	UJ	0.55	0.18	0.12 - 1.1
	670SB021	0.5	U			
	670SB022	0.5	U			
	670SB023	1.4	=			
	670SB024	0.4	U			
	670SB025	0.6	UJ			
	670SB026	0.2	UJ			
	670SB027	0.2	U			
	670SB032	1.5	U			
	684SB001	0.3	UJ			
	684SB002	0.3	UJ			
	684SB003	0.4	UJ			
	684SB004	0.4	UJ			
	684SB005	0.3	UJ			
	684SB006	0.4	UJ			
	684SB007	0.4	UJ			
	684SB008	0.1	J			
	684SB009	2.9	J			
	684SB010	0.1	J			
	684SB011	1.0	U			
	684SB012	1.0	U			
	684SB013	1.0	U			
	684SB014	1.2	J			
	684SB015	1.3	J			
	684SB016	1.5	J			
	684SB017	1.0	U			
	684SB018	1.0	U			
	684SB019	0.8	U			
	684SB020	0.9	U			
	684SB021	0.8	U			

TABLE 5-1
Surface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	EPA Region III RBC[a] (HI=0.1)	SSL[b] (DAF=10)	Zone H Background Range of Concentrations
Thallium	684SB022	0.6	U	0.55	0.18	0.12 - 1.1
	684SB023	0.7	U			
	684SB024	1.0	U			
	684SB025	1.0	U			
	684SB026	0.3	U			
	684SB027	0.3	U			
	684SB028	0.5	UJ			
	684SB029	0.7	UJ			
	684SB030	0.6	UJ			
	684SB031	0.5	UJ			

TABLE 5-1
Surface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (µg/kg)	Qualifier	EPA Region III RBC[a] (HI=0.1)	SSL[b] (DAF=10)	CNC Site-wide BEQ Reference Concentration
BEQs[d]	014SB001	92.1	U	0.87[e]	NA	1,304
	014SB002	92.1	U			
	014SB003	92.1	U			
	014-SB004	92.1	U			
	014CB004	92.1	U			
	014SB005	96.0	=			
	014SB006	92.1	U			
	014SB007	122.7	=			
	014SB008	92.1	U			
	014SB009	92.1	U			
	014SB106	1,200	=			
	014SW001	92.1	U			
	015SB001	157.5	=			
	015SB002	92.1	U			
	015SB003	623	=			

TABLE 5-1
Surface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	EPA Region III RBC[a] (HI=0.1)	SSL[b] (DAF=10)	Zone H Background Range of Concentrations
BEQs[b]	015SB004	**1,919.4**	=	0.87[e]	NA	1,304
	015SB005	293.5	=			
	015SB006	622	=			
	015SB007	156.0	=			
	015SB008	92.1	U			
	670SB001	92.1	U			
	670SB002	351.2	=			
	670SB003	**7,762**	=			
	670CB003	741.4	=			
	670SB004	1,047	=			
	670SB005	**1,590.9**	=			
	670SB006	92.1	U			
	670SB007	92.1	U			
	670SB008	982	=			
	670SB009	92.1	U			
	670SB010	92.1	U			
	670SB011	92.1	U			
	670SB012	659	=			
	670SB013	92.1	U			
	670CB013	107.8	=			
	670SB014	92.2	=			
	670SB015	148.4	=			
	670CB015	NS	=			
	670SB016	254.3	=			
	670SB017	92.1	U			
	670SB018	92.1	U			
	670SB019	127.1	=			
	670SB020	92.1	U			
	670SB021	96.3	=			
	670SB022	92.1	U			

TABLE 5-1
Surface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	EPA Region III RBC[a] (HI=0.1)	SSL[b] (DAF=10)	Zone H Background Range of Concentrations
BEQs[b]	670SB023	92.1	U	0.87[e]	NA	1,304
	670SB024	92.1	U			
	670SB026	92.1	U			
	670SB027	92.1	U			
	670SB028	92.1	U			
	670SB029	**7,525.1**	=			
	670SB030	212.0	=			
	670SB031	**3,766.2**	=			
	670SB032	1,051	=			
	670SB033	92.1	U			
	670SB034	**2,136.3**	=			
	670SB035	92.1	U			

Bold concentrations indicate upper-interval soil samples with concentrations exceeding the range of background values for all inorganics except lead (residential cleanup goal of 400 mg/kg); and for BEQs, the CNC BEQ site-wide reference concentration of 1,304 μg/kg.

[a] RBCs are from the EPA Region III RBC Tables (October 2000).

[b] SSL values are extrapolated from the EPA guidance document: *Soil Screening Guidance: User's Guide* (1996), using a Dilution Attenuation Factor (DAF)=10.

[c] The target residential land use cleanup goal of 400 mg/kg for lead is established by the EPA.

[d] BEQ concentrations are derived from calculations made per *Technical Information for Development of Background BEQ Values*. (CH2M-Jones, February 2001).

[e] The EPA Region III RBC value indicated for BEQs is for benzo(a)pyrene.

= Indicates that the compound was detected, the reported value is equal to the sample concentration.

J Indicates an estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.

U Indicates that the concentration was not detected.

UJ Indicates that the concentration was not detected and is estimated.

TABLE 5-2
Subsurface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	SSL[a] (DAF=10)	Zone H Background Range of Concentrations
Antimony	670SB004	2.0	UJ	2.7	1.5 - 19
	670SB005	2.1	UJ		
	670SB006	1.2	U		
	670SB007	2.1	UJ		
	670SB008	1.9	UJ		
	670SB009	2.0	UJ		
	670SB010	2.3	J		
	670SB011	2.7	J		
	670SB013	1.9	UJ		
	670SB014	1.9	UJ		
	670SB015	2.5	UJ		
	670SB016	1.8	U		
	670SB017	2.1	U		
	670SB018	1.9	U		
	670SB019	1.8	UJ		
	670SB020	1.4	U		
	670SB021	2.2	U		
	670SB022	1.9	U		
	670SB023	1.6	U		
	670SB024	2.3	U		
	670SB025	1.7	UJ		
	670SB026	1.8	U		
	670SB027	8.5	U		
	670SB032	1.5	UJ		
	684SB001	1.3	UJ		
	684SB002	1.1	UJ		
	684SB003	1.3	UJ		
	684SB005	1.4	UJ		
	684SB006	1.5	UJ		

TABLE 5-2
Subsurface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	SSL[a] (DAF=10)	Zone H Background Range of Concentrations
Antimony	684SB007	4.8	J	2.7	1.5 - 19
	684SB008	6.0	U		
	684SB009	6.0	U		
	684SB011	7.2	J		
	684SB013	6.4	J		
	684SB014	8.7	=		
	684SB015	8.6	J		
	684SB016	5.1	J		
	684SB018	3.5	=		
	684SB019	1.5	UJ		
	684SB022	2.9	UJ		
	684SB023	1.9	UJ		
	684SB024	1.6	UJ		
	684SB025	2.4	UJ		
	684SB027	1.9	U		
	684SB029	2.5	UJ		
	684SB030	2.0	UJ		
Arsenic	014SB001	10.4	UJ	0.013	0.78 - 136
	014SB002	10.3	UJ		
	014SB003	8.2	UJ		
	014-SB004	7.5	UJ		
	014SB005	12.8	UJ		
	014SB006	12.8	UJ		
	014SB007	13.6	UJ		
	014SB008	13.8	UJ		
	014SB009	17.3	UJ		
	015SB001	12.1	=		
	015SB002	13.4	=		
	015SB003	12.3	=		

TABLE 5-2
Subsurface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	SSL[a] (DAF=10)	Zone H Background Range of Concentrations
Arsenic	015SB004	12.4	=	0.013	0.78 - 136
	670SB001	14.2	=		
	670SB002	14.0	=		
	670SB004	19.5	=		
	670SB005	18.0	=		
	670SB006	13.6	J		
	670SB007	29.4	=		
	670SB008	22.7	=		
	670SB009	20.4	=		
	670SB010	19.5	=		
	670SB011	13.8	=		
	670SB012	18.2	=		
	670SB013	23.0	=		
	670SB014	9.0	=		
	670SB015	19.2	=		
	670SB016	16.2	J		
	670SB017	23.3	J		
	670SB018	21.6	J		
	670SB019	16.4	=		
	670SB020	20.8	=		
	670SB021	25.4	J		
	670SB022	18.4	J		
	670SB023	18.1	J		
	670SB024	23.1	J		
	670SB025	20.0	UJ		
	670SB026	19.7	J		
	670SB027	4.4	J		
	670SB032	24.9	=		
	684SB001	5.0	=		
	684SB002	2.8	U		

TABLE 5-2
Subsurface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	SSL[a] (DAF=10)	Zone H Background Range of Concentrations
Arsenic	684SB003	1.3	U	0.013	0.78 - 136
	684SB005	9.4	=		
	684SB006	4.5	=		
	684SB007	2.0	=		
	684SB008	5.1	=		
	684SB009	2.2	=		
	684SB011	3.1	=		
	684SB013	2.2	=		
	684SB014	2.8	=		
	684SB015	11.2	=		
	684SB016	7.7	=		
	684SB018	2.4	=		
	684SB019	7.3	UJ		
	684SB022	21.1	UJ		
	684SB023	13.3	UJ		
	684SB024	15.4	UJ		
	684SB025	23.7	UJ		
	684SB027	17.8	J		
	684SB029	14.0	UJ		
	684SB030	22.3	UJ		
Lead	014SB001	18.1	UJ	400[b]	2.1 - 39
	014SB002	18.8	UJ		
	014SB003	26.3	UJ		
	014-SB004	17.0	UJ		
	014SB005	27.0	UJ		
	014SB006	33.8	UJ		
	014SB007	44.7	=		
	014SB008	21.8	UJ		
	014SB009	31.9	UJ		

TABLE 5-2
Subsurface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	SSL[a] (DAF=10)	Zone H Background Range of Concentrations
Lead	015SB001	23.6	=	400[b]	2.1 - 39
	015SB002	29.5	=		
	015SB003	28.7	=		
	015SB004	33.0	J		
	670SB001	34.8	=		
	670SB002	20.4	J		
	670SB004	35.0	J		
	670SB005	39.3	J		
	670SB006	16.0	=		
	670SB007	33.2	J		
	670SB008	36.1	J		
	670SB009	35.6	J		
	670SB010	40.8	J		
	670SB011	32.6	J		
	670SB012	37.2	=		
	670SB013	35.4	J		
	670SB014	11.6	J		
	670SB015	32.1	=		
	670SB016	39.3	=		
	670SB017	46.5	=		
	670SB018	38.3	=		
	670SB019	39.8	=		
	670SB020	42.0	=		
	670SB021	41.2	=		
	670SB022	31.0	=		
	670SB023	47.4	=		
	670SB024	46.3	=		
	670SB025	53.1	UJ		
	670SB026	46.1	=		
	670SB027	14.3	J		

TABLE 5-2
Subsurface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	SSL[a] (DAF=10)	Zone H Background Range of Concentrations
Lead	670SB032	41.8	=	400[b]	2.1 - 39
	684SB001	7.2	=		
	684SB002	5.8	=		
	684SB003	4.3	J		
	684SB005	15.6	=		
	684SB006	4.4	J		
	684SB007	4.8	=		
	684SB008	6.5	=		
	684SB009	8.9	=		
	684SB011	3.0	=		
	684SB013	3.6	=		
	684SB014	4.4	=		
	684SB015	30.8	=		
	684SB016	28.9	=		
	684SB018	5.3	=		
	684SB019	1.9	UJ		
	684SB022	34.3	UJ		
	684SB023	31.5	UJ		
	684SB024	35.0	UJ		
	684SB025	41.9	UJ		
	684SB027	41.6	=		
	684SB029	39.1	UJ		
	684SB030	33.8	UJ		
Thallium	670SB001	0.9	U	0.18	0.36 - 1.9
	670SB002	0.5	U		
	670SB004	0.6	U		
	670SB005	0.7	U		
	670SB006	0.4	U		
	670SB007	0.7	U		

TABLE 5-2
Subsurface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	SSL[a] (DAF=10)	Zone H Background Range of Concentrations
Thallium	670SB008	0.6	U	0.18	0.36 - 1.9
	670SB009	0.6	U		
	670SB010	0.7	U		
	670SB011	0.9	U		
	670SB012	0.9	U		
	670SB013	0.6	U		
	670SB014	0.6	U		
	670SB015	0.6	UJ		
	670SB016	0.6	U		
	670SB017	0.6	U		
	670SB018	0.6	U		
	670SB019	1.2	U		
	670SB020	2.9	U		
	670SB021	0.7	U		
	670SB022	0.6	U		
	670SB023	0.5	U		
	670SB024	0.6	U		
	670SB025	0.5	UJ		
	670SB026	0.3	U		
	670SB027	0.7	U		
	670SB032	1.9	U		
	684SB001	0.3	UJ		
	684SB002	0.3	UJ		
	684SB003	0.3	UJ		
	684SB005	0.3	UJ		
	684SB006	0.4	UJ		
	684SB007	0.1	J		
	684SB008	0.1	J		
	684SB009	0.1	J		
	684SB011	0.9	J		

TABLE 5-2
Subsurface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (mg/kg)	Qualifier	SSL[a] (DAF=10)	Zone H Background Range of Concentrations
Thallium	684SB013	1.0	U	0.18	0.36 - 1.9
	684SB014	1.0	U		
	684SB015	1.0	U		
	684SB016	1.0	U		
	684SB018	1.0	U		
	684SB019	0.5	U		
	684SB022	0.9	U		
	684SB023	1.2	U		
	684SB024	0.8	U		
	684SB025	0.8	U		
	684SB027	0.3	U		
	684SB029	0.6	UJ		
	684SB030	0.7	UJ		

TABLE 5-2
Subsurface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (µg/kg)	Qualifier	CNC Site-wide BEQ Reference Concentration
BEQs[c]	014SB001	92.1	U	1,400
	014SB002	92.1	U	
	014SB003	92.1	U	
	014-SB004	92.1	U	
	014SB005	92.1	U	
	014SB006	92.1	U	
	014SB007	93.7	=	
	014SB008	92.1	U	
	014SB009	92.1	U	
	015SB001	92.1	U	
	015SB002	92.1	U	

TABLE 5-2
Subsurface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (µg/kg)	Qualifier	CNC Site-wide BEQ Reference Concentration
	015SB003	92.1	U	
BEQs[c]	015SB004	92.1	U	1,400
	015SB008	92.1	U	
	670SB001	92.1	U	
	670SB002	92.1	U	
	670SB003	92.1	U	
	670SB004	92.1	U	
	670SB005	92.1	U	
	670SB006	92.1	U	
	670SB007	92.1	U	
	670SB008	92.1	U	
	670SB009	92.1	U	
	670SB010	92.1	U	
	670SB011	92.1	U	
	670SB012	92.1	U	
	670SB013	92.1	U	
	670SB014	92.1	U	
	670SB015	103.0	=	
	670SB016	92.1	U	
	670SB017	92.1	U	
	670SB018	92.1	U	
	670SB019	92.1	U	
	670SB020	137.1	=	
	670SB021	92.1	U	
	670SB022	92.1	U	
	670SB023	92.1	U	
	670SB024	92.1	U	
	670SB026	92.1	U	
	670SB027	92.1	U	
	670SB028	92.1	U	

TABLE 5-2
Subsurface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (µg/kg)	Qualifier	CNC Site-wide BEQ Reference Concentration
BEQs[c]	670SB030	92.1	U	1,400
	670SB032	114.1	=	
	670SB033	92.1	U	
	670SB034	92.1	U	
	670SB035	92.1	U	
	684SB001	92.1	U	
	684SB002	92.1	U	
	684SB003	92.1	U	
	684SB005	92.1	U	
	684SB006	92.1	U	
	684SB007	92.1	U	
	684SB008	92.1	U	
	684SB009	92.1	U	
	684SB011	92.1	U	
	684SB013	92.1	U	
	684SB014	92.1	U	
	684SB015	92.1	U	
	684SB016	92.1	U	
	684SB018	92.1	U	
	684SB019	92.1	U	
	684SB022	92.1	U	
	684SB023	92.1	U	
	684SB024	92.1	U	
	684SB025	92.1	U	
	684SB027	185.5		
	684SB029	92.1	U	
	684SB030	92.1	U	
	684SB035	167.8		
	684SB036	92.1	U	
	684SB039	92.1	U	

TABLE 5-2
Subsurface Soil Analytical Results for COCs at Combined SWMU 14 (RFI Sampling)
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Result (µg/kg)	Qualifier	CNC Site-wide BEQ Reference Concentration
BEQs[c]	684SB040	232.3		1,400
	684SB041	92.1	U	
	684SB042	92.1	U	
	684SB043	92.1	U	
	684SB044	92.1	U	

Bold concentrations indicate lower-interval soil samples with concentrations exceeding the subsurface range of reference concentration for all inorganics except lead (compared with the SSL of 400 mg/kg) and for BEQs, the CNC BEQ site-wide subsurface reference concentration of 1,400 µg/kg.

[a] SSL values are extrapolated from the EPA guidance document: *Soil Screening Guidance: User's Guide* (1996), using a Dilution Attenuation Factor (DAF)=10.

[b] The target residential land use cleanup goal of 400 mg/kg for lead is established by the EPA.

[c] BEQ concentrations are derived from calculations made per *Technical Information for Development of Background BEQ Values*. CH2M-Jones. February 2001.

= Indicates that the compound was detected, the reported value is equal to the sample concentration.

J Indicates an estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.

U Indicates that the concentration was not detected.

UJ Indicates that the concentration was not detected and is estimated.

TABLE 5-3
Surface Soil Concentrations of Selected COPCs at Combined SWMU 14
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Date Sampled	Result (mg/kg)	Qualifier
Arsenic	684SB012	09/20/1994	0.89	J
	684SB011	09/20/1994	1.40	=
	684SB042	09/07/1995	1.50	J
	684SB008	09/19/1994	1.90	=
	684SB013	09/20/1994	2.80	=
	015SB002	09/10/1994	3.60	J
	684SB017	09/21/1994	3.60	=
	684SB041	09/07/1995	4.70	J
	684SB016	09/20/1994	4.80	=
	684SB040	09/07/1995	4.80	J
	684SB010	09/19/1994	5.20	=
	015SB001	09/10/1994	6.40	=
	684SB018	09/21/1994	6.40	=
	670SB019	09/14/1994	7.00	J
	684SB005	09/19/1994	7.40	=
	670SB021	09/14/1994	7.90	J
	670SB017	09/14/1994	8.20	J
	670SB027	09/24/1994	8.30	J
	670SB020	09/14/1994	8.40	=
	684SB003	09/19/1994	8.50	=
	670SB007	09/12/1994	8.90	=
	670SB011	09/12/1994	8.90	=
	684SB007	09/19/1994	9.00	=
	670SB009	09/12/1994	9.10	=
	670SB022	09/14/1994	9.30	J
	670SB014	09/12/1994	9.50	=
	670SB002	09/10/1994	9.70	=
	670SB008	09/12/1994	9.70	=
	684SB027	09/23/1994	9.90	J
	670SB018	09/14/1994	10.10	J

TABLE 5-3
Surface Soil Concentrations of Selected COPCs at Combined SWMU 14
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Date Sampled	Result (mg/kg)	Qualifier
Arsenic	670SB010	09/13/1994	10.40	=
	670SB013	09/12/1994	10.90	=
	670SB015	09/14/1994	10.90	=
	670SB004	09/13/1994	11.30	=
	684SB014	09/20/1994	11.70	=
	670SB016	09/14/1994	12.10	J
	670SB026	09/23/1994	12.30	J
	684SB004	09/19/1994	12.70	=
	684SB009	09/19/1994	12.90	=
	670SB024	09/23/1994	13.00	J
	684SB015	09/20/1994	13.50	=
	014SB106	02/06/1995	13.60	=
	670SB006	09/13/1994	13.80	=
	015SB003	09/10/1994	15.00	=
	670SB005	09/13/1994	15.20	=
	670SB001	09/10/1994	15.60	=
	684SB026	09/23/1994	16.30	J
	670SB032	09/14/1994	17.20	=
	670SB012	09/12/1994	23.70	=
	015SB004	09/12/1994	51.40	=
	670SB023	09/23/1994	69.00	=
	684SB006	09/19/1994	0.56	U
	684SB002	09/19/1994	1.90	U
	684SB001	09/19/1994	3.30	U
	014SB011	01/20/1995	10.70	U
	014SB010	01/20/1995	19.30	U
	684SB021	09/21/1994	3.80	UJ
	684SB019	09/21/1994	5.10	UJ
	684SB022	09/21/1994	5.10	UJ
	684SB030	09/23/1994	7.50	UJ

TABLE 5-3
Surface Soil Concentrations of Selected COPCs at Combined SWMU 14
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Date Sampled	Result (mg/kg)	Qualifier
Arsenic	684SB029	09/23/1994	9.00	UJ
	684SB025	09/21/1994	10.60	UJ
	014SB003	09/22/1994	11.00	UJ
	684SB028	09/23/1994	11.20	UJ
	684SB020	09/21/1994	11.30	UJ
	684SB023	09/21/1994	11.60	UJ
	014SB007	09/22/1994	13.20	UJ
	670SB025	09/23/1994	13.70	UJ
	014SB009	09/22/1994	13.80	UJ
	014SB001	09/22/1994	14.20	UJ
	014SB008	09/22/1994	16.20	UJ
	684SB024	09/21/1994	16.20	UJ
	014SB002	09/22/1994	16.80	UJ
	014SB006	09/22/1994	16.80	UJ
	014SB004	09/22/1994	17.90	UJ
	684SB031	09/23/1994	18.60	UJ
	014SB005	09/22/1994	19.20	UJ
	014SW001	09/22/1994	20.30	UJ
Average Concentration			**9.48**	
Aroclor-1254	684SB032	01/25/1995	0.05	=
	684SB033	01/25/1995	0.16	=
	014SB001	09/22/1994	0.03	U
	014SB002	09/22/1994	0.03	U
	014SB003	09/22/1994	0.03	U
	014SB004	09/22/1994	0.03	U
	014SB005	09/22/1994	0.03	U
	014SB006	09/22/1994	0.03	U
	014SB007	09/22/1994	0.03	U
	014SB008	09/22/1994	0.03	U
	014SB009	09/22/1994	0.03	U

TABLE 5-3
Surface Soil Concentrations of Selected COPCs at Combined SWMU 14
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Date Sampled	Result (mg/kg)	Qualifier
Aroclor-1254	014SB106	02/06/1995	0.05	U
	014SW001	09/22/1994	0.03	U
	015SB001	09/10/1994	0.04	U
	015SB002	09/10/1994	0.03	U
	015SB003	09/10/1994	0.05	U
	015SB004	09/12/1994	0.02	U
	670SB001	09/10/1994	0.05	U
	670SB002	09/10/1994	0.05	U
	670SB003	09/13/1994	0.05	U
	670SB004	09/13/1994	0.04	U
	670SB005	09/13/1994	0.05	U
	670SB006	09/13/1994	0.05	U
	670SB007	09/12/1994	0.02	U
	670SB008	09/12/1994	0.05	U
	670SB009	09/12/1994	0.05	U
	670SB010	09/13/1994	0.05	U
	670SB011	09/12/1994	0.05	U
	670SB012	09/12/1994	0.05	U
	670SB013	09/12/1994	0.05	U
	670SB014	09/12/1994	0.02	U
	670SB015	09/14/1994	0.03	U
	670SB016	09/14/1994	0.05	U
	670SB017	09/14/1994	0.05	U
	670SB018	09/14/1994	0.05	U
	670SB019	09/14/1994	0.03	U
	670SB020	09/14/1994	0.03	U
	670SB021	09/14/1994	0.04	U
	670SB023	09/23/1994	0.05	U
	670SB024	09/23/1994	0.05	U
	670SB027	09/24/1994	0.03	U

TABLE 5-3
Surface Soil Concentrations of Selected COPCs at Combined SWMU 14
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Date Sampled	Result (mg/kg)	Qualifier
Aroclor-1254	670SB032	09/14/1994	0.03	U
	684SB001	09/19/1994	0.03	U
	684SB002	09/19/1994	0.03	U
	684SB003	09/19/1994	0.03	U
	684SB004	09/19/1994	0.03	U
	684SB005	09/19/1994	0.03	U
	684SB006	09/19/1994	0.03	U
	684SB007	09/19/1994	0.03	U
	684SB008	09/19/1994	0.03	U
	684SB009	09/19/1994	0.03	U
	684SB010	09/19/1994	0.33	U
	684SB011	09/20/1994	0.33	U
	684SB012	09/20/1994	0.33	U
	684SB013	09/20/1994	0.03	U
	684SB014	09/20/1994	0.03	U
	684SB015	09/20/1994	0.33	U
	684SB016	09/20/1994	0.03	U
	684SB017	09/21/1994	0.33	U
	684SB018	09/21/1994	0.03	U
	684SB019	09/21/1994	0.17	U
	684SB020	09/21/1994	0.17	U
	684SB021	09/21/1994	0.17	U
	684SB022	09/21/1994	0.17	U
	684SB023	09/21/1994	0.03	U
	684SB024	09/21/1994	0.03	U
	684SB025	09/21/1994	0.03	U
	684SB026	09/23/1994	0.03	U
	684SB027	09/23/1994	0.03	U
	684SB028	09/23/1994	0.03	U
	684SB029	09/23/1994	0.03	U

TABLE 5-3
Surface Soil Concentrations of Selected COPCs at Combined SWMU 14
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Date Sampled	Result (mg/kg)	Qualifier
Aroclor-1254	684SB030	09/23/1994	0.03	U
	684SB031	09/23/1994	0.03	U
	684SB034	01/25/1995	0.05	U
	684SB035	01/25/1995	0.05	U
	684SB036	01/25/1995	0.04	U
	684SB037	01/25/1995	0.04	U
	684SB038	01/25/1995	0.04	U
	684SB039	01/25/1995	0.04	U
	670SB022	09/14/1994	0.04	UJ
Aroclor-1260	684SB007	09/19/1994	0.38	=
	684SB032	01/25/1995	0.06	=
	684SB033	01/25/1995	0.07	=
	014SB001	09/22/1994	0.03	U
	014SB002	09/22/1994	0.03	U
	014SB003	09/22/1994	0.03	U
	014SB004	09/22/1994	0.03	U
	014SB005	09/22/1994	0.03	U
	014SB006	09/22/1994	0.03	U
	014SB007	09/22/1994	0.03	U
	014SB008	09/22/1994	0.03	U
	014SB009	09/22/1994	0.03	U
	014SB106	02/06/1995	0.05	U
	014SW001	09/22/1994	0.03	U
	015SB001	09/10/1994	0.04	U
	015SB002	09/10/1994	0.03	U
	015SB003	09/10/1994	0.05	U
	015SB004	09/12/1994	0.02	U
	670SB001	09/10/1994	0.05	U
	670SB002	09/10/1994	0.05	U
	670SB003	09/13/1994	0.05	U

TABLE 5-3
Surface Soil Concentrations of Selected COPCs at Combined SWMU 14
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Date Sampled	Result (mg/kg)	Qualifier
Aroclor-1260	670SB004	09/13/1994	0.04	U
	670SB005	09/13/1994	0.05	U
	670SB006	09/13/1994	0.05	U
	670SB007	09/12/1994	0.02	U
	670SB008	09/12/1994	0.05	U
	670SB009	09/12/1994	0.05	U
	670SB010	09/13/1994	0.05	U
	670SB011	09/12/1994	0.05	U
	670SB012	09/12/1994	0.05	U
	670SB013	09/12/1994	0.05	U
	670SB014	09/12/1994	0.02	U
	670SB015	09/14/1994	0.03	U
	670SB016	09/14/1994	0.05	U
	670SB017	09/14/1994	0.05	U
	670SB018	09/14/1994	0.05	U
	670SB019	09/14/1994	0.03	U
	670SB020	09/14/1994	0.03	U
	670SB021	09/14/1994	0.04	U
	670SB023	09/23/1994	0.05	U
	670SB024	09/23/1994	0.05	U
	670SB027	09/24/1994	0.03	U
	670SB032	09/14/1994	0.03	U
	684SB001	09/19/1994	0.03	U
	684SB002	09/19/1994	0.03	U
	684SB003	09/19/1994	0.03	U
	684SB004	09/19/1994	0.03	U
	684SB005	09/19/1994	0.03	U
	684SB006	09/19/1994	0.03	U
	684SB008	09/19/1994	0.03	U
	684SB009	09/19/1994	0.03	U

TABLE 5-3
Surface Soil Concentrations of Selected COPCs at Combined SWMU 14
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Date Sampled	Result (mg/kg)	Qualifier
Aroclor-1260	684SB010	09/19/1994	0.33	U
	684SB011	09/20/1994	0.33	U
	684SB012	09/20/1994	0.33	U
	684SB013	09/20/1994	0.03	U
	684SB014	09/20/1994	0.03	U
	684SB015	09/20/1994	0.33	U
	684SB016	09/20/1994	0.03	U
	684SB017	09/21/1994	0.33	U
	684SB018	09/21/1994	0.03	U
	684SB019	09/21/1994	0.17	U
	684SB020	09/21/1994	0.17	U
	684SB021	09/21/1994	0.17	U
	684SB022	09/21/1994	0.17	U
	684SB023	09/21/1994	0.03	U
	684SB024	09/21/1994	0.03	U
	684SB025	09/21/1994	0.03	U
	684SB026	09/23/1994	0.03	U
	684SB027	09/23/1994	0.03	U
	684SB028	09/23/1994	0.03	U
	684SB029	09/23/1994	0.03	U
	684SB030	09/23/1994	0.03	U
	684SB031	09/23/1994	0.03	U
	684SB034	01/25/1995	0.05	U
	684SB035	01/25/1995	0.05	U
	684SB036	01/25/1995	0.04	U
	684SB037	01/25/1995	0.04	U
	684SB038	01/25/1995	0.04	U
	684SB039	01/25/1995	0.04	U
	670SB022	09/14/1994	0.04	UJ

TABLE 5-3
Surface Soil Concentrations of Selected COPCs at Combined SWMU 14
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Date Sampled	Result (mg/kg)	Qualifier
Thallium	684SB010	09/19/1994	0.07	J
	684SB008	09/19/1994	0.09	J
	670SB007	09/12/1994	0.48	=
	014SB011	01/20/1995	0.55	J
	670SB010	09/13/1994	0.82	J
	684SB014	09/20/1994	1.20	J
	684SB015	09/20/1994	1.30	J
	670SB023	09/23/1994	1.40	=
	684SB016	09/20/1994	1.50	J
	684SB009	09/19/1994	2.90	J
	670SB027	09/24/1994	0.20	U
	684SB027	09/23/1994	0.25	U
	684SB026	09/23/1994	0.27	U
	670SB024	09/23/1994	0.36	U
	015SB004	09/12/1994	0.42	U
	670SB004	09/13/1994	0.45	U
	670SB022	09/14/1994	0.45	U
	670SB008	09/12/1994	0.47	U
	670SB021	09/14/1994	0.48	U
	014SB002	09/22/1994	0.50	U
	670SB005	09/13/1994	0.50	U
	670SB006	09/13/1994	0.50	U
	670SB009	09/12/1994	0.50	U
	670SB018	09/14/1994	0.50	U
	670SB014	09/12/1994	0.53	U
	670SB016	09/14/1994	0.55	U
	670SB017	09/14/1994	0.55	U
	684SB022	09/21/1994	0.55	U
	014SB106	02/06/1995	0.58	U
	014SB009	09/22/1994	0.68	U

TABLE 5-3
Surface Soil Concentrations of Selected COPCs at Combined SWMU 14
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Date Sampled	Result (mg/kg)	Qualifier
Thallium	684SB023	09/21/1994	0.69	U
	684SB021	09/21/1994	0.76	U
	684SB019	09/21/1994	0.81	U
	014SB007	09/22/1994	0.90	U
	684SB020	09/21/1994	0.91	U
	014SB006	09/22/1994	0.94	U
	684SB024	09/21/1994	0.95	U
	014SB008	09/22/1994	0.99	U
	684SB011	09/20/1994	1.00	U
	684SB012	09/20/1994	1.00	U
	684SB013	09/20/1994	1.00	U
	684SB017	09/21/1994	1.00	U
	684SB018	09/21/1994	1.00	U
	684SB025	09/21/1994	1.00	U
	670SB012	09/12/1994	1.30	U
	670SB032	09/14/1994	1.50	U
	670SB013	09/12/1994	1.70	U
	015SB001	09/10/1994	1.80	U
	015SB002	09/10/1994	1.90	U
	670SB011	09/12/1994	2.00	U
	670SB001	09/10/1994	2.30	U
	670SB002	09/10/1994	2.70	U
	015SB003	09/10/1994	3.00	U
	670SB026	09/23/1994	0.21	UJ
	684SB001	09/19/1994	0.27	UJ
	684SB005	09/19/1994	0.27	UJ
	684SB002	09/19/1994	0.34	UJ
	684SB006	09/19/1994	0.36	UJ
	014SB001	09/22/1994	0.38	UJ
	684SB007	09/19/1994	0.39	UJ

TABLE 5-3
Surface Soil Concentrations of Selected COPCs at Combined SWMU 14
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample Location	Date Sampled	Result (mg/kg)	Qualifier
Thallium	684SB003	09/19/1994	0.40	UJ
	014SB003	09/22/1994	0.41	UJ
	684SB004	09/19/1994	0.42	UJ
	014SB005	09/22/1994	0.52	UJ
	684SB028	09/23/1994	0.54	UJ
	684SB031	09/23/1994	0.54	UJ
	014SB004	09/22/1994	0.57	UJ
	670SB025	09/23/1994	0.57	UJ
	014SW001	09/22/1994	0.60	UJ
	684SB030	09/23/1994	0.60	UJ
	014SB010	01/20/1995	0.69	UJ
	684SB029	09/23/1994	0.69	UJ
	670SB015	09/14/1994	1.60	UJ
	670SB020	09/14/1994	2.20	UJ
	670SB019	09/14/1994	2.30	UJ
Average Concentration			**0.506**	

Average concentrations were calculated by using the full value of the detected concentrations and half the detection limit for sample results with U or UJ qualifiers.

= Indicates that the compound was detected, the reported value is equal to the sample concentration.

J Indicates an estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.

U Indicates that the concentration was not detected.

UJ Indicates that the concentration was not detected and is estimated.

mg/kg Milligrams per kilogram

TABLE 5-4
Detections of VOCs in Surface Soil
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample ID	Station ID	Result (mg/kg)	Qualifier	Date Sampled	SSL (DAF=1)
1,1-DCE	014SB00401	014SB004	0.0018	J	09/22/1994	0.003
	014SB00501	014SB005	0.0025	J	09/22/1994	
	684SB00401	684SB004	0.0022	J	09/19/1994	
Acetone	014SW00114	014SW001	0.136	=	09/22/1994	0.8
	015SB00101	015SB001	0.036	=	09/10/1994	
	015SB00201	015SB002	0.013	J	09/10/1994	
	015SB00301	015SB003	0.069	J	09/10/1994	
	015SB00401	015SB004	0.027	J	09/12/1994	
	670SB00101	670SB001	0.092	J	09/10/1994	
	670SB00201	670SB002	0.078	J	09/10/1994	
	670SB01301	670SB013	0.036	J	09/12/1994	
	670SB01601	670SB016	0.067	J	09/14/1994	
	670SB02401	670SB024	0.043	=	09/23/1994	
	684SB00901	684SB009	0.0076	J	09/19/1994	
	684SB01901	684SB019	0.0974	J	09/21/1994	
Carbon disulfide	014SB00501	014SB005	0.0034	J	09/22/1994	2
	684SB02201	684SB022	0.0012	J	09/21/1994	
Dibromochloromethane	670SB00201	670SB002	**0.007**	J	09/10/1994	0.00004
MEK	014SB00801	014SB008	0.0046	J	09/22/1994	0.38*
	684SB01101	684SB011	0.0039	J	09/20/1994	
Methylene chloride	670SB01101	670SB011	**0.012**	J	09/12/1994	0.001
	670SB01201	670SB012	**0.017**	J	09/12/1994	
	670SB01301	670SB013	**0.018**	J	09/12/1994	
	670SB01601	670SB016	**0.029**	J	09/14/1994	
	670SB01701	670SB017	**0.026**	J	09/14/1994	
	670SB01801	670SB018	**0.021**	J	09/14/1994	
	670SB02101	670SB021	**0.014**	J	09/14/1994	

TABLE 5-4
Detections of VOCs in Surface Soil
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample ID	Station ID	Result (mg/kg)	Qualifier	Date Sampled	SSL (DAF=1)
Methylene chloride	670SB02201	670SB022	**0.019**	J	09/14/1994	0.001
	670SB02301	670SB023	**0.011**	J	09/23/1994	
	670SB02401	670SB024	**0.015**	=	09/23/1994	
	684SB00601	684SB006	**0.0781**	J	09/19/1994	
	684SB00701	684SB007	**0.212**	J	09/19/1994	
	684SB01001	684SB010	**0.0271**	=	09/19/1994	
Tetrachloroethene (PCE)	684SB01101	684SB011	0.0014	J	09/20/1994	0.003
Toluene	014SB00101	014SB001	0.0057	J	09/22/1994	0.6
	014SB00201	014SB002	0.0352	=	09/22/1994	
	014SB00301	014SB003	0.0161	=	09/22/1994	
	014SB00401	014SB004	0.0549	=	09/22/1994	
	014SB00501	014SB005	0.0577	=	09/22/1994	
	014SB00601	014SB006	0.0075	=	09/22/1994	
	014SB00801	014SB008	0.0036	J	09/22/1994	
	014SB00901	014SB009	0.0105	=	09/22/1994	
	014SW00114	014SB014	0.0044	J	09/22/1994	
	015SB00301	015SB003	0.009	J	09/10/1994	
	670SB00601	670SB006	0.006	J	09/13/1994	
	670SB01301	670SB013	0.006	J	09/12/1994	
	670SB01501	670SB015	0.0082	J	09/14/1994	
	670SB01601	670SB016	0.0044	J	09/14/1994	
	670SB01901	670SB019	0.0056	J	09/14/1994	
	670SB02001	670SB020	0.0203	J	09/14/1994	
	670SB02301	670SB023	0.009	=	09/23/1994	
	670SB02401	670SB024	0.018	J	09/23/1994	
	670SB02601	670SB026	0.0322	=	09/23/1994	
	670SB02701	670SB027	0.116	=	09/24/1994	
	670SB03201	670SB032	0.004	J	09/14/1994	
	684SB00101	684SB001	0.0019	J	09/19/1994	

TABLE 5-4
Detections of VOCs in Surface Soil
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample ID	Station ID	Result (mg/kg)	Qualifier	Date Sampled	SSL (DAF=1)
Toluene	684SB00701	684SB007	0.0092	J	09/19/1994	0.6
	684SB00901	684SB009	0.0313	J	09/19/1994	
	684SB01001	684SB010	0.0078	J	09/19/1994	
	684SB01101	684SB011	0.0230	=	09/20/1994	
	684SB01301	684SB013	0.0079	=	09/20/1994	
	684SB01401	684SB014	0.0122	=	09/20/1994	
	684SB01501	684SB015	0.0024	J	09/20/1994	
	684SB01601	684SB016	0.0156	=	09/20/1994	
	684SB01701	684SB017	0.0042	J	09/21/1994	
	684SB01801	684SB018	0.0051	J	09/21/1994	
	684SB01901	684SB019	0.0027	J	09/21/1994	
	684SB02001	684SB020	0.0022	J	09/21/1994	
	684SB02101	684SB021	0.0047	J	09/21/1994	
	684SB02201	684SB022	0.0037	J	09/21/1994	
	684SB02401	684SB024	0.0027	J	09/21/1994	
	684SB02501	684SB025	0.0037	J	09/21/1994	
	684SB02601	684SB026	0.0058	J	09/23/1994	
	684SB02701	684SB027	0.0035	J	09/23/1994	
	684SB02801	684SB028	0.0024	J	09/23/1994	
	684SB02901	684SB029	0.143	=	09/23/1994	
	684SB03001	684SB030	0.0373	=	09/23/1994	
	684SB03101	684SB031	0.0175	=	09/23/1994	
Xylenes (Total)	014SB00201	014SB002	0.0031	J	09/22/1994	10
	014SB00301	014SB003	0.002	J	09/22/1994	
	014SB00401	014SB004	0.0027	J	09/22/1994	
	014SB00501	014SB005	0.0055	J	09/22/1994	
	014SB00601	014SB006	0.0039	J	09/22/1994	
	014SB00901	014SB009	0.004	J	09/22/1994	
	670SB01901	670SB019	0.0031	J	09/14/1994	
	670SB02001	670SB020	0.002	J	09/14/1994	

TABLE 5-4
Detections of VOCs in Surface Soil
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample ID	Station ID	Result (mg/kg)	Qualifier	Date Sampled	SSL (DAF=1)
Xylenes (Total)	684SB00301	684SB003	0.0052	J	09/19/1994	10
	684SB00401	684SB004	0.0093	=	09/19/1994	
	684SB00501	684SB005	0.0034	J	09/19/1994	
	684SB01101	684SB011	0.0057	J	09/20/1994	
	684SB01401	684SB014	0.0026	J	09/20/1994	
	684SB01501	684SB015	0.002	J	09/20/1994	
	684SB01601	684SB016	0.0042	J	09/20/1994	
	684SB01701	684SB017	0.0022	J	09/21/1994	
	684SB01901	684SB019	0.0014	J	09/21/1994	
	684SB02201	684SB022	0.0028	J	09/21/1994	
	684SB02601	684SB026	0.0016	J	09/23/1994	
	684SB02701	684SB027	0.0017	J	09/23/1994	
	684SB02901	684SB029	0.0034	J	09/23/1994	

Concentrations in bold and outlined within the table indicate an exceedance of the screening criterion.

= Indicates that the compound was detected, the reported value is equal to the sample concentration.

J Indicates an estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.

mg/kg Milligrams per kilogram

TABLE 5-5
Detections of VOCs in Subsurface Soil
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample ID	Station ID	Result (mg/kg)	Qualifier	Date Sampled
1,1-DCE	014SB00102	014SB001	0.0019	J	09/22/1994
	684SB02402	684SB024	0.0018	J	09/21/1994
	684SB02502	684SB025	0.0048	J	09/21/1994
	684SB03002	684SB030	0.0018	J	09/23/1994
Acetone	015SB00102	015SB001	0.06	=	09/10/1994
	015SB00202	015SB002	0.085	=	09/10/1994
	015SB00302	015SB003	0.084	J	09/10/1994
	015SB00402	015SB004	0.083	=	09/12/1994
	670SB00202	670SB002	0.062	=	09/10/1994
	670SB00502	670SB005	0.034	J	09/13/1994
	670SB00702	670SB007	0.12	=	09/12/1994
	670SB01002	670SB010	0.044	J	09/13/1994
	670SB01202	670SB012	0.093	=	09/12/1994
	670SB01402	670SB014	0.043	=	09/12/1994
	670SB01602	670SB016	0.096	J	09/14/1994
	670SB01702	670SB017	0.2	=	09/14/1994
	670SB01802	670SB018	0.066	=	09/14/1994
	670SB02102	670SB021	0.098	=	09/14/1994
	670SB02202	670SB022	0.11	=	09/14/1994
	670SB02302	670SB023	0.043	=	09/23/1994
	670SB02402	670SB024	0.14	J	09/23/1994
	684SB00802	684SB008	0.0805	=	09/19/1994
	684SB00902	684SB009	0.112	J	09/19/1994
	684SB01102	684SB011	0.0606	J	09/20/1994
	684SB01902	684SB019	0.076	J	09/21/1994
	684SB02202	684SB022	0.284	=	09/21/1994
	684SB02302	684SB023	0.113	=	09/21/1994
	684SB02402	684SB024	0.0999	=	09/21/1994
	684SB02502	684SB025	0.079	=	09/21/1994

TABLE 5-5
Detections of VOCs in Subsurface Soil
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample ID	Station ID	Result (mg/kg)	Qualifier	Date Sampled
Acetonitrile	670SB02002	670SB020	0.0073	J	09/14/1994
	684SB00602	684SB006	0.0066	J	09/19/1994
	684SB01102	684SB011	0.005	J	09/20/1994
Carbon disulfide	684SB00602	684SB006	0.0024	J	09/19/1994
	684SB00802	684SB008	0.004	J	09/19/1994
	684SB01102	684SB011	0.0046	J	09/20/1994
Methyl-ethyl-ketone	014SB00102	014SB001	0.0125	J	09/22/1994
	014SB00202	014SB002	0.0118	J	09/22/1994
	670SB03202	670SB032	0.0099	J	09/14/1994
	684SB01102	684SB011	0.0155	=	09/20/1994
	684SB01302	684SB013	0.0027	J	09/20/1994
	684SB01502	684SB015	0.0069	J	09/20/1994
	684SB01902	684SB019	0.0054	J	09/21/1994
Methylene chloride	670SB00602	670SB006	**0.02**	J	09/13/1994
	670SB01102	670SB011	**0.011**	J	09/12/1994
	670SB01202	670SB012	**0.021**	J	09/12/1994
	670SB01602	670SB016	**0.034**	J	09/14/1994
	670SB01702	670SB017	**0.039**	J	09/14/1994
	670SB01802	670SB018	**0.026**	J	09/14/1994
	670SB02102	670SB021	**0.027**	J	09/14/1994
	670SB02202	670SB022	**0.027**	J	09/14/1994
	670SB02302	670SB023	**0.013**	J	09/23/1994
	670SB02402	670SB024	**0.051**	J	09/23/1994
	684SB00302	684SB003	**0.0235**	J	09/19/1994
	684SB00902	684SB009	**0.0448**	=	09/19/1994
TCE	684SB01502	684SB015	0.002	J	09/20/1994
	684SB02502	684SB025	0.0029	J	09/21/1994

TABLE 5-5
Detections of VOCs in Subsurface Soil
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample ID	Station ID	Result (mg/kg)	Qualifier	Date Sampled
Toluene	014SB00102	014SB001	0.0172	=	09/22/1994
	014SB00202	014SB002	0.0068	J	09/22/1994
	014SB00302	014SB003	0.0167	=	09/22/1994
	014SB00402	014SB004	0.0133	=	09/22/1994
	014SB00502	014SB005	0.0057	J	09/22/1994
	014SB00602	014SB006	0.0064	J	09/22/1994
	014SB00802	014SB008	0.0092	=	09/22/1994
	014SB00902	014SB009	0.0062	J	09/22/1994
	015SB00102	015SB001	0.0045	J	09/10/1994
	015SB00302	015SB003	0.0046	J	09/10/1994
	670SB01702	670SB017	0.005	J	09/14/1994
	670SB02002	670SB020	0.0028	J	09/14/1994
	670SB02602	670SB026	0.0601	=	09/23/1994
	670SB02702	670SB027	0.0294	=	09/24/1994
	670SB03202	670SB032	0.0028	J	09/14/1994
	684SB00202	684SB002	0.0019	J	09/19/1994
	684SB00802	684SB008	0.0031	J	09/19/1994
	684SB00902	684SB009	0.0051	J	09/19/1994
	684SB01102	684SB011	0.0071	=	09/20/1994
	684SB01602	684SB016	0.0178	=	09/20/1994
	684SB01802	684SB018	0.0027	J	09/21/1994
	684SB01902	684SB019	0.0052	J	09/21/1994
	684SB02302	684SB023	0.0021	J	09/21/1994
	684SB02902	684SB029	0.0046	J	09/23/1994
	684SB03002	684SB030	0.066	=	09/23/1994
Xylenes (Total)	014SB00102	014SB001	0.0029	J	09/22/1994
	014SB00202	014SB002	0.0013	J	09/22/1994
	014SB00402	014SB004	0.0025	J	09/22/1994
	014SB00602	014SB006	0.0044	J	09/22/1994
	014SB00902	014SB009	0.0042	J	09/22/1994

TABLE 5-5
Detections of VOCs in Subsurface Soil
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Sample ID	Station ID	Result (mg/kg)	Qualifier	Date Sampled
Xylenes (Total)	670SB02702	670SB027	0.0028	J	09/24/1994
	684SB00502	684SB005	0.0089	J	09/19/1994
	684SB00602	684SB006	0.0041	J	09/19/1994
	684SB01102	684SB011	0.0049	J	09/20/1994
	684SB01802	684SB018	0.0017	J	09/21/1994
	684SB01902	684SB019	0.0025	J	09/21/1994

Concentrations in bold and outlined within the table indicate an exceedance of the screening criterion.

= Indicates that the compound was detected, the reported value is equal to the sample concentration.

J Indicates an estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.

mg/kg Milligrams per kilogram

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)
Acetone										
Shallow Wells	H014GW001	014GW00101	11/15/1994	10.0	U	µg/L	NA	NA	NA	61
	H014GW001	014GW00102	04/05/1995	25.0	U					
	H014GW001	014GW00103	10/12/1995	19.0	U					
	H014GW001	014GW00104	03/08/1996	10.0	U					
	H014GW002	014GW00201a	11/14/1994	10.0	U					
	H014GW002	014GW00202	04/05/1995	25.0	UJ					
	H014GW002	014GW00203	09/13/1995	54.0	U					
	H014GW002	014GW00204	03/20/1996	5.0	J					
	H014GW003	014GW00301	11/16/1994	12.5	UJ					
	H014GW003	014GW00302	04/06/1995	25.0	UJ					
	H014GW003	014GW00303	09/11/1995	52.0	U					
	H014GW003	014GW00304	03/12/1996	10.0	U					
	H014GW004	014GW00401	11/16/1994	10.0	U					
	H014GW004	014GW00402	04/10/1995	25.0	UJ					
	H014GW004	014GW00403	09/12/1995	27.0	U					
	H014GW004	014GW00404	03/13/1996	10.0	U					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)
Acetone	H014GW005	014GW00501	11/16/1994	10.0	U	µg/L	NA	NA	NA	61
Shallow Wells	H014GW005	014GW00502	04/07/1995	25.0	U					
	H014GW005	014GW00503	09/12/1995	97.0	U					
	H014GW005	014GW00504	03/14/1996	10.0	U					
	H014GW006	014GW00602	07/19/1999	5.0	J					
	H014GW0006	014H000610	07/19/2000	10.0	U					
	H014GW007	014GW00701	03/01/1999	5.0	U					
Acetone	H014GW01D	014GW01D01	11/15/1994	10.0	U	µg/L	NA	NA	NA	61
Deep Wells	H014GW01D	014GW01D02	04/05/1995	25.0	U					
	H014GW01D	014GW01D03	09/13/1995	25.0	U					
	H014GW01D	014GW01D04	03/08/1996	10.0	U					
	H014GW02D	014GW02D01a	11/14/1994	10.0	U					
	H014GW02D	014GW02D02	04/05/1995	25.0	UJ					
	H014GW02D	014GW02D03	09/13/1995	50.0	U					
	H014GW02D	014GW02D04	03/12/1996	10.0	U					
	H014GW03D	014GW03D01	11/16/1994	11.9	UJ					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result (µg/L)	Qualifier	Units	Zone H Background Range of Concentrations (µg/L) Min. Conc	Max. Conc.	MCL (µg/L)	Tap Water RBC (µg/L)
Acetone	H014GW03D	014GW03D02	04/07/1995	25.0	U	µg/L	NA	NA	NA	61
Deep Wells	H014GW03D	014GW03D03	09/12/1995	63.0	U					
	H014GW03D	014GW03D04	03/13/1996	10.0	J					
	H014GW03D	014GW03D05	07/28/1998	12.0	U					
	H014GW04D	014GW04D01	11/17/1994	13.4	UJ					
	H014GW04D	014GW04D02	04/10/1995	25.0	UJ					
	H014GW04D	014GW04D03	09/12/1995	160.0	U					
	H014GW04D	014GW04D04	03/13/1996	10.0	U					
	H014GW05D	014GW05D01	11/17/1994	14.8	UJ					
	H014GW05D	014GW05D02	04/10/1995	25.0	UJ					
	H014GW05D	014GW05D03	09/12/1995	37.0	U					
	H014GW05D	014GW05D04	03/14/1996	10.0	U					
Aluminum	H014GW001	014GW00102	04/05/1995	**15,500.0**	=	µg/L	57.3	1,140	NA	3,700[a]
Shallow Wells	H014GW001	014GW00103	10/12/1995	865.0	=					
	H014GW001	014GW00104	03/08/1996	467.0	=					
	H014GW002	014GW00202	04/05/1995	**3,100.0**	=					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)
Aluminum	H014GW002	014GW00203	09/13/1995	65.5	J	µg/L	57.3	1,140	NA	3,700[a]
Shallow Wells	H014GW002	014GW00204	03/20/1996	5,470.0	=					
	H014GW003	014GW00302	04/06/1995	462.0	=					
	H014GW003	014GW00303	09/11/1995	70.0	J					
	H014GW003	014GW00304	03/12/1996	718.0	=					
	H014GW004	014GW00402	04/10/1995	18.5	U					
	H014GW004	014GW00403	09/12/1995	23.7	J					
	H014GW004	014GW00404	03/13/1996	522.0	=					
	H014GW005	014GW00502	04/07/1995	110.0	U					
	H014GW005	014GW00503	09/12/1995	10.5	U					
	H014GW005	014GW00504	03/14/1996	18.0	UJ					
Aluminum	H014GW01D	014GW01D02	04/05/1995	14.3	U	µg/L	16.10	3,620	NA	3,700[a]
Deep Wells	H014GW01D	014GW01D03	09/13/1995	10.5	U					
	H014GW01D	014GW01D04	03/08/1996	18.0	UJ					
	H014GW02D	014GW02D02	04/05/1995	14.3	U					
	H014GW02D	014GW02D03	09/13/1995	10.5	U					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)
Aluminum	H014GW02D	014GW02D04	03/12/1996	18.0	UJ	µg/L	16.10	3,620	NA	3,700[a]
Deep Wells	H014GW03D	014GW03D02	04/07/1995	14.3	U					
	H014GW03D	014GW03D03	09/12/1995	21.0	U					
	H014GW03D	014GW03D04	03/13/1996	18.0	UJ					
	H014GW04D	014GW04D02	04/10/1995	14.3	U					
	H014GW04D	014GW04D03	09/12/1995	10.5	U					
	H014GW04D	014GW04D04	03/13/1996	18.0	UJ					
	H014GW05D	014GW05D02	04/10/1995	14.3	U					
	H014GW05D	014GW05D03	09/12/1995	10.5	U					
	H014GW05D	014GW05D04	03/14/1996	18.0	UJ					
BEHP	H014GW001	014GW00101	11/15/1994	2.20	J	µg/L	NA	NA	4.8	NA
Shallow Wells	H014GW001	014GW00103	10/12/1995	11.0	U					
	H014GW001	014GW00104	03/08/1996	10.0	U					
	H014GW002	014GW00201a	11/14/1994	**11.**	=					
	H014GW002	014GW00203	09/13/1995	11.0	U					
	H014GW002	014GW00204	03/20/1996	10.0	U					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)
BEHP	H014GW003	014GW00301	11/16/1994	**5.0**	J	µg/L	NA	NA	4.8	NA
Shallow Wells	H014GW003	014GW00303	09/11/1995	11.0	U					
	H014GW003	014GW00304	03/12/1996	2.0	J					
	H014GW004	014GW00401	11/16/1994	**5.8**	J					
	H014GW004	014GW00403	09/12/1995	13.0	U					
	H014GW004	014GW00404	03/13/1996	10.0	U					
	H014GW005	014GW00501	11/16/1994	1.8	J					
	H014GW005	014GW00503	09/12/1995	11.0	U					
	H014GW005	014GW00504	03/14/1996	**220.0**	J					
BEHP	H014GW01D	014GW01D03	09/13/1995	11.0	U	µg/L	NA	NA	NA	4.8
Deep Wells	H014GW01D	014GW01D04	03/08/1996	10.0	U					
	H014GW02D	014GW02D01a	11/14/1994	11.2	UJ					
	H014GW02D	014GW02D03	09/13/1995	16.0	U					
	H014GW02D	014GW02D04	03/12/1996	10.0	U					
	H014GW03D	014GW03D03	09/12/1995	52.0	U					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)
BEHP	H014GW03D	014GW03D04	03/13/1996	10.0	U	µg/L	NA	NA	NA	4.8
Deep Wells	H014GW03D	014GW04D03	09/12/1995	**740.0**	=					
	H014GW03D	014GW04D04	03/13/1996	10.0	U					
	H014GW05D	014GW05D01	11/17/1994	10.0	UJ					
	H014GW05D	014GW05D03	09/12/1995	110.0	U					
	H014GW05D	014GW05D04	03/14/1996	10.0	U					
Heptachlor Epoxide (HPCE)	014GW001	014GW00101	11/15/1994	0.05	U	µg/L	NA	NA	0.2	0.007
Shallow Wells	014GW001	014GW00102	04/05/1995	0.06	U					
	014GW001	014GW00103	10/12/1995	0.06	U					
	014GW001	014GW00104	03/08/1996	0.04	U					
	014GW002	014GW00201a	11/14/1994	0.05	U					
	014GW002	014GW00202	04/05/1995	0.06	UJ					
	014GW002	014GW00203	09/13/1995	0.10	U					
	014GW002	014GW00204	03/20/1996	0.04	U					
	014GW003	014GW00301	11/16/1994	0.05	U					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)
HPCE	014GW003	014GW00302	04/06/1995	0.06	U	µg/L	NA	NA	0.2	0.007
Shallow Wells	014GW003	014GW00303	09/11/1995	0.06	U					
	014GW003	014GW00304	03/12/1996	0.04	U					
	014GW004	014GW00401	11/16/1994	0.05	U					
	014GW004	014GW00402	04/10/1995	0.05	U					
	014GW004	014GW00403	09/12/1995	0.06	U					
	014GW004	014GW00404	03/13/1996	0.04	U					
	014GW005	014GW00501	11/16/1994	0.05	U					
	014GW005	014GW00502	04/07/1995	0.06	U					
	014GW005	014GW00503	09/12/1995	0.06	U					
	014GW005	014GW00504	03/14/1996	0.04	U					
HPCE	014GW01D	014GW01D01	11/15/1994	0.05	U	µg/L	NA	NA	0.2	0.007
Deep Wells	014GW01D	014GW01D02	04/05/1995	0.06	U					
	014GW01D	014GW01D03	09/13/1995	0.06	U					
	014GW01D	014GW01D04	03/08/1996	0.04	U					
	014GW02D	014GW02D01a	11/14/1994	0.50	U					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)
HPCE	014GW02D	014GW02D02	04/05/1995	0.06	U	µg/L	NA	NA	0.2	0.007
Deep Wells	014GW02D	014GW02D03	09/13/1995	0.06	U					
	014GW02D	014GW02D04	03/12/1996	0.04	U					
	014GW03D	014GW03D01	11/16/1994	**3.24**	=					
	014GW03D	014GW03D02	04/07/1995	0.06	U					
	014GW03D	014GW03D03	09/12/1995	0.06	U					
	014GW03D	014GW03D04	03/13/1996	0.04	U					
	014GW04D	014GW04D01	11/17/1994	2.50	U					
	014GW04D	014GW04D02	04/10/1995	0.06	U					
	014GW04D	014GW04D03	09/12/1995	0.05	U					
	014GW04D	014GW04D04	03/13/1996	0.04	U					
	014GW05D	014GW05D01	11/17/1994	5.0	U					
	014GW05D	014GW05D02	04/10/1995	0.06	U					
	014GW05D	014GW05D03	09/12/1995	0.06	U					
	014GW05D	014GW05D04	03/14/1996	0.04	U					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)
TEQ	H014GW001	014GW00101	11/15/94	5.62	=	pg/L	NA	NA	NA	30 pg/L
Shallow Wells	H014GW001	014GW00103	10/12/95	1.66	=					
	H014GW001	014GW00104	03/08/96	4.32	=					
	H014GW002	014GW00204	03/20/96	5.70	=					
	H014GW003	014GW00301	11/16/94	1.90	=					
	H014GW003	014GW00304	03/12/96	5.13	U					
	H014GW004	014GW00401	11/16/94	2.52	=					
	H014GW004	014GW00403	09/12/95	2.26	=					
	H014GW004	014GW00404	03/13/96	2.51	=					
	H014GW005	014GW00501	11/16/94	2.31	=					
	H014GW005	014GW00504	03/14/96	3.98	U					
TEQ	H014GW01D	014GW01D01	11/15/94	3.04	=	pg/L	NA	NA	NA	30 pg/L
Deep Wells	H014GW01D	014GW01D03	09/13/95	2.69	=					
	H014GW01D	014GW01D04	03/08/96	7.10	=					
	H014GW02D	014GW02D01b	11/15/94	3.36	=					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)
TEQ	H014GW02D	014GW02D03	09/13/95	4.54	U	pg/L	NA	NA	30 pg/L	0.00045 pg/L
Deep Wells	H014GW02D	014GW02D04	03/12/96	5.14	U					
	H014GW03D	014GW03D01	11/16/94	2.64	=					
	H014GW03D	014GW03D04	03/13/96	9.76	U					
	H014GW04D	014GW04D01	11/17/94	2.26	=					
	H014GW04D	014GW04D04	03/13/96	5.44	U					
	H014GW05D	014GW05D01	11/17/94	3.37	=					
	H014GW05D	014GW05D03	09/12/95	2.70	U					
	H014GW05D	014GW05D04	03/14/96	3.62	U					
Vanadium	H014GW001	014GW00101	11/15/1994	4,600.0	U	µg/L	1.8	7.7	NA	26[a]
Shallow Wells	H014GW001	014GW00102	04/05/1995	65.2	J					
	H014GW001	014GW00103	10/12/1995	5.5	U					
	H014GW001	014GW00104	03/08/1996	2.7	J					
	H014GW002	014GW00201b	11/15/1994	3.1	U					
	H014GW002	014GW00202	04/05/1995	15.6	U					
	H014GW002	014GW00203	09/13/1995	3.5	U					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)
Vanadium	H014GW002	014GW00204	03/20/1996	16.8	J	µg/L	1.8	7.7	NA	26[a]
Shallow Wells	H014GW003	014GW00301	11/16/1994	3.1	U					
	H014GW003	014GW00302	04/06/1995	6.8	U					
	H014GW003	014GW00303	09/11/1995	5.0	J					
	H014GW003	014GW00304	03/12/1996	2.1	J					
	H014GW004	014GW00401	11/16/1994	3.1	U					
	H014GW004	014GW00402	04/10/1995	2.7	U					
	H014GW004	014GW00403	09/12/1995	3.5	U					
	H014GW004	014GW00404	03/13/1996	1.0	J					
	H014GW005	014GW00501	11/16/1994	3.9	U					
	H014GW005	014GW00502	04/07/1995	6.6	U					
	H014GW005	014GW00503	09/12/1995	5.7	J					
	H014GW005	014GW00504	03/14/1996	3.0	J					
Vanadium	H014GW01D	014GW01D01	11/15/1994	4.5	U	µg/L	1.0	9.0	NA	26[a]
Deep Wells	H014GW01D	014GW01D02	04/05/1995	8.1	UJ					
	H014GW01D	014GW01D03	09/13/1995	4.6	J					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)
Vanadium	H014GW01D	014GW01D04	03/08/1996	1.6	J	µg/L	1.0	9.0	NA	26[a]
Deep Wells	H014GW02D	014GW02D01b	11/15/1994	4.5	U					
	H014GW02D	014GW02D02	04/05/1995	7.9	UJ					
	H014GW02D	014GW02D03	09/13/1995	5.1	J					
	H014GW02D	014GW02D04	03/12/1996	1.0	J					
	H014GW03D	014GW03D01	11/16/1994	8.9	U					
	H014GW03D	014GW03D02	04/07/1995	9.4	UJ					
	H014GW03D	014GW03D03	09/12/1995	8.3	J					
	H014GW03D	014GW03D04	03/13/1996	2.1	J					
	H014GW04D	014GW04D01	11/17/1994	4.8	U					
	H014GW04D	014GW04D02	04/10/1995	8.8	UJ					
	H014GW04D	014GW04D03	09/12/1995	7.3	J					
	H014GW04D	014GW04D04	03/13/1996	1.6	J					
	H014GW05D	014GW05D01	11/17/1994	7.5	U					
	H014GW05D	014GW05D02	04/10/1995	16.0	UJ					
	H014GW05D	014GW05D03	09/12/1995	10.4	J					
	H014GW05D	014GW05D04	03/14/1996	3.4	J					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)
Vinyl Chloride	H014GW001	014GW00101	11/15/1994	10.0	U	µg/L	NA	NA	2	0.08
Shallow Wells	H014GW001	014GW00102	04/05/1995	10.0	U					
	H014GW001	014GW00103	10/12/1995	10.0	U					
	H014GW001	014GW00104	03/08/1996	10.0	U					
	H014GW001	014GW00105	07/24/1998	5.0	U					
	H014GW002	014GW00201a	11/14/1994	10.0	U					
	H014GW002	014GW00202	04/05/1995	10.0	U					
	H014GW002	014GW00203	09/13/1995	10.0	U					
	H014GW002	014GW00204	03/20/1996	10.0	U					
	H014GW002	014GW00205	07/24/1998	5.0	U					
	H014GW003	014GW00301	11/16/1994	10.0	U					
	H014GW003	014GW00302	04/06/1995	10.0	U					
	H014GW003	014GW00303	09/11/1995	10.0	U					
	H014GW003	014GW00304	03/12/1996	10.0	U					
	H014GW003	014GW00305	07/25/1998	5.0	U					
	H014GW004	014GW00401	11/16/1994	10.0	U					
	H014GW004	014GW00402	04/10/1995	10.0	U					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)
Vinyl Chloride	H014GW004	014GW00403	09/12/1995	10.0	U	µg/L	NA	NA	2	0.08
Shallow Wells	H014GW004	014GW00404	03/13/1996	10.0	U					
	H014GW004	014GW00405	07/25/1998	5.0	U					
	H014GW005	014GW00501	11/16/1994	10.0	U					
	H014GW005	014GW00502	04/07/1995	10.0	U					
	H014GW005	014GW00503	09/12/1995	10.0	U					
	H014GW005	014GW00504	03/14/1996	10.0	U					
	H014GW005	014GW00505	07/26/1998	5.0	U					
	H014GW006	014GW00601	07/26/1998	**17.0**	=					
	H014GW006	014GW00602	07/19/1999	5.0	U					
	H014GW006	014G000610	07/19/2000	10.0	U					
	H014GW007	014GW00701	03/01/1999	5.0	U					
	H014GW007	014GW00702	07/19/1999	5.0	U					
Vinyl Chloride	H014GW01D	014GW01D01	11/15/1994	10.0	U	µg/L	NA	NA	2	0.08
Deep Wells	H014GW01D	014GW01D02	04/05/1995	10.0	U					
	H014GW01D	014GW01D03	09/13/1995	10.0	U					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)
Vinyl Chloride	H014GW01D	014GW01D04	03/08/1996	10.0	U	µg/L	NA	NA	2	0.08
Deep Wells	H014GW01D	014GW01D05	07/24/1998	5.0	U					
	H014GW02D	014GW02D01a	11/14/1994	10.0	U					
	H014GW02D	014GW02D02	04/05/1995	10.0	U					
	H014GW02D	014GW02D03	09/13/1995	20.0	U					
	H014GW02D	014GW02D04	03/12/1996	10.0	U					
	H014GW02D	014GW02D05	07/24/1998	5.0	U					
	H014GW03D	014GW03D01	11/16/1994	10.0	U					
	H014GW03D	014GW03D02	04/07/1995	10.0	U					
	H014GW03D	014GW03D03	09/12/1995	25.0	U					
	H014GW03D	014GW03D04	03/13/1996	10.0	U					
	H014GW03D	014GW03D05	07/28/1998	5.0	U					
	H014GW04D	014GW04D01	11/17/1994	10.0	U					
	H014GW04D	014GW04D02	04/10/1995	10.0	U					
	H014GW04D	014GW04D03	09/12/1995	10.0	U					
	H014GW04D	014GW04D04	03/13/1996	10.0	U					
	H014GW04D	014GW04D05	07/25/1998	5.0	U					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)
Vinyl Chloride	H014GW05D	014GW05D01	11/17/1994	10.0	U	µg/L	NA	NA	2	0.08
Deep Wells	H014GW05D	014GW05D02	04/10/1995	10.0	U					
	H014GW05D	014GW05D03	09/12/1995	10.0	U					
	H014GW05D	014GW05D04	03/14/1996	10.0	U					
	H014GW05D	014GW05D05	07/27/1998	5.0	U					
	H014GW06D	014GW06D01	07/28/1998	5.0	U					
	H014GWC6D	014GWC6D01	03/24/1999	5.0	U					
	H014GW006	014H000610	07/19/2000	10.0	U					
Thallium	014GW001	014GW00101	11/15/1994	2,000.0	U	µg/L	1.9	105	2.0	0.26
Shallow Wells	014GW001	014GW00102	04/05/1995	3.3	U					
	014GW001	014GW00103	10/12/1995	6.4	UJ					
	014GW001	014GW00104	03/08/1996	2.7	UJ					
	014GW002	014GW00201b	11/15/1994	2.0	U					
	014GW002	014GW00202	04/05/1995	3.3	U					
	014GW002	014GW00203	09/13/1995	2.5	UJ					
	014GW002	014GW00204	03/20/1996	5.2	J					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)
Thallium	014GW003	014GW00301	11/16/1994	1.0	U	µg/L	1.9	105	2.0	0.26
Shallow Wells	014GW003	014GW00302	04/06/1995	3.3	U					
	014GW003	014GW00303	09/11/1995	2.5	UJ					
	014GW003	014GW00304	03/12/1996	2.8	J					
	014GW004	014GW00401	11/16/1994	1.0	U					
	014GW004	014GW00402	04/10/1995	3.3	U					
	014GW004	014GW00403	09/12/1995	2.5	UJ					
	014GW004	014GW00404	03/13/1996	2.7	UJ					
	014GW005	014GW00501	11/16/1994	1.0	U					
	014GW005	014GW00502	04/07/1995	3.9	U					
	014GW005	014GW00503	09/12/1995	2.5	UJ					
	014GW005	014GW00504	03/14/1996	2.7	UJ					
Thallium	014GW01D	014GW01D01	11/15/1994	2.0	U	µg/L	5.6	5.9	2.0	0.26
Deep Wells	014GW01D	014GW01D02	04/05/1995	5.7	UJ					
	014GW01D	014GW01D03	09/13/1995	21.8	J					
	014GW01D	014GW01D04	03/08/1996	2.7	UJ					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)
Thallium	014GW02D	014GW02D01b	11/15/1994	1.2	J	µg/L	5.6	5.9	2.0	0.26
Deep Wells	014GW02D	014GW02D02	04/05/1995	4.6	UJ					
	014GW02D	014GW02D03	09/13/1995	15.9	J					
	014GW02D	014GW02D04	03/12/1996	2.7	UJ					
	014GW03D	014GW03D01	11/16/1994	1.0	U					
	014GW03D	014GW03D02	04/07/1995	3.3	UJ					
	014GW03D	014GW03D03	09/12/1995	18.3	J					
	014GW03D	014GW03D04	03/13/1996	2.7	UJ					
	014GW04D	014GW04D01	11/17/1994	1.0	U					
	014GW04D	014GW04D02	04/10/1995	3.3	UJ					
	014GW04D	014GW04D03	09/12/1995	22.4	J					
	014GW04D	014GW04D04	03/13/1996	2.7	UJ					
	014GW05D	014GW05D01	11/17/1994	1.2	J					
	014GW05D	014GW05D02	04/10/1995	3.3	UJ					
	014GW05D	014GW05D03	09/12/1995	28.8	J					
	014GW05D	014GW05D04	03/14/1996	5.2	J					

TABLE 5-6
Summary of Detected Concentrations of Selected COPCs in Groundwater
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Sampled	Result	Qualifier	Units	Zone H Background Range of Concentrations		MCL	Tap Water RBC
				(µg/L)			(µg/L) Min. Conc	Max. Conc.	(µg/L)	(µg/L)

Bold concentrations represent exceedances of either the Tap Water RBC, the MCL, or the maximum concentration of the Zone H Range of Background Concentrations.

[a] RBC at HI=0.1

= Indicates that the compound was detected, the reported value is equal to the sample concentration.

J Indicates an estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.

U Indicates that the concentration was not detected.

UJ Indicates that the concentration was not detected and is estimated.

NA Not analyzed/not applicable

pg/L Picograms per liter

6.0 Summary of Information Related to Site Closeout Issues

6.1 Presence of Inorganics in Groundwater

For the purpose of site closeout documentation, the inorganics in groundwater issue refers to the occasional or intermittent detection of metals (primarily arsenic, thallium, and antimony) in groundwater at concentrations above the applicable MCL, preceded or followed by detections of these same metals below the MCL or below the practicable quantitation limit. There were no detections of antimony above laboratory detection limits in shallow or deep groundwater samples. Arsenic detections in groundwater did not exceed the MCL. The nature and extent of the occurrence of thallium in groundwater have been discussed in Section 5.0 and thallium is not considered a COC at this site.

No groundwater COCs were identified for Combined SWMU 14. No further evaluation of inorganics in groundwater at this site is warranted.

6.2 Potential Linkage to Investigated Sanitary Sewers at the CNC (SWMU 37)

There are no data suggesting that there are any connections or impacts to the sanitary sewers from Combined SWMU 14. Therefore, further evaluation of this issue is not warranted.

6.3 Potential Linkage to Investigated Storm Sewers at the CNC (AOC 699)

No direct connections from Combined SWMU 14 to the storm sewers are known to exist. No COCs requiring further evaluation are present at the site after the IM completion. Based on these findings, further evaluation of this issue is not warranted.

6.4 Potential Linkage to AOC 504, Investigated Railroad Lines at the CNC

There are no railroad lines at Combined SWMU 14. Therefore, no linkage with the railroad lines exists and no further evaluation of this issue is warranted.

6.5 Potential Migration Pathways to Surface Water Bodies at the CNC

The nearest surface water body to Combined SWMU 14 is the Cooper River, which lies approximately 1,200 feet east of the site. The eastern and southern sides of Combined SWMU 14 are bounded by a high berm which prevents overland surface water flow from the site towards the Cooper River. There are no potential migration pathways from the site to surface water bodies. Therefore, further evaluation of this issue is not warranted.

6.6 Potential Contamination in Oil/Water Separators

There are no oil/water separators (OWSs) associated with Combined SWMU 14. In addition, there is no reference to an OWS at the site in the Oil/Water Separator Data report, prepared by the Department of the Navy (September 2000). Therefore, further evaluation of this issue is not warranted.

6.7 Land Use Controls

With the completion of the IM at Combined SWMU 14 during December 2001 and January 2002, the soil COCs which exceeded the unrestricted (residential) land use screening criteria have been removed and disposed of. The excavations have been backfilled with clean soil. There were no groundwater COCs identified at this site. This site is expected to be classified for unrestricted land use. Therefore, LUCs are not expected to be necessary at the site.

7.0 Interim Measure Completion Report

Based on the refinement of COCs presented in Section 5.0, only surface soil COCs were identified for Combined SWMU 14. The surface soil COCs identified were arsenic, antimony, lead, thallium and BEQs. These COCs occurred in several hotspots at Combined SWMU 14 (as shown on Figure 5-1), and were targeted for removal in a soil excavation IM conducted by CH2M-Jones. At the conclusion of this IM, surface soil showing exceedances of the target cleanup goal were removed and replaced by clean soils, resulting in residual site concentrations below unrestricted land use criteria. The IM is described in this section.

Prior to the commencement of the IM, an IM Work Plan (IMWP) was submitted to SCDHEC for review during May 2001 (CH2M-Jones, 2001a). This IMWP was approved prior to commencement of the field activities.

7.1 Technical Approach of the Interim Measure

The IM included pre-excavation delineation sampling around the hotspots targeted for soil removal. This pre-excavation delineation was proposed in the IMWP in order to verify whether the COCs were present beyond a 10 ft x 10 ft area, by sampling all fours sides of a square area around the hotspot where the COC was detected. The IMWP proposed that the extent of soil removal would be determined by the concentrations detected in the pre-excavation delineation samples surrounding the hotspot. The IMWP also proposed that no additional confirmation sampling would be conducted after excavation, since the vertical limits of contamination was determined to be only in the surface soil interval, and the lateral extent of the residual site concentrations would be determined by the pre-excavation delineation sampling. The IMWP proposed that the excavations would be backfilled with clean soil soon after excavation. This approach was presented to SCDHEC and was approved after review of the IMWP.

7.1.1 Target Cleanup Goals

For arsenic and thallium, the target cleanup goals used in the IM for surface soil were the background concentrations derived from the grid sample data set for Zone H surface soil. For arsenic, the target cleanup goal used was 15.6 mg/kg. For thallium, the target cleanup value used was 1.1 mg/kg. For antimony, the target cleanup goal for surface soils was the

EPA Region III residential RBC of 3.1 mg/kg, since the Zone H background data set did not detect antimony in over 90 percent of the background soil samples.

For BEQs, the target cleanup goal in surface soil was the site-wide CNC BEQ reference concentration of 1.304 mg/kg for surface soil.

7.2 Pre-excavation Sampling and Contaminant Delineation

Prior to initiating the excavation activities, the former RFI soil boring locations were staked in the field by a registered surveyor using previously-surveyed coordinates stored in the CNC Environmental Geographic Information System (EGIS) tool, and using Global Positioning System (GPS) equipment. This survey was performed during August 2001.

At each location where surface soil excavation was to be performed, a 10-ft x 10-ft excavation footprint was laid out, and four delineation samples (in the north, south, east and west directions) were collected outside each 10-ft x 10-ft excavation footprint. These samples were analyzed to verify the concentrations of the COCs being removed (BEQs or inorganics, or both). A total of 34 hotspots were targeted for delineation and subsequent soil removal.

Soil samples were collected at surveyed delineation sampling locations. The analytes sampled were determined by the targeted COCs detected at the hotspot. Figure 7-1 shows the August 2001 delineation sampling locations.

Analytical results from the delineation sampling were evaluated to determine the horizontal extent of excavation at each location. Based on the screening of analytical results against the target cleanup goals, at least one of the four delineation sampling locations showed an exceedance of the cleanup goals at 16 of the 34 hotspots. Figure 7-1 shows the delineation sampling locations where an exceedance of the cleanup goals was detected. Table 7-1 includes concentrations of COCs detected in samples collected during the August 2001 pre-excavation delineation sampling. Appendix E includes the analytical results and data validation narratives for the August 2001 delineation sampling.

An evaluation of the analytical results and the spatial pattern of exceedance locations from this August 2001 sampling event indicated that the area south of SWMU 15 showed BEQ exceedances in several adjacent hotspot locations. This suggested the presence of surface soil BEQ contamination in an area-wide pattern rather than as hotspots in this area. It was decided to further delineate the BEQ contamination vertically in this area, due to the possibility that the area might be impacted by the entrainment of trap and skeet range

targets in the top 6 to 12 inches of soil. These shooting targets were suspected to be the source of BEQs in this area. Figure 7-2 shows this area, which was designated as Area 1.

Figure 7-2 also shows the vertical delineation sampling locations in Area 1 (sample locations H684SB118, H684SB119, H684SB120, H670SB072 and H670SB073). These samples were collected in two depth intervals: 0 to 6 inches below land surface (inches bls) and 6 to 12 inches bls, to verify the vertical BEQ contaminant distribution pattern.

An area to the north and west of Building 1896 on the northern boundary of AOC 670 showed elevated BEQ concentrations that were attributed to the presence of TPH detected in surface soil in this area during the RFI. This area was designated as Area 2, as shown in Figure 7-2.

Two additional samples were also collected during October 2001 in an area east of Area 1 (at H684SB117 and H684SB122, as shown in Figure 7-2) to verify the surface soil BEQ contamination in these areas. These samples were collected from the 0 to 1 ft bls depth interval. Analytical results of the BEQ vertical delineation sampling in Area 1 are shown in Figure 7-3. Copies of analytical results tables and data validation narratives for the October 2001 sampling event are included in Appendix E.

At locations outside Areas 1 and 2, additional soil samples were collected at the 34 hotspot locations where exceedances of screening criteria were noted in samples from the August 2001 sampling. These samples were collected by stepping out another 5 ft in the direction of the exceedance (i.e., if the exceedance occurred in the northern delineation sample, an additional sample was collected by stepping out another 5 ft north of this delineation sample location). This was done in order to verify if contaminant migration had taken place outside the 10-ft x 10-ft excavation area. This second delineation sampling event was conducted during October 2001. Analytical results from this sampling event did not indicate the presence of COCs beyond the sample locations in the second sampling event. Table 7-1 includes the detected concentrations from these additional samples outside the hotspot locations.

7.3 Excavation of Soils

7.3.1 Technical Approach to Excavation

Based on the analytical results from the August 2001 and October 2001 delineation sampling events, the technical approach to the excavation of contaminated soils for the IM at Combined SWMU 14 was proposed in an Excavation Work Plan (EWP) (CH2M-Jones, 2001b) prepared during November 2001. A copy of the EWP was submitted to SCDHEC.

This excavation approach was consistent with the technical approach for remediation proposed in the Combined SWMU 14 IMWP (CH2M-Jones, 2001a) which was reviewed and approved by SCDHEC, prior to the commencement of the delineation sampling and excavation activities.

The EWP proposed excavating surface soil within the entire footprint of Areas 1 and 2 rather than as hotspots in these areas.

Based on the analytical results of the October 2001 sampling event, Area 1 was subdivided into two sections, as shown in Figure 7-4. The northern section of Area 1 showed BEQ exceedances of the CNC surface soil BEQ background reference concentration in the 0 to 6 inches bls depth interval only, and were targeted for excavation down to 6 inches bls. Soil in the 6 to 12 inches bls depth interval in the northern section of Area 1 did not show exceedances of the CNC background screening goals. Accordingly, the northern section of Area 1 was to be excavated down to 6 inches bls as proposed in the EWP.

The EWP proposed that no post-excavation sampling was necessary in the northern section of Area 1, since the soil in the 6 to 12 inches bls did not show exceedances of the CNC BEQ screening goals. Furthermore, these soils had been sampled adequately during the RFI and the pre-excavation delineation sampling events of August 2001 and October 2001 (conducted as part of the IM), and did not show COC exceedances in the subsurface interval. The EWP proposed that the excavation in this section would be backfilled soon after contaminated soils were removed.

The southern section of Area 1 showed exceedances of the CNC BEQ background reference concentration in samples from both the 0 to 6 inch bls interval and the 6 to 12 inch bls depth interval. Accordingly, the EWP proposed excavation in this area down to a depth of 1 ft bls. The EWP also proposed analyzing three post-excavation confirmatory soil samples from this area for SVOCs, prior to backfilling the excavation with clean soil.

Areas 1 and 2 excavation boundaries were extended out farther beyond the hotspot locations in these areas, to excavate more soils as a conservative measure.

7.3.2 Excavation at Hotspots

At hotspot locations outside Area 1 and Area 2 where pre-excavation delineation sampling did not show COC exceedance outside the 10-ft x 10-ft area, excavation was conducted within a 10-ft x 10-ft area. At hotspots where the pre-excavation delineation sampling of August 2001 showed COC exceedance outside the 10-ft x 10-ft area, the October 2001 re-sampling event verified that these exceedances did not extend beyond 15 feet from the

original RFI soil boring location. Accordingly, excavations at these hotspots were extended out laterally to 15 to 20 ft in the direction of COC exceedance. All hotspots were excavated down to a depth of 1 ft bls. Figure 7-4 shows the hotspot excavation areas.

Excavation was initiated in these hotspot areas on December 6, 2001 using a backhoe. Excavated soils were placed in lined steel rolloffs with a lid cover. A total of 11 rolloffs were used to place the excavated material from all hotspot excavations outside Areas 1 and 2. The rolloffs were marked with appropriate labeling information including the origin of the waste, date of collection, and COCs. The rolloffs were secured in an exclusion zone with appropriate caution tape around the zone and hazard warning signs.

Dust monitoring was conducted during excavation activities using a calibrated real-time dust monitor. No exceedances of the nuisance dust action levels were noted on the dust monitor during the excavations. No saturation from stormwater was noticed in the excavated soils while they were placed in the rolloffs.

7.3.3 Excavation at Areas 1 and 2

The excavation at Area 1 was initiated on December 17, 2001. Area 1 was divided into a northern section and a southern section.

The northern section was excavated down to 6 inches bls, and the excavated soils were stockpiled within the footprint of Area 1 and covered with plastic sheeting. The Area 1 excavation was cordoned off with caution tape to prevent unauthorized entry into the excavations.

The southern section was proposed to be excavated down to a depth of 12 inches bls. During excavation, it was decided to extend the excavation depth down to 16 inches bls as a conservative measure. Excavated soils were stockpiled within the footprint of Area 1 and covered with plastic sheeting to prevent intrusion of rain water. The plastic sheeting was secured with heavy weights to prevent them from being blown open by the wind.

7.3.4 Confirmatory Soil Sampling

Post-excavation confirmatory samples were collected from three locations within the southern section of Area 1, as shown in Figure 7-5. The southern section of Area 1 was divided into three roughly equal parts. Within each part, five post-excavation grab samples were collected and composited into one confirmatory sample. There were a total of three such confirmatory composite samples in the southern section of Area 1 (at H670SB078, H670SB079, and H670SB080, as shown in Figure 7-5).

Additionally, two grab samples were collected from the northern boundary of Area 1 at a depth of 6 to 12 inches bls (at H670SB081 and H670SB082) in response to a request from SCDHEC during the review of the EWP. These two locations are shown in Figure 7-5.

All confirmatory soil samples were analyzed for SVOCs by EPA method SW-8270C. The sampling procedures were performed in accordance with the *Environmental Services Division Standard Operating Procedures and Quality Assurance Manual* (ESDSOPQAM) (EPA, 1996).

Table 7-1 presents the analytical results from pre-excavation delineation sampling, as well as the average residual concentrations of COCs at hotspot excavation locations and at Area 1.

7.3.5 Waste Characterization Sampling

Soil samples from rolloffs were collected to represent the excavated material for offsite disposal. Waste characterization samples were collected for analyses for TCLP metals, VOCs, SVOCs, and flash point. Analytical results from waste characterization sampling indicated that the excavated soils were non-hazardous.

Appendix D includes a copy of the analytical results from waste characterization sampling, the waste profile, disposal facility approval of the waste profile and copies of waste manifests. The waste material was transported during January 2002, to the Waste Management Oakridge Landfill disposal facility in Dorchester, South Carolina, for disposal.

Approximately 920 tons of soil were disposed of at the disposal facility as non-hazardous waste.

Waste storage, handling, characterization and disposal were conducted in accordance with the EPA guidance document, *Management of Remediation Waste Under RCRA* (1998).

7.3.6 Site Restoration

The excavations were backfilled with clean soil soon after the contaminated soil was removed, and graded to restore the site to original elevations. The restored areas were seeded with grass seed to facilitate growth of vegetation and prevent soil erosion.

Appendix E includes copies of site photos taken during various remediation activities at Combined SWMU 14.

7.4 Residual Site Concentrations of COCs

Only surface soil COCs (arsenic, antimony, BEQs, lead, and thallium) were identified for Combined SWMU 14. Surface soil at locations where these COCs exceeded screening criteria

were removed during the IM, as described in the preceding sections. These excavated locations were backfilled with clean soils during the IM, thus replacing the contaminated soils with clean soils. Each hotspot excavation area was surrounded by at least four pre-excavation delineation soil samples. At some hotspots where the delineation samples in the first sampling event showed COC concentrations above target cleanup goals, additional delineation samples were collected farther away from the hotspot. At these hotspots, the excavation was extended to the final delineation sample locations which showed COC concentrations below target cleanup goals.

Detected concentrations from the final delineation samples at each hotspot area can be averaged to provide a conservative estimate of residual site concentration at the hotspots for the COC targeted at that hotspot. Table 7-1 shows the average COC concentration at each hotspot where surface soil was excavated. These average concentrations at the hotspots are below the target cleanup goals for unrestricted land use. Additionally, the historic RFI soil sampling locations which were not targeted for excavation during the IM showed concentrations of site constituents below the screening criteria for unrestricted land use.

The confirmatory soil samples collected after Area 1 excavation represent residual concentrations of the BEQs remaining at the site. These concentrations are below the site-wide BEQ reference concentration of 1.304 mg/kg.

Surface soil with elevated concentrations of COCs above screening criteria for unrestricted land use were successfully removed at Combined SWMU 14, resulting in residual site concentrations at the site that are acceptable for unrestricted land use. The results of this IM support the recommendation for NFA at Combined SWMU 14.

TABLE 7-1
Post-Excavation Residual Concentrations of Targeted Surface Soil COCs
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Historic RFI Soil Boring Location	2001 Pre-Excavation Delineation Sample ID	2001 Pre-Excavation Delineation Station ID	Depth	Location of Pre-Excav. Delineation Sample around Historic RFI boring	Arsenic		Antimony		Thallium		Lead		BEQ	Comments
			(ft bls)		Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result mg/kg)	
		EPA Region III Residential RBC			**0.43**		**3.1[a]**		**0.55**		**400[a]**			
		Zone H Background Range			**0.64 – 18[a]**		**1.1 - 2.2**		**0.12 -1.1[a]**		**1.8 - 172**		**1.304[a]**	
H015SB004	H015SB00901	H015SB009	0-1	North side	**18.5**	=							0.94	Aug 2001 Sampling
	H015SB01001	H015SB010	0-1	East side	10.4	=							1.09	Aug 2001 Sampling
	H015SB01101	H015SB011	0-1	South side	18	=							0.19	Aug 2001 Sampling
	H015SB01201	H015SB012	0-1	West side	**20.7**	=							1.25	Aug 2001 Sampling
Average Residual Concentration					***16.9***								***0.87***	
H684SB003	H684SB04501	H684SB045	0-1	North side									**69.76**	Aug 2001 Sampling[b]
	H684SB04601	H684SB046	0-1	East side									0.21	Aug 2001 Sampling
	H684SB04701	H684SB047	0-1	South side									0.09	Aug 2001 Sampling
	H684SB04801	H684SB048	0-1	West side									1.30	Aug 2001 Sampling
	H684SB12101	H684SB121	0-1	*North side*									*0.08*	Oct 2001 Sampling
Average Residual Concentration													**0.42**	
H684SB004	H684SB04901	H684SB049	0-1	North side									1.01	Aug 2001 Sampling
	H684SB05001	H684SB050	0-1	East side									0.39	Aug 2001 Sampling
	H684SB05101	H684SB051	0-1	South side									0.06	Aug 2001 Sampling

TABLE 7-1
Post-Excavation Residual Concentrations of Targeted Surface Soil COCs
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Historic RFI Soil Boring Location	2001 Pre-Excavation Delineation Sample ID	2001 Pre-Excavation Delineation Station ID	Depth	Location of Pre-Excav. Delineation Sample around Historic RFI boring	Arsenic		Antimony		Thallium		Lead		BEQ	Comments
			(ft bls)		Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result mg/kg)	
		EPA Region III Residential RBC			**0.43**		**3.1[a]**		**0.55**		**400[a]**			
		Zone H Background Range			**0.64 – 18[a]**		**1.1 - 2.2**		**0.12 -1.1[a]**		**1.8 - 172**		**1.304[a]**	
H684SB004	H684SB05201	H684SB052	0-1	West side									0.09	Aug 2001 Sampling
Average Residual Concentration													**0.39**	
H684SB009	H684SB05301	H684SB053	0-1	North side					0.612	UJ				Aug 2001 Sampling
	H684SB05401	H684SB054	0-1	East side					0.63	UJ				Aug 2001 Sampling
	H684SB05501	H684SB055	0-1	South side					1.74	UJ				Aug 2001 Sampling
	H684SB05601	H684SB056	0-1	West side					0.65	UJ				Aug 2001 Sampling
Average Residual Concentration									**0.45**					
H684SB013	H684SB06101	H684SB061	0-1	North side			0.595	UJ						Aug 2001 Sampling
	H684SB06201	H684SB062	0-1	East side			0.57	UJ						Aug 2001 Sampling
	H684SB06301	H684SB063	0-1	South side			1.42	J						Aug 2001 Sampling
	H684SB06401	H684SB064	0-1	West side			1.62	J						Aug 2001 Sampling
Average Residual Concentration							**0.91**							

TABLE 7-1
Post-Excavation Residual Concentrations of Targeted Surface Soil COCs
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Historic RFI Soil Boring Location	2001 Pre-Excavation Delineation Sample ID	2001 Pre-Excavation Delineation Station ID	Depth	Location of Pre-Excav. Delineation Sample around Historic RFI boring	Arsenic		Antimony		Thallium		Lead		BEQ	Comments
			(ft bls)		Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result mg/kg)	
		EPA Region III Residential RBC			**0.43**		**3.1[a]**		**0.55**		**400[a]**			
		Zone H Background Range			**0.64 – 18[a]**		**1.1 - 2.2**		**0.12 -1.1[a]**		**1.8 - 172**		**1.304[a]**	
H684SB012	H684SB06501	H684SB065	0-1	North side			0.533	UJ						Aug 2001 Sampling
	H684SB06601	H684SB066	0-1	East side			0.799	J						Aug 2001 Sampling
	H684SB06701	H684SB067	0-1	South side			0.565	UJ						Aug 2001 Sampling
	H684SB06801	H684SB068	0-1	West side			0.849	J						Aug 2001 Sampling
Average Residual Concentration							**0.55**							
H684SB018	H684SB06901	H684SB069	0-1	North side			0.675	UJ						Aug 2001 Sampling
	H684SB07001	H684SB070	0-1	East side			0.647	UJ						Aug 2001 Sampling
	H684SB07101	H684SB071	0-1	South side			0.695	UJ						Aug 2001 Sampling
	H684SB07201	H684SB072	0-1	West side			0.702	UJ						Aug 2001 Sampling
Average Residual Concentration							**0.34**							
H684SB017	H684SB07301	H684SB073	0-1	North side			0.72	UJ						Aug 2001 Sampling
	H684SB07401	H684SB074	0-1	East side			0.542	UJ						Aug 2001 Sampling
	H684SB07501	H684SB075	0-1	South side			0.522	UJ						Aug 2001 Sampling
	H684SB07601	H684SB076	0-1	West side			0.55	UJ						Aug 2001 Sampling

TABLE 7-1
Post-Excavation Residual Concentrations of Targeted Surface Soil COCs
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Historic RFI Soil Boring Location	2001 Pre-Excavation Delineation Sample ID	2001 Pre-Excavation Delineation Station ID	Depth	Location of Pre-Excav. Delineation Sample around Historic RFI boring	Arsenic		Antimony		Thallium		Lead		BEQ	Comments
			(ft bls)		Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result mg/kg)	
		EPA Region III Residential RBC			**0.43**		**3.1[a]**		**0.55**		**400[a]**			
		Zone H Background Range			**0.64 – 18[a]**		**1.1 - 2.2**		**0.12 -1.1[a]**		**1.8 - 172**		**1.304[a]**	
Average Residual Concentration							**0.29**							
H684SB020	H684SB07701	H684SB077	0-1	North side									**6.12**	Aug 2001 Sampling[b]
(part of Area 2	H684SB07801	H684SB078	0-1	East side									**2.10**	Aug 2001 Sampling[b]
Excavation)	H684SB07901	H684SB079	0-1	South side									0.05	Aug 2001 Sampling[b]
	H684SB08001	H684SB080	0-1	West side									**2.51**	Aug 2001 Sampling[b]
H684SB021	H684SB08101	H684SB081	0-1	North side									0.27	Aug 2001 Sampling[b]
(part of Area 2	H684SB08201	H684SB082	0-1	East side									0.16	Aug 2001 Sampling[b]
Excavation)	H684SB08301	H684SB083	0-1	South side									0.48	Aug 2001 Sampling[b]
	H684SB08401	H684SB084	0-1	West side									**1.86**	Aug 2001 Sampling[b]
H684SB023	H684SB08501	H684SB085	0-1	North side									**15.83**	Aug 2001 Sampling[b]
(part of Area 2	H684SB08601	H684SB086	0-1	East side									**1.59**	Aug 2001 Sampling[b]
Excavation)	H684SB08701	H684SB087	0-1	South side									0.73	Aug 2001 Sampling[b]
	H684SB08801	H684SB088	0-1	West side									**15.82**	Aug 2001 Sampling[b]
H684SB024	H684SB08901	H684SB089	0-1	North side									**16.27**	Aug 2001 Sampling[b]
(part of Area 2	H684SB09001	H684SB090	0-1	East side									0.07	Aug 2001 Sampling[b]

TABLE 7-1
Post-Excavation Residual Concentrations of Targeted Surface Soil COCs
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Historic RFI Soil Boring Location	2001 Pre-Excavation Delineation Sample ID	2001 Pre-Excavation Delineation Station ID	Depth	Location of Pre-Excav. Delineation Sample around Historic RFI boring	Arsenic		Antimony		Thallium		Lead		BEQ	Comments
			(ft bls)		Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result mg/kg)	
		EPA Region III Residential RBC			**0.43**		**3.1[a]**		**0.55**		**400[a]**			
		Zone H Background Range			**0.64 – 18[a]**		**1.1 - 2.2**		**0.12 -1.1[a]**		**1.8 - 172**		**1.304[a]**	
Excavation)	H684SB09101	H684SB091	0-1	South side									**4.74**	Aug 2001 Sampling[b]
	H684SB09201	H684SB092	0-1	West side									**14.30**	Aug 2001 Sampling[b]
H684SB044	H684SB09301	H684SB093	0-1	North side									**16.12**	Aug 2001 Sampling[b]
(part of Area 2	H684SB09401	H684SB094	0-1	East side									**69.71**	Aug 2001 Sampling[b]
Excavation)	H684SB09501	H684SB095	0-1	South side									**30.68**	Aug 2001 Sampling[b]
	H684SB09601	H684SB096	0-1	West side									**89.86**	Aug 2001 Sampling[b]
H684SB043	H684SB09701	H684SB097	0-1	North side									**6.57**	Aug 2001 Sampling[b]
(part of Area 1	H684SB09801	H684SB098	0-1	East side									**2.54**	Aug 2001 Sampling[b]
Excavation)	H684SB09901	H684SB099	0-1	South side									**31.34**	Aug 2001 Sampling[b]
	H684SB10001	H684SB100	0-1	West side									**1.92**	Aug 2001 Sampling[b]
	H684CB09901	H684SB099	0-1	South side									**16.60**	Aug 2001 Sampling[b]
H684SB035	H684SB10101	H684SB101	0-1	North side									0.22	Aug 2001 Sampling[b]
(part of Area 1	H684SB10201	H684SB102	0-1	East side									0.04	Aug 2001 Sampling[b]
Excavation)	H684SB10301	H684SB103	0-1	South side									0.72	Aug 2001 Sampling[b]
	H684SB10401	H684SB104	0-1	West side									**42.26**	Aug 2001 Sampling[b]

TABLE 7-1
Post-Excavation Residual Concentrations of Targeted Surface Soil COCs
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Historic RFI Soil Boring Location	2001 Pre-Excavation Delineation Sample ID	2001 Pre-Excavation Delineation Station ID	Depth	Location of Pre-Excav. Delineation Sample around Historic RFI boring	Arsenic		Antimony		Thallium		Lead		BEQ	Comments
			(ft bls)		Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result mg/kg)	
		EPA Region III Residential RBC			**0.43**		**3.1[a]**		**0.55**		**400[a]**			
		Zone H Background Range			**0.64 – 18[a]**		**1.1 - 2.2**		**0.12 -1.1[a]**		**1.8 - 172**		**1.304[a]**	
H684SB036	H684SB10501	H684SB105	0-1	North side									0.07	Aug 2001 Sampling
	H684SB10601	H684SB106	0-1	East side									0.04	Aug 2001 Sampling
	H684SB10701	H684SB107	0-1	South side									**1.24**	Aug 2001 Sampling[b]
	H684SB10801	H684SB108	0-1	West side									0.06	Aug 2001 Sampling
	H684SB12201	*H684SB122*	*0-1*	*South side*									*1.21*	*Oct 2001 Sampling*
Average Residual Concentration													**0.34**	
H684SB015	H684SB10901	H684SB109	0-1	North side									**2.95**	Aug 2001 Sampling[b]
	H684SB11001	H684SB110	0-1	East side									**3.53**	Aug 2001 Sampling[b]
	H684SB11101	H684SB111	0-1	South side									0.53	Aug 2001 Sampling
	H684SB11201	H684SB112	0-1	West side									1.50	Aug 2001 Sampling
	H684SB11701	*H684SB117*	*0-0.5*	*North side*									*0.08*	*Oct 2001 Sampling*
	H684SB11702	*H684SB117*	*0.5-1*	*North side*									*0.07*	*Oct 2001 Sampling*
Average Residual Concentration													**0.54**	

TABLE 7-1
Post-Excavation Residual Concentrations of Targeted Surface Soil COCs
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Historic RFI Soil Boring Location	2001 Pre-Excavation Delineation Sample ID	2001 Pre-Excavation Delineation Station ID	Depth	Location of Pre-Excav. Delineation Sample around Historic RFI boring	Arsenic		Antimony		Thallium		Lead		BEQ	Comments
			(ft bls)		Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result mg/kg)	
		EPA Region III Residential RBC			**0.43**		**3.1[a]**		**0.55**		**400[a]**			
		Zone H Background Range			**0.64 – 18[a]**		**1.1 - 2.2**		**0.12 -1.1[a]**		**1.8 - 172**		**1.304[a]**	
H684SB016	H684SB11301	H684SB113	0-1	North side			1.01	UJ						Aug 2001 Sampling
	H684SB11401	H684SB114	0-1	East side			0.971	UJ						Aug 2001 Sampling
Average Residual Concentration							**0.99**							
H670SB026	H670SB03601	H670SB036	0-1	North side							268	J		Aug 2001 Sampling
	H670SB03701	H670SB037	0-1	East side							32.7	J		Aug 2001 Sampling
	H670SB03801	H670SB038	0-1	South side							51.4	J		Aug 2001 Sampling
	H670SB03901	H670SB039	0-1	West side							288	J		Aug 2001 Sampling
Average Residual Concentration											**160**			
H670SB031	H670SB04001	H670SB040	0-1	North side									**37.62**	Aug 2001 Sampling[b]
(part of Area 1	H670SB04101	H670SB041	0-1	East side									**36.03**	Aug 2001 Sampling[b]
Excavation)	H670SB04201	H670SB042	0-1	South side									**26.24**	Aug 2001 Sampling[b]
	H670SB04301	H670SB043	0-1	West side									**25.95**	Aug 2001 Sampling[b]
H670SB034	H670SB04401	H670SB044	0-1	North side									**23.43**	Aug 2001 Sampling[b]
(part of Area 1	H670SB04501	H670SB045	0-1	East side									**43.39**	Aug 2001 Sampling[b]

TABLE 7-1
Post-Excavation Residual Concentrations of Targeted Surface Soil COCs
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Historic RFI Soil Boring Location	2001 Pre-Excavation Delineation Sample ID	2001 Pre-Excavation Delineation Station ID	Depth	Location of Pre-Excav. Delineation Sample around Historic RFI boring	Arsenic		Antimony		Thallium		Lead		BEQ	Comments
			(ft bls)		Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result mg/kg)	
		EPA Region III Residential RBC			**0.43**		**3.1[a]**		**0.55**		**400[a]**			
		Zone H Background Range			**0.64 – 18[a]**		**1.1 - 2.2**		**0.12 -1.1[a]**		**1.8 - 172**		**1.304[a]**	
Excavation)	H670SB04601	H670SB046	0-1	South side									**2.34**	Aug 2001 Sampling[b]
	H670SB04701	H670SB047	0-1	West side									**8.44**	Aug 2001 Sampling[b]
H670SB003	H670SB04801	H670SB048	0-1	North side									**43.43**	Aug 2001 Sampling[b]
(part of Area 1	H670SB04901	H670SB049	0-1	East side									**4.02**	Aug 2001 Sampling[b]
Excavation)	H670SB05001	H670SB050	0-1	South side									**1.50**	Aug 2001 Sampling[b]
	H670SB05101	H670SB051	0-1	West side									**21.61**	Aug 2001 Sampling[b]
H670SB029	H670SB05201	H670SB052	0-1	North side									0.13	Aug 2001 Sampling
	H670SB05301	H670SB053	0-1	East side									0.96	Aug 2001 Sampling
	H670SB05401	H670SB054	0-1	South side									1.11	Aug 2001 Sampling
	H670SB05501	H670SB055	0-1	West side									0.15	Aug 2001 Sampling
Average Residual Concentration													**0.6**	
H670SB012	H670SB05601	H670SB056	0-1	North side	12.9	=	0.651	UJ			89	J		Aug 2001 Sampling
	H670SB05701	H670SB057	0-1	East side	8.36	=	0.617	UJ			38.7	J		Aug 2001 Sampling
	H670SB05801	H670SB058	0-1	South side	8.77	=	1.02	UJ			35.4	J		Aug 2001 Sampling

TABLE 7-1
Post-Excavation Residual Concentrations of Targeted Surface Soil COCs
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Historic RFI Soil Boring Location	2001 Pre-Excavation Delineation Sample ID	2001 Pre-Excavation Delineation Station ID	Depth	Location of Pre-Excav. Delineation Sample around Historic RFI boring	Arsenic		Antimony		Thallium		Lead		BEQ	Comments
			(ft bls)		Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result mg/kg)	
		EPA Region III Residential RBC			**0.43**		**3.1[a]**		**0.55**		**400[a]**			
		Zone H Background Range			**0.64 – 18[a]**		**1.1 - 2.2**		**0.12 -1.1[a]**		**1.8 - 172**		**1.304[a]**	
H670SB012	H670SB05901	H670SB059	0-1	West side	10.8	=	0.689	UJ			29.8	J		Aug 2001 Sampling
Average Residual Concentration					**10.2**		**0.4**				**48.2**			
H670SB005	H670SB06001	H670SB060	0-1	North side									0.25	Aug 2001 Sampling
	H670SB06101	H670SB061	0-1	East side									**2.31**	Aug 2001 Sampling[b]
	H670SB06201	H670SB062	0-1	South side									0.13	Aug 2001 Sampling
	H670SB06301	H670SB063	0-1	West side									**3.08**	Aug 2001 Sampling[b]
	H670SB07501	*H670SB075*	*0-1*	*East side*									0.09	*Oct 2001 Sampling*
	H670SB07601	*H670SB076*	*0-1*	*West side*									1.15	*Oct 2001 Sampling*
Average Residual Concentration													**0.41**	
H670SB009	H670SB06401	H670SB064	0-1	North side			0.711	UJ						Aug 2001 Sampling
	H670SB06601	H670SB066	0-1	South side			0.765	UJ						Aug 2001 Sampling
Average Residual Concentration							**0.37**							

TABLE 7-1
Post-Excavation Residual Concentrations of Targeted Surface Soil COCs
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Historic RFI Soil Boring Location	2001 Pre-Excavation Delineation Sample ID	2001 Pre-Excavation Delineation Station ID	Depth	Location of Pre-Excav. Delineation Sample around Historic RFI boring	Arsenic		Antimony		Thallium		Lead		BEQ	Comments
			(ft bls)		Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result mg/kg)	
		EPA Region III Residential RBC			**0.43**		**3.1[a]**		**0.55**		**400[a]**			
		Zone H Background Range			**0.64 – 18[a]**		**1.1 - 2.2**		**0.12 -1.1[a]**		**1.8 - 172**		**1.304[a]**	
H670SB023	H670SB06801	H670SB068	0-1	North side	10.5	=	1.44	UJ			82.6	J		Aug 2001 Sampling
	H670SB06901	H670SB069	0-1	East side	9.55	=	1.94	J			132	J		Aug 2001 Sampling
	H670SB07001	H670SB070	0-1	South side	**24.1**	=	15.3	J			**3,260**	J		Aug 2001 Sampling[b]
	H670SB07101	H670SB071	0-1	West side	9.84	=	1.58	UJ			168	J		Aug 2001 Sampling
	H670SB07701	*H670SB077*	*0-1*	*South side*	11						90			*Oct 2001 Sampling*
Average Residual Concentration					**10.22**		**2.97**				**118.15**			
H014SB005	H014SB01201	H014SB012	0-1	North side							136	J		Aug 2001 Sampling
	H014SB01301	H014SB013	0-1	East side							119	=		Aug 2001 Sampling
	H014SB01401	H014SB014	0-1	South side							81.4	J		Aug 2001 Sampling
	H014SB01501	H014SB015	0-1	West side							145	J		Aug 2001 Sampling
Average Residual Concentration											**120.35**			
H014SB006	H014SB01601	H014SB016	0-1	North side							185	J		Aug 2001 Sampling
	H014SB01701	H014SB017	0-1	East side							104	J		Aug 2001 Sampling
	H014SB01801	H014SB018	0-1	South side							107	J		Aug 2001 Sampling

TABLE 7-1
Post-Excavation Residual Concentrations of Targeted Surface Soil COCs
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Historic RFI Soil Boring Location	2001 Pre-Excavation Delineation Sample ID	2001 Pre-Excavation Delineation Station ID	Depth	Location of Pre-Excav. Delineation Sample around Historic RFI boring	Arsenic		Antimony		Thallium		Lead		BEQ	Comments
			(ft bls)		Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result mg/kg)	
		EPA Region III Residential RBC			**0.43**		**3.1[a]**		**0.55**		**400[a]**			
		Zone H Background Range			**0.64 – 18[a]**		**1.1 - 2.2**		**0.12 -1.1[a]**		**1.8 - 172**		**1.304[a]**	
H014SB006	H014SB01901	H014SB019	0-1	West side							88.2	J		Aug 2001 Sampling
Average Residual Concentration											**121.05**			
H014SB010	H014SB02001	H014SB020	0-1	North side							**43,700**	J		Aug 2001 Sampling[b]
	H014SB02101	H014SB021	0-1	East side							193	J		Aug 2001 Sampling
	H014SB02201	H014SB022	0-1	South side							12.8	J		Aug 2001 Sampling
	H014SB02301	H014SB023	0-1	West side							164	J		Aug 2001 Sampling
	H014SB03601	*H014SB036*	*0-1*	*North side*							57			*Oct 2001 Sampling*
Average Residual Concentration											**107**			
014SD21	H014SB02401	H014SB024	0-1	North side							96.8	J		Aug 2001 Sampling
(lead shot	H014SB02501	H014SB025	0-1	East side							127	J		Aug 2001 Sampling
distribution	H014SB02601	H014SB026	0-1	South side							31	J		Aug 2001 Sampling
sample area)	H014SB02701	H014SB027	0-1	West side							288	J		Aug 2001 Sampling
Average Residual Concentration											**136**			

TABLE 7-1
Post-Excavation Residual Concentrations of Targeted Surface Soil COCs
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Historic RFI Soil Boring Location	2001 Pre-Excavation Delineation Sample ID	2001 Pre-Excavation Delineation Station ID	Depth	Location of Pre-Excav. Delineation Sample around Historic RFI boring	Arsenic		Antimony		Thallium		Lead		BEQ	Comments
			(ft bls)		Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result mg/kg)	
		EPA Region III Residential RBC			**0.43**		**3.1[a]**		**0.55**		**400[a]**			
		Zone H Background Range			**0.64 – 18[a]**		**1.1 - 2.2**		**0.12 -1.1[a]**		**1.8 - 172**		**1.304[a]**	
014SD29	H014SB02801	H014SB028	0-1	North side							35.8	J		Aug 2001 Sampling
(lead shot	H014SB02901	H014SB029	0-1	East side							78.2	J		Aug 2001 Sampling
distribution	H014SB03001	H014SB030	0-1	South side							149	J		Aug 2001 Sampling
sample area)	H014SB03101	H014SB031	0-1	West side							111	J		Aug 2001 Sampling
Average Residual Concentration											**93.5**			
014SD16	H014SB03201	H014SB032	0-1	North side							52.1	J		Aug 2001 Sampling
(lead shot	H014SB03301	H014SB033	0-1	East side							166	J		Aug 2001 Sampling
distribution	H014SB03401	H014SB034	0-1	South side							41.7	J		Aug 2001 Sampling
sample area)	H014SB03501	H014SB035	0-1	West side							74.2	J		Aug 2001 Sampling
Average Residual Concentration											**83.5**			
Area 1 Post-Excavation Confirmatory Sample Results:														
	H670SB07801	H670SB078	0-1										0.12	Dec 2001 Sampling
	H670SB07901	H670SB079	0-1										0.06	Dec 2001 Sampling
	H670SB08001	H670SB080	0-1										0.21	Dec 2001 Sampling

TABLE 7-1
Post-Excavation Residual Concentrations of Targeted Surface Soil COCs
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Historic RFI Soil Boring Location	2001 Pre-Excavation Delineation Sample ID	2001 Pre-Excavation Delineation Station ID	Depth	Location of Pre-Excav. Delineation Sample around Historic RFI boring	Arsenic		Antimony		Thallium		Lead		BEQ	Comments
			(ft bls)		Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result (mg/kg)	Qual.	Result mg/kg)	
		EPA Region III Residential RBC			**0.43**		**3.1[a]**		**0.55**		**400[a]**			
		Zone H Background Range			**0.64 – 18[a]**		**1.1 - 2.2**		**0.12 -1.1[a]**		**1.8 - 172**		**1.304[a]**	
Area 1 Post-Excavation Confirmatory Sample Results:														
	H670SB08101	H670SB081	0-1										0.08	Dec 2001 Sampling
	H670SB08201	H670SB082	0-1										0.29	Dec 2001 Sampling

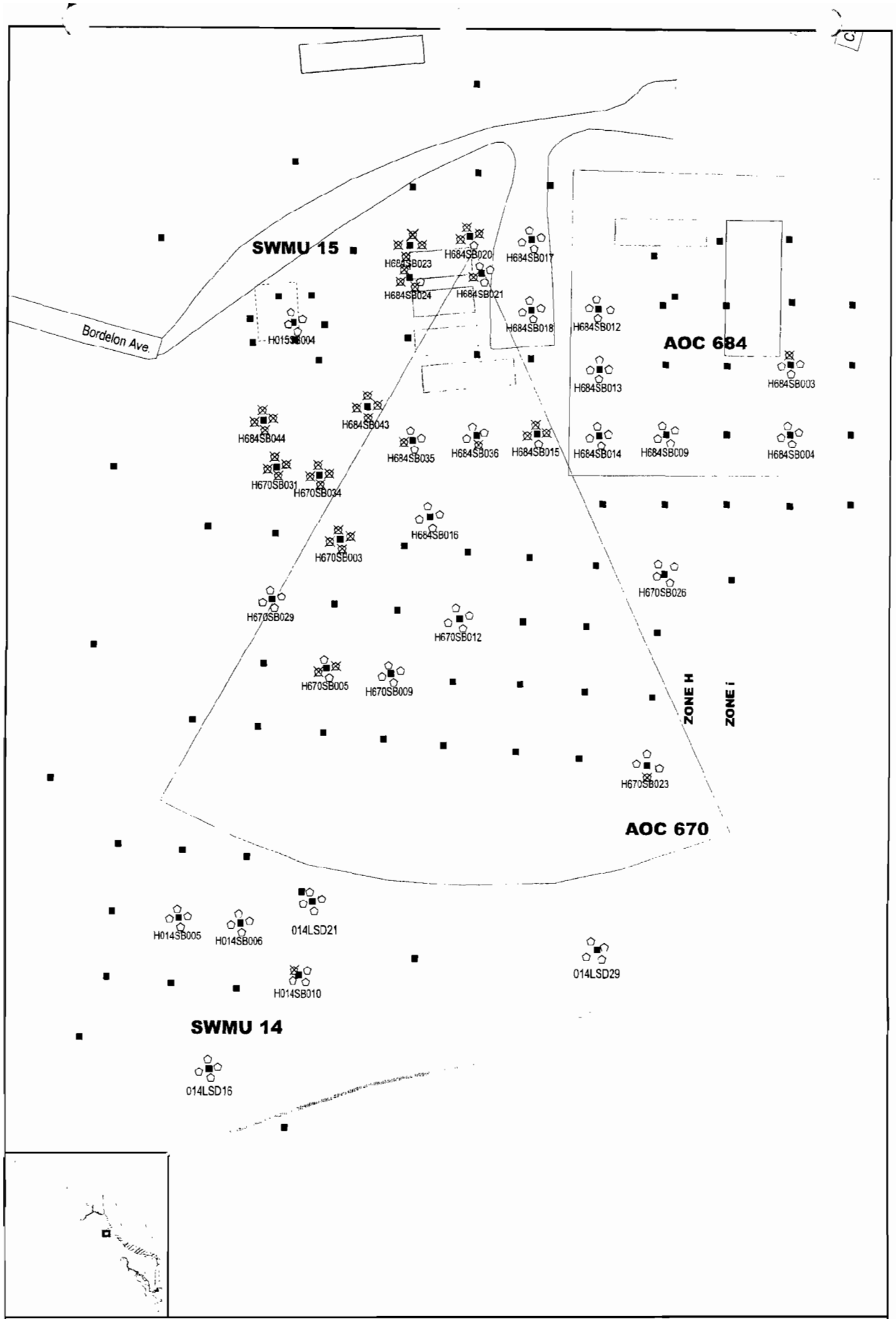
Bold values represent exceedances of parameter concentrations when screened against the appropriate criteria.

[a] Target Cleanup Goal

[b] Soils at these delineation sample locations showed COC concentrations above the target cleanup goal. The soils were excavated and replaced with clean soils as part of the IM.

Sample IDs shown in italics are from second-event (October 2001) delineation samples at hotspots where first-event (August 2001) delineation samples showed exceedances of screening criteria. The sample results for these locations represent the final concentration outside the excavation limit in the direction indicated.

Average residual concentrations were calculated using the half the detection limits for those sample results with a U or UJ qualifier (values below detection limits).



○ Pre-excavation Delineation Sampling Location (August 2001)

⊠ Delineation Sampling Location with Exceedance of Screening Goal

■ RFI Soil Sampling Location

Roads

AOC Boundary

SWMU Boundary

Buildings

Zone Boundary

N

0 50 100 Feet

1 inch = 68 feet

Figure 7-1

Pre-Excavation Delineation **Sampling** Locations with Exceedances of Screening Goals

Combined SWMU 14, Zone H,CNC

CH2MHILL

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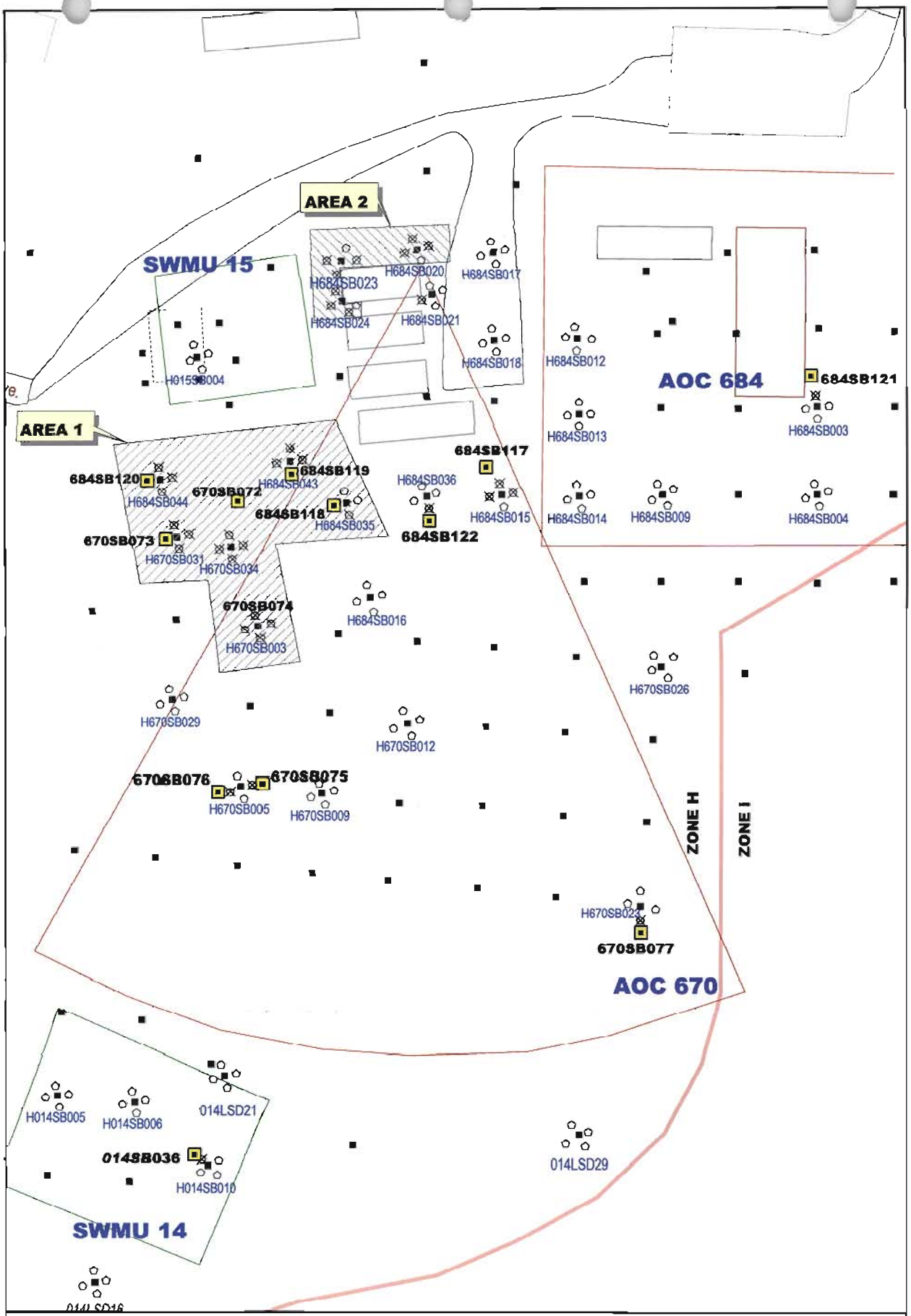
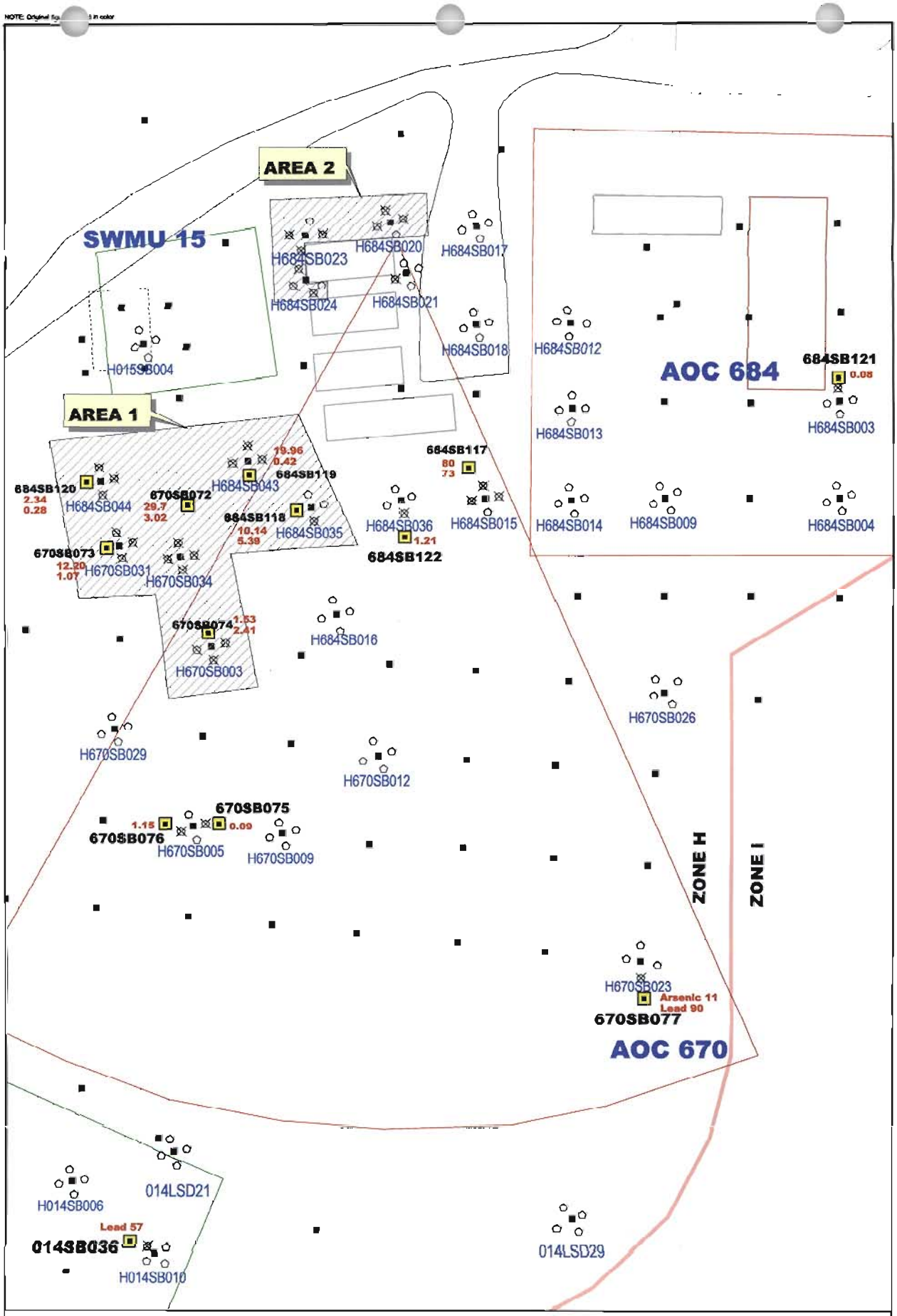


Pre-excavation Delineation Sampling Location (Aug 2001)
Delineation Sampling Location with Exceedance of Screening Goal
RFI Soil Sampling Location
Vertical Delineation Test Area (Area 1)
October 2001 Sampling Location
Buildings
Zone Boundary
AOC Boundary
SWMU Boundary
N
0 40 80 Feet
1 inch = 56 feet

Figure 7-2
October 2001 Delineation Sampling Locations
Combined SWMU 14, Zone H
Charleston Naval Complex

CH2MHILL



○ Pre-excavation Delineation Sampling Location (August 2001)

⊗ Delineation Sampling Location with Exceedance of Screening Goal

■ RFI Soil Sampling Location

▣ October 2001 Delineation Sampling Location

12.20 COC concentration (for BEQs, unless otherwise noted) in mg/kg

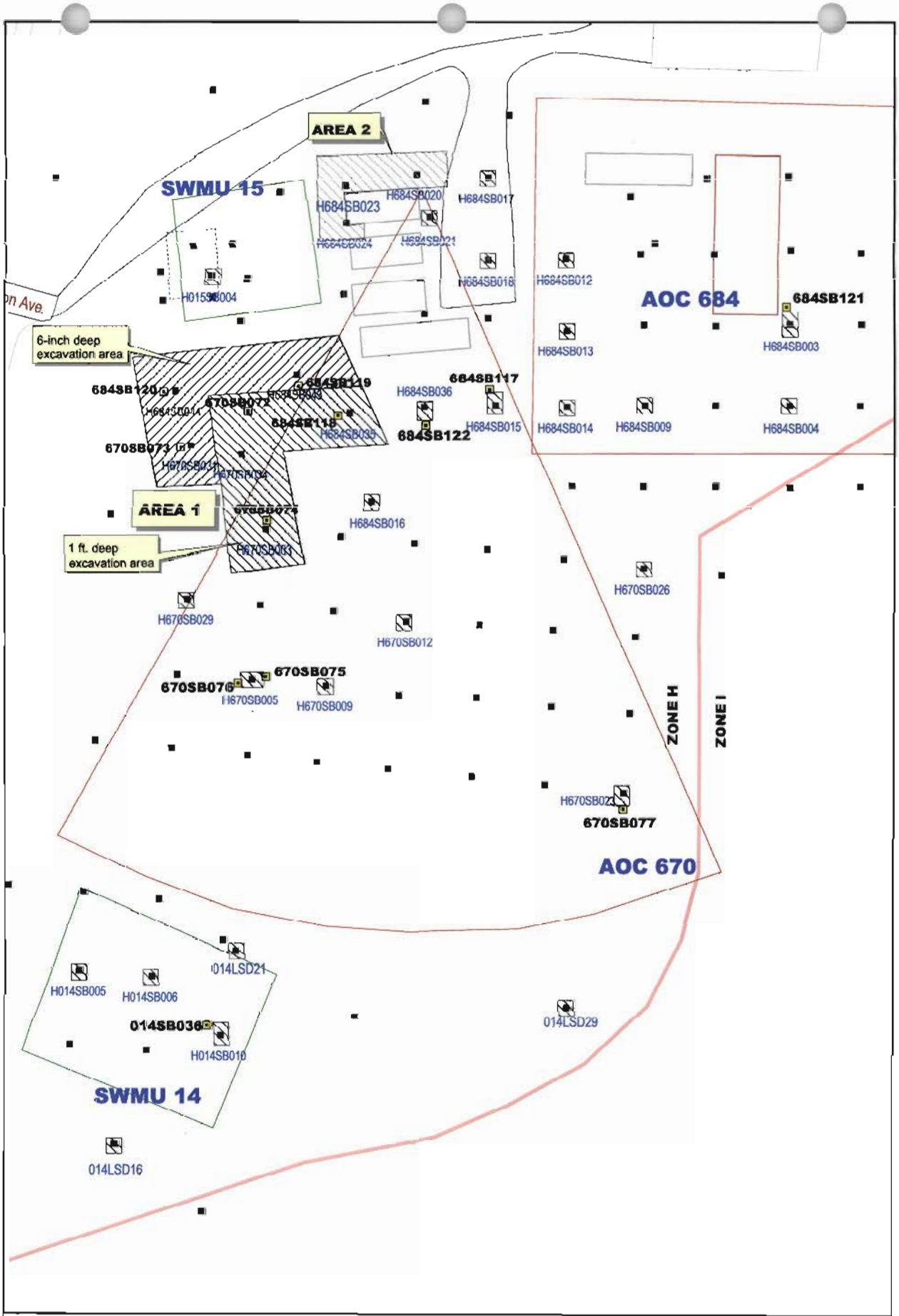
N

0 40 80 Feet

1 inch = 50 feet

Figure 7-3
October 2001 Delineation Sampling Results
Combined SWMU 14 IM, Zone H
Charleston Naval Complex

CH2MHILL



RFI Soil Sampling Location
October 2001 Resampling Location
6-inch deep Excavation Area (Area 1)
1-foot deep Excavation Area
Buildings
Zone Boundary
AOC Boundary
SWMU Boundary

N

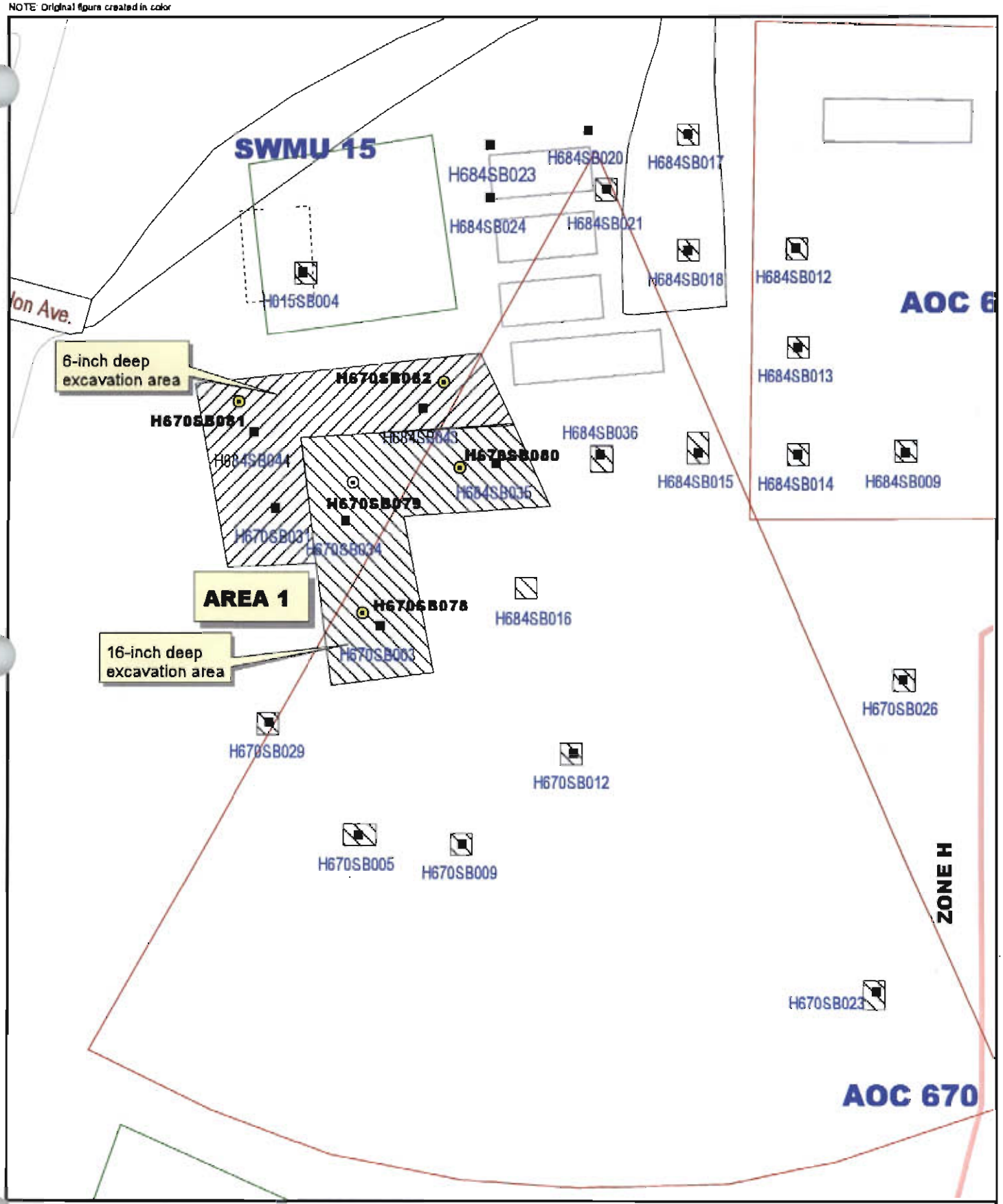
0 50 100 Feet

1 inch = 59 feet

Figure 7-4
IM Excavation Areas
Combined SWMU 14, Zone H
Charleston Naval Complex

CH2MHILL

NOTE: Original figure created in color



■ RFI Soil Sampling Location

6-inch deep Excavation Area (Area 1)

1-foot deep Excavation Area

AOC Boundary

SWMU Boundary

Buildings

Zone Boundary

N

0 50 100 Feet

1 inch = 79 feet

Figure 7-5
Confirmatory Soil Sample Locations
Combined SWMU 14 IM, Zone H
Charleston Naval Complex

CH2MHILL

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8.0 Recommendations

The information presented in this CMSWP/IMCR supports the conclusion that NFA is warranted at Combined SWMU 14. RFI and post-RFI data were screened and evaluated through a COPC/COC screening refinement process. Arsenic, antimony, thallium, lead, and BEQs in surface soil were identified as the COCs. There were no subsurface soil COCs or groundwater COCs identified for the site. The pre-excavation delineation sampling conducted during August 2001 and October 2001 adequately defined the lateral and vertical extent of contamination in soils. Contaminated soils were removed to these lateral and vertical extents. After completion of the IM, no COCs exist at the site above unrestricted land use screening criteria. This IM is expected to be the final remedy for Combined SWMU 14. Therefore, CH2M-Jones recommends that the status of the site be changed to NFA.

Once the BCT concurs that NFA is appropriate for the site, a Statement of Basis will be prepared and made available for public comment, in accordance with SCDHEC policy. This will allow for public participation in the final remedy selection.

9.0 References

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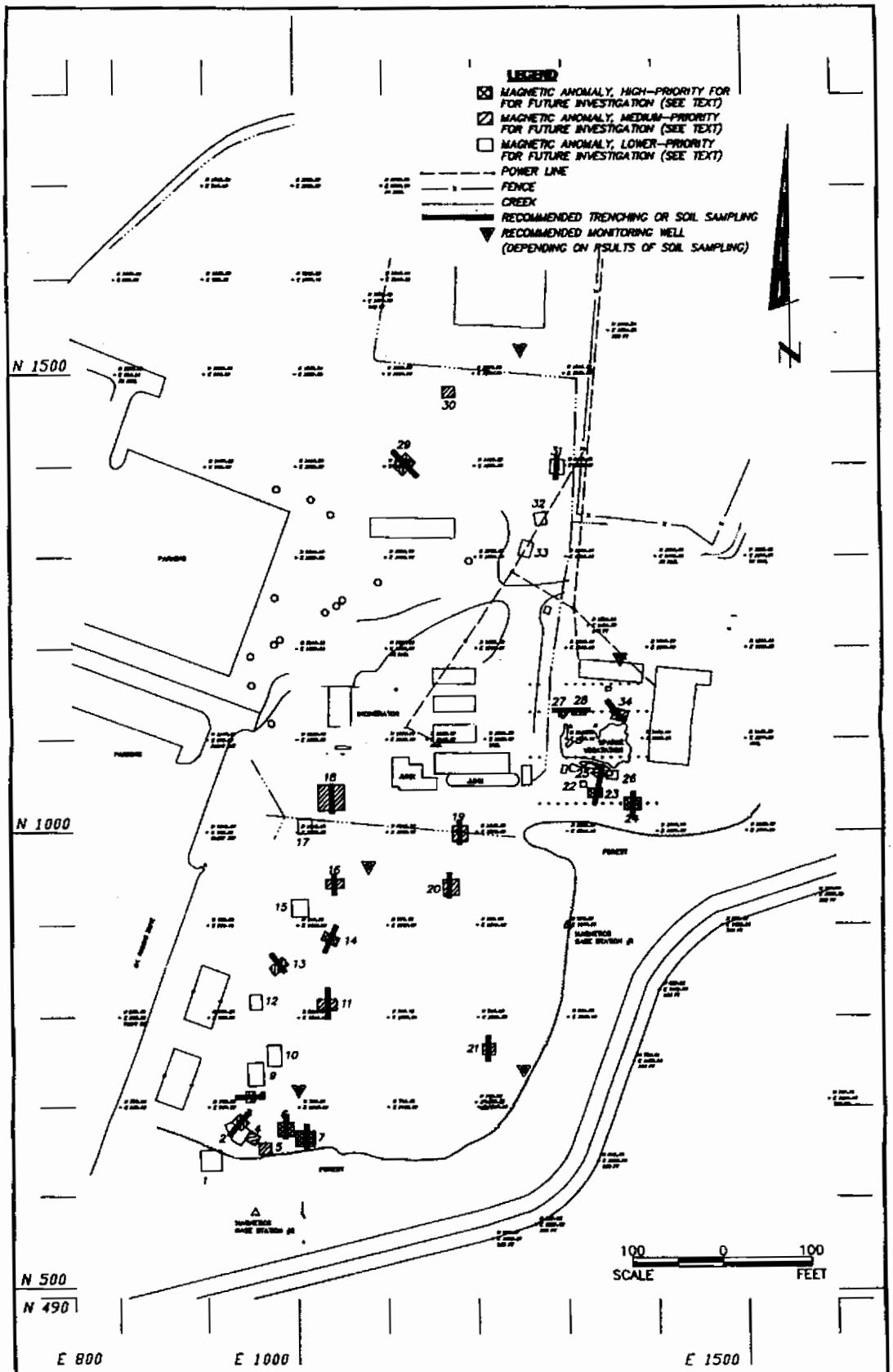


PRELIMINARY RFI
FIELD WORK, 1992
CHARLESTON NAVAL
SHIPYARD
CHARLESTON, S.C.

PLATE 2
INTEGRATED INTERPRETATION
SWMU #14

DWG DATE: 02/15/93 | DWG NAME: 29SWMU15

TABLE 1

RFI ANOMALY EXCAVATION RESULTS

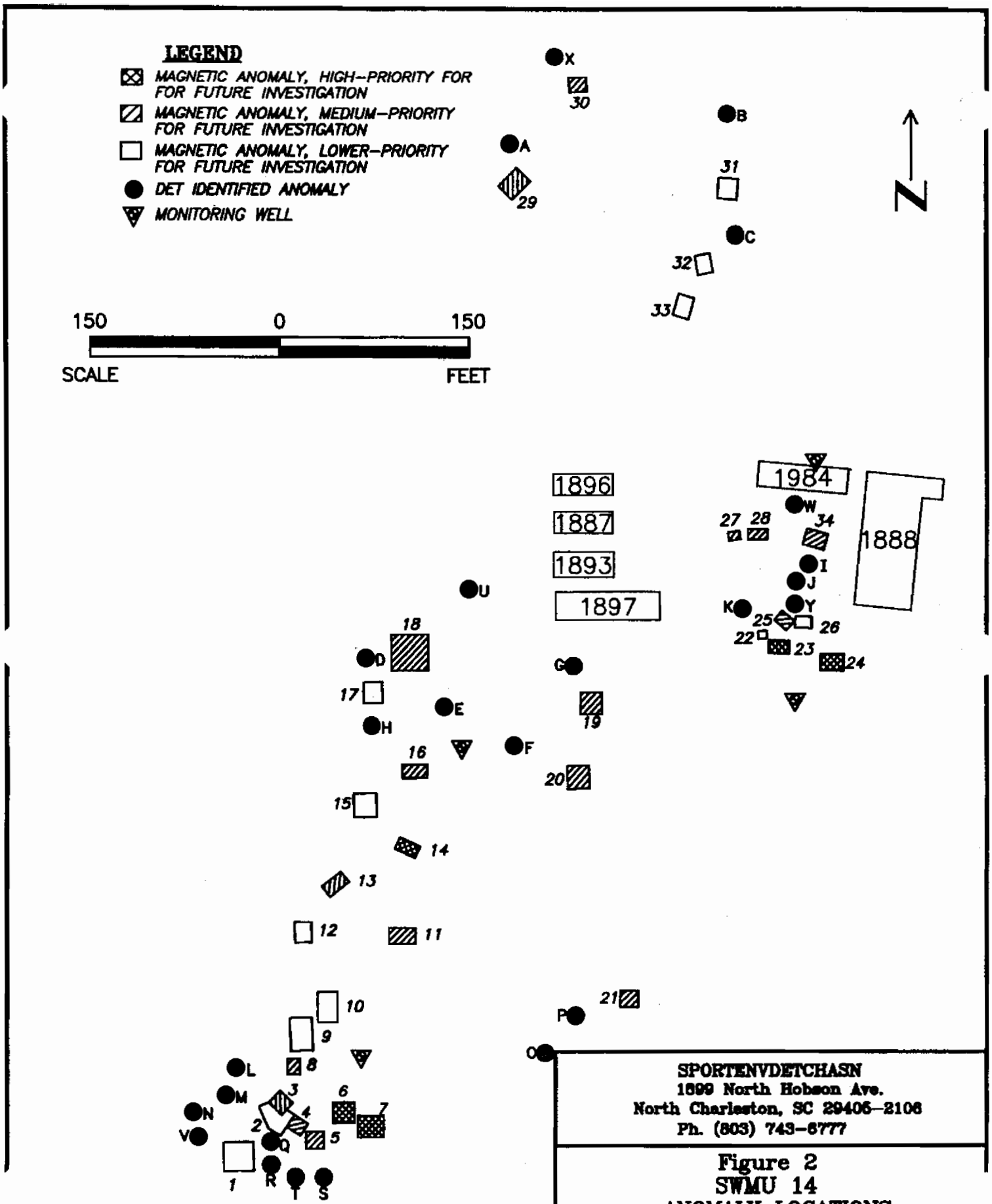
ANOMALY #	ITEM EXCAVATED	DEPTH
ANOMALY 1	2′ rebar	6 inches
ANOMALY 2	rebar	6 inches
ANOMALY 3	rebar	6 inches
ANOMALY 4	rebar	6 inches
ANOMALY 5	2 ½′ rebar	2 foot
ANOMALY 6	Wire, welding rods, & tie down straps	1 foot
ANOMALY 7	2′ rebar	6 inches
ANOMALY 8	Metal strapping	6 inches
ANOMALY 9	2 pieces of rebar	1 foot
ANOMALY 10	2 pieces of rebar	1 foot
ANOMALY 11	Cement footing & metal fence post	6 inches
ANOMALY 12	Rebar & miscellaneous metal	1 ½ foot
ANOMALY 13	3 pieces of rebar	1 foot
ANOMALY 14	Cement footing & metal fence post	6 inches
ANOMALY 15	Rust colored soil	2 foot
ANOMALY 16	Cement footing & metal fence post	6 inches
ANOMALY 17	wire	1 foot
ANOMALY 18	Skeet/trap house concrete foundation	4 foot
ANOMALY 19	4 ½′ channel steel	1 foot
ANOMALY 20	4′ channel steel	1 foot
ANOMALY 21	Rebar rectangular shape	6 inches
ANOMALY 22	Miscellaneous scrap metal	1 ½ foot
ANOMALY 23	Metal grill & 10" eyebeam	2 foot
ANOMALY 24	10 ft x 2 ½ ft ½" metal plate	5 foot

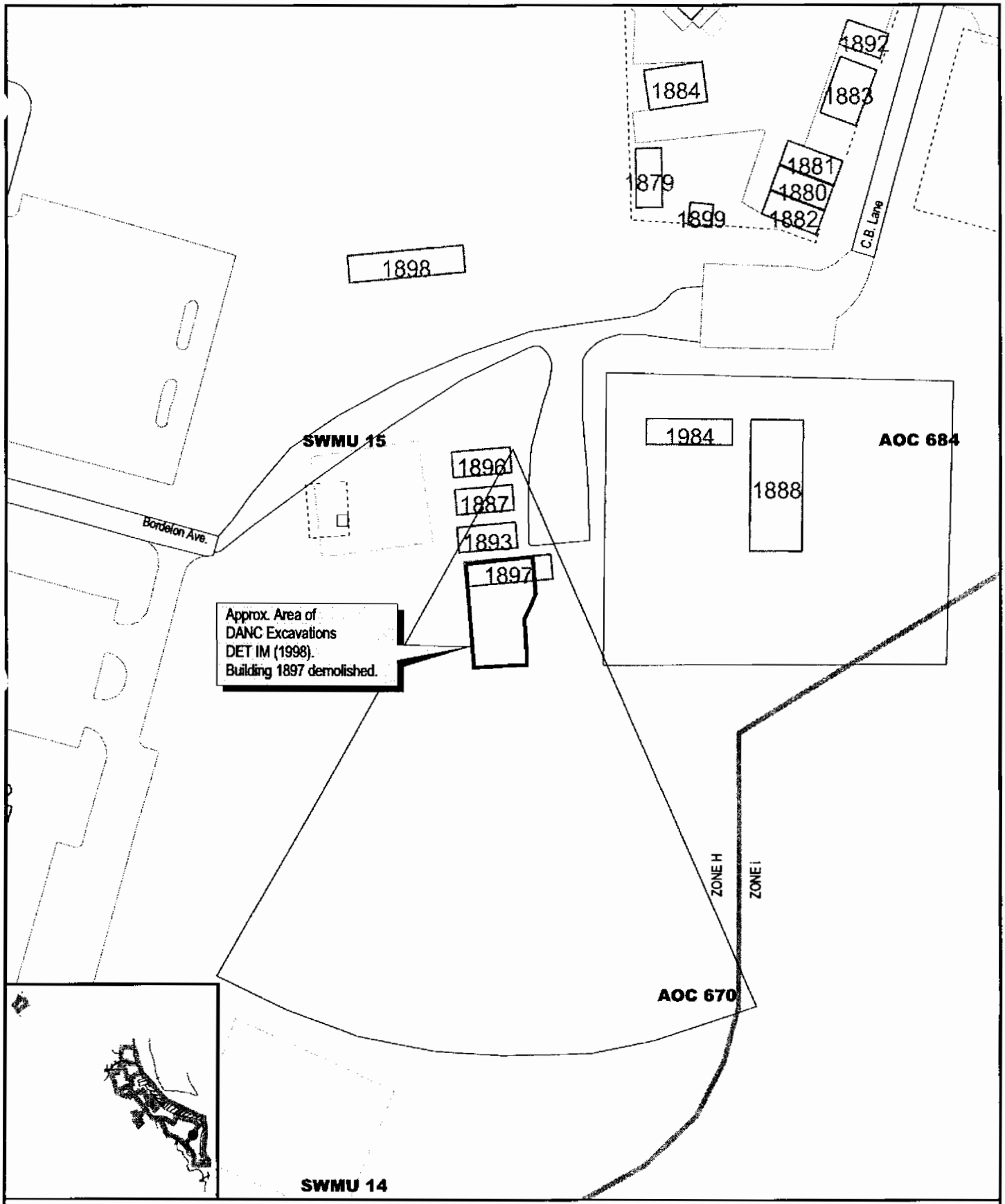
ANOMALY #	ITEM EXCAVATED	DEPTH
ANOMALY 25	3 pieces of rebar & 3 cement footings with pipe	1 foot
ANOMALY 26	1 ½′ square pipe & rebar	2 foot
ANOMALY 27	2 pieces of rebar, 1 horseshoe, 4 boards with nails, & a tent stake	1 ½ foot
ANOMALY 28	Rebar	1 foot
ANOMALY 29	10′ of 4′ pipe	1 foot
ANOMALY 30	3′ of 1" OD pipe	1 ½ foot
ANOMALY 31	6′ pipe	2 ½ foot
ANOMALY 32	1 each 12" & 2′ pipe, nails, & miscellaneous scrap metal	3 foot
ANOMALY 33	6′ , 2 ½′, & 3 ½′ of 1 ½" pipe, & sheet metal	2 foot
ANOMALY 34	2 cement footings with pipe & 1 12" rebar	1 foot

TABLE 2

DETACHMENT ANOMALY EXCAVATION RESULTS

ANOMALY #	ITEM EXCAVATED	DEPTH
ANOMALY A	Wire rope	1 foot
ANOMALY B	3 pieces of rebar	2 foot
ANOMALY C	Nails	6 inches
ANOMALY D	2′ metal tubing	6 inches
ANOMALY E	Miscellaneous scrap metal	6 inches
ANOMALY F	Channel steel	6 inches
ANOMALY G	Approximately 140 DANC containers	3 to 4 foot
ANOMALY H	Metal tubing	1 foot
ANOMALY I	Nails	6 inches
ANOMALY J	Rebar	1 foot
ANOMALY K	Wire	6 inches
ANOMALY L	4 pieces of rebar	1 foot
ANOMALY M	6 pieces of rebar	1 foot
ANOMALY N	5 pieces of rebar	1 foot
ANOMALY O	Rebar	6 inches
ANOMALY P	Rebar	1 foot
ANOMALY Q	Rebar & miscellaneous metal	6 inches
ANOMALY R	Rebar	6 inches
ANOMALY S	Rebar	6 inches
ANOMALY T	Miscellaneous scrap metal	6 inches
ANOMALY U	Wire	6 inches
ANOMALY V	Nails	6 inches
ANOMALY W	Rebar	1 foot
ANOMALY X	2 ½′ pipe	3 foot
ANOMALY Y	Rebar	1 foot


LEGEND
MAGNETIC ANOMALY, HIGH-PRIORITY FOR FOR FUTURE INVESTIGATION
MAGNETIC ANOMALY, MEDIUM-PRIORITY FOR FUTURE INVESTIGATION
MAGNETIC ANOMALY, LOWER-PRIORITY FOR FUTURE INVESTIGATION
DET IDENTIFIED ANOMALY
MONITORING WELL
150
0
150
SCALE
FEET
N
1896
1887
1893
1897
1984
1888
SPORTENVDETCHASN
1899 North Hobson Ave.
North Charleston, SC 29406-2106
Ph. (803) 743-6777
Figure 2
SWMU 14
ANOMALY LOCATIONS
Charleston Naval Base
Charleston, SC
DWG DATE: 4/20/98
DWG NAME: 14FIG2



Approx. Extent of DANC Excavation Area
AOC Boundary
SWMU Boundary
Buildings
Zone Boundary

N

0 80 160 Feet

Note: Original figure produced in color.

Figure B-1
Location of DANC Excavation Area, DET IM (1998)
Combined SWMU 14, Zone H
Charleston Naval Complex

CH2MHILL

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COMPLETION REPORT

INTERIM MEASURE FOR
SWMU 14
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

April 28, 1998

TABLE OF CONTENTS

Section **Page**

Table of Contents ii

List of Appendices iii

Acronyms, Abbreviations and Symbols iv

1. Introduction 1-1
   - 1.1 Installation Restoration Program 1-1
     - 1.1.1 Naval Base Charleston Installation Restoration Program 1-1
   - 1.2 Interim Measures 1-1
   - 1.3 Solid Waste Management Unit 14 1-1
   - 1.4 Solid Waste Management Unit 14 Interim Measure 1-2

2. Interim Measure Execution 2-1
   - 2.1 Actions Required by Interim Measure Work Plan 2-1
     - 2.1.1 Surveys 2-1
     - 2.1.2 Anomaly Investigation/Excavation 2-1
   - 2.2 Observations Noted 2-2
   - 2.3 Plan Modifications and Justification 2-2
     - 2.3.1 Excavated Top Soil 2-2
     - 2.3.2 Demolition of Building 1897 2-3
     - 2.3.3 Backfilling of Excavations 2-3

3 Interim Measure Outcome 3-1
   - 3.1 Site Conditions Following Completion of Work 3-1

4. Sampling 4-1
   - 4.1 Sampling Evolutions and Results 4-1
     - 4.1.1 Investigatory Sampling 4-1
     - 4.1.2 Confirmatory Sampling 4-1
     - 4.1.3 Waste Characterization Sampling 4-1

TABLE OF CONTENTS (cont'd)

Section **Page**

5. Waste Generation 5-1
   - 5.1 Hazardous/Potentially Hazardous Waste 5-1
     - 5.1.1 Hazardous Excavated Soil 5-1
   - 5.2 Non-Hazardous Waste 5-1
     - 5.2.1 Non-Hazardous Excavated Soil 5-1

LIST OF FIGURES

Figure 1 Site Map A-1

Figure 2 Anomaly Locations A-2

Figure 3 Screening Sample Location/Results A-3

Figure 4 Confirmation Sample Location/Results A-4

Figure 5 Geodetic Survey Zones C-1

LIST OF TABLES

TABLE 1 RFI Anomaly Excavation Results B-1

TABLE 2 Detachment Anomaly Excavation Results B-2

LIST OF APPENDICES

Appendix A. Figures ..... Tab 1

Appendix B Tables ..... Tab 2

Appendix C Geodetic Surveys ..... Tab 3

Appendix D Photographs ..... Tab 6

Appendix E Sampling Documentation ..... Tab 4

Appendix F Waste Documentation ..... Tab 5

Appendix G Miscellaneous Documentation ..... Tab 7

ACCRONYMS, ABBREVIATIONS, and SYMBOLS

AOC	Area of Concern
CMS	Corrective Measure Study
DANC	Warfare Decontaminating Agents M4
DERP	Defense Environmental Restoration Program
DET	Supervisor of Shipbuilding, Conversion and Repair, Portsmouth Virginia, Environmental Detachment Charleston
EPA	United States Environmental Protection Agency
IM	Interim Measures
IR	Department of the Navy Installation Restoration Program
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
SARA	Superfund Amendments and Reauthorization Act
SOUTHDIV	Southern Division Naval Facilities Engineering Command
SWMU	Solid Waste Management Unit

1. INTRODUCTION

1.1 INSTALLATION RESTORATION PROGRAM. The purpose of the Department of the Navy Installation Restoration Program (IR) 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 SOLID WASTE MANAGEMENT UNIT 14. SWMU 14 is an abandoned chemical disposal area, located in Zone "H", where miscellaneous chemicals, Warfare Decontaminating Agents, and industrial waste were reportedly buried. SWMU 14

encompasses SWMU 15 (former propane-fired incinerator), AOC 670 (former skeet range) and AOC 684 (former pistol range). Refer to Figure 1 in Appendix A for site map.

Past history indicated that chemicals were disposed of in SWMU 14 from approximately the mid 1940's up until 1977. The last known disposal occurred in 1977 when ten five-gallon containers of Warfare Decontaminating Agents M4 (DANC) and DS-2 were reportedly buried. SWMU 14 is presently an unused field with several closed buildings.

SWMU 14 was covered under the Final RFA of June 6, 1995 and under the Final Zone H RCRA RFI Work Plan. During past investigations, the canisters of decontaminating agents and other items reportedly buried at SWMU 14 were never found. The chemical data for soil and groundwater samples collected in the area did not suggest that a release had ever occurred. Geophysical studies performed in 1993 indicated 22 anomalies which exhibit characteristics associated with buried drums or pails. There were 11 additional anomalies of low resonance detected (Figure 1). Past investigations also revealed the presence of several isolated areas of lead contamination presumably from AOC 670 (skeet range).

1.4 Solid Waste Management Unit 14 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, Portsmouth Virginia, Environmental Detachment Charleston (DET). The primary objective of this IM was to investigate and remove anomalies (specifically containers of Warfare Decontaminating Agents) and lead contamination identified in the RFI report dated July 5, 1996. The soils were to be excavated until the sampling program indicated with reasonable confidence that the concentrations of the contaminants at the site are less than the industrial limits of the United States Environmental Protection Agency (EPA) Region III Risk-Based Concentration table dated September 23, 1996. This IM work plan may not necessarily be the final remediation action taken at this site. Additional actions may be required as

determined by the RFI process. This IM was consistent with the ultimate clean up of this site and was not intended to circumvent the public participation process inherent within environmental clean up under RCRA authority.

2. INTERIM MEASURE EXECUTION

2.1 ACTIONS REQUIRED BY INTERIM MEASURE WORKPLAN.

2.1.1 Surveys. The area was geodetically surveyed and the approximate locations of the grids containing the anomalies marked. A baseline civil survey was performed to establish the elevation of anomalies relative to the elevation of the surrounding terrain. Additional magnetic surveys with an EM61 (a high sensitivity, high resolution time-domain metal detector) were performed over the 34 anomalies to further pinpoint the specific location, orientation, and depth of the anomalies. While magnetically surveying the 34 RFI identified anomalies, 25 additional anomalies were also identified for a total of 59 anomalies (Figure 2 of Appendix A). See Appendix C for the magnetic survey contour maps for each anomaly.

2.1.2 Anomaly Investigation/Excavation. Each of the 59 anomalies was investigated on a case by case basis. Anomalies were uncovered by trenching using a trackhoe with personnel wearing level B protection. The Work Plan required the uppermost six inches of topsoil influenced by lead shot be removed, stockpiled separately and disposed of as hazardous waste. All other soils excavated were stockpiled in six mil plastic lined bermed areas for waste characterization. A hand held magnetic locating device was utilized during digging operations to aid in the detection and location of anomalies. Investigation/excavation of all anomalies, with the exception of anomaly "G", resulted in rebar, pipes with cement footings, a horseshoe, board with nails, tent stakes, metal plate, channel, piping, tubing, eyebeam, wire, sheet metal, skeet/trap house foundations, welding rods, tie down straps, fence posts, and other miscellaneous metal objects. See Tables 1 and 2 in Appendix B for a listing of items excavated and their associated depths.

After each area was investigated, a magnetic survey with the EM61 was performed to ensure that the anomaly had been cleared as a result of the excavation.

Investigation/excavation of anomaly "G" resulted in the discovery of rusty metal drum remnants, white crystals, and discolored (rust) soil. The remnants matched the physical description of DANC containers. Excavation continued in all directions until visual confirmation indicated all drums had been removed with the exception of the sidewall bordering Building 1897. Approximately 90 five gallon DANC containers were removed from this initial excavation. Screening samples indicated the excavation had two areas of concern: sample numbers SPORT0500-10 and SPORT0500-15 had traces of 1,1,2,2 tetrachloroethane. Additionally, the entire sidewall bordering the south side of Building 1897 (Figure 3 of Appendix A) had traces of 1,1,2,2 tetrachloroethane and remnants of the DANC containers could be seen. The DET trenched along the north side of Building 1897 (in between Building 1897 and Building 1893) and verified that the extent of the drums did not extend beyond Building 1897. Building 1897 and its associated slab was demolished and removed to enable excavation under it and is discussed in paragraph 2.3.2 of this report. The DET excavated former Building 1897 removing an estimated 50 five gallon DANC containers from an area measuring 20ft x 60ft and 4 ½ ft in depth. Additionally, the two areas of concern (sample numbers SPORT0500-10 and SPORT0500-15) were further excavated (Figure 4 of Appendix A). Based on sampling and SOUTHDIV concurrence, the excavation was backfilled.

2.2 OBSERVATIONS NOTED. Ground water intrusion was observed in the bottom of the excavation at approximately 4 ½ foot.

2.3 PLAN MODIFICATIONS AND JUSTIFICATION.

2.3.1 Excavated Top Soil. The top six inches of soil excavated above the anomalies influenced by lead shot in the area of AOC 670 was required by the work plan to be disposed of hazardous waste. The DET received letter of approval from South Carolina Department of Health and Environmental Control on 25 September 1997 (See Appendix G) to place the soil back into the excavations where miscellaneous non-hazardous metal debris was excavated located within AOC 670.

2.3.2 Demolition of Building 1897. Building 1897 and its associated concrete slab had to be removed as a result of the containers extending under the building. The building (20ft x 84ft) was constructed of metal siding and metal framing. All metals demolished were recycled. Core sample SPORT0546-2 was performed on the concrete slab (20ft x 98ft x 8 inches thick) to verify it was clear of contamination. Concrete was demolished and disposed of as construction debris.

2.3.3 Backfilling of excavations. Excavated soil was used as backfill on all anomalies where miscellaneous metal objects were found. Clean back fill was brought in for the excavation containing the DANC containers.

3.0 INTERIM MEASURE OUTCOME

3.1 SITE CONDITIONS FOLLOWING COMPLETION OF WORK. Following completion of all site work on 13 January 1998, the excavations were backfilled, cleaned and groomed. The overall general shape and slope of the site remained the same as it was prior to the start of the IM. Building 1897 is no longer present on the north side of the excavated area. The area was seeded with rye grass.

4. SAMPLING

4.1 SAMPLING EVOLUTIONS AND RESULTS

4.1.1 Investigatory Sampling. A total of 5 investigatory samples were collected by DET throughout the course of this IM. The Det investigatory samples include the following :

- One grab (SPORT0471-1) and two composite (SPORT0532-1 and SPORT0532-2) soil samples were collected from areas where lead shot was believed to have influenced the area.
- One water sample (ground water intrusion) was collected from the bottom of the excavation and analyzed for Appendix IX Volatiles (SPORT0532-3).
- One composite concrete (pulverized) sample was collected from the slab under building 1897 (SPORT0546-2).
- Two composite samples of the top 1 ½ foot of soil located under the slab of building 1897 (SPORT0574-1 and SPORT0574-2).

Refer to Appendix E for copies of the analytical data and the Chain of Custody Records for all samples.

4.1.2 Confirmatory Sampling. A total of 30 confirmatory samples (SPORT0500-1 thru 17 and SPORT0578-1 thru 13) were collected by DET throughout the course of this IM from the sidewalls and bottom of the excavation as shown in Figure 4 of Appendix A. Refer to Appendix E for copies of the analytical data and the Chain of Custody Records for all samples.

4.1.3 Waste Characterization Sampling. A total of 5 waste characterization samples (SPORT0439-1, SPORT0449-1, and SPORT0473-1 thru 3) were collected by the DET. Refer to Appendix E for copies of the analytical data and the Chain of Custody Records for all samples.

5. WASTE GENERATION

5.1 HAZARDOUS/POTENTIALLY HAZARDOUS WASTE

5.1.1 Hazardous Excavated Soil. CSI Environmental Inc. of Indianapolis Indiana transported 446,000 pounds of hazardous soil to Michigan Disposal in Belleville Michigan and 6,669 pounds to City Environmental in Detroit Michigan between 12 May 1997 and 01 December 1997. Refer to Appendix F for copies of all shipping manifests for this waste.

5.2 NON-HAZARDOUS WASTE

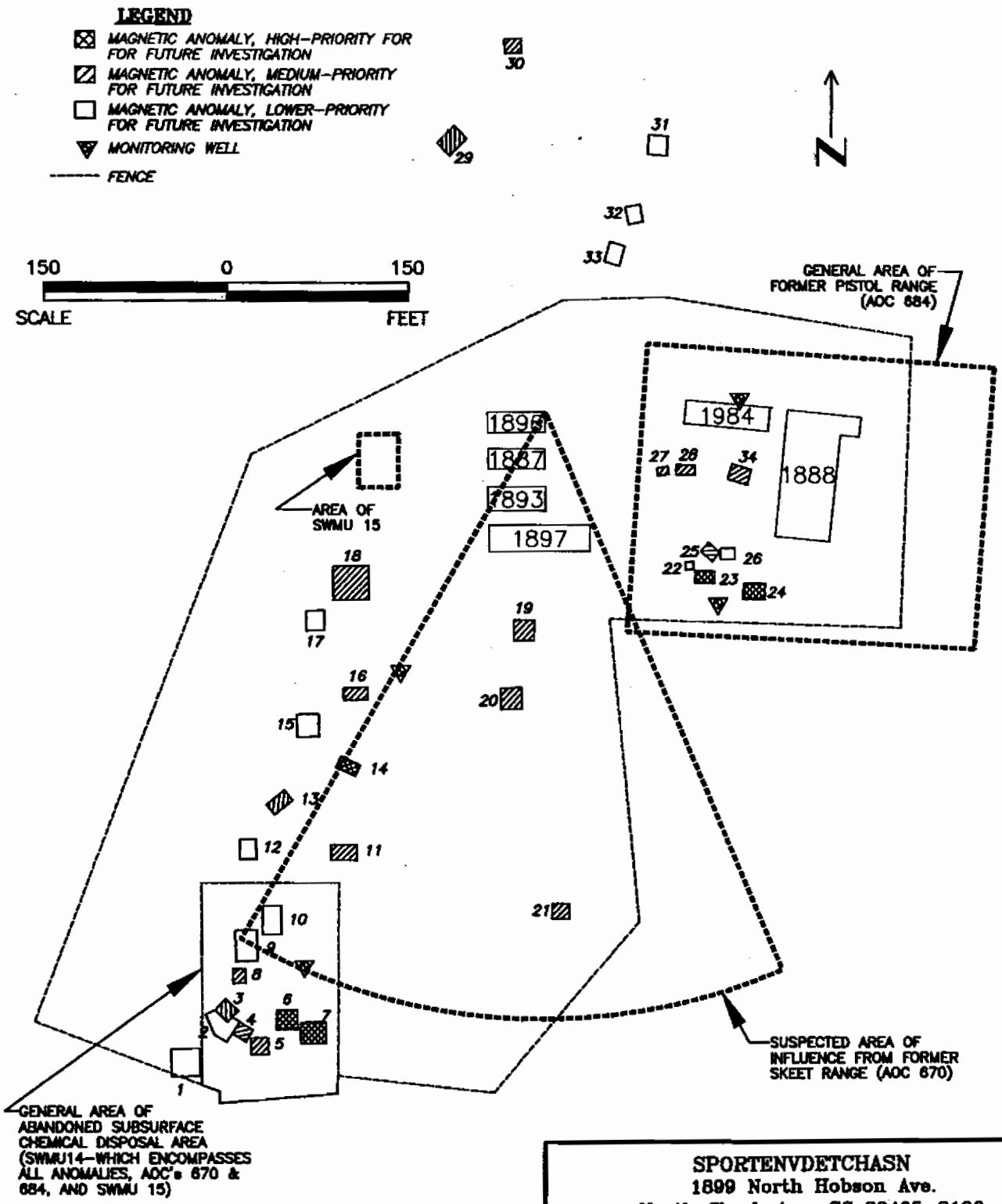
5.2.1 Non-Hazardous Excavated Soil. Chinners Trucking of Ridgeville South Carolina transported approximately 960,000 pounds of non-hazardous soil to Chambers Oakridge Landfill in Dorchester South Carolina.

APPENDIX A

FIGURES

APPENDIX A

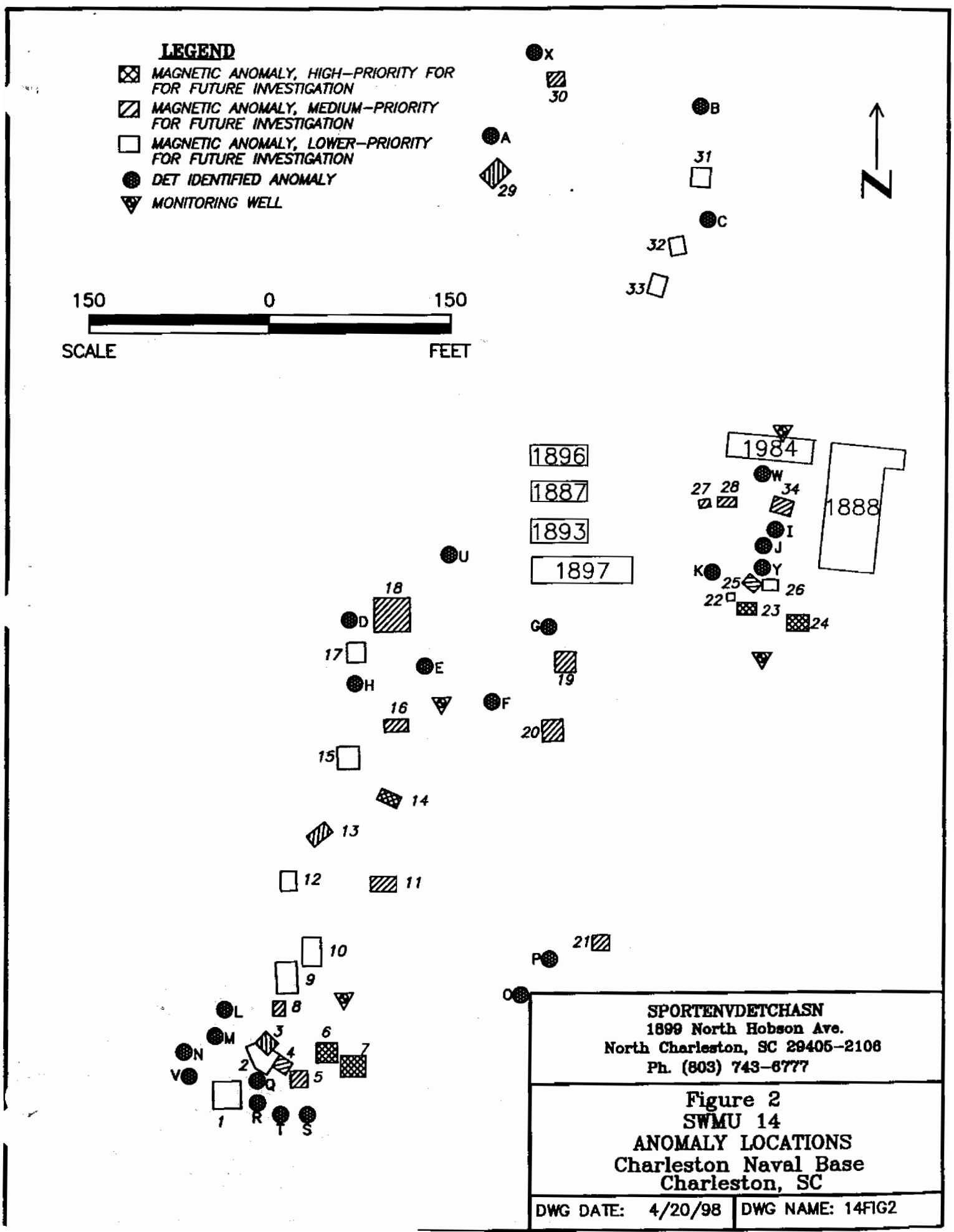
FIGURES

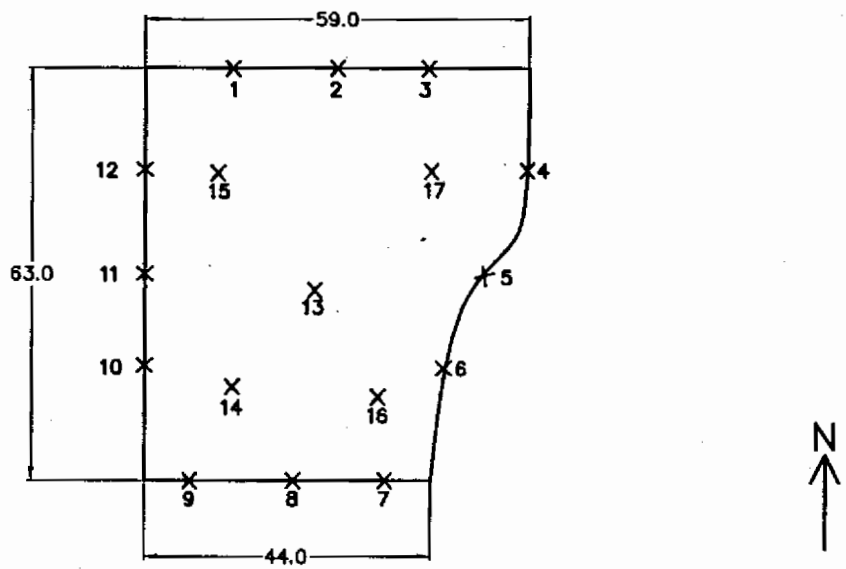


SPORTENVDETCHASN
1899 North Hobson Ave.
North Charleston, SC 29405-2106
Ph. (803) 743-6777

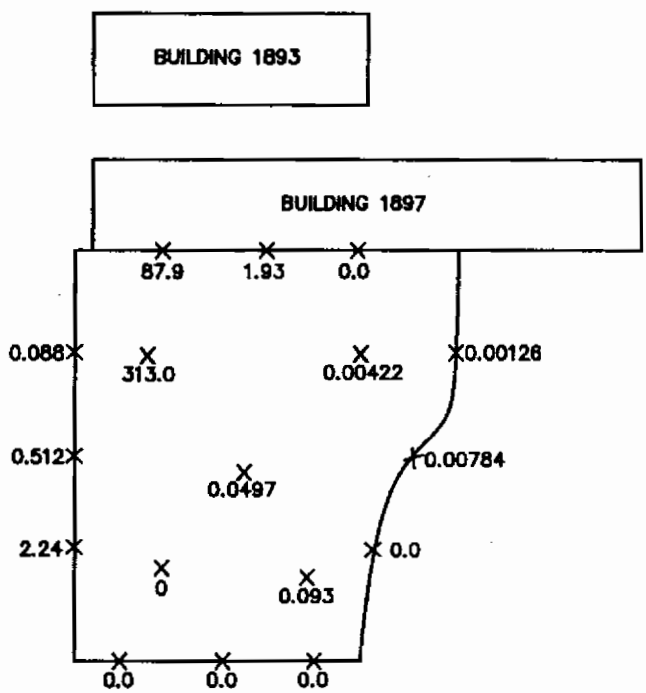
Figure 1
SWMU 14
Site Map
Charleston Naval Base
Charleston, SC

DWG DATE: 4/10/98 | DWG NAME: 14FIG1


LEGEND
MAGNETIC ANOMALY, HIGH-PRIORITY FOR FOR FUTURE INVESTIGATION
MAGNETIC ANOMALY, MEDIUM-PRIORITY FOR FUTURE INVESTIGATION
MAGNETIC ANOMALY, LOWER-PRIORITY FOR FUTURE INVESTIGATION
DET IDENTIFIED ANOMALY
MONITORING WELL
150 0 150
SCALE FEET
N
1896
1887
1893
1897
1984
1888
SPORTENVDETCHASN
1899 North Hobson Ave.
North Charleston, SC 29405-2108
Ph. (803) 743-6777
Figure 2
SWMU 14
ANOMALY LOCATIONS
Charleston Naval Base
Charleston, SC
DWG DATE: 4/20/98
DWG NAME: 14FIG2



SAMPLE ID SPORT0500-__

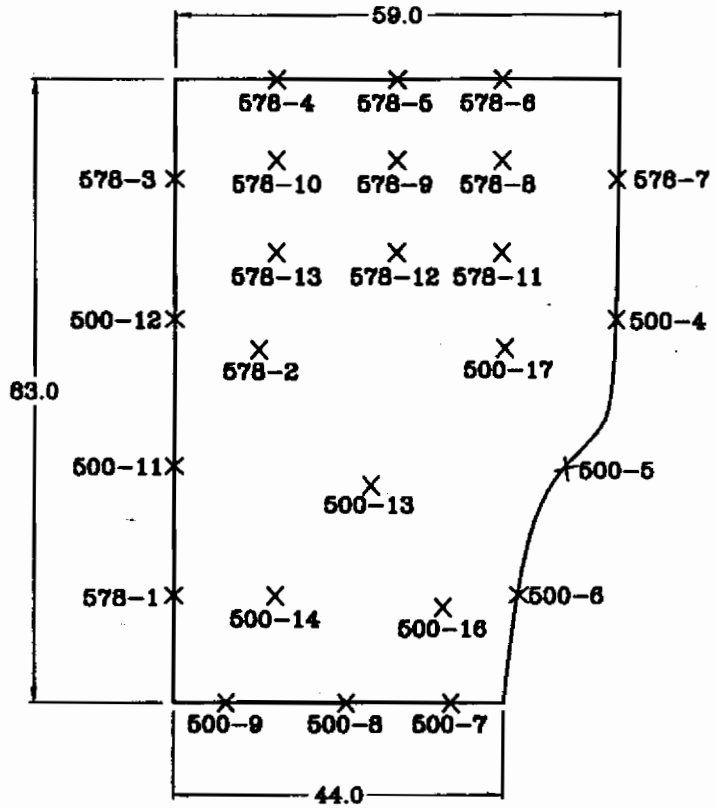


RESULTS OF 1,1,2,2-TETRACHLOROETHANE (ppm)

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

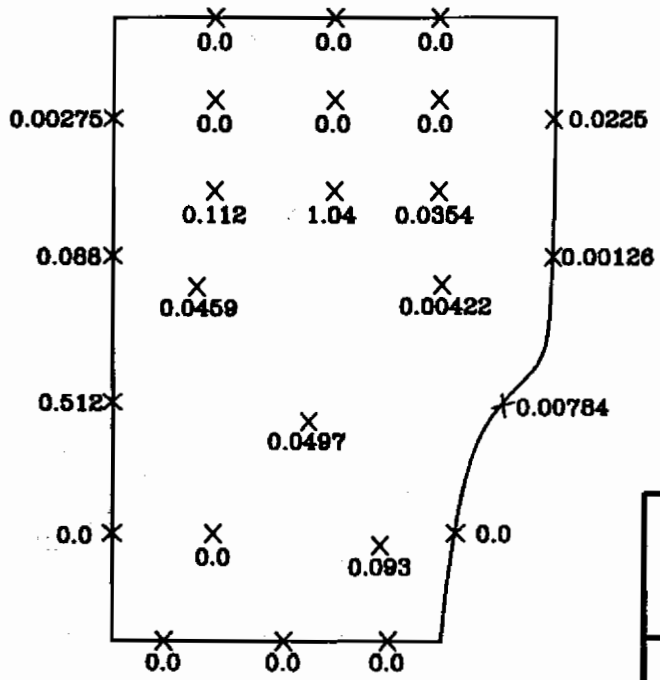
Figure 3
SWMU 14
Screening Sample Location/Results
Charleston Naval Base
Charleston, SC

DWG DATE: 4/13/98	DWG NAME: 14FIG3



SAMPLE ID SPORTO____-_

N

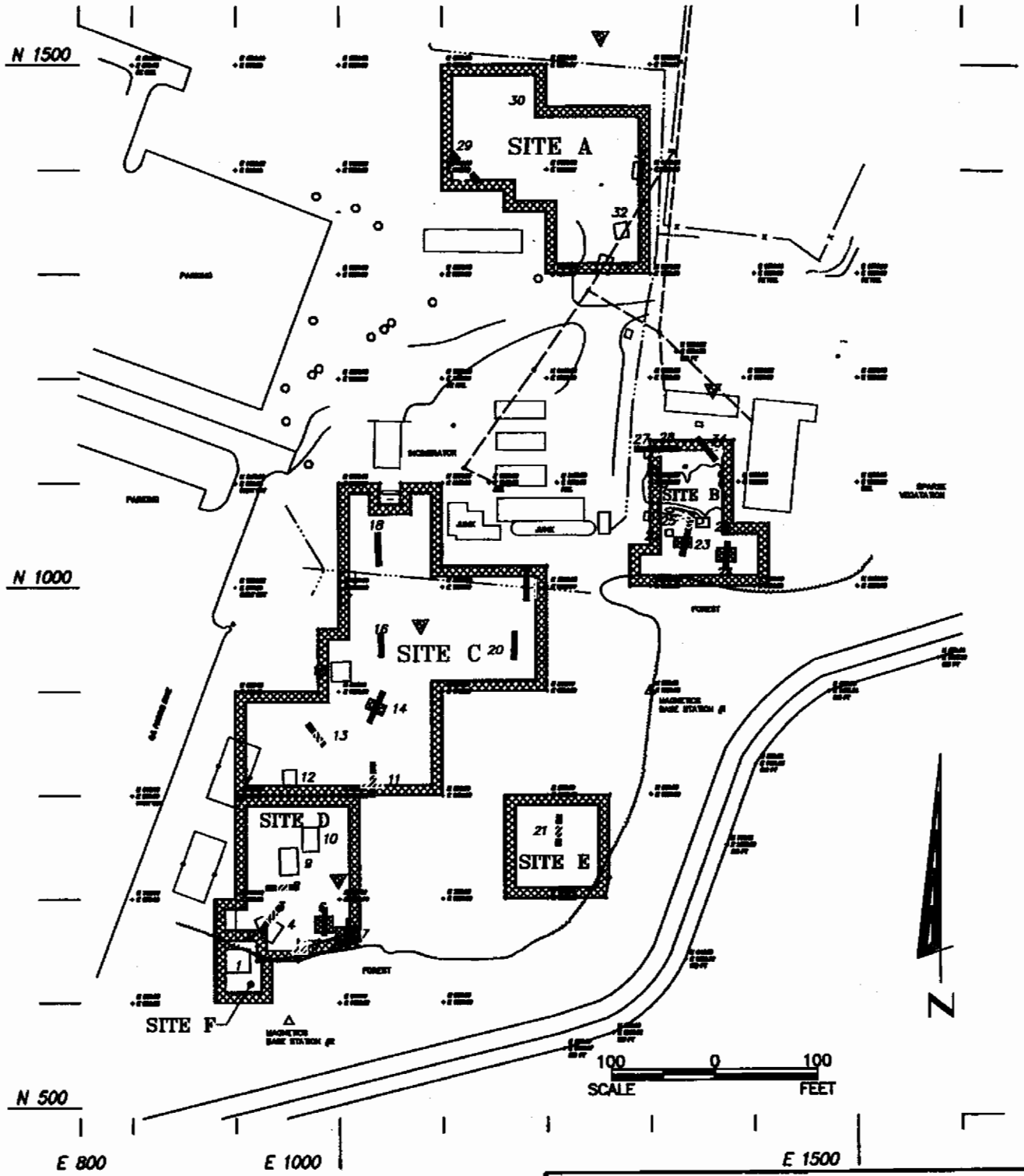


RESULTS OF
1,1,2,2-TETRACHLOROETHANE (ppm)

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

Figure 4
SWMU 14
Confirmation Sample Location/Results
Charleston Naval Base
Charleston, SC

DWG DATE: 4/13/98 | DWG NAME: 14FIG4



LEGEND

- MAGNETIC ANOMALY, HIGH-PRIORITY FOR FOR FUTURE INVESTIGATION
- MAGNETIC ANOMALY, MEDIUM-PRIORITY FOR FUTURE INVESTIGATION
- MAGNETIC ANOMALY, LOWER-PRIORITY FOR FUTURE INVESTIGATION
- POWER LINE
- CREEK
- RECOMMENDED TRENCHING OR SOIL SAMPLING
- RECOMMENDED MONITORING WELL (DEPENDING ON RESULTS OF SOIL SAMPLING)

SPORTENVDETCHASN
1699 North Hobson Ave.
North Charleston, SC 29405-2106
Ph. (803) 743-6777

Figure 5
SWMU 14
GEODETIC SURVEY ZONES
Charleston Naval Base
Charleston, SC

DWG DATE: 4/21/98 | DWG NAME: 14FIG5

APPENDIX B

TABLES

TABLE 1

RFI ANOMALY EXCAVATION RESULTS

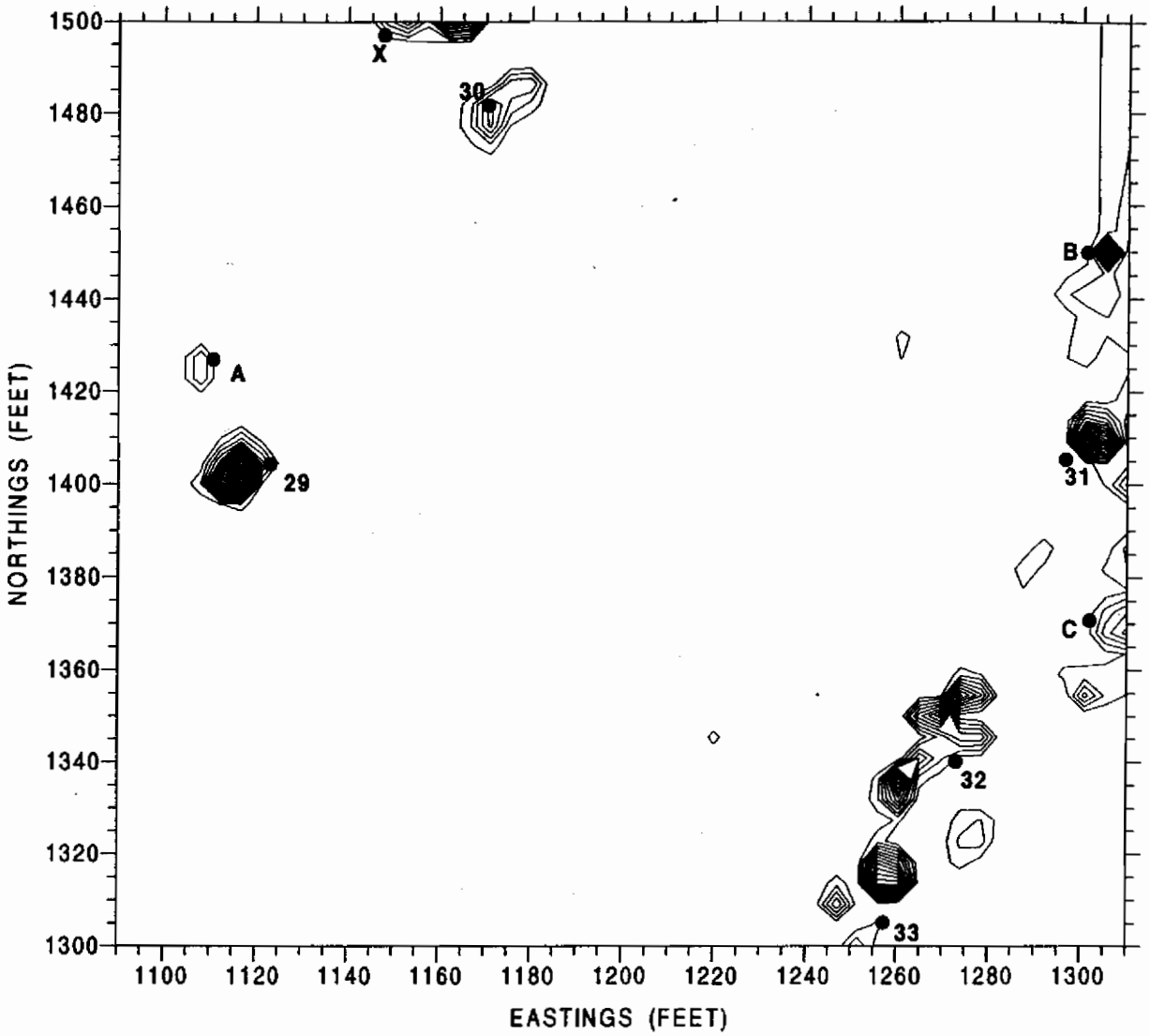
ANOMALY #	ITEM EXCAVATED	DEPTH
ANOMALY 1	2′ rebar	6 inches
ANOMALY 2	rebar	6 inches
ANOMALY 3	rebar	6 inches
ANOMALY 4	rebar	6 inches
ANOMALY 5	2 ½′ rebar	2 foot
ANOMALY 6	Wire, welding rods, & tie down straps	1 foot
ANOMALY 7	2′ rebar	6 inches
ANOMALY 8	Metal strapping	6 inches
ANOMALY 9	2 pieces of rebar	1 foot
ANOMALY 10	2 pieces of rebar	1 foot
ANOMALY 11	Cement footing & metal fence post	6 inches
ANOMALY 12	Rebar & miscellaneous metal	1 ½ foot
ANOMALY 13	3 pieces of rebar	1 foot
ANOMALY 14	Cement footing & metal fence post	6 inches
ANOMALY 15	Rust colored soil	2 foot
ANOMALY 16	Cement footing & metal fence post	6 inches
ANOMALY 17	wire	1 foot
ANOMALY 18	Skeet/trap house concrete foundation	4 foot
ANOMALY 19	4 ½′ channel steel	1 foot
ANOMALY 20	4′ channel steel	1 foot
ANOMALY 21	Rebar rectangular shape	6 inches
ANOMALY 22	Miscellaneous scrap metal	1 ½ foot
ANOMALY 23	Metal grill & 10" eyebeam	2 foot
ANOMALY 24	10 ft x 2 ½ ft ½" metal plate	5 foot

ANOMALY #	ITEM EXCAVATED	DEPTH
ANOMALY 25	3 pieces of rebar & 3 cement footings with pipe	1 foot
ANOMALY 26	1 ½′ square pipe & rebar	2 foot
ANOMALY 27	2 pieces of rebar, 1 horseshoe, 4 boards with nails, & a tent stake	1 ½ foot
ANOMALY 28	Rebar	1 foot
ANOMALY 29	10′ of 4′ pipe	1 foot
ANOMALY 30	3′ of 1" OD pipe	1 ½ foot
ANOMALY 31	6′ pipe	2 ½ foot
ANOMALY 32	1 each 12" & 2′ pipe, nails, & miscellaneous scrap metal	3 foot
ANOMALY 33	6′ , 2 ½′, & 3 ½′ of 1 ½" pipe, & sheet metal	2 foot
ANOMALY 34	2 cement footings with pipe & 1 12" rebar	1 foot

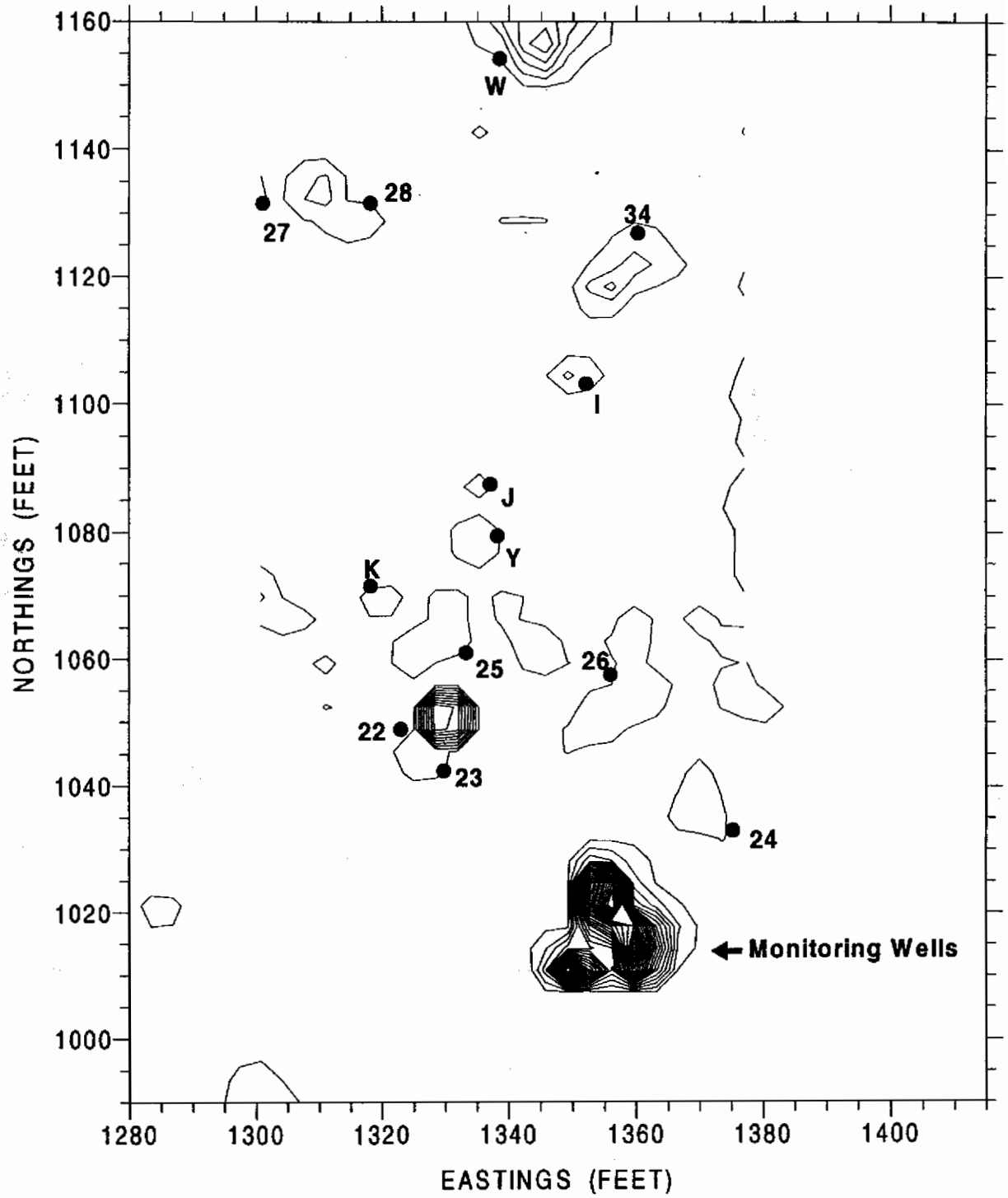
TABLE 2

DETACHMENT ANOMALY EXCAVATION RESULTS

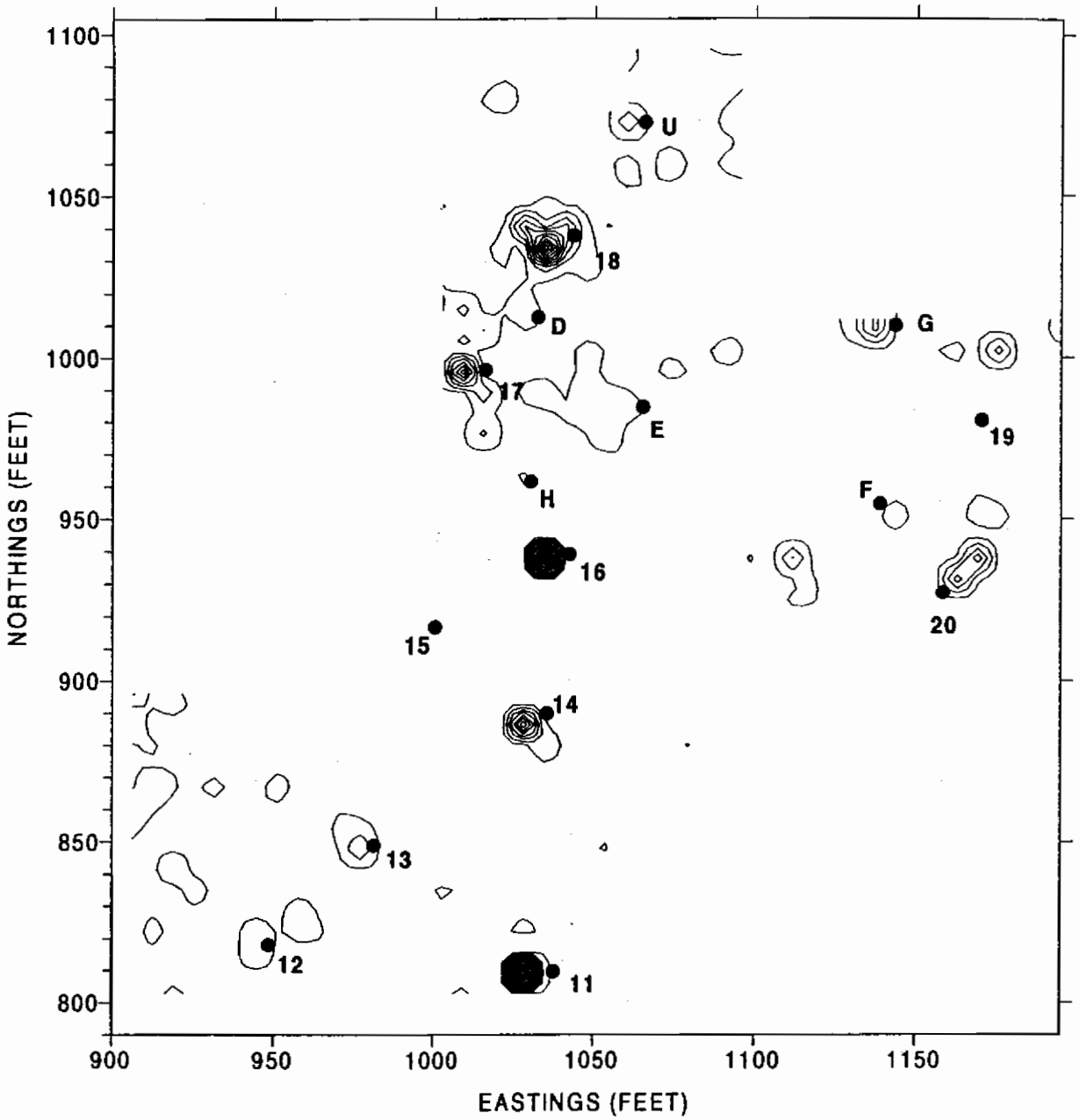
ANOMALY #	ITEM EXCAVATED	DEPTH
ANOMALY A	Wire rope	1 foot
ANOMALY B	3 pieces of rebar	2 foot
ANOMALY C	Nails	6 inches
ANOMALY D	2′ metal tubing	6 inches
ANOMALY E	Miscellaneous scrap metal	6 inches
ANOMALY F	Channel steel	6 inches
ANOMALY G	Approximately 140 DANC containers	3 to 4 foot
ANOMALY H	Metal tubing	1 foot
ANOMALY I	Nails	6 inches
ANOMALY J	Rebar	1 foot
ANOMALY K	Wire	6 inches
ANOMALY L	4 pieces of rebar	1 foot
ANOMALY M	6 pieces of rebar	1 foot
ANOMALY N	5 pieces of rebar	1 foot
ANOMALY O	Rebar	6 inches
ANOMALY P	Rebar	1 foot
ANOMALY Q	Rebar & miscellaneous metal	6 inches
ANOMALY R	Rebar	6 inches
ANOMALY S	Rebar	6 inches
ANOMALY T	Miscellaneous scrap metal	6 inches
ANOMALY U	Wire	6 inches
ANOMALY V	Nails	6 inches
ANOMALY W	Rebar	1 foot
ANOMALY X	2 ½′ pipe	3 foot
ANOMALY Y	Rebar	1 foot



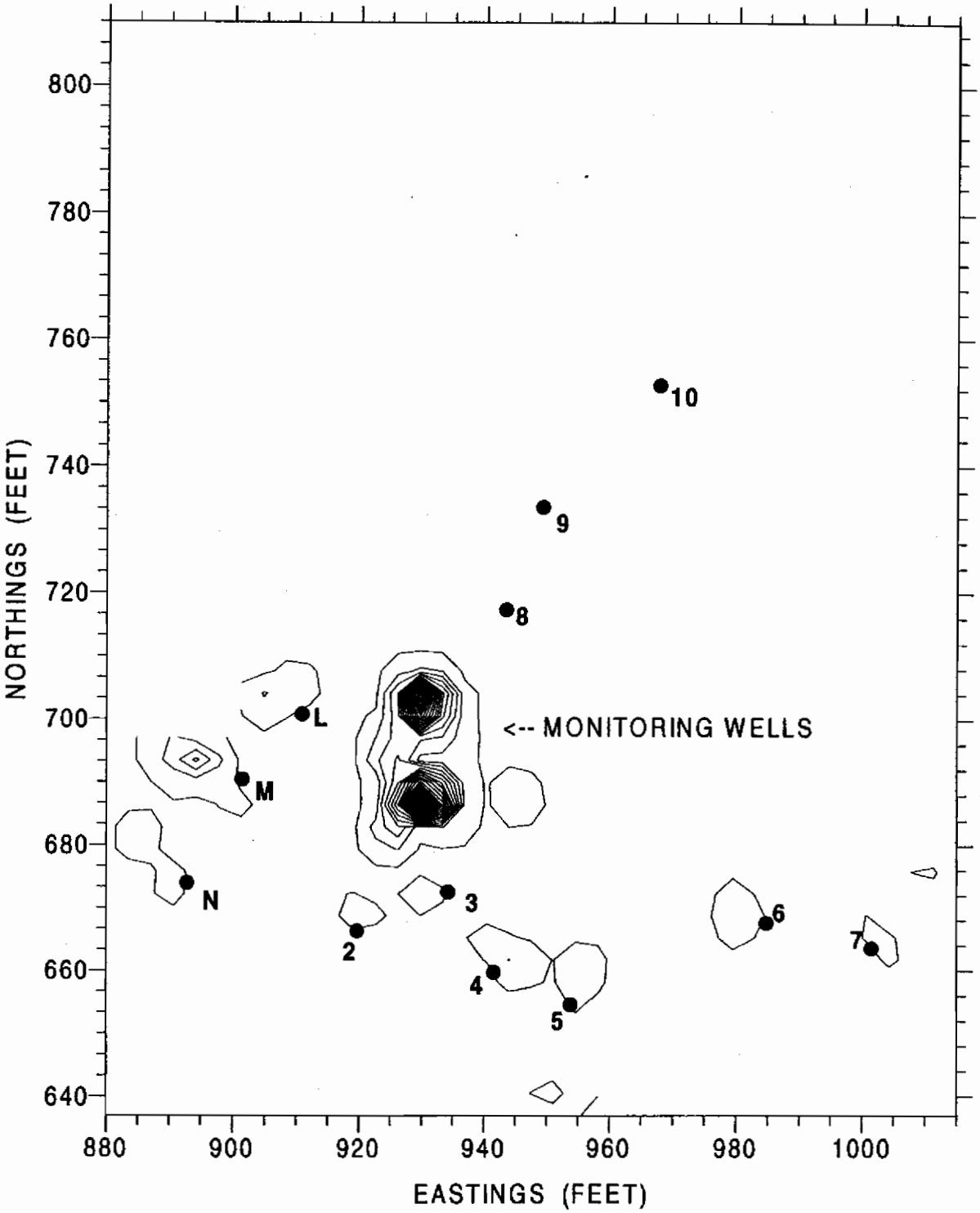
SWMU 14 – SITE A ANOMALY LOCATIONS
EM61 SURVEY – BOTTOM CHANNEL
CONTOUR INTERVAL = 10mv



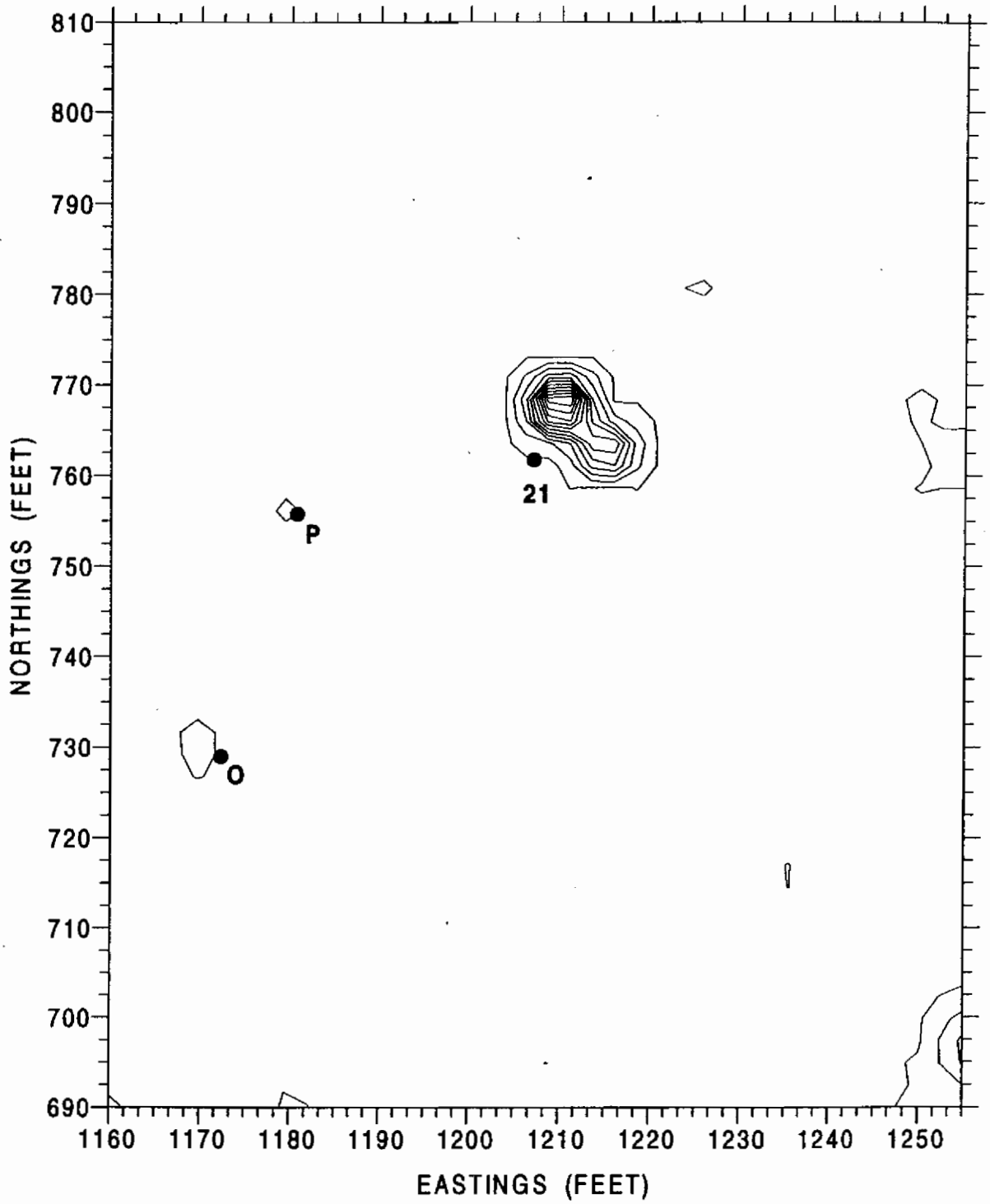
SWMU 14 – SITE B ANOMALY LOCATIONS
EM61 SURVEY – BOTTOM CHANNEL
CONTOUR INTERVAL = 10mv



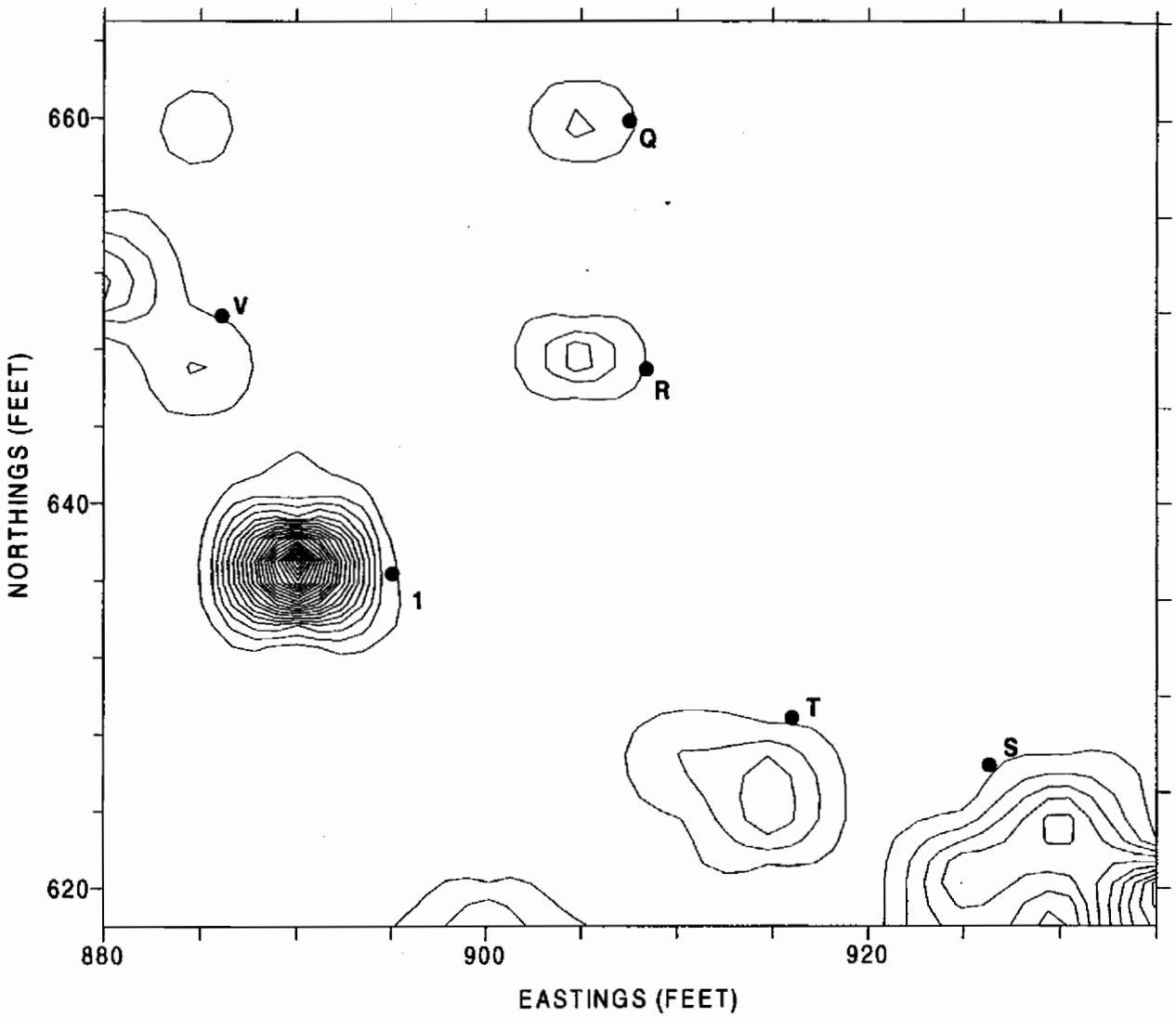
SWMU 14 – SITE C ANOMALY LOCATIONS
EM61 SURVEY – BOTTOM CHANNEL
CONTOUR INTERVAL = 10mv



SWMU 14 – SITE D ANOMALY LOCATIONS
EM61 SURVEY – BOTTOM CHANNEL
CONTOUR INTERVAL = 10mv



SWMU 14 – SITE E ANOMALY LOCATIONS
EM61 SURVEY – BOTTOM CHANNEL
CONTOUR INTERVAL = 10mv



SWMU 14 – SITE F ANOMALY LOCATIONS
EM61 SURVEY – BOTTOM CHANNEL
CONTOUR INTERVAL = 10mv

APPENDIX C

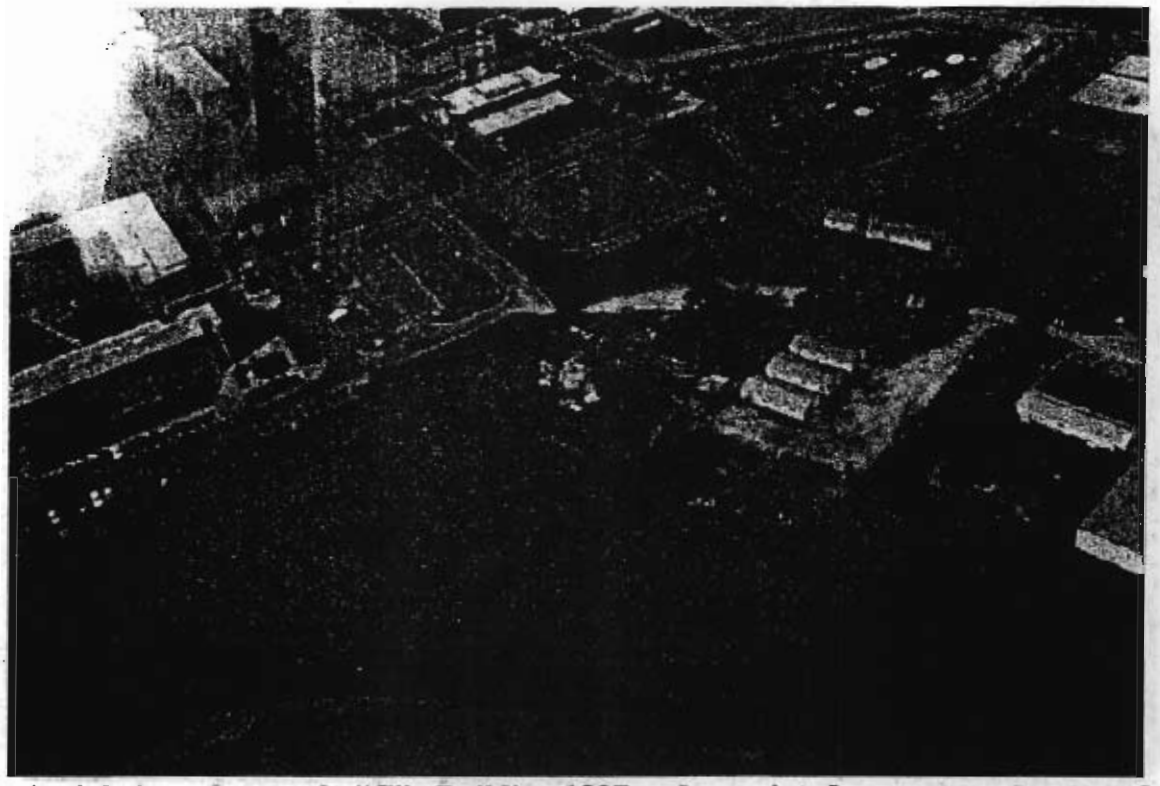
GEODETIC SURVEYS

APPENDIX D

PHOTOGRAPHS

The DET performing additional magnetic surveys utilizing the EM61

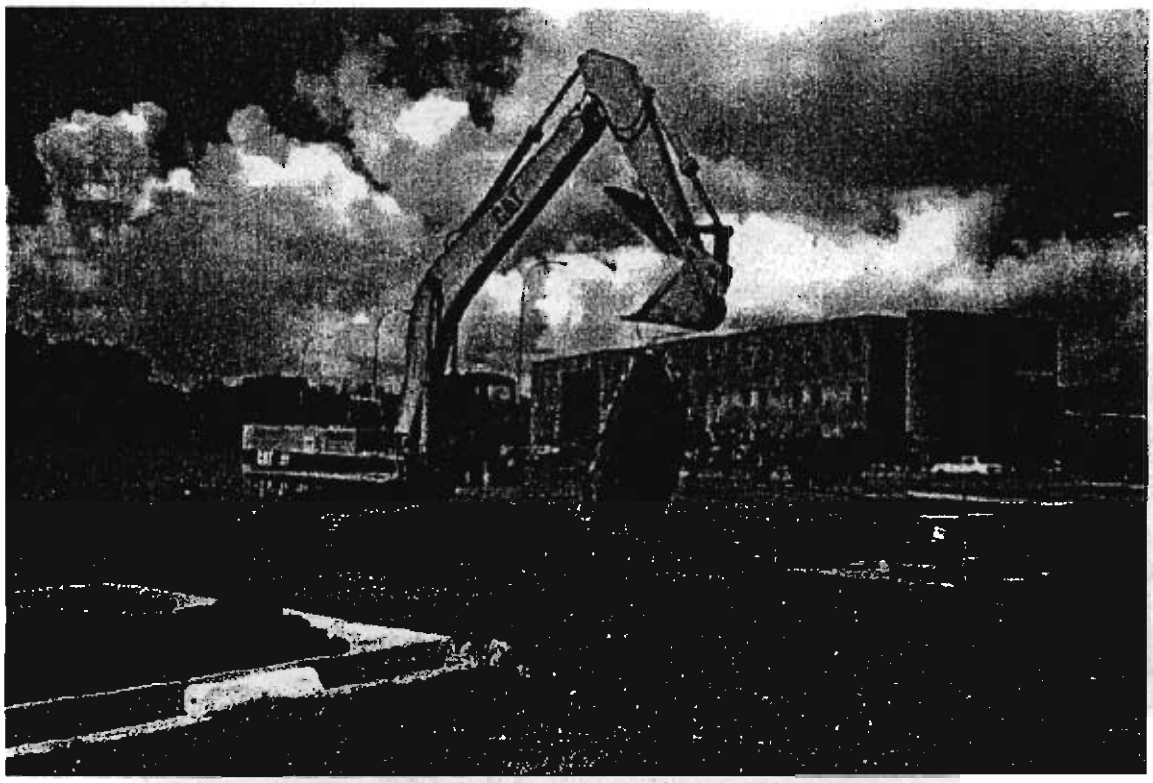
Transporting the top six inches of soil to lined bermed areas



Aerial view of anomaly "G". Building 1897 and associated concrete pad removed

Demolition of Building 1897

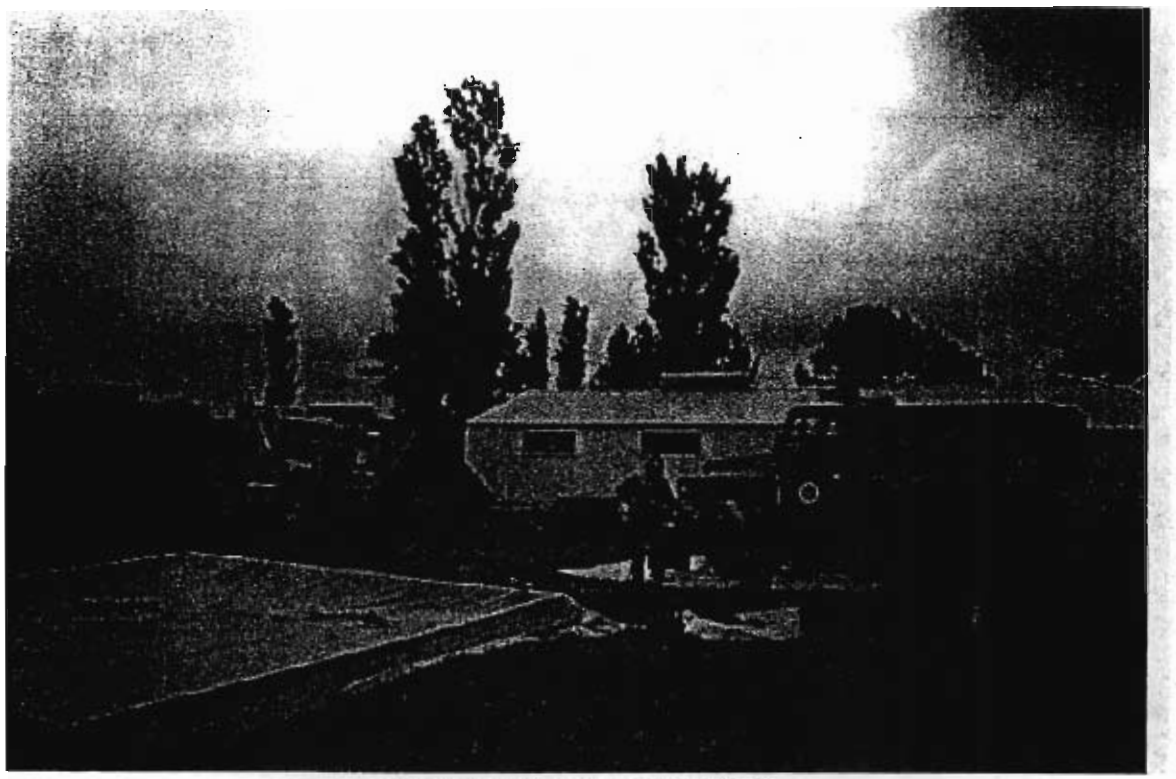
Demolition of Building 1897 and its associated concrete



Trackhoe removing the foundation of the skeet/trap house

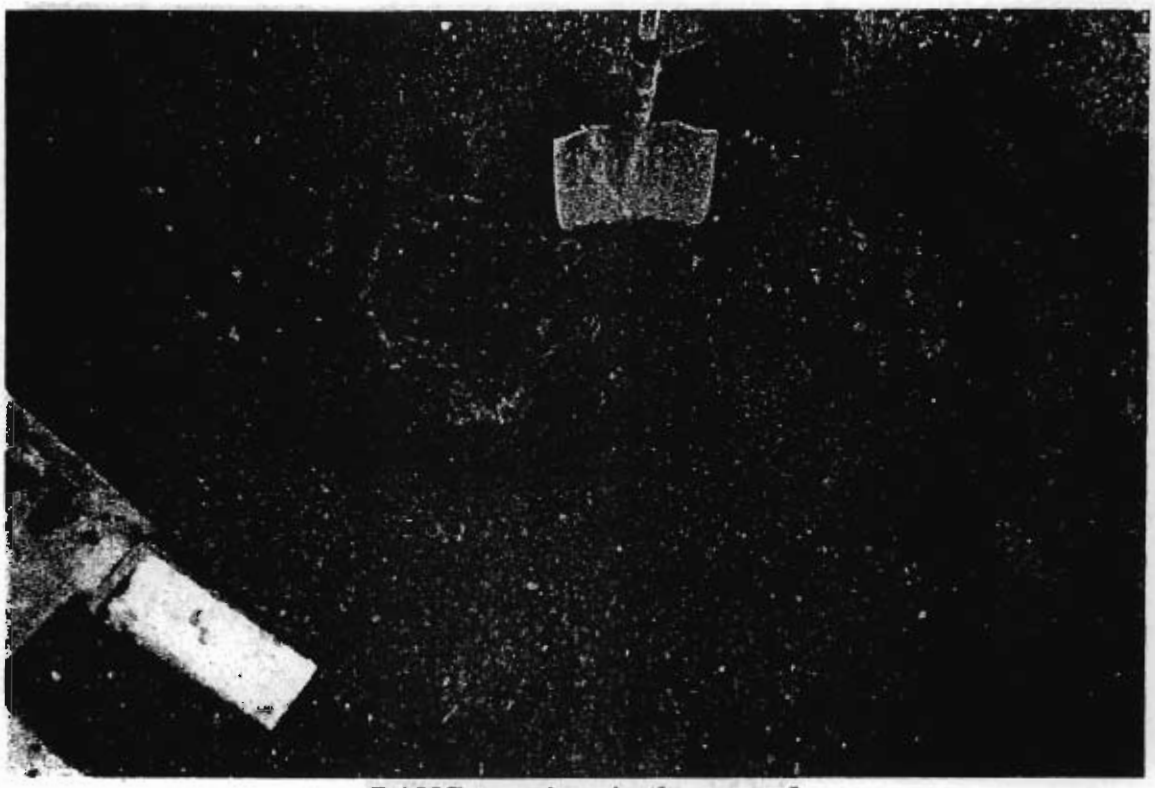
Excavation of anomaly "G"

Excavation of anomaly "G"



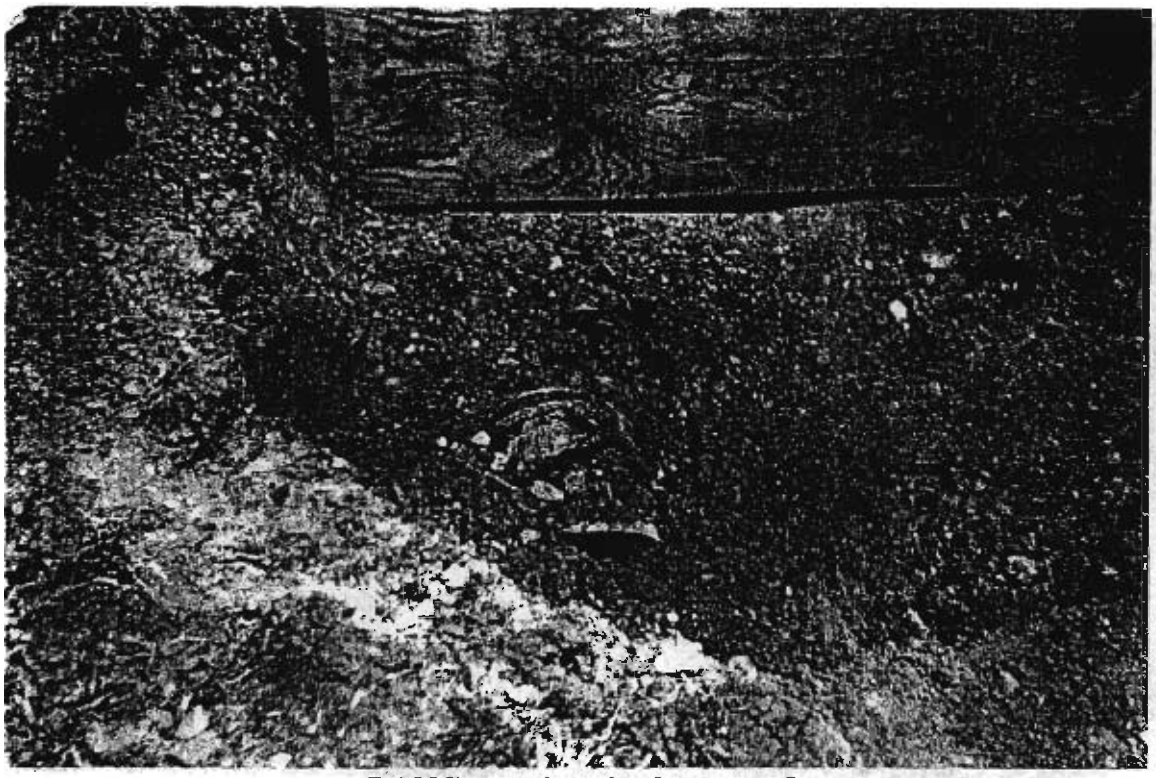
Excavation of anomaly "G"

Excavation of anomaly "G"



DANC container in the ground

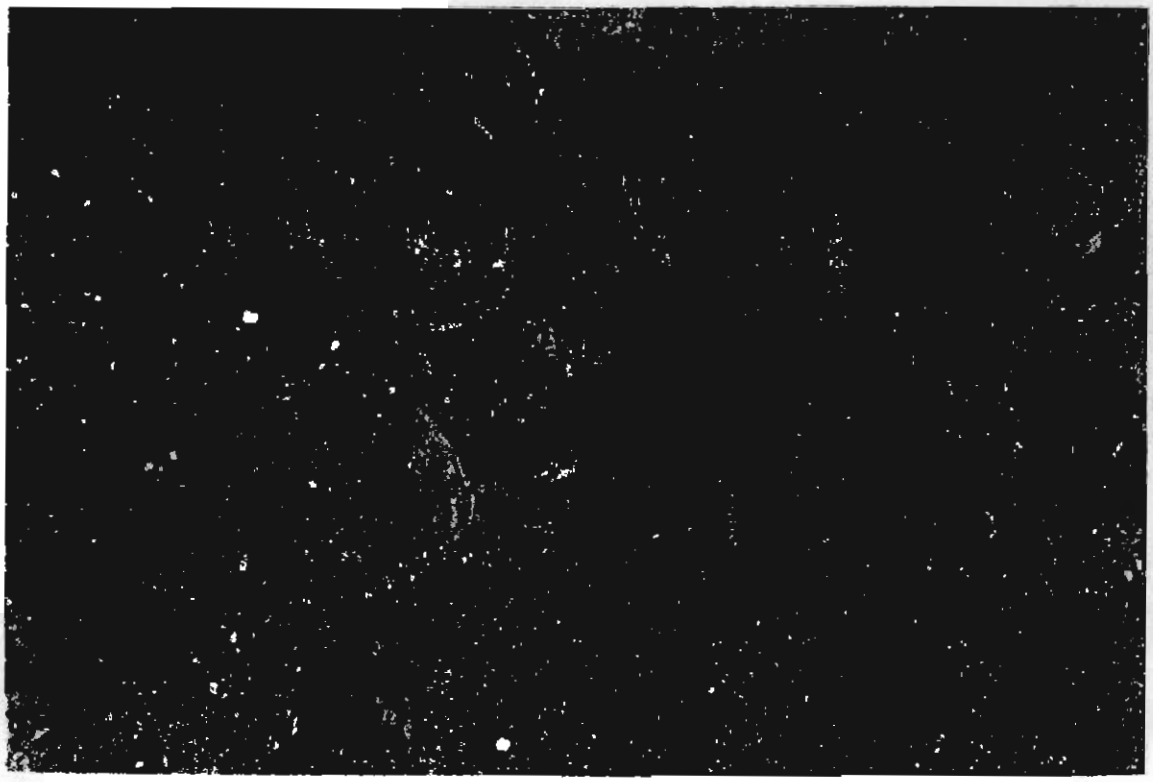
DANC container in the ground



DANC container in the ground

DANC container in the ground

DANC containers in the ground



DANC containers in the ground

DANC container excavated

DANC container excavated

Site after completion of work. Looking North towards building 1893

APPENDIX E

SAMPLING DOCUMENTATION

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 02, 1997 |

Sample ID : SPORT0471-1
Lab ID : 9706552-01
Matrix : TCLP
Date Collected : 06/25/97
Date Received : 06/25/97
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Metals Analysis											
Silver	U	0.00278	0.00780	0.500	mg/l	1.0	JSS	06/30/97	1132	104192	1
Arsenic	U	-0.150	0.0421	0.500	mg/l	1.0					
Barium	J	0.0528	0.00220	10.0	mg/l	1.0					
Cadmium	U	-0.0000100	0.00330	0.100	mg/l	1.0					
Chromium	U	-0.00193	0.00420	0.500	mg/l	1.0					
Lead	U	0.0130	0.0364	0.500	mg/l	1.0					
Selenium	U	0.0210	0.0841	0.300	mg/l	1.0					
Mercury	U	-0.00141	0.00100	0.0200	mg/l	1.0	CRB	07/01/97	1438	104176	2

The following prep procedures were performed:

ICP	CRB	06/27/97	1400	104192	3
Mercury	CRB	06/29/97	1000	104176	4
TCLP Prep for Metals	JL	06/26/97	1525	104127	5

M = Method	Method-Description
M 1	EPA 6010A
M 2	EPA 7471
M 3	EPA 3005
M 4	EPA 7470
M 5	EPA 1311

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9706552-01

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87458
NC	235	
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 02, 1997

Sample ID	: SPORT0471-1
M = Method	**Method-Description**

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

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

Karen Blakeney
Reviewed By

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NC	233	
SC	10120	10512
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 02, 1997

Sample ID	: SPORT0471-1
Lab ID	: 9706552-02
Matrix	: Soil
Date Collected	: 06/25/97
Date Received	: 06/25/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Metals Analysis											
Silver	U	-0.813	0.386	2.50	mg/kg	1.0	JSS	06/30/97	1422	104209	1
Arsenic	J	14.5	2.11	15.0	mg/kg	1.0	JSS	06/27/97	1254	104165	1
Barium		21.2	0.110	2.50	mg/kg	1.0					
Beryllium	J	0.526	0.0150	2.50	mg/kg	1.0					
Cadmium	J	0.519	0.165	2.50	mg/kg	1.0					
Cobalt	J	2.08	0.170	2.50	mg/kg	1.0					
Chromium		31.8	0.210	2.50	mg/kg	1.0					
Copper		13.7	0.420	2.50	mg/kg	1.0					
Nickel		11.9	0.395	2.50	mg/kg	1.0					
Lead		52.2	1.82	5.00	mg/kg	1.0					
Antimony		5.25	2.00	5.00	mg/kg	1.0					
Selenium	J	8.27	4.16	14.9	mg/kg	1.0	JSS	06/30/97	1422	104209	1
Tin	J	1.43	1.17	5.00	mg/kg	1.0	JSS	06/27/97	1254	104165	1
Thallium	J	8.26	2.33	14.9	mg/kg	1.0	JSS	06/30/97	1422	104209	1
Vanadium		20.0	0.210	2.50	mg/kg	1.0	JSS	06/27/97	1254	104165	1
Zinc		54.5	0.105	2.50	mg/kg	1.0					
Mercury	J	0.117	0.0155	0.200	mg/kg	1.0	CRB	06/30/97	1639	104124	2

The following prep procedures were performed:

ICP	CRB	06/26/97	2100	104165	3
ICP	CRB	06/29/97	0900	104209	3
Mercury	CRB	06/27/97	1630	104124	4

M = Method	Method-Description
M 1	EPA 6010A

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87459
NC	223	
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 02, 1997

Sample ID : SPORT0471-1

M = Method	Method-Description
M 2	EPA 7470
M 3	EPA 3050
M 4	EPA 7471

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

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

Karen Blakeney
Reviewed By

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JUL-02-97(WED) 13:36 GEN. ENGINEERING TEL:803-852-5812 P.005

NPW 0019 1

General Engineering Lab ies, Inc.
2040 Savage Road
Charleston, South Carolina 29414
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

CHAIN OF CUSTODY RECORD

9706652

Page 1 of 1

Client Name/Facility Name: SPORTENYDETCHASN

Collected by/Company: SPORTENYDETCHASN

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 27813

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# 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	APP IX VOLATILES		Remarks	
01	SPORTD471-1	6/25/97	0745				X	1							a)											NBCH6705000400	.1 .2
02	SPORTD471-2	6/25/97	0830				X	1							b)									X		NBCH0145000603	.1 .3
03																											
04																											
																										a) TCLP METALS	
																										APP. IX, metals	
																										b) TCLP metals	
																										RCRA METALS	

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
[signature]	6/25/97	1130	[signature]	[signature]	6/25/97	1570	[signature]

Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:
[signature]	6/25/97	1630	Karen Blaker	6/25/97	1030	

White = sample collector Yellow = file Pink = with report

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: October 03, 1997

Sample ID : SPORT0532-1
Lab ID : 9709703-01
Matrix : Soil
Date Collected : 09/30/97
Date Received : 09/30/97
Priority : Rush
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Metals Analysis											
Mercury		0.101	0.0168	0.0333	mg/kg	1.0	RMJ	10/01/97	1800	108722	N
Silver	J	271	60.8	490	ug/kg	2.0	MBL	10/01/97	1839	108719	1
Arsenic		7960	292	490	ug/kg	2.0					
Barium		20900	32.5	490	ug/kg	2.0					
Cadmium		907	20.4	490	ug/kg	2.0					
Chromium		42700	71.4	490	ug/kg	2.0					
Lead		106000	66.4	490	ug/kg	2.0					
Selenium		527	137	490	ug/kg	2.0					

The following prep procedures were performed:

Mercury	RMJ	10/01/97	1230	108722 2
TRACE	PGD	10/01/97	1230	108719 3

M = Method	Method-Description
M 1	EPA 6010A
M 2	EPA 7471
M 3	EPA 3050

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

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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: October 03, 1997

Sample ID : SPORT0532-1

M = Method	Method-Description

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

Karen Blakeney
Reviewed By

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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: October 03, 1997

Sample ID : SPORT0532-1
Lab ID : 9709703-05
Matrix : TCLP
Date Collected : 09/30/97
Date Received : 09/30/97
Priority : Rush
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Metals Analysis											
Lead		33.2	3.39	25.0	ug/l	5.0	MBL	10/02/97	1348	108735	1
The following prep procedures were performed:											
TCLP Prep for Metals							JL	09/30/97	1815	108670	2

M = Method	Method-Description
M 1	EPA 6010A
M 2	EPA 1311

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: October 03, 1997

Sample ID	: SPORT0532-2
Lab ID	: 9709703-02
Matrix	: Soil
Date Collected	: 09/30/97
Date Received	: 09/30/97
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Metals Analysis											
Mercury		0.103	0.0170	0.0333	mg/kg	1.0	RMJ	10/01/97	1802	108722	N
Silver	J	245	60.1	485	ug/kg	2.0	MBL	10/02/97	1816	108719	1
Arsenic		10900	289	485	ug/kg	2.0					
Barium		29000	32.2	485	ug/kg	2.0					
Cadmium		1550	20.2	485	ug/kg	2.0					
Chromium		56700	70.7	485	ug/kg	2.0					
Lead		200000	65.8	485	ug/kg	2.0					
Selenium		504	136	485	ug/kg	2.0					

The following prep procedures were performed:

Mercury	RMJ	10/01/97	1230	108722 2
TRACE	FGD	10/01/97	1230	108719 3

M = Method	Method-Description
M 1	EPA 6010A
M 2	EPA 7471
M 3	EPA 3050

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

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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: October 03, 1997

Sample ID : SPORT0532-2

M = Method	Method-Description

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Karen Blakeney

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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: October 03, 1997 |

Sample ID	: SPORT0532-2
Lab ID	: 9709703-06
Matrix	: TCLP
Date Collected	: 09/30/97
Date Received	: 09/30/97
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Metals Analysis											
Lead		228	3.39	25.0	ug/l	5.0	MBL	10/02/97	1353	108735	1

The following prep procedures were performed:

TCLP Prep for Metals							JL	09/30/97	1815	108670	2

M = Method	Method-Description
M 1	EPA 6010A
M 2	EPA 1311

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: October 03, 1997

Sample ID	: SPORT0532-3
Lab ID	: 9709703-03
Matrix	: GroundH2O
Date Collected	: 09/30/97
Date Received	: 09/30/97
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
Appendix IX Volatiles - 55 items											
1,1,1,2-Tetrachloroethane	U	0.00	2.00	4.00	ug/l	2.0	JEB	10/02/97	1154	108782	1
1,1,1-Trichloroethane	U	0.00	2.00	4.00	ug/l	2.0					
1,1,2,2-Tetrachloroethane		92.4	2.00	4.00	ug/l	2.0					
1,1,2-Trichloroethane	U	0.00	2.00	4.00	ug/l	2.0					
1,1-Dichloroethane	U	0.00	2.00	4.00	ug/l	2.0					
1,1-Dichloroethylene	U	0.00	2.00	4.00	ug/l	2.0					
1,2,3-Trichloropropane	U	0.00	2.00	4.00	ug/l	2.0					
1,2-Dibromo-3-chloropropane	U	0.00	2.00	4.00	ug/l	2.0					
1,2-Dibromoethane	U	0.00	2.00	4.00	ug/l	2.0					
1,2-Dichlorobenzene	U	0.00	2.00	4.00	ug/l	2.0					
1,2-Dichloroethane	U	0.00	2.00	4.00	ug/l	2.0					
1,2-Dichloropropane	U	0.00	2.00	4.00	ug/l	2.0					
1,2-cis-Dichloroethylene		166	2.00	4.00	ug/l	2.0					
1,2-trans-Dichloroethylene		29.4	2.00	4.00	ug/l	2.0					
2-Butanone	U	0.00	4.00	10.0	ug/l	2.0					
2-Hexanone	U	0.00	10.0	20.0	ug/l	2.0					
4-Methyl-2-pentanone	U	0.00	10.0	20.0	ug/l	2.0					
Acetone	U	0.00	10.0	20.0	ug/l	2.0					
Acetonitrile	U	0.00	4.00	20.0	ug/l	2.0					
Acrolein	U	0.00	20.0	40.0	ug/l	2.0					
Acrylonitrile	U	0.00	20.0	40.0	ug/l	2.0					
Allyl Chloride	U	0.00	10.0	20.0	ug/l	2.0					
Benzene	U	0.00	2.00	4.00	ug/l	2.0					
Bromoform	U	0.00	2.00	4.00	ug/l	2.0					
Carbon Disulfide	U	0.00	4.00	10.0	ug/l	2.0					
Carbon Tetrachloride	U	0.00	2.00	4.00	ug/l	2.0					
Chlorobenzene	U	0.00	2.00	4.00	ug/l	2.0					

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FL	E87156/87294	E87472/87458
NC	219	
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: October 03, 1997

Sample ID : SPORT0532-3

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	0.00	2.00	4.00	ug/l	2.0					
Chloroethane	U	0.00	2.00	4.00	ug/l	2.0	JEB	10/02/97	1154	108782	1
Chloroform	U	0.00	2.00	4.00	ug/l	2.0					
Chloroprene	U	0.00	4.00	10.0	ug/l	2.0					
Dibromomethane	U	0.00	2.00	4.00	ug/l	2.0					
Dichlorobromomethane	U	0.00	2.00	4.00	ug/l	2.0					
Dichlorodifluoromethane	U	0.00	2.00	4.00	ug/l	2.0					
Ethylbenzene	U	0.00	2.00	4.00	ug/l	2.0					
Isobutyl Alcohol	U	0.00	20.0	40.0	ug/l	2.0					
Methacrylonitrile	U	0.00	10.0	20.0	ug/l	2.0					
Methyl Bromide	U	0.00	2.00	4.00	ug/l	2.0					
Methyl Chloride	U	0.00	2.00	4.00	ug/l	2.0					
Methyl Iodide	U	0.00	4.00	10.0	ug/l	2.0					
Methyl Methacrylate	U	0.00	4.00	20.0	ug/l	2.0					
Methylene Chloride	U	0.00	2.00	10.0	ug/l	2.0					
Propionitrile	U	0.00	20.0	40.0	ug/l	2.0					
Styrene	U	0.00	2.00	4.00	ug/l	2.0					
Tetrachloroethylene	U	0.00	2.00	4.00	ug/l	2.0					
Toluene	U	0.00	2.00	4.00	ug/l	2.0					
Trichloroethylene		86.1	2.00	4.00	ug/l	2.0					
Trichlorofluoromethane	U	0.00	2.00	4.00	ug/l	2.0					
Vinyl Acetate	U	0.00	10.0	20.0	ug/l	2.0					
Vinyl chloride		26.0	2.00	4.00	ug/l	2.0					
Xylenes (TOTAL)	U	0.00	2.00	4.00	ug/l	2.0					
bis(2-Chloromethylethyl)ether	U	0.00	20.0	40.0	ug/l	2.0					
cis-1,3-Dichloropropylene	U	0.00	2.00	4.00	ug/l	2.0					
trans-1,3-Dichloropropylene	U	0.00	2.00	4.00	ug/l	2.0					
trans-1,4-Dichloro-2-butene	U	0.00	2.00	4.00	ug/l	2.0					

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	99.8	(73.8 - 128.)
Dibromofluoromethane	APP 9 VOA-8260	84.4	(63.9 - 139.)
Toluene-d8	APP 9 VOA-8260	96.1	(77.1 - 121.)

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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: October 03, 1997

Sample ID : SPORT0532-3

Surrogate Recovery	Test	Percent %	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8260

Notes:
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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 29405-2105

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 | Report Date: October 03, 1997 |

Sample ID	: SPORT0532-4
Lab ID	: 9709703-04
Matrix	: GroundH2O
Date Collected	: 09/30/97
Date Received	: 09/30/97
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
Appendix IX Volatiles - 55 items											
1,1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/l	1.0	JEB	10/02/97	1251	108782	1
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/l	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/l	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/l	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/l	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/l	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/l	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/l	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/l	1.0					
1,2-Dichlorobenzene	U	0.00	1.00	2.00	ug/l	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/l	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/l	1.0					
1,2-cis-Dichloroethylene	U	0.00	1.00	2.00	ug/l	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/l	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/l	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/l	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/l	1.0					
Acetone	U	0.00	5.00	10.0	ug/l	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/l	1.0					
Acrolein	U	0.00	10.0	20.0	ug/l	1.0					
Acrylonitrile	U	0.00	10.0	20.0	ug/l	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/l	1.0					
Benzene	U	0.00	1.00	2.00	ug/l	1.0					
Bromoform	U	0.00	1.00	2.00	ug/l	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/l	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/l	1.0					
Chlorobenzene	U	0.00	1.00	2.00	ug/l	1.0					

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

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

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: October 03, 1997

Sample ID : SPORT0532-4

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	0.00	1.00	2.00	ug/l	1.0					
Chloroethane	U	0.00	1.00	2.00	ug/l	1.0	JEB	10/02/97	1251	108782	1
Chloroform	U	0.00	1.00	2.00	ug/l	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/l	1.0					
Dibromomethane	U	0.00	1.00	2.00	ug/l	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/l	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/l	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/l	1.0					
Isobutyl Alcohol	U	0.00	10.0	20.0	ug/l	1.0					
Methacrylonitrile	U	0.00	5.00	10.0	ug/l	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/l	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/l	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/l	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/l	1.0					
Methylene Chloride	U	0.00	1.00	5.00	ug/l	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/l	1.0					
Styrene	U	0.00	1.00	2.00	ug/l	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/l	1.0					
Toluene	U	0.00	1.00	2.00	ug/l	1.0					
Trichloroethylene	U	0.00	1.00	2.00	ug/l	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/l	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/l	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/l	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/l	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/l	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/l	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/l	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/l	1.0					

Surrogate Recovery	Test	Percent %	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	97.7	(73.8 - 128.)
Dibromofluoromethane	APP 9 VOA-8260	84.6	(63.9 - 139.)
Toluene-d8	APP 9 VOA-8260	95.3	(77.1 - 121.)

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Laboratory Certifications

STATE	DEL	EPI
FL	E87156/87294	E87472/87458
NC	233	
SC	10120	10512
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: October 03, 1997

Sample ID : SPORT0532-4

Surrogate Recovery	Test	Percent%	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8260

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 D. Blakeney
Reviewed By

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NPWCOOH 1

3-DAY TURN-AROUND

CHAIN OF CUSTODY RECORD

9709703

Page 1 of 1

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

Client Name/Facility Name: SPORTENV DETCHASN

Collected by/Company: Alan Morgan SPORTENV DETCHASN

Use F or P in the boxes to indicate whether sample was filtered and/or preserved

CCL 29211

SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	TCLP RCRA METALS - specify	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type	RCRA METALS	ADDITIONAL VOA	Remarks
01 05	SPOA0532-1	9/30/97	1345		X	X									X									X		NBCH014S026000
02 06	SPOA0532-2	9/30/97	1355		X	X									X									X		NBCH014S027000
03	SPOA0532-3	9/30/97	1405				X																		X	NBCH014WD28000
04	SPOA0532-4	9/30/97	1330				X																		X	NBCH014T029000

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
Alan J Morgan	9/30/97	1445	[illegible]	[illegible]	9/30/97	1505	[illegible]
[illegible]	9/30/97	1530	Karen Blakeney				

Date:	Time:	Remarks:
9/30/97	1530	

White = sample collector Yellow = file Pink = with report

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/E7294	E87472/E7458
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: October 23, 1997 |

Sample ID	: SPORT0546-2
Lab ID	: 9710357-02
Matrix	: Soil
Date Collected	: 10/15/97
Date Received	: 10/15/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
Appendix IX Volatiles - 55 items											
1,1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JEB	10/20/97	1509	109688	1
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-cis-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E17156/87294	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: October 23, 1997

Sample ID : SPORT0546-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JEB	10/20/97	1509	109688	1
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0					
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Isobutyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
Methacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride	U	0.00	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	88.9	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	75.9	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	90.2	(72.1 - 137.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87.
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: October 23, 1997

Sample ID : SPORT0546-2

Surrogate Recovery	Test	Percent%	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8260

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

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

Karen Blakeney
Reviewed By

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CHAIN OF CUSTODY RECORD

9710357

Page 1 of 1

Client Name/Facility Name: SPORTENVDETCHASN

Collected by/Company: SPORTENVDETCHASN

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 29431

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# 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	APP IV VOA	RESIDUAL CHLORINE	Remarks
01	SPORTØ546-1	10/15/97	1008		X		X	1																X		NBCH01470030 00
02	SPORTØ546-2	10/15/97	1030				X	1																X		NBCH01460031 00
03	SPORTØ546-3	10/15/97	1105		X		X	1																X	X	NBCH01460032 00

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
[illegible signature]	10/15/97	1145	[illegible signature]	[illegible signature]	10/15/97	1425	[illegible signature]
[illegible signature]	10/15/97	1445	Karen Blake				

Date:	Time:	Remarks:
10/15/97	1445	

White = sample collector Yellow = file Pink = with report

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPA
FL	E87156/87294	E87472/87413
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: December 03, 1997

Sample ID	: SPORT0574-1
Lab ID	: 9711697-01
Matrix	: Soil
Date Collected	: 11/24/97
Date Received	: 11/24/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
Appendix IX Volatiles - 55 items											
1,1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	RMB	12/01/97	1521	112068	1
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-cis-Dichloroethylene		7.91	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.810	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					

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Laboratory Certifications

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

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

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: December 03, 1997

Sample ID : SPORT0574-1

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	0.00		1.00	2.00	ug/kg	1.0					
Chloroethane	U	0.00		1.00	2.00	ug/kg	1.0	RMB	12/01/97	1521	112068	1
Chloroform	U	0.00		1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00		2.00	10.0	ug/kg	1.0					
Dibromomethane	U	0.00		1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00		1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00		1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00		1.00	2.00	ug/kg	1.0					
Isobutyl Alcohol	U	0.00		10.0	20.0	ug/kg	1.0					
Methacrylonitrile	U	0.00		5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00		1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00		1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00		2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00		2.00	10.0	ug/kg	1.0					
Methylene Chloride	J	1.82	760 / 87	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00		10.0	20.0	ug/kg	1.0					
Styrene	U	0.00		1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00		1.00	2.00	ug/kg	1.0					
Toluene	U	0.00		1.00	2.00	ug/kg	1.0					
Trichloroethylene	U	0.640	570 / 87	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00		1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00		5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00		1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00		1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00		10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00		1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00		1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00		1.00	2.00	ug/kg	1.0					
General Chemistry												
Chlorine, Residual	U	-0.0700		10.0	10.0	mg/kg	1.0	LIB	11/24/97	1905	111948	2

Surrogate Recovery	Test	Percent %	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	106.	(53.5 - 154.)

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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: December 03, 1997

Sample ID : SPORT0574-1

Surrogate Recovery	Test	Percent %	Acceptable Limits
Dibromofluoromethane	APP 9 VOA-8260	122.	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	114.	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

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

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

Karen Blakeney
Reviewed By

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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: December 03, 1997 |

Sample ID	: SPORT0574-2
Lab ID	: 9711697-02
Matrix	: Soil
Date Collected	: 11/24/97
Date Received	: 11/24/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
Appendix IX Volatiles - 55 items											
1,1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	RMB	12/01/97	1550	112068	1
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-cis-Dichloroethylene	U	0.580	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPA
FL	E87156/87294	E87672/87456
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: December 03, 1997 |

Sample ID : SPORT0574-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroethane	U	0.00	1.00	2.00	ug/kg	1.0	RMB	12/01/97	1550	112068	1
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0					
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Isobutyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
Methacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride	J	3.10	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	-0.120	10.0	10.0	mg/kg	1.0	LIB	11/24/97	1905	111948	2

Comments:
Volatile Organics contained matrix interferences.

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9711697-02

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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: December 03, 1997

Sample ID : SPORT0574-2

Surrogate Recovery	Test	Percent %	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	102.	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	152.*	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	120.	(72.1 - 137.)

M = Method	Method Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

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

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

Karen Blakeney
Reviewed By

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8745
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: December 03, 1997

Sample ID	: SPORT0574-3
Lab ID	: 9711697-03
Matrix	: Soil
Date Collected	: 11/24/97
Date Received	: 11/24/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
ppendix IX Volatiles - 55 items											
,1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	RMB	12/01/97	1453	112068	1
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-cis-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
rbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
alorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87-
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: December 03, 1997

Sample ID : SPORT0574-3

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroethane	U	0.00	1.00	2.00	ug/kg	1.0	RMB	12/01/97	1453	112068	1
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0					
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Isobutyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
Methacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride	U	0.397	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	92.9	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	125.	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	105.	(72.1 - 137.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87-
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: December 03, 1997

Sample ID : SPORT0574-3

Surrogate Recovery	Test	Percent%	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8260

Notes:

e qualifiers in this report are defined as follows:

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

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

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

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

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

Karen Blakeney

Reviewed By

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(803) 556-8171 • Fax (803) 766-1178

9711697-03

NPWC 00197

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

9711697

Page 1 of 1

Client Name/Facility Name: SPORTENV DETCHASN

Collected by/Company: SPORTENV DETCHASN

Use F or P in the boxes to indicate whether sample was filtered and/or preserved

CCL 30260

SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	TCLP METALS - specify	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type	CHLORINE RESIDUAL	H2 preserved	Remarks
01	SPORT 0514-1	11-24-97	1130		x			3							✓									✓	✓	NBCH014S003301
04																										
02	SPORT 0514-2	11-24-97	1330		x		✓	3							✓									✓	✓	NBCH014S003401
03																										
03	SPORT 0514-3	11-24-97	0930		x		✓	3																	✓	NBCH014T002501

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
Alan J Mayer	11/24/97	1430	Vivian Washington	Vivian Washington	11-24-97	1500	Stephanie Bethelton

Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:
Stephanie Bethelton	11-24-97	1536	Karen Blake	11-24-97	1536	

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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 02, 1997

Sample ID : SPORT0500-1
Lab ID : 9708480-01
Matrix : Soil
Date Collected : 08/22/97
Date Received : 08/22/97
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
ppendix IX Volatiles - 55 items											
,1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	TCL	08/25/97	1656	106977	1
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane		87900	5000	10000	ug/kg	5000	TCL	08/27/97	1123	106977	1
1,1,2-Trichloroethane		889	100	200	ug/kg	100	TCL	08/26/97	1854	106977	1
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0	TCL	08/25/97	1656	106977	1
1,1-Dichloroethylene		26.7	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	100	200	ug/kg	100	TCL	08/26/97	1854	106977	1
1,2-Dibromo-3-chloropropane	U	0.00	100	200	ug/kg	100					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0	TCL	08/25/97	1656	106977	1
1,2-Dichloroethane		3.65	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene		9770	100	200	ug/kg	100	TCL	08/26/97	1854	106977	1
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0	TCL	08/25/97	1656	106977	1
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone		107	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	J	1.99	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	J	3.30	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorobenzene		33.4	1.00	2.00	ug/kg	1.0					
hlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
hloroethane	U	0.00	1.00	2.00	ug/kg	1.0					

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8745.
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 02, 1997

Sample ID : SPORT0500-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chloroform		23.1	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0	TCL	08/25/97	1656	106977	1
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
ᵀobutyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
ᵉthacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
ᵢthyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride		6.22	1.00	5.00	ug/kg	1.0					
Propionitrile	U	1.18	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene		3130	100	200	ug/kg	100	TCL	08/26/97	1854	106977	1
Toluene	J	1.01	1.00	2.00	ug/kg	1.0	TCL	08/25/97	1656	106977	1
Trichloroethylene		120000	2000	4000	ug/kg	2000	TCL	08/26/97	1825	106977	1
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0	TCL	08/25/97	1656	106977	1
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride		482	100	200	ug/kg	100	TCL	08/26/97	1854	106977	1
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0	TCL	08/25/97	1656	106977	1
bis(2-Chloromethylethyl)ether	U	0.00	1000	2000	ug/kg	100	TCL	08/26/97	1854	106977	1
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0	TCL	08/25/97	1656	106977	1
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	100	200	ug/kg	100	TCL	08/26/97	1854	106977	1
General Chemistry											
Chlorine, Residual	U	-0.0800	10.0	10.0	mg/kg	1.0	LIB	08/22/97	1845	106947	2

Comments:
Volatile Organics contained matrix interferences.

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8745.
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 02, 1997

Sample ID : SPORT0500-1

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	476.*	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	101.	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	111.	(72.1 - 137.)

M = Method	Method-Description
1	EPA 8260 EPA 330.5 Modified

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).
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

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29414
(803) 556-8171 • Fax (803) 766-1178

9708480-01

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8745
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 02, 1997

Sample ID	: SPORT0500-2
Lab ID	: 9708480-02
Matrix	: Soil
Date Collected	: 08/22/97
Date Received	: 08/22/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
latile Organics											
pendix IX Volatiles - 55 items											
1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	TCL	08/25/97	1724	106977	1
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane		1930	100	200	ug/kg	100	TCL	08/26/97	1757	106977	1
1,1,2-Trichloroethane		15.3	1.00	2.00	ug/kg	1.0	TCL	08/25/97	1724	106977	1
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene		6.34	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane		14.9	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene		722	100	200	ug/kg	100	TCL	08/26/97	1757	106977	1
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0	TCL	08/25/97	1724	106977	1
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone		113	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	1.37	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	J	8.66	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
lorobenzene		23.6	1.00	2.00	ug/kg	1.0					
lorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
loroethane	U	0.00	1.00	2.00	ug/kg	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87-
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 02, 1997

Sample ID : SPORT0500-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chloroform		2.72	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0	TCL	08/25/97	1724	106977	1
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Isobutyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
ethacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
ethyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride		22.5	1.00	5.00	ug/kg	1.0					
Propionitrile	U	1.58	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	J	163	100	200	ug/kg	100	TCL	08/26/97	1757	106977	1
Toluene	U	0.00	1.00	2.00	ug/kg	1.0	TCL	08/25/97	1724	106977	1
Trichloroethylene		1400	100	200	ug/kg	100	TCL	08/26/97	1757	106977	1
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0	TCL	08/25/97	1724	106977	1
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride		27.5	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	1.50	500	500	mg/kg	50.	LIB	08/22/97	1845	106947	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	114.	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	91.5	(63.4 - 136.)
luene-d8	APP 9 VOA-8260	115.	(72.1 - 137.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8745.
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 02, 1997

Sample ID : SPORT0500-2

Surrogate Recovery	Test	Percent%	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

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

Karen Blakeney
Reviewed By

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8745.
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 02, 1997

Sample ID	: SPORT0500-3
Lab ID	: 9708480-03
Matrix	: Soil
Date Collected	: 08/22/97
Date Received	: 08/22/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
ppendix IX Volatiles - 55 items											
1,1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	TCL	08/26/97	1728	106977	1
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
'hlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroethane	U	0.00	1.00	2.00	ug/kg	1.0					

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874.
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 02, 1997

Sample ID : SPORT0500-3

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0	TCL	08/26/97	1728	106977	1
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Isobutyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
Methacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride	J	3.78	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	J	1.83	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	4.00	500	500	mg/kg	50.	LIB	08/22/97	1845	106947	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	97.5	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	92.2	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	95.6	(72.1 - 137.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8745.
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 02, 1997

Sample ID : SPORT0500-3

Surrogate Recovery	Test	Percent%	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

.es:

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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.

Karen Blakeney
Reviewed By

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
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: December 12, 1997

Sample ID : SPORT0578-5

Surrogate Recovery	Test	Percent%	Acceptable Limits
Dibromofluoromethane	APP 9 VOA-8260	89.8	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	85.0	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

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.

Catharine Hill

Reviewed By

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9712088 05

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8745
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: December 12, 1997

Sample ID	: SPORT0578-6
Lab ID	: 9712088-06
Matrix	: Soil
Date Collected	: 12/02/97
Date Received	: 12/03/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
pendix IX Volatiles - 55 items											
1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS	12/07/97	1619	112547	1
1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoetnane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-cis-Dichloroethylene	U	0.650	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone		23.6	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0	JGS	12/08/97	1451	112547	1
Acetone		174	5.00	10.0	ug/kg	1.0	JGS2	12/07/97	1619	112547	1
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0	JGS	12/07/97	1619	112547	1
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.530	2.00	10.0	ug/kg	1.0					
rbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
robenzene	U	0.00	1.00	2.00	ug/kg	1.0					

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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: December 12, 1997

Sample ID : SPORT0578-6

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS	12/07/97	1619	112547	1
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0					
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
thylbenzene	U	0.620	1.00	2.00	ug/kg	1.0					
butyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
thacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
~~Methyl Methacrylate~~	~~U~~	~~0.00~~	~~2.00~~	~~10.0~~	~~ug/kg~~	~~1.0~~					
Methylene Chloride		13.8	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	0.800	100	100	mg/kg	10.	LIB	12/03/97	1700	112388	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
nofluorobenzene	APP 9 VOA-8260	55.8	(53.5 - 154.)

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8745
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: December 12, 1997

Sample ID : SPORT0578-6

Surrogate Recovery	Test	Percent%	Acceptable Limits
Dibromofluoromethane	APP 9 VOA-8260	47.8*	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	49.0*	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
2	EPA 330.5 Modified

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.

Catharine U Liles
Reviewed By

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(803) 556-8171 • Fax (803) 766-1178

9712088-06

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874[illegible]
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: December 12, 1997

Sample ID	: SPORT0578-7
Lab ID	: 9712088-07
Matrix	: Soil
Date Collected	: 12/02/97
Date Received	: 12/03/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
'olatile Organics											
ppendix IX Volatiles - 55 items											
1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS	12/07/97	1645	112547	1
.1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane		22.5	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-cis-Dichloroethylene	J	1.49	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0	JGS	12/08/97	1517	112547	1
Acetone		53.3	5.00	10.0	ug/kg	1.0	JGS	12/07/97	1645	112547	1
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
'bon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
'robenzene	U	0.00	1.00	2.00	ug/kg	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
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: December 12, 1997

Sample ID : SPORT0578-7

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS	12/08/97	1517	112547	1
Chloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS	12/07/97	1645	112547	1
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0					
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
thylbenzene	U	0.590	1.00	2.00	ug/kg	1.0					
obutyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
/ethacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride		7.11	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	J	1.38	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene		2.81	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	1.09	10.0	10.0	mg/kg	1.0	LIB	12/03/97	1700	112388	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
ɔmofluorobenzene	APP 9 VOA-8260	64.0	(53.5 - 154.)

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9712088-07

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8745
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: December 12, 1997

Sample ID : SPORT0578-7

Surrogate Recovery	Test	Percent%	Acceptable Limits
Dibromofluoromethane	APP 9 VOA-8260	50.0*	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	53.8*	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
' 2	EPA 330.5 Modified

..otes:

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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.

Catharine U Lil

Reviewed By

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874.
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: December 12, 1997

Sample ID	: SPORT0578-8
Lab ID	: 9712088-08
Matrix	: Soil
Date Collected	: 12/02/97
Date Received	: 12/03/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
ppendix IX Volatiles - 55 items											
.1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS	12/09/97	1539	112547	1
.1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-cis-Dichloroethylene	J	1.37	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	J	5.03	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone		69.3	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
'orobenzene	U	0.00	1.00	2.00	ug/kg	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87-[illegible]
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: December 12, 1997

Sample ID : SPORT0578-8

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS	12/09/97	1539	112547	1
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0					
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
[illegible]hylbenzene	U	0.570	1.00	2.00	ug/kg	1.0					
[illegible] butyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
[illegible]ethacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride	U	0.00	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	0.0800	10.0	10.0	mg/kg	1.0	LIB	12/03/97	1700	112388	2

[illegible]rrogate Recovery	Test	Percent%	Acceptable Limits
[illegible]mofluorobenzene	APP 9 VOA-8260	110.	(53.5 - 154.)

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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: December 12, 1997

Sample ID : SPORT0578-8

Surrogate Recovery	Test	Percent%	Acceptable Limits
Dibromofluoromethane	APP 9 VOA-8260	98.0	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	98.0	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

.otes:

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.

Catharine M. Eels

Reviewed By

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9712088-08

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87-
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: December 12, 1997

Sample ID	: SPORT0578-9
Lab ID	: 9712088-09
Matrix	: Soil
Date Collected	: 12/02/97
Date Received	: 12/03/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
Appendix IX Volatiles - 55 items											
1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS	12/07/97	1736	112547	
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-cis-Dichloroethylene		13.0	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	J	7.16	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone		40.8	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
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: December 12, 1997

Sample ID : SPORT0578-9

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS	12/07/97	1736	112547	1
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0					
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.560	1.00	2.00	ug/kg	1.0					
obutyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
Methacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride	U	0.00	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride		5.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	0.470	100	100	mg/kg	10.	LIB	12/03/97	1700	112388	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
omofluorobenzene	APP 9 VOA-8260	110.	(53.5 - 154.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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: December 12, 1997

Sample ID : SPORT0578-9

Surrogate Recovery	Test	Percent%	Acceptable Limits
Dibromofluoromethane	APP 9 VOA-8260	91.4	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	98.8	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

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.

Catharine H Kile

Reviewed By

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8.
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: December 12, 1997

Sample ID	: SPORT0578-10
Lab ID	: 9712088-10
Matrix	: Soil
Date Collected	: 12/02/97
Date Received	: 12/03/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
Appendix IX Volatiles - 55 items											
1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS	12/07/97	1801	112547	
1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-cis-Dichloroethylene		9.86	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	J	8.01	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone		47.3	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.830	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
orobenzene	U	0.00	1.00	2.00	ug/kg	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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: December 12, 1997

Sample ID : SPORT0578-10

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS	12/07/97	1801	112547	1
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0					
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
hylbenzene	U	0.550	1.00	2.00	ug/kg	1.0					
butyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
thacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride	U	0.560	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.530	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	J	1.62	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	0.100	100	100	mg/kg	10.	LIB	12/03/97	1700	112388	2

rogate Recovery	Test	Percent%	Acceptable Limits
romofluorobenzene	APP 9 VOA-8260	112.	(53.5 - 154.)

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STATE	GEL	EPI
FL	E87156/87294	E87472/874:
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: December 12, 1997

Sample ID : SPORT0578-10

Surrogate Recovery	Test	Percent%	Acceptable Limits
Dibromofluoromethane	APP 9 VOA-8260	90.6	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	97.4	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

No.
The qualifiers in this report are defined as follows:
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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.

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.

Catharine H. Lile

eviewed By

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GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87.
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: December 12, 1997

Sample ID	: SPORT0578-11
Lab ID	: 9712088-11
Matrix	: Soil
Date Collected	: 12/02/97
Date Received	: 12/03/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
ppendix IX Volatiles - 55 items											
',1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS	12/08/97	1608	112547	
,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane		35.4	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-cis-Dichloroethylene		120	20.0	40.0	ug/kg	20.	JGS	12/09/97	1604	112547	1
1,2-trans-Dichloroethylene		9.40	1.00	2.00	ug/kg	1.0	JGS	12/08/97	1608	112547	1
2-Butanone		25.1	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone		70.8	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
bon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
orobenzene	U	0.00	1.00	2.00	ug/kg	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
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: December 12, 1997

Sample ID : SPORT0578-11

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS	12/08/97	1608	112547	1
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0					
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.570	1.00	2.00	ug/kg	1.0					
ıbutyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
.ethacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride		7.33	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.870	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene		45.2	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride		51.4	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	-0.0600	10.0	10.0	mg/kg	1.0	LIB	12/03/97	1700	112388	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
ɔmofluorobenzene	APP 9 VOA-8260	106.	(53.5 - 154.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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: December 12, 1997

Sample ID : SPORT0578-11

Surrogate Recovery	Test	Percent%	Acceptable Limits
Dibromofluoromethane	APP 9 VOA-8260	89.4	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	99.6	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

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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Catharine [signature]
Reviewed By

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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 03, 1997

Sample ID	: SPORT0500-4
Lab ID	: 9708480-04
Matrix	: Soil
Date Collected	: 08/22/97
Date Received	: 08/22/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
Appendix IX Volatiles - 55 items											
,1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	TCL	08/28/97	1700	107147	1
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane	J	1.26	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
hloroethane	U	0.00	1.00	2.00	ug/kg	1.0					

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8745
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 03, 1997

Sample ID : SPORT0500-4

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0	TCL	08/28/97	1700	107147	1
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Isobutyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
Methacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride		21.5	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	10.0	500	500	mg/kg	50.	LIB	08/22/97	1845	106947	2

Comments:

Volatile Organics contained matrix interferences.

The 1,1,2,2-Tetrachloroethane concentration may be biased high due to matrix interference with the associated internal standard.

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9708480-04

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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 03, 1997

Sample ID : SPORT0500-4

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	110.	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	85.2	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	104.	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

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

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

Karen Blakeney
Reviewed By

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9708480-04

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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 03, 1997

Sample ID	: SPORT0500-5
Lab ID	: 9708480-05
Matrix	: Soil
Date Collected	: 08/22/97
Date Received	: 08/22/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
'olatile Organics											
'ppendix IX Volatiles - 55 items											
1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	TCL	08/28/97	1728	107147	1
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane		7.84	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
'hlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
'hlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
.hloroethane	U	0.00	1.00	2.00	ug/kg	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87-
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 03, 1997

Sample ID : SPORT0500-6

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0	TCL	08/28/97	1756	107147	1
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Isobutyl Alcohol	U	1.87	10.0	20.0	ug/kg	1.0					
Methacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
lethyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride		9.79	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	7.50	500	500	mg/kg	50.	LIB	08/22/97	1845	106947	2

Comments:
Volatile Organics contained matrix interferences.

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8745
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 03, 1997

Sample ID : SPORT0500-6

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	99.9	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	85.2	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	97.2	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
1 2	EPA 330.5 Modified

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

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

Karen Blakeney
Reviewed By

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0708480-06

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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 03, 1997

Sample ID	: SPORT0500-7
Lab ID	: 9708480-07
Matrix	: Soil
Date Collected	: 08/22/97
Date Received	: 08/22/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
Appendix IX Volatiles - 55 items											
1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	DLS	08/29/97	1359	107147	1
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
loroethane	U	0.00	1.00	2.00	ug/kg	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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 03, 1997

Sample ID : SPORT0500-7

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0	DLS	08/29/97	1359	107147	1
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
·obutyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
(ethacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
ethyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride	J	3.31	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	-25.5	500	500	mg/kg	50.	LIB	08/22/97	1845	106947	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
romofluorobenzene	APP 9 VOA-8260	111.	(53.5 - 154.)
bromofluoromethane	APP 9 VOA-8260	80.2	(63.4 - 136.)
luene-d8	APP 9 VOA-8260	102.	(72.1 - 137.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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 03, 1997

Sample ID : SPORT0500-7

Surrogate Recovery	Test	Percent%	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

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.
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Karen Blakeney
Reviewed By

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9708480-07

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87-
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 03, 1997

Sample ID	: SPORT0500-8
Lab ID	: 9708480-08
Matrix	: Soil
Date Collected	: 08/22/97
Date Received	: 08/22/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
Appendix IX Volatiles - 55 items											
1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	TCL	08/28/97	1853	107147	
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	2.60	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroethane	U	0.00	1.00	2.00	ug/kg	1.0					

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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: September 03, 1997

Sample ID : SPORT0500-8

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0	TCL	08/28/97	1853	107147	1
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Isobutyl Alcohol	U	3.18	10.0	20.0	ug/kg	1.0					
'ethacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
:thyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride		6.14	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	4.50	500	500	mg/kg	50.	LIB	08/22/97	1845	106947	2

Comments:
Volatile Organics contained matrix interferences.

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9708480-08

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
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 03, 1997

Sample ID : SPORT0500-8

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	96.2	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	81.6	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	94.8	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

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

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

Karen Blakeney
Reviewed By

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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 03, 1997

Sample ID	: SPORT0500-9
Lab ID	: 9708480-09
Matrix	: Soil
Date Collected	: 08/22/97
Date Received	: 08/22/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
\ppendix IX Volatiles - 55 items											
,1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	TCL	08/28/97	1922	107147	1
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
hlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
hloroethane	U	0.00	1.00	2.00	ug/kg	1.0					

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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: September 03, 1997

Sample ID : SPORT0500-9

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0	TCL	08/28/97	1922	107147	1
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Isobutyl Alcohol	U	1.51	10.0	20.0	ug/kg	1.0					
Methacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride		9.17	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	9.00	500	500	mg/kg	50.	LIB	08/22/97	1845	106947	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	102.	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	81.1	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	96.2	(72.1 - 137.)

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

cc: NPWC00197 Report Date: September 03, 1997

Sample ID : SPORT0500-9

Surrogate Recovery	Test	Percent%	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

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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 03, 1997

Sample ID	: SPORT0500-10
Lab ID	: 9708480-10
Matrix	: Soil
Date Collected	: 08/22/97
Date Received	: 08/22/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
olatile Organics											
pendix IX Volatiles - 55 items											
.1,1,2-Tetrachloroethane	U	0.00	20.0	40.0	ug/kg	20.	DLS	08/29/97	1851	107147	1
1,1,1-Trichloroethane	U	0.00	20.0	40.0	ug/kg	20.					
1,1,2,2-Tetrachloroethane		2240	50.0	100	ug/kg	50.					
1,1,2-Trichloroethane	U	0.00	20.0	40.0	ug/kg	20.					
1,1-Dichloroethane	U	0.00	20.0	40.0	ug/kg	20.					
1,1-Dichloroethylene	U	0.00	20.0	40.0	ug/kg	20.					
1,2,3-Trichloropropane	U	0.00	20.0	40.0	ug/kg	20.					
1,2-Dibromo-3-chloropropane	U	0.00	20.0	40.0	ug/kg	20.					
1,2-Dibromoethane	U	0.00	20.0	40.0	ug/kg	20.					
1,2-Dichloroethane	U	0.00	20.0	40.0	ug/kg	20.					
1,2-Dichloropropane	U	0.00	20.0	40.0	ug/kg	20.					
1,2-trans-Dichloroethylene	U	0.00	20.0	40.0	ug/kg	20.					
2-Butanone	U	0.00	40.0	100	ug/kg	20.					
2-Hexanone	U	0.00	100	200	ug/kg	20.					
4-Methyl-2-pentanone	U	0.00	100	200	ug/kg	20.					
Acetone	U	0.00	100	200	ug/kg	20.					
Acetonitrile	U	0.00	40.0	200	ug/kg	20.					
Acrolein	U	0.00	200	400	ug/kg	20.					
Acrylonitrile	U	0.00	100	1000	ug/kg	20.					
Allyl Chloride	U	0.00	100	200	ug/kg	20.					
Benzene	U	0.00	20.0	40.0	ug/kg	20.					
Bromoform	U	0.00	20.0	40.0	ug/kg	20.					
Carbon Disulfide	U	0.00	40.0	100	ug/kg	20.					
Carbon Tetrachloride	U	0.00	20.0	40.0	ug/kg	20.					
hlorobenzene	U	0.00	20.0	40.0	ug/kg	20.					
ilorodibromomethane	U	0.00	20.0	40.0	ug/kg	20.					
.hloroethane	U	0.00	20.0	40.0	ug/kg	20.					

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North Charleston, South Carolina 29405-2106

Contact: Mr. Bill Hiers

Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: September 03, 1997

Sample ID : SPORT0500-10

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chloroform	U	0.00	20.0	40.0	ug/kg	20.					
Chloroprene	U	0.00	40.0	40.0	ug/kg	20.	DLS	08/29/97	1851	107147	1
Dibromomethane	U	0.00	20.0	40.0	ug/kg	20.					
Dichlorobromomethane	U	0.00	20.0	40.0	ug/kg	20.					
Dichlorodifluoromethane	U	0.00	20.0	40.0	ug/kg	20.					
Ethylbenzene	U	0.00	20.0	40.0	ug/kg	20.					
Isobutyl Alcohol	U	0.00	200	400	ug/kg	20.					
Methacrylonitrile	U	0.00	100	200	ug/kg	20.					
Methyl Bromide	U	0.00	20.0	40.0	ug/kg	20.					
Methyl Chloride	U	0.00	20.0	40.0	ug/kg	20.					
Methyl Iodide	U	0.00	40.0	100	ug/kg	20.					
Methyl Methacrylate	U	0.00	40.0	200	ug/kg	20.					
Methylene Chloride	J	28.2	20.0	100	ug/kg	20.					
Propionitrile	U	0.00	200	400	ug/kg	20.					
Styrene	U	0.00	20.0	40.0	ug/kg	20.					
Tetrachloroethylene		48.8	20.0	40.0	ug/kg	20.					
Toluene	U	0.00	20.0	40.0	ug/kg	20.					
Trichloroethylene		618	20.0	40.0	ug/kg	20.					
Trichlorofluoromethane	U	0.00	20.0	40.0	ug/kg	20.					
Vinyl Acetate	U	0.00	100	200	ug/kg	20.					
Vinyl chloride	U	0.00	20.0	40.0	ug/kg	20.					
Xylenes (TOTAL)	U	0.00	20.0	40.0	ug/kg	20.					
bis(2-Chloromethylethyl)ether	U	0.00	200	400	ug/kg	20.					
cis-1,3-Dichloropropylene	U	0.00	20.0	40.0	ug/kg	20.					
trans-1,3-Dichloropropylene	U	0.00	20.0	40.0	ug/kg	20.					
trans-1,4-Dichloro-2-butene	U	0.00	20.0	40.0	ug/kg	20.					
General Chemistry											
Chlorine, Residual	U	3.00	500	500	mg/kg	50.	LIB	08/22/97	1845	106947	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	87.1	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	75.5	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	85.6	(72.1 - 137.)

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874'
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 03, 1997

Sample ID : SPORT0500-10

Surrogate Recovery	Test	Percent%	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

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

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

Karen Blakeney
Reviewed By

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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 03, 1997

Sample ID	: SPORT0500-11
Lab ID	: 9708480-11
Matrix	: Soil
Date Collected	: 08/22/97
Date Received	: 08/22/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
ppendix IX Volatiles - 55 items											
1,1,2-Tetrachloroethane	U	0.00	5.00	10.0	ug/kg	5.0	DLS	08/29/97	1918	107147	i
1,1,1-Trichloroethane	U	0.00	5.00	10.0	ug/kg	5.0					
1,1,2,2-Tetrachloroethane		512	5.00	10.0	ug/kg	5.0					
1,1,2-Trichloroethane	U	0.00	5.00	10.0	ug/kg	5.0					
1,1-Dichloroethane	U	0.00	5.00	10.0	ug/kg	5.0					
1,1-Dichloroethylene	U	0.00	5.00	10.0	ug/kg	5.0					
1,2,3-Trichloropropane	U	0.00	5.00	10.0	ug/kg	5.0					
1,2-Dibromo-3-chloropropane	U	0.00	5.00	10.0	ug/kg	5.0					
1,2-Dibromoethane	U	0.00	5.00	10.0	ug/kg	5.0					
1,2-Dichloroethane	U	0.00	5.00	10.0	ug/kg	5.0					
1,2-Dichloropropane	U	0.00	5.00	10.0	ug/kg	5.0					
1,2-trans-Dichloroethylene	U	0.00	5.00	10.0	ug/kg	5.0					
2-Butanone	U	0.00	10.0	25.0	ug/kg	5.0					
2-Hexanone	U	0.00	25.0	50.0	ug/kg	5.0					
4-Methyl-2-pentanone	U	0.00	25.0	50.0	ug/kg	5.0					
Acetone	U	0.00	25.0	50.0	ug/kg	5.0					
Acetonitrile	U	0.00	10.0	50.0	ug/kg	5.0					
Acrolein	U	0.00	50.0	100	ug/kg	5.0					
Acrylonitrile	U	0.00	25.0	250	ug/kg	5.0					
Allyl Chloride	U	0.00	25.0	50.0	ug/kg	5.0					
Benzene	U	0.00	5.00	10.0	ug/kg	5.0					
Bromoform	U	0.00	5.00	10.0	ug/kg	5.0					
Carbon Disulfide	U	0.00	10.0	25.0	ug/kg	5.0					
Carbon Tetrachloride	U	0.00	5.00	10.0	ug/kg	5.0					
Chlorobenzene	U	0.00	5.00	10.0	ug/kg	5.0					
lorodibromomethane	U	0.00	5.00	10.0	ug/kg	5.0					
oroethane	U	0.00	5.00	10.0	ug/kg	5.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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 03, 1997

Sample ID : SPORT0500-11

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chloroform	U	0.00	5.00	10.0	ug/kg	5.0					
Chloroprene	U	0.00	10.0	10.0	ug/kg	5.0	DLS	08/29/97	1918	107147	1
Dibromomethane	U	0.00	5.00	10.0	ug/kg	5.0					
Dichlorobromomethane	U	0.00	5.00	10.0	ug/kg	5.0					
Dichlorodifluoromethane	U	0.00	5.00	10.0	ug/kg	5.0					
Ethylbenzene	U	0.00	5.00	10.0	ug/kg	5.0					
Isobutyl Alcohol	U	7.90	50.0	100	ug/kg	5.0					
Methacrylonitrile	U	0.00	25.0	50.0	ug/kg	5.0					
Methyl Bromide	U	0.00	5.00	10.0	ug/kg	5.0					
Methyl Chloride	U	0.00	5.00	10.0	ug/kg	5.0					
Methyl Iodide	U	0.00	10.0	25.0	ug/kg	5.0					
Methyl Methacrylate	U	0.00	10.0	50.0	ug/kg	5.0					
Methylene Chloride	J	6.50	5.00	25.0	ug/kg	5.0					
Propionitrile	U	0.00	50.0	100	ug/kg	5.0					
Styrene	U	0.00	5.00	10.0	ug/kg	5.0					
Tetrachloroethylene	U	0.00	5.00	10.0	ug/kg	5.0					
Toluene	U	0.00	5.00	10.0	ug/kg	5.0					
Trichloroethylene		67.3	5.00	10.0	ug/kg	5.0					
Trichlorofluoromethane	U	0.00	5.00	10.0	ug/kg	5.0					
Vinyl Acetate	U	0.00	25.0	50.0	ug/kg	5.0					
Vinyl chloride	U	0.00	5.00	10.0	ug/kg	5.0					
Xylenes (TOTAL)	U	0.00	5.00	10.0	ug/kg	5.0					
bis(2-Chloromethylethyl)ether	U	0.00	50.0	100	ug/kg	5.0					
cis-1,3-Dichloropropylene	U	0.00	5.00	10.0	ug/kg	5.0					
trans-1,3-Dichloropropylene	U	0.00	5.00	10.0	ug/kg	5.0					
trans-1,4-Dichloro-2-butene	U	0.00	5.00	10.0	ug/kg	5.0					
General Chemistry											
Chlorine, Residual	U	7.50	500	500	mg/kg	50.	LIB	08/22/97	1845	106947	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	95.4	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	79.6	(63.4 - 136.)
oluene-d8	APP 9 VOA-8260	89.0	(72.1 - 137.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8745
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 03, 1997

Sample ID : SPORT0500-11

Surrogate Recovery	Test	Percent%	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

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

Karen Blakeney
Reviewed By

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9708480-11

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
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 03, 1997

Sample ID	: SPORT0500-12
Lab ID	: 9708480-12
Matrix	: Soil
Date Collected	: 08/22/97
Date Received	: 08/22/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
Appendix IX Volatiles - 55 items											
1,1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	DLS	08/29/97	1120	107147	
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane		88.0	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane		2.84	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroethane	U	0.00	1.00	2.00	ug/kg	1.0					

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STATE	GEL	EPI
FL	E87156/87294	E87472/874
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 03, 1997

Sample ID : SPORT0500-12

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0	DLS	08/29/97	1120	107147	1
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Isobutyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
Methacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
thyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride	J	3.81	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	J	1.33	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	0.500	500	500	mg/kg	50.	LIB	08/22/97	1845	106947	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	105.	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	76.9	(63.4 - 136.)
luene-d8	APP 9 VOA-8260	95.8	(72.1 - 137.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/A
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 03, 1997

Sample ID : SPORT0500-12

Surrogate Recovery	Test	Percent%	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

Notes:
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Karen Blakeney
Reviewed By

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GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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 03, 1997

Sample ID	: SPORT0500-13
Lab ID	: 9708480-13
Matrix	: Soil
Date Collected	: 08/22/97
Date Received	: 08/22/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
Appendix IX Volatiles - 55 items											
1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	DLS	08/29/97	1147	107147	1
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane		49.7	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
loroethane	U	0.00	1.00	2.00	ug/kg	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8745
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 03, 1997

Sample ID : SPORT0500-13

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0	DLS	08/29/97	1147	107147	1
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Isobutyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
acrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
yl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
nyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride	J	1.25	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene		12.0	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	-9.00	500	500	mg/kg	50.	LIB	08/22/97	1845	106947	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	99.0	(53.5 - 154.)
romofluoromethane	APP 9 VOA-8260	85.3	(63.4 - 136.)
ne-d8	APP 9 VOA-8260	91.0	(72.1 - 137.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874.
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 03, 1997

Sample ID : SPORT0500-13

Surrogate Recovery	Test	Percent%	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

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

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

Karen Blakeney
Reviewed By

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9708480-13

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874:
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 03, 1997

Sample ID	: SPORT0500-14
Lab ID	: 9708480-14
Matrix	: Soil
Date Collected	: 08/22/97
Date Received	: 08/22/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
opendix IX Volatiles - 55 items											
1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JEB	09/02/97	1806	107147	1
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone		13.6	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	2.66	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
lorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
lorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
loroethane	U	0.00	1.00	2.00	ug/kg	1.0					

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STATE	GEL	EPI
FL	E87156/87294	E87472/874
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 03, 1997

Sample ID : SPORT0500-14

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0	JEB	09/02/97	1806	107147	1
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Isobutyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
Methacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
ethyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride	U	0.00	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	27.5	2500	2500	mg/kg	250	LIB	08/22/97	1845	106947	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	108.	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	105.	(63.4 - 136.)
luene-d8	APP 9 VOA-8260	108.	(72.1 - 137.)

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9708480-14

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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 03, 1997

Sample ID : SPORT0500-14

Surrogate Recovery	Test	Percent%	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

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e qualifiers in this report are defined as follows:
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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8
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 03, 1997

Sample ID	: SPORT0500-15
Lab ID	: 9708480-15
Matrix	: Soil
Date Collected	: 08/22/97
Date Received	: 08/22/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
Appendix IX Volatiles - 55 items											
1,1,1,2-Tetrachloroethane	U	0.00	5.00	10.0	ug/kg	5.0	DLS	08/29/97	1705	107147	
1,1,1-Trichloroethane	U	0.00	5.00	10.0	ug/kg	5.0					
1,1,2,2-Tetrachloroethane		313000	5000	10000	ug/kg	5000	JEB	09/03/97	1045	107147	1
1,1,2-Trichloroethane		480	5.00	10.0	ug/kg	5.0	DLS	08/29/97	1705	107147	1
1,1-Dichloroethane	U	0.00	5.00	10.0	ug/kg	5.0					
1,1-Dichloroethylene	U	0.00	5.00	10.0	ug/kg	5.0					
1,2,3-Trichloropropane	U	0.00	5.00	10.0	ug/kg	5.0					
1,2-Dibromo-3-chloropropane	U	0.00	5.00	10.0	ug/kg	5.0					
1,2-Dibromoethane	U	0.00	5.00	10.0	ug/kg	5.0					
1,2-Dichloroethane	U	0.00	5.00	10.0	ug/kg	5.0					
1,2-Dichloropropane	U	0.00	5.00	10.0	ug/kg	5.0					
1,2-trans-Dichloroethylene		76.9	5.00	10.0	ug/kg	5.0					
2-Butanone	U	0.00	10.0	25.0	ug/kg	5.0					
2-Hexanone	U	0.00	25.0	50.0	ug/kg	5.0					
4-Methyl-2-pentanone	U	0.00	25.0	50.0	ug/kg	5.0					
Acetone	U	0.00	25.0	50.0	ug/kg	5.0					
Acetonitrile	U	0.00	10.0	50.0	ug/kg	5.0					
Acrolein	U	0.00	50.0	100	ug/kg	5.0					
Acrylonitrile	U	0.00	25.0	250	ug/kg	5.0					
Allyl Chloride	U	0.00	25.0	50.0	ug/kg	5.0					
Benzene	U	0.00	5.00	10.0	ug/kg	5.0					
Bromoform	U	0.00	5.00	10.0	ug/kg	5.0					
Carbon Disulfide	U	0.00	10.0	25.0	ug/kg	5.0					
Carbon Tetrachloride	U	0.00	5.00	10.0	ug/kg	5.0					
Chlorobenzene		39.2	5.00	10.0	ug/kg	5.0					
Chlorodibromomethane	U	0.00	5.00	10.0	ug/kg	5.0					
Chloroethane	U	0.00	5.00	10.0	ug/kg	5.0					

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STATE	GEL	EPI
FL	E87156/87294	E87472/874
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 03, 1997

Sample ID : SPORT0500-15

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chloroform	J	9.75	5.00	10.0	ug/kg	5.0					
Chloroprene	U	0.00	10.0	10.0	ug/kg	5.0	DLS	08/29/97	1705	107147	1
Dibromomethane	U	0.00	5.00	10.0	ug/kg	5.0					
Dichlorobromomethane	U	0.00	5.00	10.0	ug/kg	5.0					
Dichlorodifluoromethane	U	0.00	5.00	10.0	ug/kg	5.0					
Ethylbenzene	U	0.00	5.00	10.0	ug/kg	5.0					
Isobutyl Alcohol	U	0.00	50.0	100	ug/kg	5.0					
Methacrylonitrile	U	0.00	25.0	50.0	ug/kg	5.0					
Methyl Bromide	U	0.00	5.00	10.0	ug/kg	5.0					
Methyl Chloride	U	0.00	5.00	10.0	ug/kg	5.0					
Methyl Iodide	U	0.00	10.0	25.0	ug/kg	5.0					
Methyl Methacrylate	U	0.00	10.0	50.0	ug/kg	5.0					
Methylene Chloride	J	12.3	5.00	25.0	ug/kg	5.0					
Propionitrile	U	0.00	50.0	100	ug/kg	5.0					
Styrene	U	0.00	5.00	10.0	ug/kg	5.0					
Tetrachloroethylene		2000	1000	2000	ug/kg	1000	JEB	09/02/97	1700	107147	1
Toluene	U	0.00	5.00	10.0	ug/kg	5.0	DLS	08/29/97	1705	107147	1
Trichloroethylene		27800	1000	2000	ug/kg	1000	JEB	09/02/97	1700	107147	1
Trichlorofluoromethane	U	0.00	5.00	10.0	ug/kg	5.0	DLS	08/29/97	1705	107147	1
Vinyl Acetate	U	0.00	25.0	50.0	ug/kg	5.0					
Vinyl chloride	U	4.30	5.00	10.0	ug/kg	5.0					
Xylenes (TOTAL)	U	0.00	5.00	10.0	ug/kg	5.0					
bis(2-Chloromethylethyl)ether	U	0.00	50.0	100	ug/kg	5.0					
cis-1,3-Dichloropropylene	U	0.00	5.00	10.0	ug/kg	5.0					
trans-1,3-Dichloropropylene	U	0.00	5.00	10.0	ug/kg	5.0					
trans-1,4-Dichloro-2-butene	U	0.00	5.00	10.0	ug/kg	5.0					
General Chemistry											
Chlorine, Residual	U	-7.50	500	500	mg/kg	50.	LIB	08/22/97	1845	106947	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	101.	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	78.9	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	91.1	(72.1 - 137.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87·
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 03, 1997

Sample ID : SPORT0500-15

Surrogate Recovery	Test	Percent%	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

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9708480-15

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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 03, 1997

Sample ID	: SPORT0500-16
Lab ID	: 9708480-16
Matrix	: Soil
Date Collected	: 08/22/97
Date Received	: 08/22/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
'olatile Organics											
ppendix IX Volatiles - 55 items											
..1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	DLS	08/29/97	1731	107147	1
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane		93.2	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	J	1.84	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
orobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
orodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
oroethane	U	0.00	1.00	2.00	ug/kg	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8745
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 03, 1997

Sample ID : SPORT0500-16

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0	DLS	08/29/97	1731	107147	1
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Isobutyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
acrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
yl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride		18.9	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene		4.28	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene		24.4	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	-16.0	500	500	mg/kg	50.	LIB	08/22/97	1845	106947	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	116.	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	80.6	(63.4 - 136.)
ne-d8	APP 9 VOA-8260	111.	(72.1 - 137.)

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9708480-16

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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 03, 1997

Sample ID : SPORT0500-16

Surrogate Recovery	Test	Percent%	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

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

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

Karen Blakeney
Reviewed By

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GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874:
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 03, 1997

Sample ID	: SPORT0500-17
Lab ID	: 9708480-17
Matrix	: Soil
Date Collected	: 08/22/97
Date Received	: 08/22/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
ppendix IX Volatiles - 55 items											
,1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	DLS	08/29/97	1758	107147	1
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane		4.22	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene		5.43	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
hlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
hloroethane	U	0.00	1.00	2.00	ug/kg	1.0					

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87-
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 03, 1997

Sample ID : SPORT0500-17

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0	DLS	08/29/97	1758	107147	1
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Isobutyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
Methacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride	J	3.89	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene		2.84	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene		17.0	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	J	1.66	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	-6.50	500	500	mg/kg	50.	LIB	08/22/97	1845	106947	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	102.	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	78.2	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	97.6	(72.1 - 137.)

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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 03, 1997

Sample ID : SPORT0500-17

Surrogate Recovery	Test	Percent%	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

es:

..ie qualifiers in this report are defined as follows:

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

Karen Blakeney

Reviewed By

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9708480-17

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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 03, 1997

Sample ID	: SPORT0500-18
Lab ID	: 9708480-18
Matrix	: Soil
Date Collected	: 08/22/97
Date Received	: 08/22/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
olatile Organics											
ppendix IX Volatiles - 55 items											
1,1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	DLS	08/29/97	1213	107147	1
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroethane	U	0.00	1.00	2.00	ug/kg	1.0					

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
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 03, 1997

Sample ID : SPORT0500-18

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0	DLS	08/29/97	1213	107147	1
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Isobutyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
Methacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride	U	0.00	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	82.7	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	78.2	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	81.3	(72.1 - 137.)

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
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 03, 1997

Sample ID : SPORT0500-18

M = Method	Method-Description
M 1	EPA 8260

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

NO COUNTY

General Engineering L[illegible]es, 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

9708480

Client Name/Facility Name: SPORTENVDETCHASN

Collected by/Company: SPORTENVDETCHASN

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 28632

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# 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	RESIDUAL CHLORINE	App. IX Vol.	Remarks
-01	SPORTØ5ØØ-1	8/22/97	Ø835		X		X	2																X	X	NBCH014S008004
-02	SPORTØ5ØØ-2	8/22/97	Ø84Ø		X		X	2																X	X	NBCH014S009004
-03	SPORTØ5ØØ-3	8/22/97	Ø847		X		X	2																X	X	NBCH014S010004 ~~NBCH014S010004~~
-04	SPORTØ5ØØ-4	8/22/97	Ø853		X		X	2																X	X	NBCH014S011004
-05	SPORTØ5ØØ-5	8/22/97	Ø858		X		X	2																X	X	NBCH014S012004
-06	SPORTØ5ØØ-6	8/22/97	Ø9Ø3		X		X	2																X	X	NBCH014S013004
-07	SPORTØ5ØØ-7	8/22/97	Ø9Ø8		X		X	2																X	X	NBCH014S014004
-08	SPORTØ5ØØ-8	8/22/97	Ø913		X		X	2																X	X	NBCH014S015004
-09	SPORTØ5ØØ-9	8/22/97	Ø918		X		X	2																X	X	NBCH014S016004
-10	SPORTØ5ØØ-10	8/22/97	Ø924		X		X	2																X	X	NBCH014S017004
-11	SPORTØ5ØØ-11	8/22/97	Ø929		X		X	2																X	X	NBCH014S018004
-12	SPORTØ5ØØ-12	8/22/97	Ø932		X		X	2																X	X	NBCH014S019004
-13	SPORTØ5ØØ-13	8/22/97	Ø942		X		X	2																X	X	NBCH014S20005

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
Alan J. Mayer	8/22/97	1600	W. R. Hiers, Jr.	W. R. Hiers, Jr.	8/22/97	1434	Catharine [illegible]

Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:
Catharine [illegible]	8/22/97	1505	Karen J. Blakeney	8/22/97	15:15	

White [illegible]ple collector Yellow = file Pink = with report

General Engineering Lab[illegible]s, Inc.
2040 Savage Road
Charleston, South Carolina
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

CHAIN OF CUSTODY RECORD

970848

Client Name/Facility Name: SPORTENVDETCHASN

Collected by/Company: SPORTENVDETCHASN

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 28632

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrate/Nitrite	VOC - Specify Method required	METALS - specify	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliforms - specify type	RESIDUAL CHLORINE	APP. IX Vol	Remarks
-04	SPORT0500-14	8/22/97	0947		X		X	2																X	X	NBCH0145021005
-05	SPORT0500-15	8/22/97	0953		X		X	2																X	X	NBCH0145022005
-06	SPORT0500-16	8/22/97	1003		X		X	2																X	X	NBCH0145023005
-07	SPORT0500-17	8/22/97	1009		X		X	2																X	X	NBCH0145024005
-08	SPORT0500-18	8/22/97	0741		X		X	2																	X	NBCH014T25000
-09																										
-10																										
-11																										
-12																										
-13																										

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
Alan Moore	8/22/97	1200	W.R. Hiers, Jr.	W.R. Hiers Jr.	8/22/97	1434	Catherine [illegible]
Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:	
[illegible]	8/22/97	1505	Donna [illegible]	8/22/97	1505		

White = sample collector Yellow = file Pink = [illegible]

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8745
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: December 12, 1997

Sample ID	: SPORT0578-1
Lab ID	: 9712088-01
Matrix	: Soil
Date Collected	: 12/02/97
Date Received	: 12/03/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
ppendix IX Volatiles - 55 items											
,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS2	12/07/97	1411	112547	1
,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-cis-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.660	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
·bon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
:obenzene	U	0.00	1.00	2.00	ug/kg	1.0					

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GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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: December 12, 1997

Sample ID : SPORT0578-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS2	12/07/97	1411	112547	1
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0					
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
chlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
ylbenzene	U	0.570	1.00	2.00	ug/kg	1.0					
utyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
Methacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride	J	1.22	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	2.70	100	100	mg/kg	10.	LIB	12/03/97	1700	112388	2

ogate Recovery	Test	Percent%	Acceptable Limits
ofluorobenzene	APP 9 VOA-8260	102.	(53.5 - 154.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8745
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 03, 1997

Sample ID : SPORT0500-5

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0	TCL	08/28/97	1728	107147	1
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Isobutyl Alcohol	U	2.16	10.0	20.0	ug/kg	1.0					
Methacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride		21.7	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.810	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene		14.4	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	11.0	500	500	mg/kg	50.	LIB	08/22/97	1845	106947	2

Comments:
The concentrations for 1,1,2,2-Tetrachloroethane, Tetrachloroethylene, and Trichloroethylene may be biased high due to matrix interference.

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
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 03, 1997

Sample ID : SPORT0500-5

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	109.	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	84.0	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	107.	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

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

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

Karen Blakeney
Reviewed By

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8
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 03, 1997

Sample ID	: SPORT0500-6
Lab ID	: 9708480-06
Matrix	: Soil
Date Collected	: 08/22/97
Date Received	: 08/22/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
Appendix IX Volatiles - 55 items											
.,1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	TCL	08/28/97	1756	107147	
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
:hloroethane	U	0.00	1.00	2.00	ug/kg	1.0					

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STATE	GEL	EPI
FL	E87156/87294	E87472/87-
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: December 12, 1997

Sample ID : SPORT0578-1

Surrogate Recovery	Test	Percent%	Acceptable Limits
Dibromofluoromethane	APP 9 VOA-8260	93.2	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	92.8	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
2	EPA 330.5 Modified

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.

Catharine H Lile

Reviewed By

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87[illegible]
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: December 12, 1997

Sample ID	: SPORT0578-2
Lab ID	: 9712088-02
Matrix	: Soil
Date Collected	: 12/02/97
Date Received	: 12/03/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
ppendix IX Volatiles - 55 items											
,1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS2	12/08/97	1634	112547	1
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS2	12/07/97	1437	112547	1
1,1,2,2-Tetrachloroethane		45.9	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene		4.54	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-cis-Dichloroethylene		472	25.0	50.0	ug/kg	25.	JGS2	12/09/97	1439	112547	1
1,2-trans-Dichloroethylene		194	10.0	20.0	ug/kg	10.	JGS2	12/08/97	1634	112547	1
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0	JGS2	12/07/97	1437	112547	1
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.820	2.00	10.0	ug/kg	1.0					
bon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
orobenzene	U	0.600	1.00	2.00	ug/kg	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874[illegible]
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: December 12, 1997

Sample ID : SPORT0578-2

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS2	12/07/97	1437	112547	1
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0					
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
'hylbenzene	U	0.570	1.00	2.00	ug/kg	1.0					
butyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
..ethacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride	U	0.00	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene		15.6	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene		551	25.0	50.0	ug/kg	25.	JGS2	12/09/97	1439	112547	1
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS2	12/07/97	1437	112547	1
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride		71.1	10.0	20.0	ug/kg	10.	JGS2	12/08/97	1634	112547	1
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0	JGS2	12/07/97	1437	112547	1
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	-2.10	100	100	mg/kg	10.	LIB	12/03/97	1700	112388	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
ıofluorobenzene	APP 9 VOA-8260	102.	(53.5 - 154.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8.
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: December 12, 1997

Sample ID : SPORT0578-2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Dibromofluoromethane	APP 9 VOA-8260	86.6	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	92.0	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 330.5 Modified

tes:

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.

Catharine Hobbs

Reviewed By

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9712088-02

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87.
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: December 12, 1997

Sample ID : SPORT0578-3
Lab ID : 9712088-03
Matrix : Soil
Date Collected : 12/02/97
Date Received : 12/03/97
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
ppendix IX Volatiles - 55 items											
1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS	12/08/97	1400	112547	1
,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane		2.75	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-cis-Dichloroethylene	J	1.17	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0	JGS2	12/08/97	1400	112547	1
Acetone	U	0.00	5.00	10.0	ug/kg	1.0	JGS	12/08/97	1400	112547	1
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
robenzene	U	0.00	1.00	2.00	ug/kg	1.0					

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9712088-03

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
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: December 12, 1997

Sample ID : SPORT0578-3

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroethane	U	0.00	1.00	2.00	ug/kg	1.0	JGS	12/08/97	1400	112547	1
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0					
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.600	1.00	2.00	ug/kg	1.0					
Methyl tert-butyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
Methacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride		15.0	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.980	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	J	1.54	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					
General Chemistry											
Chlorine, Residual	U	0.360	10.0	10.0	mg/kg	1.0	LIB	12/03/97	1700	112388	2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	85.8	(53.5 - 154.)

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8
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: December 19, 1997

Sample ID	: SPORT0578-14
Lab ID	: 9712088-14
Matrix	: Soil
Date Collected	: 12/02/97
Date Received	: 12/03/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
Appendix IX Volatiles - 55 items											
1,1,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0	TCL	12/11/97	2226	112652	
1,1,1-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2,2-Tetrachloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1,2-Trichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,1-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2,3-Trichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromo-3-chloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dibromoethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloroethane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-Dichloropropane	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-cis-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
1,2-trans-Dichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
2-Butanone	U	0.00	2.00	10.0	ug/kg	1.0					
2-Hexanone	U	0.00	5.00	10.0	ug/kg	1.0					
4-Methyl-2-pentanone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetone	U	0.00	5.00	10.0	ug/kg	1.0					
Acetonitrile	U	0.00	2.00	10.0	ug/kg	1.0					
Acrolein	U	0.00	10.0	20.0	ug/kg	1.0					
Acrylonitrile	U	0.00	5.00	50.0	ug/kg	1.0					
Allyl Chloride	U	0.00	5.00	10.0	ug/kg	1.0					
Benzene	U	0.00	1.00	2.00	ug/kg	1.0					
Bromoform	U	0.00	1.00	2.00	ug/kg	1.0					
Carbon Disulfide	U	0.00	2.00	10.0	ug/kg	1.0					
Carbon Tetrachloride	U	0.00	1.00	2.00	ug/kg	1.0					
Chlorobenzene	U	0.00	1.00	2.00	ug/kg	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8
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: December 19, 1997

Sample ID : SPORT0578-14

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroethane	U	0.00	1.00	2.00	ug/kg	1.0	TCL	12/11/97	2226	112652	1
Chloroform	U	0.00	1.00	2.00	ug/kg	1.0					
Chloroprene	U	0.00	2.00	10.0	ug/kg	1.0					
Dibromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorobromomethane	U	0.00	1.00	2.00	ug/kg	1.0					
Dichlorodifluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Ethylbenzene	U	0.00	1.00	2.00	ug/kg	1.0					
Isobutyl Alcohol	U	0.00	10.0	20.0	ug/kg	1.0					
Methacrylonitrile	U	0.00	5.00	10.0	ug/kg	1.0					
Methyl Bromide	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Methyl Iodide	U	0.00	2.00	5.00	ug/kg	1.0					
Methyl Methacrylate	U	0.00	2.00	10.0	ug/kg	1.0					
Methylene Chloride	U	0.00	1.00	5.00	ug/kg	1.0					
Propionitrile	U	0.00	10.0	20.0	ug/kg	1.0					
Styrene	U	0.00	1.00	2.00	ug/kg	1.0					
Tetrachloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Toluene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichloroethylene	U	0.00	1.00	2.00	ug/kg	1.0					
Trichlorofluoromethane	U	0.00	1.00	2.00	ug/kg	1.0					
Vinyl Acetate	U	0.00	5.00	10.0	ug/kg	1.0					
Vinyl chloride	U	0.00	1.00	2.00	ug/kg	1.0					
Xylenes (TOTAL)	U	0.00	1.00	4.00	ug/kg	1.0					
bis(2-Chloromethylethyl)ether	U	0.00	10.0	20.0	ug/kg	1.0					
cis-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,3-Dichloropropylene	U	0.00	1.00	2.00	ug/kg	1.0					
trans-1,4-Dichloro-2-butene	U	0.00	1.00	2.00	ug/kg	1.0					

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	127.	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	97.0	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	110.	(72.1 - 137.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472
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: December 19, 1997

Sample ID : SPORT0578-14

Surrogate Recovery	Test	Percent%	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8260

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

Karen Blakeney
Reviewed By

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8.
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: December 19, 1997

Sample ID	: SPORT0578-15
Lab ID	: 9712088-15
Matrix	: Soil
Date Collected	: 12/02/97
Date Received	: 12/03/97
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
Appendix IX Volatiles - 55 items											
1,1,1,2-Tetrachloroethane	U	0.00	100	200	ug/kg	100	TCL	12/11/97	2047	112652	
1,1,1-Trichloroethane	U	0.00	100	200	ug/kg	100					
1,1,2,2-Tetrachloroethane	U	0.00	100	200	ug/kg	100					
1,1,2-Trichloroethane	U	0.00	100	200	ug/kg	100					
1,1-Dichloroethane	U	0.00	100	200	ug/kg	100					
1,1-Dichloroethylene	U	0.00	100	200	ug/kg	100					
1,2,3-Trichloropropane	U	0.00	100	200	ug/kg	100					
1,2-Dibromo-3-chloropropane	U	0.00	100	200	ug/kg	100					
1,2-Dibromoethane	U	0.00	100	200	ug/kg	100					
1,2-Dichlorobenzene	U	0.00	100	200	ug/kg	100					
1,2-Dichloroethane	U	0.00	100	200	ug/kg	100					
1,2-Dichloropropane	U	0.00	100	200	ug/kg	100					
1,2-cis-Dichloroethylene		9810	100	200	ug/kg	100					
1,2-trans-Dichloroethylene	U	45.5	100	200	ug/kg	100					
2-Butanone		1670	200	500	ug/kg	100					
2-Hexanone	U	0.00	500	1000	ug/kg	100					
4-Methyl-2-pentanone	U	0.00	500	1000	ug/kg	100					
Acetone	U	0.00	500	1000	ug/kg	100					
Acetonitrile	U	0.00	200	1000	ug/kg	100					
Acrolein	U	0.00	1000	2000	ug/kg	100					
Acrylonitrile	U	0.00	500	5000	ug/kg	100					
Allyl Chloride	U	0.00	500	1000	ug/kg	100					
Benzene	U	0.00	100	200	ug/kg	100					
Bromoform	U	0.00	100	200	ug/kg	100					
Carbon Disulfide	U	0.00	200	500	ug/kg	100					
Carbon Tetrachloride	U	0.00	100	200	ug/kg	100					
Chlorobenzene	U	0.00	100	200	ug/kg	100					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/..
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: December 19, 1997

Sample ID : SPORT0578-15

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chlorodibromomethane	U	0.00	100	200	ug/kg	100					
Chloroethane	U	0.00	100	200	ug/kg	100	TCL	12/11/97	2047	112652	1
Chloroform	U	0.00	100	200	ug/kg	100					
Chloroprene	U	0.00	200	200	ug/kg	100					
Dibromomethane	U	0.00	100	200	ug/kg	100					
Dichlorobromomethane	U	0.00	100	200	ug/kg	100					
Dichlorodifluoromethane	U	0.00	100	200	ug/kg	100					
Ethylbenzene	U	0.00	100	200	ug/kg	100					
Isobutyl Alcohol	U	0.00	1000	2000	ug/kg	100					
Methacrylonitrile	U	0.00	500	1000	ug/kg	100					
Methyl Bromide	U	0.00	100	200	ug/kg	100					
Methyl Chloride	U	0.00	100	200	ug/kg	100					
Methyl Iodide	U	0.00	200	500	ug/kg	100					
Methyl Methacrylate	U	0.00	200	1000	ug/kg	100					
Methylene Chloride	U	0.00	100	500	ug/kg	100					
Propionitrile	U	0.00	1000	2000	ug/kg	100					
Styrene	U	0.00	100	200	ug/kg	100					
Tetrachloroethylene	U	74.0	100	200	ug/kg	100					
Toluene	U	0.00	100	200	ug/kg	100					
Trichloroethylene	U	0.00	100	200	ug/kg	100					
Trichlorofluoromethane	U	0.00	100	200	ug/kg	100					
Vinyl Acetate	U	0.00	500	1000	ug/kg	100					
Vinyl chloride	U	0.00	100	200	ug/kg	100					
Xylenes (TOTAL)	U	0.00	100	200	ug/kg	100					
bis(2-Chloromethylethyl)ether	U	0.00	1000	2000	ug/kg	100					
cis-1,3-Dichloropropylene	U	0.00	100	200	ug/kg	100					
trans-1,3-Dichloropropylene	U	0.00	100	200	ug/kg	100					
trans-1,4-Dichloro-2-butene	U	0.00	100	200	ug/kg	100					

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	APP 9 VOA-8260	121.	(53.5 - 154.)
Dibromofluoromethane	APP 9 VOA-8260	109.	(63.4 - 136.)
Toluene-d8	APP 9 VOA-8260	109.	(72.1 - 137.)

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9712088-15

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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: December 19, 1997

Sample ID : SPORT0578-15

Surrogate Recovery	Test	Percent%	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8260

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

Karen Blakeney
Reviewed By

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NPN0000141

General Engineering [illegible]ies, Inc.
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Charleston, South Carolina 29417
(803) 556-8171

CHAIN OF CUSTODY RECORD

Page 1 of 2

9712088

Client Name/Facility Name: SPORTENVDETCHASN

Collected by/Company: SPORTENVDETCHASN

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 30344

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# 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	RESIDUAL CHLORINE	APP IX VOL	Remarks	
-01	SPORT0578-1	12/2/97	1314		X		X	2																X	X	NBCH0145003604	.1
-02	SPORT0578-2	12/2/97	1326		X		X	2																X	X	NBCH0145003704	.1
-03	SPORT0578-3	12/2/97	1330		X		X	2																X	X	NBCH0145003804	.1
-04	SPORT0578-4	12/2/97	1333		X		X	2																X	X	NBCH0145003904	.1
-05	SPORT0578-5	12/2/97	1336		X		X	2																X	X	NBCH0145004004	.1
-06	SPORT0578-6	12/2/97	1340		X		X	2																X	X	NBCH0145004108 4	.1
-07	SPORT0578-7	12/2/97	1343		X		X	2																X	X	NBCH0145004208 4	.1
-08	SPORT0578-8	12/2/97	1402		X		X	2																X	X	NBCH0145004305	.1
-09	SPORT0578-9	12/2/97	1404		X		X	2																X	X	NBCH0145004405	.1
-10	SPORT0578-10	12/2/97	1407		X		X	2																X	X	NBCH0145004505	.1
-11	SPORT0578-11	12/2/97	1411		X		X	2																X	X	NBCH0145004605	.1
-12	SPORT0578-12	12/2/97	1415		X		X	2																X	X	NBCH0145004705	.1
-13	SPORT0578-13	12/2/97	1419		X		X	2																X	X	NBCH0145004805	.1

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
Alan J Moya	12/2/97	1500	[signature]	[signature]	12/3/97	1510	Stephanie Bedelton
Stephanie Bedelton	12/3/97	1533	Received by lab by: Karen Blakeney	Date: 12/3/97	Time: 1533	Remarks:	

White = sample collector Yellow = file Pink = with report

General Engineering [illegible] les, Inc.
2040 Savage Road
Charleston, South Carolin[illegible] 407
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

CHAIN OF CUSTODY RECORD

Client Name/Facility Name: SPORTENUDETCHASN

Collected by/Company: SPORTENUDETCHASN

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

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# 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	RESIDUAL CHLORINE	APPIX VOA	Remarks	
-14	SPORT0578-14	12/2/97	0922		X		X	1																	X	NBCH014T4900	.2
-15	SPORT0578-15	12/2/97	1419		X		X	1																	X	NBCH014T5005	.2

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
[signature]	12/2/97	1500	[signature]	[signature]	12/3/97	1510	Stephanie Bedeton
Stephanie Bedeton	12/3/97	1533	Karen Blakeney	12/3/97	1533		

Remarks:

White = sample collector Yellow = file Pink = with report

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
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: May 16, 1997

Sample ID	: SPORT0439-1
Lab ID	: 9705309-01
Matrix	: Misc.
Date Collected	: 05/12/97
Date Received	: 05/13/97
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
CMS Library Search-VOA		yes					TCL	05/13/97	1713	102110	
olatile Organics by 8260 - 77 items											
1,1,1-Trichloroethane	U	0.00	10.0	20.0	ug/kg	10.					
1,1,2,2-Tetrachloroethane		480	10.0	20.0	ug/kg	10.					
1,1,2-Trichloroethane	U	0.00	10.0	20.0	ug/kg	10.					
1,1-Dichloroethane	U	0.00	10.0	20.0	ug/kg	10.					
1,1-Dichloroethylene	U	0.00	10.0	20.0	ug/kg	10.					
1,1-Dichloropropene	U	0.00	10.0	20.0	ug/kg	10.					
1,2,3-Trichlorobenzene	U	0.00	10.0	20.0	ug/kg	10.					
1,2,4-Trichlorobenzene	U	0.00	10.0	20.0	ug/kg	10.					
1,2,4-trimethylbenzene	U	0.00	10.0	20.0	ug/kg	10.					
1,2-Dibromo-3-chloropropane	U	0.00	10.0	20.0	ug/kg	10.					
1,2-Dibromoethane	U	0.00	10.0	20.0	ug/kg	10.					
1,2-Dichlorobenzene	U	0.00	10.0	20.0	ug/kg	10.					
1,2-Dichloroethane	U	0.00	10.0	20.0	ug/kg	10.					
1,2-Dichloropropane	U	0.00	10.0	20.0	ug/kg	10.					
1,2-cis-Dichloroethylene		56.1	10.0	20.0	ug/kg	10.					
1,2-trans-Dichloroethylene	U	0.00	10.0	20.0	ug/kg	10.					
1,3,5-trimethylbenzene	U	0.00	10.0	20.0	ug/kg	10.					
1,3-Dichlorobenzene	U	0.00	10.0	20.0	ug/kg	10.					
1,3-Dichloropropane	U	0.00	10.0	20.0	ug/kg	10.					
1,4-Dichlorobenzene	U	0.00	10.0	20.0	ug/kg	10.					
2,2-Dichloropropane	U	0.00	10.0	20.0	ug/kg	10.					
2-Butanone	J	25.0	20.0	50.0	ug/kg	10.					
2-Chloroethylvinyl ether	U	0.00	20.0	50.0	ug/kg	10.					
2-Chlorotoluene	U	0.00	10.0	20.0	ug/kg	10.					
Hexanone	U	0.00	50.0	100	ug/kg	10.					
-Chlorotoluene	U	0.00	10.0	20.0	ug/kg	10.					

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9705309-01

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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: May 16, 1997

Sample ID : SPORT0439-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
4-Methyl-2-pentanone	U	0.00	50.0	100	ug/kg	10.					
Acetone		43400	12500	25000	ug/kg	2500	JEB	05/15/97	1407	102110	1
Acetonitrile	U	15.5	20.0	100	ug/kg	10.	TCL	05/13/97	1713	102110	1
Acrolein	U	0.00	100	200	ug/kg	10.					
Acrylonitrile	U	0.00	50.0	500	ug/kg	10.					
Allyl Chloride	U	0.00	50.0	100	ug/kg	10.					
Benzene	U	0.00	10.0	20.0	ug/kg	10.					
Benzyl Chloride	U	5.10	50.0	100	ug/kg	10.					
3romobenzene	U	0.00	10.0	20.0	ug/kg	10.					
Bromochloromethane	U	0.00	10.0	20.0	ug/kg	10.					
Bromoform	U	0.00	10.0	20.0	ug/kg	10.					
Carbon Disulfide	U	0.00	20.0	50.0	ug/kg	10.					
Carbon Tetrachloride		745	10.0	20.0	ug/kg	10.					
Chlorobenzene	U	7.90	10.0	20.0	ug/kg	10.					
Chlorodibromomethane	U	0.00	10.0	20.0	ug/kg	10.					
Chloroethane	U	0.00	10.0	20.0	ug/kg	10.					
Chloroform		61400	1000	2000	ug/kg	1000	TCL	05/14/97	1325	102110	1
Dibromomethane	U	0.00	10.0	20.0	ug/kg	10.	TCL	05/13/97	1713	102110	1
Dichlorobromomethane		176	10.0	20.0	ug/kg	10.					
Dichlorodifluoromethane	U	0.00	10.0	20.0	ug/kg	10.					
Ethyl methacrylate	U	0.00	50.0	100	ug/kg	10.					
Ethylbenzene	U	0.00	10.0	20.0	ug/kg	10.					
Hexachlorobutadiene	U	10.0	10.0	20.0	ug/kg	10.					
Isobutyl Alcohol	U	0.00	100	200	ug/kg	10.					
Isopropyl benzene	U	0.00	10.0	20.0	ug/kg	10.					
Methacrylonitrile	U	0.00	50.0	100	ug/kg	10.					
Methyl Bromide	U	0.00	10.0	20.0	ug/kg	10.					
Methyl Chloride		52.2	10.0	20.0	ug/kg	10.					
Methyl Iodide	U	0.00	20.0	50.0	ug/kg	10.					
Methyl Methacrylate	U	0.00	20.0	100	ug/kg	10.					
Methylene Chloride	J	41.9	10.0	50.0	ug/kg	10.					
Naphthalene	U	7.50	10.0	20.0	ug/kg	10.					
Pentachloroethane	J	71.5	50.0	100	ug/kg	10.					
opionitrile	U	0.00	100	200	ug/kg	10.					
yrene	U	0.00	10.0	20.0	ug/kg	10.					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8[illegible]
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: May 16, 1997

Sample ID : SPORT0439-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Tetrachloroethylene	J	17.9	10.0	20.0	ug/kg	10.					
Toluene	U	0.00	10.0	20.0	ug/kg	10.	TCL	05/13/97	1713	102110	1
Trichloroethylene		64.9	10.0	20.0	ug/kg	10.					
Trichlorofluoromethane	U	7.00	10.0	20.0	ug/kg	10.					
Vinyl Acetate	U	0.00	50.0	100	ug/kg	10.					
Vinyl chloride	U	0.00	10.0	20.0	ug/kg	10.					
Xylenes (TOTAL)	U	0.00	10.0	20.0	ug/kg	10.					
bis(2-Chloromethylethyl)ether	U	0.00	100	200	ug/kg	10.					
cis-1,3-Dichloropropylene	U	0.00	10.0	20.0	ug/kg	10.					
cis-1,4-Dichloro-2-butene	U	0.00	50.0	100	ug/kg	10.					
n-Butylbenzene	U	0.00	10.0	20.0	ug/kg	10.					
n-propylbenzene	U	0.00	10.0	20.0	ug/kg	10.					
sec-Butylbenzene	U	0.00	10.0	20.0	ug/kg	10.					
tert-Butylbenzene	U	0.00	10.0	20.0	ug/kg	10.					
trans-1,3-Dichloropropylene	U	0.00	10.0	20.0	ug/kg	10.					
trans-1,4-Dichloro-2-butene	U	0.00	10.0	20.0	ug/kg	10.					
Metals Analysis											
ICP Scan for 23 Metals - 23 items											
Aluminum		57.7	0.843	12.3	mg/kg	1.0	JSS	05/14/97	1059	102120	2
Antimony	U	-6.82	1.96	4.90	mg/kg	1.0					
Arsenic	U	-13.9	2.06	14.7	mg/kg	1.0					
Barium	J	0.125	0.108	2.50	mg/kg	1.0					
Beryllium	U	0.00343	0.0147	2.50	mg/kg	1.0					
Cadmium	U	-0.212	0.162	2.50	mg/kg	1.0					
Calcium		80.3	0.343	12.3	mg/kg	1.0					
Chromium	J	0.531	0.206	2.50	mg/kg	1.0					
Cobalt	U	-0.236	0.167	2.50	mg/kg	1.0					
Copper	J	1.01	0.412	2.50	mg/kg	1.0					
Iron		5080	0.441	4.90	mg/kg	1.0					
Lead	U	-0.727	1.78	4.90	mg/kg	1.0					
Magnesium		11.5	1.08	4.90	mg/kg	1.0					
Manganese		4.99	0.123	2.50	mg/kg	1.0					
Nickel	J	0.547	0.387	2.50	mg/kg	1.0					
Potassium	U	7.27	13.3	98.0	mg/kg	1.0					
Selenium	U	-3.76	4.12	14.7	mg/kg	1.0					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8
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: May 16, 1997

Sample ID : SPORT0439-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Silver	U	-0.737	0.382	2.50	mg/kg	1.0					
Sodium	U	-2.51	7.44	49.0	mg/kg	1.0	JSS	05/14/97	1059	102120	2
Thallium	U	0.905	2.30	14.7	mg/kg	1.0					
Tin	U	0.689	1.15	4.90	mg/kg	1.0					
Vanadium	J	0.246	0.206	2.50	mg/kg	1.0					
Zinc	J	0.802	0.103	2.50	mg/kg	1.0					
Mercury	U	-27.6	2.44	33.2	ug/kg	1.0	RMJ	05/14/97	1231	102042	3
General Chemistry											
Chlorine, Residual	U	380000	2500000	2500000	mg/kg	25000	JEN	05/14/97	1230	102135	

The following prep procedures were performed:

ICP	CRB	05/13/97	1530	102120	5
Mercury	CRB	05/13/97	1115	102042	3

Comments:

Please note, 2-methoxyethanol (ethylene glycol monomethyl ether)/ C.A.S.#109864 was not identified in the Volatiles-8260 Library Search.

The sample was received beyond the recommended holding time for the Residual Chlorine analysis.

Surrogate Recovery	Test	Percent%	Acceptable Limits
Bromofluorobenzene	M8260	91.9	(53.3 - 154.)
Dibromofluoromethane	M8260	91.7	(63.4 - 136.)
Toluene-d8	M8260	84.9	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260
M 2	EPA 6010A

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GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
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: May 16, 1997

Sample ID : SPORT0439-1

M = Method	Method-Description
M 3	EPA 7471
M 4	EPA 330.5
M 5	EPA 3050/3005

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

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

Karen Blakeney
Reviewed By

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9705309-01

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9705307

General Engineering Laboratories, Inc.
2040 Savage Road
Charleston, South Carolina 29414
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

Page 1 of ____

CHAIN OF CUSTODY RECORD

— 3 DAY TURNAROUND —

Client Name/Facility Name: SPORT ENV DET CHASN

Collected by/Company: SPORT ENV DET CHASN

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 27189

SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# 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	Remarks
SPORT0439-1	5/12/97	1350				X	1																x	NBCH014V000101
																								white precipitate
																								for Identification
																								check for
																								1) 8260 VOLATILES APPI
																								2) FULL METALS SCAN
																								- T.I.C. for (EGME)
																								3) Residual chlorine
																								4) MERCURY - APP. IX.
																								NOTE: SEE ATTACHED
																								SHEET.

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
W.C. Hinch	5/12/97	1500	[signature]	[signature]	5/13/97	1048	W.R. Hiers, Jr.
Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:	
W.R. Hiers, Jr.	5/13/97	1107	Diane Tran	5/13/97	1107		

White = sample collector Yellow = file Pink = with report

GENERAL ENGINEERING LABORATORIES, INC.

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Fax Transmission Cover Sheet

Date: 5-16-97

To: Mr. Bill Hiers
SUBSHIP

From: Karen Blakeney
(803) 769-7386

Fax Number: 743-9413

FAXED

Total Number of Pages (including this page): 6

Re: Results

COMMENTS

Bill,

The "yes" in the results column for the "GCMS Library Search - VOA" simply means that the Library Search was completed. It does not mean that yes - a compound was identified.

I put a comment on page 4 of the results that explains the specified compound was not identified in the Search

Thanks,
Karen

General Engineering Laboratories, Inc. • POB 30712 • Charleston SC 29417
Phone (803) 556-8171 • Fax (803) 766-1178

SPORTENVDETCHASN (SAMPLE SPORT0439-1)

Unknown sample for identification:

Possible "decontamination agent" found in 5 gallon pails, consisting of two major components:

1. 1,1,2,2-tetrachloroethane (sym-tetrachloroethane) / C.A.S. #79345.

2. 2-methoxyethanol (ethylene glycol monomethyl ether)/ C.A.S. #109864.

1. Check for 8260 GC/MS volatiles, and target identify 2-methoxyethanol (ethylene glycol monomethyl ether). (CLIN 0004AM2)

2. Perform full metals scan. (CLIN 0003AD)

3. Perform residual chlorine test. When unearthed, personnel noted strong "chlorine-type" odor, indicating material may be an inorganic hypochlorite. (CLIN 0001CJ)

4. Perform Mercury-cold vapor (analysis) Appendix IX. (CLIN 0001DZ)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
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: May 28, 1997

Sample ID	: SPORT0449-1
Lab ID	: 9705507-01
Matrix	: Soil
Date Collected	: 05/19/97
Date Received	: 05/20/97
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Volatile Organics											
GCMS Library Search-VOA		yes					JEB	05/21/97	1247	102430	1
Priority Pollutant Volatiles - 34 items											
1,1,1-Trichloroethane	U	0.00	10.0	20.0	ug/kg	10.	JEB	05/21/97	1247	102430	2
1,1,2,2-Tetrachloroethane	U	0.00	10.0	20.0	ug/kg	10.					
1,1,2-Trichloroethane	U	0.00	10.0	20.0	ug/kg	10.					
1,1-Dichloroethane	U	0.00	10.0	20.0	ug/kg	10.					
1,1-Dichloroethylene	U	0.00	10.0	20.0	ug/kg	10.					
1,2-Dichlorobenzene	U	0.00	10.0	20.0	ug/kg	10.					
1,2-Dichloroethane	U	0.00	10.0	20.0	ug/kg	10.					
1,2-Dichloropropane	U	0.00	10.0	20.0	ug/kg	10.					
1,2-trans-Dichloroethylene		22.0	10.0	20.0	ug/kg	10.					
1,3-Dichlorobenzene	U	0.00	10.0	20.0	ug/kg	10.					
1,4-Dichlorobenzene	U	0.00	10.0	20.0	ug/kg	10.					
2-Chloroethylvinyl ether	U	0.00	20.0	50.0	ug/kg	10.					
Acrolein	U	0.00	100	200	ug/kg	10.					
Acrylonitrile	U	0.00	50.0	500	ug/kg	10.					
Benzene	U	0.00	10.0	20.0	ug/kg	10.					
Bromoform	U	0.00	10.0	20.0	ug/kg	10.					
Carbon Tetrachloride	U	0.00	10.0	20.0	ug/kg	10.					
Chlorobenzene	U	0.00	10.0	20.0	ug/kg	10.					
Chlorodibromomethane	U	0.00	10.0	20.0	ug/kg	10.					
Chloroethane	U	0.00	10.0	20.0	ug/kg	10.					
Chloroform		1090	10.0	20.0	ug/kg	10.					
Dichlorobromomethane		35.8	10.0	20.0	ug/kg	10.					
Dichlorodifluoromethane	U	0.00	10.0	20.0	ug/kg	10.					
Ethylbenzene	U	0.00	10.0	20.0	ug/kg	10.					
Methyl Bromide	U	0.00	10.0	20.0	ug/kg	10.					
Methyl Chloride	U	0.00	10.0	20.0	ug/kg	10.					

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87454
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: May 28, 1997

Sample ID : SPORT0449-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Methylene Chloride	J	10.7	10.0	50.0	ug/kg	10.					
Tetrachloroethylene		25.3	10.0	20.0	ug/kg	10.	JEB	05/21/97	1247	102430	2
Toluene	U	0.00	10.0	20.0	ug/kg	10.					
Trichloroethylene		1030	10.0	20.0	ug/kg	10.					
Trichlorofluoromethane	U	4.30	10.0	20.0	ug/kg	10.					
Vinyl chloride	U	0.00	10.0	20.0	ug/kg	10.					
cis-1,3-Dichloropropylene	U	0.00	10.0	20.0	ug/kg	10.					
trans-1,3-Dichloropropylene	U	0.00	10.0	20.0	ug/kg	10.					
Organic Prep											
Evaporative Loss @ 105 C		36.0	1.00	1.00	wt%	1.0	LS	05/21/97	1600	102488	3
Extractable Organics											
GCMS Library Search-B/N		yes					WAM	05/23/97	0010	102495	4
Priority Pollutant B/N Compounds - 59 items											
1,2,4-Trichlorobenzene	U	0.00	164	330	ug/kg	1.0					
1,2-Diphenylhydrazine	U	0.00	164	330	ug/kg	1.0					
2,4-Dinitrotoluene	U	0.00	164	330	ug/kg	1.0					
2,6-Dinitrotoluene	U	0.00	164	330	ug/kg	1.0					
2-Chloronaphthalene	U	0.00	164	330	ug/kg	1.0					
3,3'-Dichlorobenzidine	U	0.00	1640	1650	ug/kg	1.0					
4,4'-DDD	U	0.00	164	330	ug/kg	1.0					
4,4'-DDE	U	0.00	164	330	ug/kg	1.0					
4,4'-DDT	U	0.00	164	330	ug/kg	1.0					
4-Bromophenyl phenyl ether	U	0.00	164	330	ug/kg	1.0					
4-Chlorophenyl phenyl ether	U	0.00	164	330	ug/kg	1.0					
Acenaphthene	U	0.00	164	330	ug/kg	1.0					
Acenaphthylene	U	0.00	164	330	ug/kg	1.0					
Aldrin	U	0.00	164	330	ug/kg	1.0					
Anthracene	U	0.00	164	330	ug/kg	1.0					
Benzidine	U	0.00	1640	1650	ug/kg	1.0					
Benzo(a)anthracene	U	0.00	164	330	ug/kg	1.0					
Benzo(a)pyrene	U	0.00	164	330	ug/kg	1.0					
Benzo(b)fluoranthene		792	327	654	ug/kg	2.0					
Benzo(ghi)perylene	U	0.00	164	330	ug/kg	1.0					
Benzo(k)fluoranthene	U	0.00	164	330	ug/kg	1.0					
Butyl benzyl phthalate	U	0.00	164	330	ug/kg	1.0					

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STATE	GEL	EPI
FL	E87156/87294	E87472/87
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: May 28, 1997

Sample ID : SPORT0449-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Chrysene	U	0.00	164	330	ug/kg	1.0					
Di-n-butyl phthalate	U	0.00	164	330	ug/kg	1.0	WAM	05/23/97	0010	102495	4
Di-n-octyl phthalate	U	0.00	164	330	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	0.00	164	330	ug/kg	1.0					
Dieldrin	U	0.00	164	330	ug/kg	1.0					
Diethyl phthalate	U	0.00	164	330	ug/kg	1.0					
Dimethyl phthalate	U	0.00	164	330	ug/kg	1.0					
Endosulfan I	U	0.00	164	330	ug/kg	1.0					
Endosulfan II	U	0.00	164	330	ug/kg	1.0					
Endosulfan sulfate	U	0.00	164	330	ug/kg	1.0					
Endrin	U	0.00	164	330	ug/kg	1.0					
Endrin aldehyde	U	0.00	327	660	ug/kg	1.0					
Fluoranthene	U	0.00	164	330	ug/kg	1.0					
Fluorene	U	0.00	164	330	ug/kg	1.0					
Heptachlor	U	0.00	164	330	ug/kg	1.0					
Heptachlor epoxide	U	0.00	164	330	ug/kg	1.0					
Hexachlorobenzene	U	0.00	196	330	ug/kg	1.0					
Hexachlorobutadiene	U	0.00	164	330	ug/kg	1.0					
Hexachlorocyclopentadiene	U	0.00	164	330	ug/kg	1.0					
Hexachloroethane	U	0.00	164	330	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	J	435	327	654	ug/kg	2.0					
Isophorone	U	0.00	164	330	ug/kg	1.0					
N-Nitrosodimethylamine	U	0.00	164	330	ug/kg	1.0					
N-Nitrosodiphenylamine	U	0.00	164	330	ug/kg	1.0					
N-Nitrosodipropylamine	U	0.00	164	330	ug/kg	1.0					
Naphthalene	U	0.00	164	330	ug/kg	1.0					
Nitrobenzene	U	0.00	164	330	ug/kg	1.0					
Phenanthrene	U	0.00	164	330	ug/kg	1.0					
Pyrene	U	0.00	164	330	ug/kg	1.0					
alpha-BHC	U	0.00	164	330	ug/kg	1.0					
beta-BHC	U	0.00	164	330	ug/kg	1.0					
bis(2-Chloroethoxy)methane	U	0.00	164	330	ug/kg	1.0					
bis(2-Chloroethyl) ether	U	0.00	164	330	ug/kg	1.0					
bis(2-Chloroisopropyl)ether	U	0.00	164	330	ug/kg	1.0					
bis(2-Ethylhexyl)phthalate	U	0.00	164	330	ug/kg	1.0					

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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: May 28, 1997

Sample ID : SPORT0449-1

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
delta-BHC	U	0.00	164	330	ug/kg	1.0					
gamma-BHC	U	0.00	164	330	ug/kg	1.0	WAM	05/23/97	0010	102495	4

The following prep procedures were performed:

GC/MS Base/Neutral Compounds GWL 05/21/97 1600 102495 3

Comments:

Please see the attached letter for the results from the Library Search.

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	PP B/N	91.4	(30.0 - 115.)
Nitrobenzene-d5	PP B/N	53.4	(23.0 - 120.)
p-Terphenyl-d14	PP B/N	105.	(37.3 - 128.)
Bromofluorobenzene	PP VOA-8260	113.	(53.5 - 154.)
Dibromofluoromethane	PP VOA-8260	91.4	(63.4 - 136.)
Toluene-d8	PP VOA-8260	93.4	(72.1 - 137.)

M = Method	Method-Description
M 1	EPA 8260 extended
M 2	EPA 8260
M 3	EPA 3550
M 4	EPA 8270

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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: May 28, 1997

Sample ID : SPORT0449-1

M = Method	Method-Description

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.

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

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

Karen Blakeney
Reviewed By

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Charleston, South Carolina 29417
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Page 1 of 1

— 3 DAY TURNAROUND —

Client Name/Facility Name: SPORTENVDETCHASN

Collected by/Company: SPORTENVDETCHASN

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

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# 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	Preservative Type	Prior Lab Appr.	Prior Lab Appr.	Remarks
01	SPORT0449-1	5/17/97	1310		X	X		1																	X	X	NBCH0145000203
																											NOTE: (SEE ATTACHED PAGE)
																											TARGET IDENTIFY-
																											1) 1,1,2,2-TETRA-
																											CHLOROETHANE [C.A.S#
																											79345] WRH
																											2) 2-METHOXYETHANOL
																											[C.A.S. # 109864]
																											3) 1,3-DICHLORO-5,5-
																											DIMETHYLHYDANTOIN
																											[C.A.S.# 118525]

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
Heather A. [illegible]	5/19/97	1540	[illegible]	[illegible]	5/20/97	1545	[illegible]

Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:
[illegible] R. Moll	5/20/97	15:20	[illegible]	5/20/97	1520	

White = sample collector Yellow = file Pink = with report

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

May 28, 1997

Mr. Bill Hiers
SUPSHIP-Portsmouth Detachment
1899 North Hobson Avenue
North Charleston, S.C. 29405-2106

Dear Mr. Hiers:

When conducting a Tentatively Identified Compound (TIC) Library Search, General Engineering Laboratories searches for the ten highest peaks in each targeted fraction (acid, base/neutral, and volatile) of the sample. A TIC is reported only when the area count is at least ten percent of the relative internal standard area count and when the reference mass spectrum has a Probability Base Matching (PBM) value of at least eighty percent to the suspected target.

GEL also examines the relative intensities of major ions. Our guidelines suggest that relative intensities of the major ions, which are classified as being greater than ten percent in the reference spectrum, should agree within plus or minus twenty percent of the intensities in the reference spectrum. The mass spectral reference library contains over 75,000 compounds.

Less than ten compounds for each fraction may be reported when performing a TIC. Often, peaks do not meet the guidelines mentioned above. These peaks are often attributed to electronic noise or unidentified compounds. In cases where a complete library search identifies a compound in both volatile and semi-volatile fractions, it will be reported as a TIC in only one group.

As its name suggests, Tentatively Identified Compounds are merely estimated in identification and quantitation. In order to positively identify these compounds, they would have to be compared to pure reference standard material. This would ensure gas chromatographic retention times, mass spectra, instrument response, and isomer possibilities. Since true response factors used for quantifications are calculated from known standards, we have done estimated concentrations using a response factor of one.

SUPSHIP's sample 9705507-01 (Sport0449-1) was analyzed for the volatile and base/neutral fractions in our TIC library. Results are as follows:

Volatile

COMPOUND	ESTIMATED CONCENTRATION
none	

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Base/Neutral

COMPOUND	ESTIMATED CONCENTRATION	CAS #
Toluene	712 ppb	108-88-3
Eicosane	508 ppb	112-95-8
Docosane	758 ppb	629-97-0
11-decyl-Heneicosane	1280 ppb	55320-06-4
Heptadecane	514 ppb	629-78-7
1,3-Dichloro-5,5-dimethylhydantion **	529 ppb	118-52-5

** Probability Base Match of 64%

Thank you for allowing General Engineering Laboratories to assist you with this project. Please call me if you have any questions.

Yours very truly,

Karen Blakeney

Karen Blakeney

NPWC00197.052897

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SPORTENVDETCHASN (SAMPLE SPORT0449-1)

Unknown sample for identification:

Possible "decontamination agent" found in 5 gallon pails, possibly consisting of two major components:

1. 1,1,2,2-tetrachloroethane (sym-tetrachloroethane) / C.A.S. #79345.

2. 2-methoxyethanol (ethylene glycol monomethyl ether)/ C.A.S. #109864.

1. Check for 8260 GC/MS Volatile Compounds, and target identify 2-methoxyethanol (ethylene glycol monomethyl ether). (CLIN 0004AM2)

2. Check for 8270 GC/MS Base/ Neutral compounds, and target identify 1,3-dichloro-5,5-dimethylhydantoin / C.A.S. #118525. (CLIN 0004AM8)

NOTE: Similar testing performed on SPORT0439-1 (LAB ID 9705309).

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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 10, 1997

Sample ID	: SPORT0473-1
Lab ID	: 9707076-01
Matrix	: Misc.
Date Collected	: 07/02/97
Date Received	: 07/03/97
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Oxidizer, reaction as	Negative as an oxidizer.						JEN	07/09/97	1130	104635	1
Chlorine, Residual	U	0.280	10.0	10.0	mg/kg	1.0	TSM	07/07/97	1030	104483	2

Comments:
This sample was received beyond the recommended holding time for Residual Chlorine.

M = Method	Method-Description
M 1	GEL Method
M 2	EPA 330.5

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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9707076-01

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874[illegible]
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 10, 1997

Sample ID : SPORT0473-1

M = Method	Method-Description

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

Karen Blakeney
Reviewed By

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STATE	GEL	EPA
FL	E87156/87294	E87472/874.
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 10, 1997

Sample ID	: SPORT0473-2
Lab ID	: 9707076-02
Matrix	: Misc.
Date Collected	: 07/02/97
Date Received	: 07/03/97
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Oxidizer, reaction as	Negative as an oxidizer.						JEN	07/09/97	1130	104635	1
Chlorine, Residual	U	0.550	50.0	50.0	mg/kg	5.0	TSM	07/07/97	1030	104483	2

Comments:
This sample was received beyond the recommended holding time for Residual Chlorine.

M = Method	Method-Description
M 1	GEL Method
M 2	EPA 330.5

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	E87472/874
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 10, 1997

Sample ID : SPORT0473-2

M = Method	Method-Description

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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Laboratory Certifications

STATE	GEL	BPI
FL	E87156/87294	E87472/87458
NC	253	
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 10, 1997 |

Sample ID	: SPORT0473-3
Lab ID	: 9707076-03
Matrix	: Misc.
Date Collected	: 07/02/97
Date Received	: 07/03/97
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Oxidizer, reaction as	Negative as an oxidizer.						JEN	07/09/97	1130	104635	1
Chlorine, Residual	U	2.00	50.0	50.0	mg/kg	5.0	TSM	07/07/97	1030	104483	2

Comments:
This sample was received beyond the recommended holding time for Residual Chlorine.

M = Method	Method-Description
M 1	GEL Method
M 2	EPA 330.5

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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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

oo: NPWC00197 Report Date: July 10, 1997

Sample ID	: SPORT0473-3

M = Method	Method-Description

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

Karen Blakeney

Reviewed By

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2040 Savage Road
Charleston, South Carolina 29414
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

Client Name/Facility Name: SPORTENVDETCHASN

Collected by/Company: SPORTENVDETCHASN

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 ~~27926~~ 27927

	SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# 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	CHLORINE	OXIDIZER	Remarks	
01	SPORTO423-1	7/2/97	14:53		X	X		2																X	X	7155 HH01	.1
02	SPORTO423-2	7/2/97	14:45		X	X		2																X	X	7163 HH01	.1
03	SPORTO423-3	7/2/97	14:59		X	X		2																X	X	7157 HH01	.1

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
[illegible]	7/2/97	15:39	W.R. Hess, Jr.	W.R. Hess, Jr.	7/3/97	1134	Catharine Hall

Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:
Catharine Hall	7/3/97	13:00	Dawn Blakeney	7/3/97	1300	

White = sample collector Yellow = file Pink = with report

APPENDIX F

WASTE

DOCUMENTATION

ORDER FOR SUPPLIES OR SERVICES

(Contractor must submit four copies of invoice.) POR

Form Approved OMB No. 0704-0187 Expires Oct 31, 1993

PAGE 1 OF 2

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0187), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR FORM TO EITHER OF THESE ADDRESSES.
SEND YOUR COMPLETED FORM TO THE PROCUREMENT OFFICIAL IDENTIFIED IN ITEM 6.

1. CONTRACT/PURCH ORDER NO.: SP440096D0020-
2. DELIVERY ORDER NO.: 0099
3. DATE OF ORDER (YYMMMDD): 97 NOV 24
4. REQUISITION/PURCH REQUEST NO.: 73256374
5. PRIORITY:

6. ISSUED BY: CODE 03DRMR
DEF REUT & MKT SVC/DRMS-PME
926 TAYLOR STA RD/PO 0533
BLACKLICK OH 43004-0533

7. ADMINISTERED BY (If other than 6): CODE

8. DELIVERY FOB: [X] DEST [ ] OTHER (See Schedule if other)

9. CONTRACTOR: CODE ORY55 FACILITY CODE
NAME AND ADDRESS
*CSI ENVIRONMENTAL INC
5778 WEST 74TH ST.
INDIANAPOLIS IN 46278

10. DELIVER TO FOB POINT BY (Date) (YYMMMDD): 97 DEC 26
11. MARK OF BUSINESS IS: [X] SMALL [ ] SMALL DISADVANTAGED [ ] WOMEN-OWNED
12. DISCOUNT TERMS
13. MAIL INVOICES TO: SEE BLOCK 15

14. SHIP TO: SP440096D0020-0099 CODE
SEE SCHEDULE

15. PAYMENT WILL BE MADE BY: CODE S33181
DEFENSE FINANCE & ACCOUNTING
ATTN DFAS-CO-LC
P. O. BOX 369016
COLUMBUS OH 43236-9016

MARK ALL PACKAGES AND PAPERS WITH CONTRACT OR ORDER NUMBER

16. TYPE OF ORDER: DELIVER [X] This delivery order is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract.
PURCHASE [ ] Reference your ____ Furnish the following on terms specified herein.

ACCEPTANCE. THE CONTRACTOR HEREBY ACCEPTS THE OFFER REPRESENTED BY THE NUMBERED PURCHASE ORDER AS IT MAY PREVIOUSLY HAVE BEEN OR IS NOW MODIFIED, SUBJECT TO ALL OF THE TERMS AND CONDITIONS SET FORTH, AND AGREES TO PERFORM THE SAME.

NAME OF CONTRACTOR | SIGNATURE | TYPED NAME AND TITLE | DATE SIGNED (YYMMMDD)

[ ] If this box is marked, supplier must sign acceptance and return the following number of copies:

ACCOUNTING AND APPROPRIATION DATA/LOCAL USE

01 97X4930 5NR0 001 P900 25 S33181 97500.00

18. ITEM NO.	19. SCHEDULE OF SUPPLIES/SERVICES	20. QUANTITY ORDERED/ACCEPTED*	21. UNIT	22. UNIT PRICE	23. AMOUNT
0001	DOCUMENT NOUN DTID ACC 73256374 RQ WASTE OX N645047318HH01 01 910700 RQ WASTE OXIDIZING SOLID N.O.S. <SOIL> D001, D040, U209 SOIL FROM SWMU-14 PICKUP ADDR <N64504> SPVR SHIPBLDG CONV REPAIR PRTSMTH VA ENVIR DET CHAS 1899 N HOBSON AVE BLDG 30 N CHARLESTON SC 29408-2160	390000 446,000	LB	.25000	97500.00
EPA WASTE CODE D001/D040/D209	UD QTY PICKED UP 446000		UD UNIT OF ISSUE LBS		
PICK UP MANIFEST ____	LINE CODE ____		PICK UP DATE 12/1/97		

* If quantity accepted by the Government is same as quantity ordered, indicate by X. If different, enter actual quantity accepted below quantity ordered and encircle.

24. UNITED STATES OF AMERICA
BY: CONTRACTING OFFICER / CONTRACTING/ORDERING OFFICER

25. TOTAL: 97500.00
26. DIFFERENCE

27. INSPECTED [ ] RECEIVED [ ] ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED
DATE | SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE

28. QUANTITY IN COLUMN 20 HAS BEEN
29. SHIP. NO. [ ] PARTIAL [ ] FINAL
30. INITIALS
31. PAYMENT [ ] COMPLETE [ ] PARTIAL [ ] FINAL
32. PAID BY
33. AMOUNT VERIFIED CORRECT FOR
34. CERTIFY this amount is correct and proper for payment.
DATE | SIGNATURE AND TITLE OF CERTIFYING OFFICER
35. CHECK NUMBER
36. BILL OF LADING NO.

37. RECEIVED AT | 38. RECEIVED BY (Print) | 39. DATE RECEIVED (YYMMMDD) | 40. TOTAL CONTAINERS | 41. S/R ACCOUNT NUMBER | 42. S/R VOUCHER NO.

DD FORM 1155, APR 93 (EF) PREVIOUS EDITION MAY BE USED.

continuation sheet p

REFERENCE NO. OF DOCUMENT BEING CONTINUED: SP440096D0020-0099

PAGE 2 OF PAGES

OF OFFEROR OR CONTRACTOR: CSI ENVIRONMENTAL INC

ITEM NO.	SUPLIES / SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
CLIN	ACC DOCUMENT NOUN DTID				
	DRMO JACKSON, COR: DAVID ISENBARGER, DOR: R065				
	PROMPT PAYMENT <MAR 1994> FAR 52.232-25				

AUTH TRANSPORTER NAME Robbie D. Wood Inc AUTH TRANSPORTER EPA # AID 067138891

AUTH TSDF NAME Michigan Disposal AUTH TSDF EPA # MID 000724831

TRANSPORTER SIGNATURE _____ CONTRACTOR SIGNATURE Joseph Alabere

AUTH COR SIGNATURE [signature]

Manifest Numbers: MI 4093445/13279
MI 4093454/13280
MI 4093453/13281
MI 4093452/13282
MI 4093450/13283
MI 4093449/13284
MI 4093448/13285
MI 4093447/13286
MI 4093446/13287
MI 4093451/13288

DELIVERY ORDER NUMBER: 0077

Item #	BOSS DOC. NO.	DTID NO.	CHANGE CLIN FROM	CHANGE CLIN TO	CHANGE QTY FROM	CHANGE QTY TO	UNIT PRICE CHANGE FROM	UNIT PRICE CHANGE TO	REASON FOR CHANGE	AGREE DISAGREE
1	73256374	N64504 7318NHD1			390,000	446,000			MIS CALULATED WEIGHT	A

Contractor Signature [signature] Generator Signature _____ C.O.R. Signature [signature]

DATE: 12/3/97 DATE: _____ DATE: 12/3/97

Delivery Order Cost Increase By $14,000. Delivery Order Cost Decrease By _____

Per Telecon _____ and _____ Modification in place (signed by approving authority)

C.O.R. authorized to release truck, DATE: _____ TIME: _____

Above changes in place prior to scheduled removal date of Delivery Order.

DATE 12/1/97

TRUCK LOAD	WEIGHT EMPTY	WEIGHT FULL	MANIFEST NUMBER		
1. 137/612	32,600	79,400		46,800	
2. 119/623	31,500	73260		41,760	
3. 117/617	30,480	76460		45,980	
4. 133/614	31,020	75,680		44,660	
5. 32/738	32,800	75,980		43,180	
6. 115/594	29,540	73,140		43,600	265,980
7. 48/598	30,220	72,900		42680	308660
8. MW102	31620	70860		39,240	347,900
9.	28660	79640		50980	
10.	29660	76780		47120	

Total 446,000# +56,000 mod

7835HH01 DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Act 64, P.A. 1979, as amended and Act 136, P.A. 1969.

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

print or type. SP4400-96-D-0020 DO99

Form Approved. OMB No. 2050-0039 · Expires 9-30

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. S C 0 1 7 0 0 2 2 5 6 0 — Manifest Document No. 3 2 7 4

2. Page 1 of 1

Information in the shaded area is not required by Federal law.

3. Generator's Name and Mailing Address
South Div., NAVFAC Eng. Corp.
Caretaker Site Office
P.O. Box 190010
Charleston, SC 29405

4. Generator's Phone (803-743-9985 X33

A. State Manifest Document Number: MI 4093445

B. State Generator's ID

5. Transporter 1 Company Name: Robbie D. Wood, Inc.

6. US EPA ID Number: A L D 0 6 7 1 3 8 8 9 1

C. State Transporter's ID: 40087

D. Transporter's Phone: 205-744-8440

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Michigan Disposal
49350 N 1-94 Service Drive
Belleville, MI 48111

10. US EPA ID Number: H I D 0 0 0 7 2 4 8 3 1

G. State Facility's ID

H. Facility's Phone: 800-592-5489

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	X	RQ Waste Oxidizing Solid, n.o.s., (1,1,2,2-Tetrachloroethane/ Trichloroethylene) 5.1, UN1479, PG II (D001/D040/U209)	001	CM	7940	P	D001	H
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above
a APP# 102153 ERG# 140 ALSO:D040/U209
b APP# ERG# Load wt: 46,800#
c APP# ERG#
d APP# ERG# TRAILER # 612

K. Handling Codes for Wastes Listed Above
a M141 b
c d

a/ / b/ / c/ / d/ / /

15. Special Handling Instructions and Additional Information Mail signed ORIGINALS to Generator, COPIES to CSI Environmental, Inc., 5778 W 74th St., Indianapolis, IN 46278. CSI 24 Hour Emergency #803-696-7958

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.

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.

GENERATOR

Printed/Typed Name: RICHARD G. NIELSON — Signature — Date: Month 12 Day 01 Year 97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Gerald T. Swann — Signature — Date: Month 12 Day 01 Year 97

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space

FACILITY

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name — Signature — Date: Month Day Year

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER 1-800-424-8802 24 HOURS PER DAY.

CSI Environmental, Inc.

SUPPLEMENTAL DOCUMENT TO BLOCK J SP4400-96-D-0020

MANIFEST # NI4093445/1327 D.O. 99

MANIFEST LINE #	LINE ITEM	CLIN	D.O. #	ITEM DESCRIPTION	# OF CONTAINERS	VOLUME/ WEIGHT
11A	1		94	Waste Oxidizing Soil	1 CM	46,800

UNIVERSAL EQ CERTIFICATION (1/97)

LAND DISPOSAL RESTRICTION FORM
SUBPART CC WASTE DETERMINATION CERTIFICATION AND SURCHARGE EXEMPTION NOTIFICATION

Michigan Disposal Waste Treatment Plant	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489	Fx:800-592-5329
Wayne Disposal, Inc.	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489	Fx:800-592-5329
Michigan Recovery Systems, Inc.	36345 Van Born Rd. Romulus, MI 48174	Ph: 800-521-0998	Fx:313-326-5670

Please Check One: X MDWTP ____ WDI ____ MRSI

Generator Name South Div., NAVFAC, Cooperative Site Manifest Doc. No./Approval #/T# ____

Generator Address Charleston Naval Complex, 1690 Turnbull, Suite NH51, Charleston, SC 29405

Generator USEPA ID No. SC6170022560 State Manifest No. ____

INSTRUCTIONS

- In Column 1 identify all USEPA hazardous waste codes that apply to this waste approval/shipment in the spaces provided below.
- In Column 2, identify the appropriate treatability group for each waste code: Non-Wastewater (NWW) or Wastewater (WW).
- In Column 3, in accordance with Subpart CC identify whether or not your waste contains >500 ppmw VOC (YES or NO), as identified as CCVOC in Attachment 1.
- In Column 4, enter the appropriate Subcategory, (See 268.40), if applicable, and also enter "Debris" if the waste is debris that will be treated using one of the alternative treatment technologies provided by 268.45.

  In Column 5, reference the appropriate paragraph(s) from Page 2 and 3 of this form. If your waste is surcharge exempt, please fill out paragraph N (On page 3).
- To expedite your approval, specify the concentration level of each constituent identified in your waste stream on Attachment 1. When shipping your waste, transfer the appropriate Reference Number(s) from Table 1 to Column 6 below, concentration data does not need to be entered in Attachment 1. [If the waste is a California List Waste, complete the boxes below appropriately and identify (in Column 6) the Reference Number(s) of the appropriate California List constituent(s) found in Attachment 1, Table 3.]

MAIN LINE ITEM #	1. HAZARDOUS WASTE CODE(S)	2. NWW or WW	3. SUBPART CC YES/NO	4. SUBCATEGORY	5. HOW MUST THE WASTE BE MANAGED?	6. REFERENCE NUMBER(S)
11.A	D001 D040 D209	NWW	NO	HgRTDC	A	Oxidizer/81, 190
11.B						
11.C						
11.D						

I hereby certify that all information submitted on this and all associated documents is complete and accurate to the best of my knowledge and information.

enerator Signature Original Signed by Generator Title ____

Printed Name ____ Date 2/1/97

7335HH02 DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Act 64, P.A. 1979, as amended and Act 136, P.A. 1969.

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

Print or type. SP4400-96-D-0020 D099

Form Approved. OMB No. 2050-0039 Expires 9-30-96

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. SC017002256 Manifest Document No. 032810

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
South Div., NAVFAC Eng. Corp.
Caretaker Site Office
P.O. Box 190010
Charleston, SC 29405

4. Generator's Phone (803-743-9985 X 33

A. State Manifest Document Number MI 4093454

B. State Generator's ID

5. Transporter 1 Company Name
Robbie D. Wood, Inc.

6. US EPA ID Number ATD067138891

C. State Transporter's ID 40067

D. Transporter's Phone 205-744-8440

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Michigan Disposal
49350 N 1-94 Service Drive
Belleville, MI 48111

10. US EPA ID Number MID000724831

G. State Facility's ID

H. Facility's Phone 800-592-5489

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	RQ, Waste Oxidizing Solid, n.o.s., (1,1,2,2-Tetrachloroethane/ Trichloroethylene) 5.1, UN1479, PG II (D001/D040/U209)	X	001	CN	7326	P	D001	H
b.								
c.								

J. Additional Descriptions for Materials Listed Above
a. APP# 162133 ERG# 140 ALSO:D040/U209
b. APP# ERG# Load wt: 41,760
c. APP# ERG#
d. APP# ERG# TRAILER # 623

K. Handling Codes for Wastes Listed Above
a M141 b
c d

a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information Mail signed ORIGINALS to Generator, COPIES to CSI Environmental, Inc., 5778 W 74th St., Indianapolis, IN 46278. CSI 24 Hour Emergency #803-696-7958

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.

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.

GENERATOR

Printed/Typed Name: RICHARD G. NIELSON
Signature:
Date: Month 12 Day 01 Year 97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: PAUL COX
Signature:
Date: Month 12 Day 01 Year 97

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

19. Discrepancy Indication Space

FACILITY

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name
Signature
Date: Month Day Year

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, BY CONTACTING AN ON DUTY OR OFFICE AT DEPARTMENT OF NATURAL RESOURCES AT 1-800-292-4706 OR 1-800-424-8802 24 HOURS PER DAY.

CSI Environmental, Inc.

SP4400-96-D-0020

SUPPLEMENTAL DOCUMENT TO BLOCK J

MANIFEST # NJ4093454/13280 D.O. 99

MANIFEST LINE #	LINE ITEM	CLIN	D.O. #	ITEM DESCRIPTION	# OF CONTAINERS	VOLUME/ WEIGHT
11A	1		94	Waste Oxidizing Soil	1 CM	41,760

UNIVERSAL EQ CERTIFICATION (1/97)

LAND DISPOSAL RESTRICTION FORM

SUBPART CC WASTE DETERMINATION CERTIFICATION AND SURCHARGE EXEMPTION NOTIFICATION

Michigan Disposal Waste Treatment Plant	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489 Fx:800-592-5329
Wayne Disposal, Inc.	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489 Fx:800-592-5329
Michigan Recovery Systems, Inc.	36345 Van Born Rd. Romulus, MI 48174	Ph: 800-521-0998 Fx:313-326-5670

Please Check One: X MDWTP _____ WDI _____ MRSI

Generator Name South Div., NAVFAC, Cooktown Site Manifest Doc. No./Approval #/T# _____

Generator Address Charleston Naval Complex, 1690 Turnbull, Suite NH-51, Charleston, SC 29405

Generator USEPA ID No. SC6170022560 State Manifest No. _____

INSTRUCTIONS

- In Column 1 identify all USEPA hazardous waste codes that apply to this waste approval/shipment in the spaces provided below.
- In Column 2, identify the appropriate treatability group for each waste code: Non-Wastewater (NWW) or Wastewater (WW).
- In Column 3, in accordance with Subpart CC identify whether or not your waste contains >500 ppmw VOC (YES or NO), as identified as CCVOC in Attachment 1.
- In Column 4, enter the appropriate Subcategory, (See 268.40), if applicable, and also enter "Debris" if the waste is debris that will be treated using one of the alternative treatment technologies provided by 268.45.

  In Column 5, reference the appropriate paragraph(s) from Page 2 and 3 of this form. If your waste is surcharge exempt, please fill out paragraph N (On page 3).
- To expedite your approval, specify the concentration level of each constituent identified in your waste stream on Attachment 1. When shipping your waste, transfer the appropriate Reference Number(s) from Table 1 to Column 6 below, concentration data does not need to be entered in Attachment 1. [If the waste is a California List Waste, complete the boxes below appropriately and identify (in Column 6) the Reference Number(s) of the appropriate California List constituent(s) found in Attachment 1, Table 3.]

MAIN LINE ITEM #	1. HAZARDOUS WASTE CODE(S)	2. NWW or WW	3. SUBPART CC YES/NO	4. SUBCATEGORY	5. HOW MUST THE WASTE BE MANAGED?	6. REFERENCE NUMBER(S)
11.A	D001 D040 D209	NWW	NO	Hg NTOC	A	Oxidizer, 181, 190
11.B						
11.C						
11.D						

I hereby certify that all information submitted on this and all associated documents is complete and accurate to the best of my knowledge and information.

Generator Signature Originals Signed by Generator Title _____

Printed Name _____ Date _____

7335 HH03

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

SP4400-96-D-0020 DO09

DO NOT WRITE IN THIS SPACE

ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Act 64, P.A. 1979, as amended and Act 136, P.A. 1969.

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

Print or type.

Form Approved. OMB No. 2050-0039 Expires 9-

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. S 0 0 1 7 0 0 2 2 5 6 0 — Manifest Document No. 1 3 2 8 1

2. Page 1 of 1

Information in the shaded area is not required by Federal law.

3. Generator's Name and Mailing Address: South Div., NAVFAC Eng. Corp. Caretaker Site Office, P.O. Box 190010, Charleston, SC 29405

4. Generator's Phone (803-743-9985 X33)

A. State Manifest Document Number: MI 4093453

B. State Generator's ID

5. Transporter 1 Company Name: Robbie D. Wood, Inc.

6. US EPA ID Number: A L D 0 6 7 1 3 8 8 9 1

C. State Transporter's ID: 40087

D. Transporter's Phone: 205-744-8440

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address: Michigan Disposal, 49350 N I-94 Service Drive, Belleville, MI 48111

10. US EPA ID Number: M I D 0 0 0 7 2 4 8 3 1

G. State Facility's ID

H. Facility's Phone: 800-592-5489

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	RQ, Waste Oxidizing Solid, n.o.s., (1,1,2,2-Tetrachloroethane/ Trichloroethylene) 5.1, UN1479, PG II (D001/D040/U209)	X	001	CM	75680	P	D001	H
b.								
c.								

GENERATOR

J. Additional Descriptions for Materials Listed Above

a APP# 102153 ERG# 140 ALSO: D040/U209

b APP# ERG# Load Wt: 44,660#

c APP# ERG#

d APP# ERG# TRAILER # 614

K. Handling Codes for Wastes Listed Above: a. M141 b. c. d.

a/ / b/ / c/ / d/ /

15. Special Handling Instructions and Additional Information: Mail signed ORIGINALS to Generator, COPIES to CSI Environmental, Inc., 5778 W 74th St., Indianapolis, IN 46278. CSI 24 Hour Emergency #803-696-7958

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Printed/Typed Name: RICHARD G. NIELSON — Signature — Date: Month 12 Day 01 Year 97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Rodney Glenn — Signature — Date: Month 12 Day 01 Year 97

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

19. Discrepancy Indication Space

FACILITY

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name — Signature — Date: Month Day Year

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER 1-800-424-8802 24 HOURS PER DAY.

CSI Environmental, Inc.

SP 440096-D-0020

SUPPLEMENTAL DOCUMENT TO BLOCK J

MANIFEST # NT4093453 13281 D.O. 99

MANIFEST LINE #	LINE ITEM	CLIN	D.O. #	ITEM DESCRIPTION	# OF CONTAINERS	VOLUME/ WEIGHT
11A	1		99	Waste Oxidizing Soil	1 CM	44,660

UNIVERSAL EQ CERTIFICATION (1/97)

LAND DISPOSAL RESTRICTION FORM

SUBPART CC WASTE DETERMINATION CERTIFICATION AND SURCHARGE EXEMPTION NOTIFICATION

Michigan Disposal Waste Treatment Plant	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489	Fx:800-592-5329
Wayne Disposal, Inc.	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489	Fx:800-592-5329
Michigan Recovery Systems, Inc.	36345 Van Born Rd. Romulus, MI 48174	Ph: 800-521-0998	Fx:313-326-5670

Please Check One: X MDWTP ____ WDI ____ MRSI

Generator Name South Div., NAVFAC, Carletaken Site Manifest Doc. No./Approval #/T# ____

Generator Address Charleston Naval Complex, 1690 Turnbull, Suite NH-51, Charleston, SC 29405

Generator USEPA ID No. SC0170022560 State Manifest No. ____

INSTRUCTIONS

- In Column 1 identify all USEPA hazardous waste codes that apply to this waste approval/shipment in the spaces provided below.
- In Column 2, identify the appropriate treatability group for each waste code: Non-Wastewater (NWW) or Wastewater (WW).
- In Column 3, in accordance with Subpart CC identify whether or not your waste contains >500 ppmw VOC (YES or NO), as identified as CCVOC in Attachment 1.
- In Column 4, enter the appropriate Subcategory, (See 268.40), if applicable, and also enter "Debris" if the waste is debris that will be treated using one of the alternative treatment technologies provided by 268.45.

  In Column 5, reference the appropriate paragraph(s) from Page 2 and 3 of this form. If your waste is surcharge exempt, please fill out paragraph N (On page 3).
- To expedite your approval, specify the concentration level of each constituent identified in your waste stream on Attachment 1. When shipping your waste, transfer the appropriate Reference Number(s) from Table 1 to Column 6 below, concentration data does not need to be entered in Attachment 1. [If the waste is a California List Waste, complete the boxes below appropriately and identify (in Column 6) the Reference Number(s) of the appropriate California List constituent(s) found in Attachment 1, Table 3.]

MAIN LINE ITEM #	1. HAZARDOUS WASTE CODE(S)	2. NWW or WW	3. SUBPART CC YES/NO	4. SUBCATEGORY	5. HOW MUST THE WASTE BE MANAGED?	6. REFERENCE NUMBER(S)
11.A	D001 D040 D209	NWW	NO	High TOC	A	Oxidizer, 181, 190
11.B						
11.C						
11.D						

I hereby certify that all information submitted on this and all associated documents is complete and accurate to the best of my knowledge and information.

Generator Signature Originals Signed by Generator Title ____

Printed Name ____ Date 2/1/97

© 1997 EQ - The Environmental Quality Co...

7335HH04

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE

ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Act 64, P.A. 1979, as amended and Act 136, P.A. 1969.

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

Print or type. SP4400-96-D-0020 DO99

Form Approved. OMB No. 2050-0039 Expires 9-30-96

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. SC017002256 0 Manifest Document No. 13282

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: South Div., NAVFAC Eng. Corp. Caretaker Site Office P.O. Box 190010 Charleston, SC 29405

4. Generator's Phone (803-743-9985 X33)

A. State Manifest Document Number: MI 4093452

B. State Generator's ID:

5. Transporter 1 Company Name: Robbie D. Wood, Inc.

6. US EPA ID Number: ALD067138891

C. State Transporter's ID: 40067

D. Transporter's Phone: 205-744-8440

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address: Michigan Disposal 49350 N 1-94 Service Drive Belleville, MI 48111

10. US EPA ID Number: MID000724831

G. State Facility's ID:

H. Facility's Phone: 800-592-5489

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a. X	RQ, Waste Oxidizing Solid, n.o.s., (1,1,2,2-Tetrachloroethane/ Trichloroethylene) 5.1, UN1479, PG II (D001/D040/U209)	001	CM	76400	P	D001	H
b.							
c.							

J. Additional Descriptions for Materials Listed Above

a APP# 102153 ERG# 140 ALSO:D040/U209

b APP# ERG#

c APP# ERG# Load wt: 45,980#

d APP# ERG# Tr #617

K. Handling Codes for Wastes Listed Above

a M141 b

c d

a/ /

b/ /

c/ /

d/ /

15. Special Handling Instructions and Additional Information Mail signed ORIGINALS to Generator, COPIES to CSI Environmental, Inc., 5778 W 74th St., Indianapolis, IN 46278. CSI 24 Hour Emergency #803-696-7958

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.

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: RICHARD G. NIELSON

Signature: Richard G. Nielson

Date: Month Day Year 12 01 97

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Joseph W. Fowler

Signature: Joseph W. Fowler

Date: Month Day Year 12 01 97

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name:

Signature:

Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name:

Signature:

Date: Month Day Year

GENERATOR

TRANSPORTER

FACILITY

CENTER 1-800-424-8802 24 HOURS PER DAY.

CSI Environmental, Inc.

SP 4400-96-D-0020

SUPPLEMENTAL DOCUMENT TO BLOCK J

MANIFEST # MI409345 2 13282 D.O. 99

MANIFEST LINE #	LINE ITEM	CLIN	D.O. #	ITEM DESCRIPTION	# OF CONTAINERS	VOLUME/ WEIGHT
11A	1		94	Waste Oxidizing Soil	1 CM	45980

UNIVERSAL EQ CERTIFICATION (1/97)

LAND DISPOSAL RESTRICTION FORM

SUBPART CC WASTE DETERMINATION CERTIFICATION AND SURCHARGE EXEMPTION NOTIFICATION

Michigan Disposal Waste Treatment Plant	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489 Fx:800-592-5329
Wayne Disposal, Inc.	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489 Fx:800-592-5329
Michigan Recovery Systems, Inc.	36345 Van Born Rd. Romulus, MI 48174	Ph: 800-521-0998 Fx:313-326-5670

Please Check One: _X_ MDWTP ____ WDI ____ MRSI

Generator Name South Div., NAVFAC, Carletaken Site Manifest Doc. No./Approval #/T#____

Generator Address Charleston Naval Complex, 1690 Turnbull, Suite NH-51, Charleston, SC 29405

Generator USEPA ID No. SC0170022560 State Manifest No.____

INSTRUCTIONS

- In Column 1 identify all USEPA hazardous waste codes that apply to this waste approval/shipment in the spaces provided below.
- In Column 2, identify the appropriate treatability group for each waste code: Non-Wastewater (NWW) or Wastewater (WW).
- In Column 3, in accordance with Subpart CC identify whether or not your waste contains >500 ppmw VOC (YES or NO), as identified as CCVOC in Attachment 1.
- In Column 4, enter the appropriate Subcategory, (See 268.40), if applicable, and also enter "Debris" if the waste is debris that will be treated using one of the alternative treatment technologies provided by 268.45.

  In Column 5, reference the appropriate paragraph(s) from Page 2 and 3 of this form. If your waste is surcharge exempt, please fill out paragraph N (On page 3).
- To expedite your approval, specify the concentration level of each constituent identified in your waste stream on Attachment 1. When shipping your waste, transfer the appropriate Reference Number(s) from Table 1 to Column 6 below, concentration data does not need to be entered in Attachment 1. [If the waste is a California List Waste, complete the boxes below appropriately and identify (in Column 6) the Reference Number(s) of the appropriate California List constituent(s) found in Attachment 1, Table 3.]

MAIN LINE ITEM #	1. HAZARDOUS WASTE CODE(S)	2. NWW or WW	3. SUBPART CC YES/NO	4. SUBCATEGORY	5. HOW MUST THE WASTE BE MANAGED?	6. REFERENCE NUMBER(S)
11.A	D001 D040 U209	NWW	NO	HGR-TOC	A	Oxidizer, 181, 190
11.B						
11.C						
11.D						

I hereby certify that all information submitted on this and all associated documents is complete and accurate to the best of my knowledge and information.

Generator Signature Originals Signed by Generator Title____

Printed Name____ Date____

35HH05

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

SP4400-96-D-0020 DO99

DO NOT WRITE IN THIS SPACE

ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Act 64, P.A. 1979, as amended and Act 136, P.A. 1969.

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

print or type.

Form Approved. OMB No. 2050-0039 Expires 9-

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. SC017002256 0 Manifest Document No. 13283

2. Page 1 of 1

Information in the shaded area is not required by Federal law.

3. Generator's Name and Mailing Address: South Div., NAVFAC Eng. Corp. Caretaker Site Office P.O. Box 190010 Charleston, SC 29405

4. Generator's Phone ( ) 803-743-9985 X 33

A. State Manifest Document Number: MI 4093450

B. State Generator's ID

5. Transporter 1 Company Name: Robbie D. Wood, Inc.

6. US EPA ID Number: ALD067138891

C. State Transporter's ID: 40067

D. Transporter's Phone: 205-744-8440

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address: Michigan Disposal 49350 N 1-94 Service Drive Belleville, MI 48111

10. US EPA ID Number: MID000724831

G. State Facility's ID

H. Facility's Phone: 800-592-5489

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	X	RQ, Waste Oxidizing Solid, n.o.s., (1,1,2,2-Tetrachloroethane/ Trichloroethylene) 5.1, UN1479, PG II (D001/D040/U209)	001	CM	75980	P	D001	H
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above

a APP# 10263 ERG# 140 ALSO:D040/U209

b APP# ERG#

c APP# ERG# Load wt: 43,180#

d APP# ERG# TRAILER # 594

K. Handling Codes for Wastes Listed Above

a M141 b

c d

a/ /

b/ /

c/ /

d/ /

15. Special Handling Instructions and Additional Information: Mail signed ORIGINALS to Generator, COPIES to CSI Environmental, Inc., 5778 W 74th St., Indianapolis, IN 46278. CSI 24 Hour Emergency #803-696-7958

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.

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: RICHARD G. NIELSON

Signature: [signature]

Date: Month Day Year 12 01 97

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: LANCE MYRICK

Signature: Lance Myrick

Date: Month Day Year 12 01 97

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Signature

Date: Month Day Year

GENERATOR

TRANSPORTER

FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENT 800-424-8802 24 HOURS PER DAY.

To be mailed by Michigan DNR

PR 5110

CSI Environmental, Inc.

SP 4400-96-D-0020

SUPPLEMENTAL DOCUMENT TO BLOCK J

MANIFEST # NT4093450 B283 D.O. 99

MANIFEST LINE #	LINE ITEM	CLIN	D.O. #	ITEM DESCRIPTION	# OF CONTAINERS	VOLUME/ WEIGHT
11A	1		99	Waste Oxidizing Soil	1 CM	43160

UNIVERSAL EQ CERTIFICATION (1/97)

LAND DISPOSAL RESTRICTION FORM

SUBPART CC WASTE DETERMINATION CERTIFICATION AND SURCHARGE EXEMPTION NOTIFICATION

Michigan Disposal Waste Treatment Plant	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489 Fx:800-592-5329
Wayne Disposal, Inc.	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489 Fx:800-592-5329
Michigan Recovery Systems, Inc.	36345 Van Born Rd. Romulus, MI 48174	Ph: 800-521-0998 Fx:313-326-5670

Please Check One: X MDWTP _____ WDI _____ MRSI

Generator Name South Div., NAVFAC, Cooktown Site Manifest Doc. No./Approval #/T#_____

Generator Address Charleston Naval Complex, 1690 Turnbull, Suite NH-51, Charleston, SC 29405

Generator USEPA ID No. SC6170022560 State Manifest No._____

INSTRUCTIONS

- In Column 1 identify all USEPA hazardous waste codes that apply to this waste approval/shipment in the spaces provided below.
- In Column 2, identify the appropriate treatability group for each waste code: Non-Wastewater (NWW) or Wastewater (WW).
- In Column 3, in accordance with Subpart CC identify whether or not your waste contains >500 ppmw VOC (YES or NO), as identified as CCVOC in Attachment 1.
- In Column 4, enter the appropriate Subcategory, (See 268.40), if applicable, and also enter "Debris" if the waste is debris that will be treated using one of the alternative treatment technologies provided by 268.45.

  In Column 5, reference the appropriate paragraph(s) from Page 2 and 3 of this form. If your waste is surcharge exempt, please fill out paragraph N (On page 3).
- To expedite your approval, specify the concentration level of each constituent identified in your waste stream on Attachment 1. When shipping your waste, transfer the appropriate Reference Number(s) from Table 1 to Column 6 below, concentration data does not need to be entered in Attachment 1. [If the waste is a California List Waste, complete the boxes below appropriately and identify (in Column 6) the Reference Number(s) of the appropriate California List constituent(s) found in Attachment 1, Table 3.]

MAIN LINE ITEM #	1. HAZARDOUS WASTE CODE(S)	2. NWW or WW	3. SUBPART CC YES/NO	4. SUBCATEGORY	5. HOW MUST THE WASTE BE MANAGED?	6. REFERENCE NUMBER(S)
11.A	D001 D040 D209	NWW	NO	High TOC	A	Oxidizer, 161, 190
11.B						
11.C						
11.D						

I hereby certify that all information submitted on this and all associated documents is complete and accurate to the best of my knowledge and information.

Generator Signature Originals Signed by Generator Title_____

Printed Name_____ Date 2/1/97

© 1997 EQ - The Environmental Quality Company

7335HH06

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE

ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Act 64, P.A. 1979, as amended and Act 136, P.A. 1969.

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

Print or type. SP4400-96-D-0020 DO99

Form Approved. OMB No. 2050-0039 Expires 9-30-96

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. SC017002256 0 Manifest Document No. 13284

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: South Div., NAVFAC Eng. Corp. Caretaker Site Office P.O. Box 190010 Charleston, SC 29405

4. Generator's Phone (803-743-9985 X33)

A. State Manifest Document Number: MI 4093449

B. State Generator's ID:

5. Transporter 1 Company Name: Robbie D. Wood, Inc.

6. US EPA ID Number: ALD067138891

C. State Transporter's ID: 40067

D. Transporter's Phone: 205-744-8440

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address: Michigan Disposal 49350 N 1-94 Service Drive Belleville, MI 48111

10. US EPA ID Number: MID000724831

G. State Facility's ID:

H. Facility's Phone: 800-592-5489

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	X	RQ, Waste Oxidizing Solid, n.o.s., (1,1,2,2-Tetrachloroethane/ Trichloroethylene) 5.1, UN1479, PG II (D001/D040/U209)	001	CM	73140	P	D001	H
b.								
c.								

J. Additional Descriptions for Materials Listed Above

a. APP# 102153 ERG# 140 ALSO:D040/U209

b. APP# ERG#

c. APP# ERG# Load wt. 43,600

d. APP# ERG# TRAILER #598

K. Handling Codes for Wastes Listed Above

a. M141 b.

c. d.

a/ /

b/ /

c/ /

d/ /

15. Special Handling Instructions and Additional Information: Mail signed ORIGINALS to Generator, COPIES to CSI Environmental, Inc., 5778 W 74th St., Indianapolis, IN 46278. CSI 24 Hour Emergency #803-696-7958

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.

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: RICHARD G. NIELSON

Signature: Richard G. Nielson

Date: Month 12 Day 01 Year 97

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: John Burns

Signature: John Burns

Date: Month 12 Day 01 Year 97

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name:

Signature:

Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name:

Signature:

Date: Month Day Year

GENERATOR

TRANSPORTER

FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 1-800-292-4706 AND THE NATIONAL RESPONSE CENTER 1-800-424-8802 24 HOURS PER DAY.

CSI Environmental, Inc.

SP4400-96-D-0020

SUPPLEMENTAL DOCUMENT TO BLOCK J

MANIFEST # NT4093449 1284 D.O. 99

MANIFEST LINE #	LINE ITEM	CLIN	D.O. #	ITEM DESCRIPTION	# OF CONTAINERS	VOLUME/ WEIGHT
11A	1		94	Waste Oxidizing Soil	1 CM	43,600

UNIVERSAL EQ CERTIFICATION (1/97)

LAND DISPOSAL RESTRICTION FORM
SUBPART CC WASTE DETERMINATION CERTIFICATION AND SURCHARGE EXEMPTION NOTIFICATION

Michigan Disposal Waste Treatment Plant	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489 Fx:800-592-5329
Wayne Disposal, Inc.	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489 Fx:800-592-5329
Michigan Recovery Systems, Inc.	36345 Van Born Rd. Romulus, MI 48174	Ph: 800-521-0998 Fx:313-326-5670

Please Check One: X MDWTP ____ WDI ____ MRSI

Generator Name South Div., NAVFAC, Cooke Site Manifest Doc. No./Approval #/T#____

Generator Address Charleston Naval Complex, 1690 Turnbull, Suite NH-51, Charleston, SC 29405

Generator USEPA ID No. SC6170022560 State Manifest No.____

INSTRUCTIONS

- In Column 1 identify all USEPA hazardous waste codes that apply to this waste approval/shipment in the spaces provided below.
- In Column 2, identify the appropriate treatability group for each waste code: Non-Wastewater (NWW) or Wastewater (WW).
- In Column 3, in accordance with Subpart CC identify whether or not your waste contains >500 ppmw VOC (YES or NO), as identified as CCVOC in Attachment 1.
- In Column 4, enter the appropriate Subcategory, (See 268.40), if applicable, and also enter "Debris" if the waste is debris that will be treated using one of the alternative treatment technologies provided by 268.45.

  In Column 5, reference the appropriate paragraph(s) from Page 2 and 3 of this form. If your waste is surcharge exempt, please fill out paragraph N (On page 3).
- To expedite your approval, specify the concentration level of each constituent identified in your waste stream on Attachment 1. When shipping your waste, transfer the appropriate Reference Number(s) from Table 1 to Column 6 below, concentration data does not need to be entered in Attachment 1. [If the waste is a California List Waste, complete the boxes below appropriately and identify (in Column 6) the Reference Number(s) of the appropriate California List constituent(s) found in Attachment 1, Table 3.]

MAIN LINE ITEM #	1. HAZARDOUS WASTE CODE(S)	2. NWW or WW	3. SUBPART CC YES/NO	4. SUBCATEGORY	5. HOW MUST THE WASTE BE MANAGED?	6. REFERENCE NUMBER(S)
1LA	D001 D040 D209	NWW	NO	High TOC	A	Oxidizer, 181, 190
1LB						
1LC						
1LD						

I hereby certify that all information submitted on this and all associated documents is complete and accurate to the best of my knowledge and information.

erator Signature Original Signed by Generator Title____

Printed Name____ Date 2/1/97

7335HN07

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE

ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Act 64, P.A. 1979, as amended and Act 136, P.A. 1969.

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

Print or type. SP4400-96-D-0020 DO99

Form Approved. OMB No. 2050-0039 Expires 9-30-96

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. SC017002256 0 Manifest Document No. 13285

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: South Div., NAVFAC Eng. Corp. Caretaker Site Office P.O. Box 190010 Charleston, SC 29405

4. Generator's Phone (803-743-9985 x33

A. State Manifest Document Number: MI 4093448

B. State Generator's ID:

5. Transporter 1 Company Name: Robbie D. Wood, Inc.

6. US EPA ID Number: ALD067138891

C. State Transporter's ID: 40067

D. Transporter's Phone: 205-744-8440

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address: Michigan Disposal 49350 N 1-94 Service Drive Belleville, MI 48111

10. US EPA ID Number: MID000724831

G. State Facility's ID:

H. Facility's Phone: 800-592-5489

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a. X	RQ, Waste Oxidizing Solid, n.o.s., (1,1,2,2-Tetrachloroethane/ Trichloroethylene) 5.1, UN1479, PG II (D001/D040/U209)	001	CW	72900	P	D001	H
b.							
c.							

GENERATOR

J. Additional Descriptions for Materials Listed Above

a APP# 10253 ERG# 140 ALSO:D040/U209

b APP# ERG#

c APP# ERG# Load wt 42,680#

d APP# ERG# TRAILER # T38

K. Handling Codes for Wastes Listed Above

a M141 b

c d

a/ /

b/ /

c/ /

d/ /

15. Special Handling Instructions and Additional Information Mail signed ORIGINALS to Generator, COPIES to CSI Environmental, Inc., 5778 W 74th St., Indianapolis, IN 46278. CSI 24 Hour Emergency #803-696-7958

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.

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: Richard G. Nielsen

Signature: [signature]

Date: Month Day Year 12 01 97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: George W. Clayton

Signature: George W. Clayton

Date: Month Day Year 12 01 97

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name:

Signature:

Date: Month Day Year

19. Discrepancy Indication Space

FACILITY

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name:

Signature:

Date: Month Day Year

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88) To be mailed by Michigan DNR PR 5110

CSI Environmental, Inc.

SP 440096-D-0020

SUPPLEMENTAL DOCUMENT TO BLOCK J

MANIFEST # MT4093448 12288 D.O. 99

MANIFEST LINE #	LINE ITEM	CLIN	D.O. #	ITEM DESCRIPTION	# OF CONTAINERS	VOLUME/ WEIGHT
11A	1		99	Waste Oxidizing Soil	1 CM	42680

UNIVERSAL EQ CERTIFICATION (1/97)

LAND DISPOSAL RESTRICTION FORM
SUBPART CC WASTE DETERMINATION CERTIFICATION AND SURCHARGE EXEMPTION NOTIFICATION

Michigan Disposal Waste Treatment Plant	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489 Fx:800-592-5329
Wayne Disposal, Inc.	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489 Fx:800-592-5329
Michigan Recovery Systems, Inc.	36345 Van Born Rd. Romulus, MI 48174	Ph: 800-521-0998 Fx:313-326-5670

Please Check One: _X_ MDWTP ____ WDI ____ MRSI

Generator Name South Div., NAVFAC, Cooperative Site Manifest Doc. No./Approval #/T#____

Generator Address Charleston Naval Complex, 1690 Turnbull, Suite NH-51, Charleston, SC 29405

Generator USEPA ID No. SC6170022560 State Manifest No.____

INSTRUCTIONS

- In Column 1 identify all USEPA hazardous waste codes that apply to this waste approval/shipment in the spaces provided below.
- In Column 2, identify the appropriate treatability group for each waste code: Non-Wastewater (NWW) or Wastewater (WW).
- In Column 3, in accordance with Subpart CC identify whether or not your waste contains >500 ppmw VOC (YES or NO), as identified as CCVOC in Attachment 1.
- In Column 4, enter the appropriate Subcategory, (See 268.40), if applicable, and also enter "Debris" if the waste is debris that will be treated using one of the alternative treatment technologies provided by 268.45.

  In Column 5, reference the appropriate paragraph(s) from Page 2 and 3 of this form. If your waste is surcharge exempt, please fill out paragraph N (On page 3).
- To expedite your approval, specify the concentration level of each constituent identified in your waste stream on Attachment 1. When shipping your waste, transfer the appropriate Reference Number(s) from Table 1 to Column 6 below, concentration data does not need to be entered in Attachment 1. [If the waste is a California List Waste, complete the boxes below appropriately and identify (in Column 6) the Reference Number(s) of the appropriate California List constituent(s) found in Attachment 1, Table 3.]

MAIN LINE ITEM #	1. HAZARDOUS WASTE CODE(S)	2. NWW or WW	3. SUBPART CC YES/NO	4. SUBCATEGORY	5. HOW MUST THE WASTE BE MANAGED?	6. REFERENCE NUMBER(S)
11.A	D001 D040 D209	NWW	NO	High TOC	A	Oxidizer, 181, 190
11.B						
11.C						
11.D						

I hereby certify that all information submitted on this and all associated documents is complete and accurate to the best of my knowledge and information.

Generator Signature Signed by Generator Title____

Printed Name____ Date 12/1/97

© 1997 EQ - The Environmental Quality Company

335HN08

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE

ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Act 64, P.A. 1979, as amended and Act 136, P.A. 1969.

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

Print or type. SP4400-96-D-0020 DO99

Form Approved. OMB No. 2050-0039 Expires 9-30-96

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. S C 0 1 7 0 0 2 2 5 6 0 Manifest Document No. 713216

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
South Div., NAVFAC Eng. Corp.
Caretaker Site Office
P.O. Box 190010
Charleston, SC 29405

4. Generator's Phone (803-743-9985X33)

A. State Manifest Document Number MI 4093447

B. State Generator's ID

5. Transporter 1 Company Name
Robbie D. Wood, Inc.

6. US EPA ID Number A L D 0 6 7 1 3 8 8 9 1

C. State Transporter's ID 40067

D. Transporter's Phone 205-744-8440

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Michigan Disposal
49350 N I-94 Service Drive
Belleville, MI 48111

10. US EPA ID Number M I D 0 0 0 7 2 4 8 3 1

G. State Facility's ID

H. Facility's Phone 800-592-5489

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	X RQ, Waste Oxidizing Solid, n.o.s., (1,1,2,2-Tetrachloroethane/ Trichloroethylene) 5.1, UN1479, PG II (D001/D040/U209)	001	CM	7,086,0	P	D001	H
b.							
c.							

GENERATOR

J. Additional Descriptions for Materials Listed Above
a APP# 102153 ERG# 140 ALSO:D040/U209
b APP# ERG# Load wt. 39,240
c APP# ERG#
d APP# ERG# Truck # MWI

K. Handling Codes for Wastes Listed Above
a. M141 b.
c. d.

a/ / b/ / c/ / d/ /

15. Special Handling Instructions and Additional Information Mail signed ORIGINALS to Generator, COPIES to CSI Environmental, Inc., 5778 W 74th St., Indianapolis, IN 46278. CSI 24 Hour Emergency #803-696-7958

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.

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: RICHARD G. NIELSON Signature: [signature] Date: Month 12 Day 01 Year 97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Melvin Williams Signature: Melvin Williams Date: Month 12 Day 01 Year 97

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name Signature Date: Month Day Year

19. Discrepancy Indication Space

FACILITY

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name Signature Date: Month Day Year

CSI Environmental, Inc.

SP 440096-D-0020

SUPPLEMENTAL DOCUMENT TO BLOCK J

MANIFEST # MI409347 D.O. 99

MANIFEST LINE #	LINE ITEM	CLIN	D.O. #	ITEM DESCRIPTION	# OF CONTAINERS	VOLUME/ WEIGHT
11A	1		94	Waste Oxidizing Soil	1 CM	39,240

UNIVERSAL EQ CERTIFICATION (1/97)

LAND DISPOSAL RESTRICTION FORM

SUBPART CC WASTE DETERMINATION CERTIFICATION AND SURCHARGE EXEMPTION NOTIFICATION

Michigan Disposal Waste Treatment Plant	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489 Fx:800-592-5329
Wayne Disposal, Inc.	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489 Fx:800-592-5329
Michigan Recovery Systems, Inc.	36345 Van Born Rd. Romulus, MI 48174	Ph: 800-521-0998 Fx:313-326-5670

Please Check One: X MDWTP _____ WDI _____ MRSI

Generator Name South Div., NAVFAC, Cooper Site Manifest Doc. No./Approval #/T#_____

Generator Address Charleston Naval Complex, 1690 Turnbull, Suite NH-51, Charleston, SC 29405

Generator USEPA ID No. SC6170022560 State Manifest No._____

INSTRUCTIONS

- In Column 1 identify all USEPA hazardous waste codes that apply to this waste approval/shipment in the spaces provided below.
- In Column 2, identify the appropriate treatability group for each waste code: Non-Wastewater (NWW) or Wastewater (WW).
- In Column 3, in accordance with Subpart CC identify whether or not your waste contains >500 ppmw VOC (YES or NO), as identified as CCVOC in Attachment 1.
- In Column 4, enter the appropriate Subcategory, (See 268.40), if applicable, and also enter "Debris" if the waste is debris that will be treated using one of the alternative treatment technologies provided by 268.45.

  In Column 5, reference the appropriate paragraph(s) from Page 2 and 3 of this form. If your waste is surcharge exempt, please fill out paragraph N (On page 3).
- To expedite your approval, specify the concentration level of each constituent identified in your waste stream on Attachment 1. When shipping your waste, transfer the appropriate Reference Number(s) from Table 1 to Column 6 below, concentration data does not need to be entered in Attachment 1. [If the waste is a California List Waste, complete the boxes below appropriately and identify (in Column 6) the Reference Number(s) of the appropriate California List constituent(s) found in Attachment 1, Table 3.]

MAIN LINE ITEM #	1. HAZARDOUS WASTE CODE(S)	2. NWW or WW	3. SUBPART CC YES/NO	4. SUBCATEGORY	5. HOW MUST THE WASTE BE MANAGED?	6. REFERENCE NUMBER(S)
11.A	D001 D040 D209	NWW	NO	High TOC	A	Oxidizer/81, 190
11.B						
11.C						
11.D						

I hereby certify that all information submitted on this and all associated documents is complete and accurate to the best of my knowledge and information.

erator Signature Original Signed by Generator Title_____

Printed Name_____ Date_____

7335HH04

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE

ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Act 34, P.A. 1979, as amended and Act 136, P.A. 1969.

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

Please print or type. SP4400-96-D-0020 DO99

Form Approved. OMB No. 2050-0039 · Expires 9-30-

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. SC0170022560 Manifest Document No. 13287

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: South Div., NAVFAC Eng. Corp. Caretaker Site Office P.O. Box 190010 Charleston, SC 29405

4. Generator's Phone (803-743-9985 X33

A. State Manifest Document Number: MI 4093446

B. State Generator's ID

5. Transporter 1 Company Name: Robbie D. Wood, Inc.

6. US EPA ID Number: ALD067138891

C. State Transporter's ID: 40067

D. Transporter's Phone: 205-744-8440

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address: Michigan Disposal 49350 N 1-94 Service Drive Belleville, MI 48111

10. US EPA ID Number: MID000724831

G. State Facility's ID

H. Facility's Phone: 800-592-5489

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	X	RQ, Waste Oxidizing Solid, n.o.s., (1,1,2,2-Tetrachloroethane/ Trichloroethylene) 5.1, UN1479, PG II (D001/D040/U209)	001	CM	79640	P	D001	H
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above

a APP# 102153 ERG# 140 ALSO:D040/U209

b APP# ERG# Load Wt. 50958

c APP# ERG#

d APP# ERG# TRAILER # 185

K. Handling Codes for Wastes Listed Above

a M141 b

c d

a/ /

b/ /

c/ /

d/ /

15. Special Handling Instructions and Additional Information Mail signed ORIGINALS to Generator, COPIES to CSI Environmental, Inc., 5778 W 74th St., Indianapolis, IN 46278. CSI 24 Hour Emergency #803-696-7958

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.

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: RICHARD G. NIELSON

Signature: [signature]

Date: Month Day Year 12 01 97

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Desmond F. Owens

Signature: [signature]

Date: Month Day Year 12 01 97

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Signature

Date: Month Day Year

GENERATOR

TRANSPORTER

FACILITY

EPA Form 8700-22 (Rev. 9/88) To be mailed by Michigan DNR PR 5110

CSI Environmental, Inc.

SP 4400-96-D-0020

SUPPLEMENTAL DOCUMENT TO BLOCK J

MANIFEST # MI409346/13287 D.O. 99

MANIFEST LINE #	LINE ITEM	CLIN	D.O. #	ITEM DESCRIPTION	# OF CONTAINERS	VOLUME/ WEIGHT
11A	1		94	Waste Oxidizing Soil	1 CM	50,980

UNIVERSAL CERTIFICATION (1/97)

LAND DISPOSAL RESTRICTION FORM

SUBPART CC WASTE DETERMINATION CERTIFICATION AND SURCHARGE EXEMPTION NOTIFICATION

Michigan Disposal Waste Treatment Plant	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489	Fx:800-592-5329
Wayne Disposal, Inc.	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489	Fx:800-592-5329
Michigan Recovery Systems, Inc.	36345 Van Born Rd. Romulus, MI 48174	Ph: 800-521-0998	Fx:313-326-5670

Please Check One: X MDWTP _____ WDI _____ MRSI

Generator Name South Div., NAVFAC, Caretaker Site Manifest Doc. No./Approval #/T#_____

Generator Address Charleston Naval Complex, 1690 Turnbull, Suite NH-51, Charleston, SC 29405

Generator USEPA ID No. SC0170022560 State Manifest No._____

INSTRUCTIONS

- In Column 1 identify all USEPA hazardous waste codes that apply to this waste approval/shipment in the spaces provided below.
- In Column 2, identify the appropriate treatability group for each waste code: Non-Wastewater (NWW) or Wastewater (WW).
- In Column 3, in accordance with Subpart CC identify whether or not your waste contains >500 ppmw VOC (YES or NO), as identified as CCVOC in Attachment 1.
- In Column 4, enter the appropriate Subcategory, (See 268.40), if applicable, and also enter "Debris" if the waste is debris that will be treated using one of the alternative treatment technologies provided by 268.45.
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- To expedite your approval, specify the concentration level of each constituent identified in your waste stream on Attachment 1. When shipping your waste, transfer the appropriate Reference Number(s) from Table 1 to Column 6 below, concentration data does not need to be entered in Attachment 1. [If the waste is a California List Waste, complete the boxes below appropriately and identify (in Column 6) the Reference Number(s) of the appropriate California List constituent(s) found in Attachment 1, Table 3.]

MAIN LINE ITEM #	1. HAZARDOUS WASTE CODE(S)	2. NWW or WW	3. SUBPART CC YES/NO	4. SUBCATEGORY	5. HOW MUST THE WASTE BE MANAGED?	6. REFERENCE NUMBER(S)
11.A	D001 D040 U209	NWW	NO	High TOC	A	Oxidizer, 181, 190
11.B						
11.C						
11.D						

I hereby certify that all information submitted on this and all associated documents is complete and accurate to the best of my knowledge and information.

Generator Signature Originals Signed by Generator Title_____

Printed Name_____ Date_____ 12/1/97

335 HH10 DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE

ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Act 64, P.A. 1979, as amended and Act 136, P.A. 1969.

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

Print or type. SP4400-96-D-0020 DO99

Form Approved. OMB No. 2050-0039 Expires 9-30-96

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: SC017002256 0 — Manifest Document No.: 13288

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: South Div., NAVFAC Eng. Corp. Caretaker Site Office P.O. Box 190010 Charleston, SC 29405

4. Generator's Phone (803-743-9985 X33)

A. State Manifest Document Number: MI 4093451

B. State Generator's ID:

5. Transporter 1 Company Name: Robbie D. Wood, Inc.

6. US EPA ID Number: ALD067138891

C. State Transporter's ID: 40067

D. Transporter's Phone: 205-744-8440

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address: Michigan Disposal 49350 N 1-94 Service Drive Belleville, MI 48111

10. US EPA ID Number: MID000724831

G. State Facility's ID:

H. Facility's Phone: 800-592-5489

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a. X	RQ, Waste Oxidizing Solid, n.o.s., (1,1,2,2-Tetrachloroethane/ Trichloroethylene) 5.1, UN1479, PG II (D001/D040/U209)	001	CM	76780	P	D001	H
b.							
c.							

J. Additional Descriptions for Materials Listed Above

a APP# 102153 ERG# 140 ALSO:D040/U209

b APP# ERG#

c APP# ERG# Load wt; 47120#

d APP# ERG# TRAILER # 213

K. Handling Codes for Wastes Listed Above

a M141 b

c d

a/ /

b/ /

c/ /

d/ /

15. Special Handling Instructions and Additional Information: Mail signed ORIGINALS to Generator, COPIES to CSI Environmental, Inc., 5778 W 74th St., Indianapolis, IN 46278. CSI 24 Hour Emergency #803-696-7958

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Printed/Typed Name: RICHARD G. NIELSON — Signature: [signature] — Date: Month 12 Day 01 Year 97

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: CLYDE WILSON — Signature: [signature] — Date: Month 12 Day 01 Year 97

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: — Signature: — Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: — Signature: — Date: Month Day Year

CSI Environmental, Inc.

SUPPLEMENTAL DOCUMENT TO BLOCK J SP 440096-D-0020

MANIFEST # NF4093457 D.O. 99

MANIFEST LINE #	LINE ITEM	CLIN	D.O. #	ITEM DESCRIPTION	# OF CONTAINERS	VOLUME/ WEIGET
11A	1		99	Waste Oxidizing Soil	1 CM	47120

UNIVERSAL EQ CERTIFICATION (1/97)

LAND DISPOSAL RESTRICTION FORM

SUBPART CC WASTE DETERMINATION CERTIFICATION AND SURCHARGE EXEMPTION NOTIFICATION

...chigan Disposal Waste Treatment Plant	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489 Fx:800-592-5329
Wayne Disposal, Inc.	49350 N. I-94 Service Dr. Belleville, MI 48111	Ph: 800-592-5489 Fx:800-592-5329
Michigan Recovery Systems, Inc.	36345 Van Born Rd. Romulus, MI 48174	Ph: 800-521-0998 Fx:313-326-5670

Please Check One: _X_ MDWTP ____ WDI ____ MRSI

Generator Name South Div., NAVFAC, Cooperative Site Manifest Doc. No./Approval #/T#_____

Generator Address Charleston Naval Complex, 1690 Turnbull, Suite NH-51, Charleston, SC 29405

Generator USEPA ID No. SC6170022560 State Manifest No._____

INSTRUCTIONS

- In Column 1 identify all USEPA hazardous waste codes that apply to this waste approval/shipment in the spaces provided below.
- In Column 2, identify the appropriate treatability group for each waste code: Non-Wastewater (NWW) or Wastewater (WW).
- In Column 3, in accordance with Subpart CC identify whether or not your waste contains >500 ppmw VOC (YES or NO), as identified as CCVOC in Attachment 1.
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MAIN LINE ITEM #	1. HAZARDOUS WASTE CODE(S)	2. NWW or WW	3. SUBPART CC YES/NO	4. SUBCATEGORY	5. HOW MUST THE WASTE BE MANAGED?	6. REFERENCE NUMBER(S)
11.A	D001 D040 D209	NWW	NO	Hg NTOC	A	Oxidizer, 181, 190
11.B						
11.C						
11.D						

I hereby certify that all information submitted on this and all associated documents is complete and accurate to the best of my knowledge and information.

Generator Signature Originals Signed by Generator Title_____

Printed Name_____ Date_____

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
CHARLESTON, SC 29413
577-3578

No. 21005

Carrier Robbie D Wood Date 12/1/97
Shipper ..... Order No. .....
Truck No. MW1
Trailer No. MW1
GROSS
REMARKS:
31620LB
TARE
NET
Charles C. Bircin

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
CHARLESTON, SC 29413
577-3578

No. 21002

Carrier Robbie D Wood Date 12/1/97
Shipper ..... Order No. .....
Truck No. 32
Trailer No. T38
GROSS
REMARKS:
32800LB
TARE
NET
Charles C. Bircin

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
CHARLESTON, SC 29413
577-3578

No. 21016

Carrier R D Wood Date 12/1/97
Shipper ..... Order No. .....
Truck No. MW1
Trailer No. MW1
70860LB GROSS
REMARKS:
TARE
NET
Charles C. Bircin

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
CHARLESTON, SC 29413
577-3578

No. 21015

Carrier Robbie D Wood Date 12/1/97
Shipper ..... Order No. .....
Truck No. 32
Trailer No. T38
GROSS
REMARKS: 72900LB
TARE
NET
Charles C. Bircin

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
CHARLESTON, SC 29413
577-3578

No. 21018

Carrier Robbie D Wood Date 12/1/97
Shipper ..... Order No. .....
Truck No. 136
Trailer No. 185
GROSS
REMARKS:
28660LB
TARE
NET
Charles C. Birch

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
CHARLESTON, SC 29413
577-3578

No. 21022

R D Wood
Carrier Lovett Date 12/1/97
Shipper ..... Order No. .....
Truck No. 216
Trailer No. 213
GROSS
REMARKS:
29660LB
TARE
NET
Charles C. Birch

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
CHARLESTON, SC 29413
577-3578

No. 21023

Carrier R D Wood Date 12/1/97
Shipper ..... Order No. .....
Truck No. 136
Trailer No. 185
79640LB
GROSS
REMARKS:
TARE
NET
Charles C. Birch

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
CHARLESTON, SC 29413
577-3578

No. 21025

Carrier R D Woods Date 12/1/97
Shipper ..... Order No. .....
Truck No. 216
Trailer No. 214
76780LB
GROSS
REMARKS:
TARE
NET
Charles C. Birch

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
CHARLESTON, SC 29413
577-3578

No 21003

Carrier Robbie D Wood Date 12/1/97
Shipper ..... Order No. .....
Truck No. 115
Trailer No. 594 GROSS
REMARKS:
29540LB TARE
NET
Charles C. Birch

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
CHARLESTON, SC 29413
577-3578

No 21004

Carrier Robbie D Wood Date 12/1/97
Shipper ..... Order No. .....
Truck No. 48
Trailer No. 598 GROSS
REMARKS:
30220LB TARE
NET
Charles C. Birch

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
CHARLESTON, SC 29413
577-3578

No 21013

Carrier Robbie D Wood Date 12/1/97
Shipper ..... Order No. .....
Truck No. 115
Trailer No. 594 GROSS
REMARKS:
75960LB TARE
NET
Charles C. Birch

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
CHARLESTON, SC 29413
577-3578

No 21014

Carrier Robbie D Wood Date 12/1/97
Shipper ..... Order No. .....
Truck No. 48
Trailer No. 598 GROSS
REMARKS:
73140LB TARE
NET
Charles C. Birch

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
P.O. BOX 21651
CHARLESTON, SC 29413
577-3578

No. 20998

Carrier Robbie D Wood Date 12/1/97
Shipper ..... Order No. .....
Truck No. 137
Trailer No. 612
REMARKS:

32600LB GROSS

TARE

NET

Charles C. Bira

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
CHARLESTON, SC 29413
577-3578

No. 21001

Carrier Robbie Date 12/1/97
Shipper ..... Order No. .....
Truck No. 133
Trailer No. 614
REMARKS:

31020LB GROSS

TARE

NET

Charles C. Bira

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
CHARLESTON, SC 29413
577-3578

No. 21008

Carrier Robbie D Wood Date 12/1/97
Shipper ..... Order No. .....
Truck No. 137
Trailer No. 612
REMARKS:

79420LB GROSS

TARE

NET

Charles C. Bira

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
CHARLESTON, SC 29413
577-3578

No. 21011

Carrier R D Wood Date 12/1/97
Shipper ..... Order No. .....
Truck No. 133
Trailer No. 614
REMARKS:

75680LB GROSS

TARE

NET

[illegible]

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
P.O. BOX 21651
CHARLESTON, SC 29413
577-3578

No. 21000

Carrier Robbie D Wood Date 12/1/97
Shipper Order No.
Truck No. 117
Trailer No. 617
GROSS
REMARKS:
30480LB TARE
NET
Charles C. Birch

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
P.O. BOX 21651
CHARLESTON, SC 29413
577-3578

No. 20999

Carrier Robbie D. Woods Date 12/1/97
Shipper Order No.
Truck No. 119
Trailer No. 623
GROSS
REMARKS:
31500LB TARE
NET
Charles C. Birch

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
CHARLESTON, SC 29413
577-3578

No. 21010

Carrier R D Wood Date 12/1/97
Shipper Order No.
Truck No. 117
Trailer No. 617
GROSS
REMARKS:
76460LB TARE
NET

CERTIFIED PUBLIC SCALES
WE WEIGH TRUCKS, INC.
1411 KING STREET EXT.
CHARLESTON, SC 29413
577-3578

No. 21009

Carrier Robbie D Wood Date 12/1/97
Shipper Order No.
Truck No. 119
Trailer No. 623
GROSS
REMARKS:
73260LB TARE
NET
Charles C. Birch

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE

ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Act 64 1979, as amended and Act 136, P.A. 1969.

Failure to file is punishable under section 299.548 MCL or Section 10 Act 136, P.A. 1969.

Please print or type. SP4400-96-D-0020 DO.0073

Form Approved. OMB No. 2050-0039 Expires

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. S C 0 1 7 0 0 2 2 5 6 0 — Manifest Document No. 7 3 2 2 7

2. Page 1 of 1

Information in the shaded a is not required by Fed law.

3. Generator's Name and Mailing Address
South Div., NAVFAC Eng. Corp.
Caretaker Site Office
P.O. Box 190010
Charleston, SC 29405

4. Generator's Phone (803-743-9985

A. State Manifest Document Number MI 4057362

B. State Generator's ID

5. Transporter 1 Company Name: Robbie D. Wood, Inc.

6. US EPA ID Number: A L D 0 6 7 1 3 8 8 9 1

C. State Transporter's ID

D. Transporter's Phone 205/744-844

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
City Environmental
1550 Harper
Detroit, MI 48211

10. US EPA ID Number: M I D 0 5 4 6 8 3 4 7 9

G. State Facility's ID

H. Facility's Phone 313-923-00

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	X RQ, WASTE OXIDIZING SOLID,n.o.s. (1,3 DICHLORO-5, 5-DIMETHYLHYDATOIN) 5.1, UN1479, PG II (D001)	01	DM	06669	P	D001
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
a. APP# 204974 ERG# 140
b. APP# ERG#
c. APP# ERG#
d. APP# ERG#

K. Handling Codes for Wastes Listed Above
a. M011 b
c d

a/ b/ c/ d/

15. Special Handling Instructions and Additional Information Mail signed ORIGINALS to Generator, COPIES to CSI Environmental Inc., 5778 W 74th St. Indianapolis, IN 46278. CSI 24 Hour Emergency #803-696-7958

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.

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 deter to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimiz 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 generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: RICHARD G. NIELSON — Signature — Date Month Day 07 30

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Daniel W. Stevens — Signature — Date Month Day 07 30

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date Month Day

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name — Signature — Date Month Day

GENERATOR — TRANSPORTER — FACILITY

J-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE

ALL SPIL ... REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHI CENTER A. ... 24-8802 24 HOURS PER DAY.

ORDER FOR SUPPLIES OR SERVICES

(Contractor must submit four copies of invoice.) POH

Form Approved OMB No. 0704-0187 Expires Dec 31, 1999

PAGE 1 OF 3

Reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0187), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR FORM TO EITHER OF THESE ADDRESSES. SEND YOUR COMPLETED FORM TO THE PROCUREMENT OFFICIAL IDENTIFIED IN ITEM 6.

1. CONTRACT/PURCH ORDER NO: SP440096D0020-
2. DELIVERY ORDER NO.: 0073
3. DATE OF ORDER (YYMMDD): 97 JUL 17
4. REQUISITION/PURCH REQUEST NO.: SEE SCHEDULE
5. PRIORITY:

6. ISSUED BY CODE 03DRMR
DEF REUT & MKT SVC/DRMS-PME
926 TAYLOR STA RD/PO 0533
BLACKLICK [redacted] 43004-0533

7. ADMINISTERED BY (If other than 6) CODE

8. DELIVERY FOB: [X] DEST [ ] OTHER (See Schedule if other)

9. CONTRACTOR CODE ORY55 FACILITY CODE
NAME AND ADDRESS
CSI ENVIRONMENTAL INC
5778 WEST 74TH ST.
INDIANAPOLIS IN 46268-4104

10. DELIVER TO FOB POINT BY (Date) (YYMMDD): 97 AUG 01
11. MARK FOR BUSINESS IS: [X] SMALL [ ] SMALL DISAD-VANTAGED [ ] WOMEN-OWNED
12. DISCOUNT TERMS
13. MAIL INVOICES TO: SEE BLOCK 15

14. SHIP TO SP440096D0020-0073 CODE
SEE SCHEDULE

15. PAYMENT WILL BE MADE BY CODE S33181
DEFENSE FINANCE & ACCOUNTING
ATTN DFAS-CO-LC
P. O. BOX 369016
COLUMBUS OH 43236-9016

MARK ALL PACKAGES AND PAPERS WITH CONTRACT OR ORDER NUMBER

16. TYPE OF ORDER: DELIVERY [X] This delivery order is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract.
PURCHASE [ ] Reference your: Furnish the following on terms specified herein.
ACCEPTANCE. THE CONTRACTOR HEREBY ACCEPTS THE OFFER REPRESENTED BY THE NUMBERED PURCHASE ORDER AS IT MAY PREVIOUSLY HAVE BEEN OR IS NOW MODIFIED, SUBJECT TO ALL OF THE TERMS AND CONDITIONS SET FORTH, AND AGREES TO PERFORM THE SAME.

NAME OF CONTRACTOR | SIGNATURE | TYPED NAME AND TITLE | DATE SIGNED (YYMMDD)

If this is marked, supplier must sign acceptance and return the following number of copies:

17. ACCOUNTING AND APPROPRIATION DATA/LOCAL USE
01 97X4930 5NRO 001 P900 25 S33181 3167.60

18. ITEM NO.	19. SCHEDULE OF SUPPLIES/SERVICES	20. QUANTITY ORDERED/ ACCEPTED*	21. UNIT	22. UNIT PRICE	23. AMOUNT
0001	DOCUMENT NOUN DTID ACC 71986733 EXPEDITED R N645047197HH01 01 661100 EXPEDITED REMOVAL 15 DAY 6609 TOTAL WEIGHT PICKUP ADDR <N64504> SPVR SHIPBLDG CONV REPAIR PRTSMTH VA ENVIR DET CHAS 1899 N HOBSON AVE BLDG 30 N CHARLESTON SC 29408-2160 EPA WASTE CODE n/a UD QTY PICKED UP 5 UD UNIT OF ISSUE EA PICK UP MANIFEST n/a LINE CODE n/a PICK UP DATE 7/30/97	5	EA	100.00000	500.00

* If quantity accepted by the Government is same as quantity ordered, indicate by X. If different, enter actual quantity accepted below quantity ordered and encircle.

24. UNITED STATES OF AMERICA BY: CONTRACTING OFFICER / CONTRACTING/ORDERING OFFICER

25. TOTAL 3167.60
26. DIFFERENCE

L. QUANTITY IN COLUMN 20 HAS BEEN [ ] INSPECTED [ ] RECEIVED [ ] ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED

27. SHIP. NO. [ ] PARTIAL [ ] FINAL
28. G.B. VOUCHER NO.
29. INITIALS
30. AMOUNT VERIFIED CORRECT FOR
31. PAYMENT [ ] COMPLETE [ ] PARTIAL [ ] FINAL
32. PAID BY
33. CHECK NUMBER
34. BILL OF LADING NO.

DATE | SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE

I certify this account is correct and proper for payment.
SIGNATURE AND TITLE OF CERTIFYING OFFICER

RECEIVED AT | 36. RECEIVED BY (Print) | 37. DATE RECEIVED (YYMMDD) | 38. TOTAL CONTAINERS | 39. GBL ACCOUNT NUMBER | 40. GBL VOUCHER NO.

DD FORM 1155, APR 93 (EF) PREVIOUS EDITION MAY BE USED.

Continuation sheet

REFERENCE NO. OF DOCUMENT BEING CONTINUED: SF440096D0020-0073

PAGE 2 OF PAGES

NAME OF OFFEROR OR CONTRACTOR: CSI ENVIRONMENTAL INC

ITEM NO.	SUPPLIES / SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
CLIN 0002	ACC DOCUMENT ROUN DTID 01 71986742 PROFILE N00 N64504714:HH01 910400 PROFILE N00191-7167, CONTAMINATED SOIL METALS DECONTAMINATION AGENT, 2-55GLDR, D001 PICKUP ADDR <N64504> PA WASTE CODE D001 UD QTY PICKED UP 961 UD UNIT OF ISSUE lb. ICK UP MANIFEST 13227 LINE CODE 11-A PICK UP DATE 7/30/97	961	LB	.40000	384.40
0003	01 71986745 PROFILE N00 N64504714:HH02 910400 PROFILE N00191-7167, CONTAMINATED SOIL METALS DECONTAMINATION AGENT, 11-55GLDR, D001 PICKUP ADDR <N64504> PA WASTE CODE D001 UD QTY PICKED UP 4494 UD UNIT OF ISSUE lb. ICK UP MANIFEST 13227 LINE CODE 11-A PICK UP DATE 7/30/97	4494	LB	.40000	1797.60
0004	01 71986749 PROFILE N00 N64504714:HH04 910400 PROFILE N00191-7167, CONTAMINATED SOIL METALS DECONTAMINATION AGENT, 02-55GLDR, D001 PICKUP ADDR <N64504> PA WASTE CODE D001 UD QTY PICKED UP 946 UD UNIT OF ISSUE lb. ICK UP MANIFEST 13227 LINE CODE 11-A PICK UP DATE 7/30/97	946	LB	.40000	378.40
0005	01 71986752 PROFILE N00 N64504715:HH01 910400 PROFILE N00191-7167, CONTAMINATED SOIL METALS DECONTAMINATION AGENT, 01-55GLDR, D001 PICKUP ADDR <N64504> A WASTE CODE D001 UD QTY PICKED UP 268 UD UNIT OF ISSUE lb. CK UP MANIFEST 13227 LINE CODE 11-A PICK UP DATE 7/30/97	268	LB	.40000	107.20

DRMO JACKSON, COR: DAVID ISENBAGER,
DOR: X774

PROMPT PAYMENT <MAR 1994> FAR
52.232-25

TH TRANSPORTER NAME Robbie S. Woods Inc AUTH TRANSPORTER EPA # AUD 067138871

TH TSDF NAME City Environmental AUTH TSDF EPA # MID 054683479

ANSPORTER SIGNATURE [signature] CONTRACTOR SIGNATURE [signature]

continuation sheet

REFERENCE NO. OF DOCUMENT BEING CONTINUED	PAGE	OF	PAGES
SF440096D0020-0073	3		

OFFEROR OR CONTRACTOR
CSI ENVIRONMENTAL INC

ITEM NO.	SUPPLIES / SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
CLIN	ACC DOCUMENT NOUN DTID				
AUTH	COR SIGNATURE [signature]				

APPENDIX G

MISCELLANEOUS DOCUMENTATION

D H E C

OTE PROTECT PROSPER

2600 Bull Street
Columbia, SC 29201-1708 CERTIFIED MAIL

COMMISSIONER:
Douglas E. Bryant

BOARD:
John H. Burriss
Chairman

William M. Hull, Jr., MD.
Vice Chairman

Roger Leaks, Jr.
Secretary

Richard E. Jabbour, DDS

Cyndi C. Mosteller

Brian K. Smith

Rodney L. Grandy

September 25, 1997

Mr. Kevin Tunstall
SUPSHIP Portsmouth, Va.
Environmental Detachment Charleston
1899 North Hobson Avenue
North Charleston, SC 29405-2106

RE: SWMU 14/AOC 670
Excavated Soil Disposal
Charleston Naval Base
SC0 170 022 560

Dear Mr. Tunstall:

The Department is in receipt of the your letter dated August 6, 1997 in which the Department is asked to consider the disposal of approximately 40 cubic yards of soil removed from SWMU 14/AOC 670 as non-hazardous soil. A TCLP analysis was submitted attached to the letter. The information provided was forwarded to Mr. Harold Seabrook of the Waste Assessment Section, who after reviewing the information, asked for clarification and additional information in memo dated August 25, 1997. The Environmental Detachment, in a meeting held in Charleston on September 10, 1997, hand-delivered responses to Mr. Seabrooks' concerns. The attached memo dated September 19, 1997 provides a definitive answer for the disposal of the 40 cubic yards of soil removed from SWMU14/AOC 670.

If you have any questions concerning this matter please contact me at (803) 896-4179.

Sincerely,

Johnny Tapia, Environmental Engineer Associate
Corrective Action Engineering Section
Bureau of Land and Waste Management

attachment

cc: Paul Bergstrand, Hydrogeology
Tony Hunt, Southern Division
Rich Richter, Trident District
Reece Batten, Southern Division
Harold Seabrook, Waste Assessment

D H E C

VOTE PROTECT PROSPER

September 19, 1997

RECEIVED
SEP 22 1997
S. C. DEPT. OF HEALTH & ENVIRONMENTAL CONTROL
Bureau of Land & Hazardous Waste Management

MEMORANDUM

TO: **Johnny Tapia, Engineer**
Permit Engineering Section
Bureau of Land and Waste Management

FROM: **Howard Moseley**
Waste Assessment Section
Division of Waste Assessment and Emergency Response
Bureau of Land and Waste Management

SUBJECT: **Charleston Naval Yard, AOC 670 and 684, SMU #14**
Charleston County

Reference: **Disposal of segregated 40 cubic yards of soil, AOC #670, requested** in the Mr. Earl Dearheart to Mr. J. Tapia letter received on August 10, 1997, Serial Number 835.

MESSAGE: Review of the above referenced was conducted by the Waste Assessment Section then discussed in a meeting on September 19, 1997. The meeting attendees were Harold Seabrook, John Tapia and Howard Moseley. Our conclusion was that we agree with Mr. Dearhart's request per the above reference. That is, we agree with the request to dispose of approximately forty (40) cubic yards of non-hazardous soil to a Subpart D Landfill. Alternatively, you may place this soil back into the AOC #670, thereby filling the holes.

The soil was generated during an investigation pertaining to discovered abnormalities that upon investigation produced old bumpers, and other miscellaneous non-hazardous metal debris.

If you require further information, please call me or Harold at 6-4120.

BHM:aag
cc: Harold Seabrook

Table 4.3.1
SWMUs 14 and 15, and AOC 670 and 684
Organic Compounds in Soil (µg/kg)

Compound Name	No. of Detections (1st Interval/2nd Interval)	Range of Concentrations for Detections (1st Interval/2nd Interval)	Risk-Based Screening Levels
Volatile Organic Compounds *(135 Samples Collected — 72 Upper Interval Samples, 63 Lower Interval Samples, 8 Samples Duplicated)*			
Acetone	10/25	7.6-97.4/34-284	780,000
Carbon disulfide	3/3	1.2-3.5/2.4-4.6	780,000
1,1-Dichloroethene	3/4	1.8-2.5/1.8-4.8	1,100
Methylene chloride	13/12	11-212/11-51	85,000
2-Butanone (MEK)	2/7	3.9-4.6/2.7-15.5	4,700,000
Tetrachloroethene	1/0	1.4/0	12,000
Toluene	47/24	1.9-143/1.9-66	1,600,000
Trichloroethene	0/2	0/2.0-2.9	47,000
Xylene (total)	23/11	1.4-9.3/1.3-8.9	16,000,000
Acetonitrile[a]	0/3	0/5-7.3	47,000
1,2,3-Trichloropropane[a]	1/0	91.2/0	240
Semivolatile Organic Compounds *(172 Samples Collected — 96 Upper Interval Samples, 76 Lower Interval Samples, 6 Samples Duplicated)*			
Acenaphthene	19/0	28.7-2,800/0	470,000
Acenaphthylene	1/0	286/0	470,000
Anthracene	21/1	14.3-4,400/37.2	2,300,000
Benzo(a)anthracene	46/7	34.5-20,000/39.7-140	880
Benzo(b)fluoranthene	43/5	50.4-16,000/104-200	880
Benzo(k)fluoranthene	41/5	48.1-26,500/83.4-140	8,800
Benzo(g,h,i)perylene	32/0	72-5,520/0	310,000
Benzo(a)pyrene	46/4	53.1-22,000/71.5-150	88

Table 4.3.1
SWMUs 14 and 15, and AOC 670 and 684
Organic Compounds in Soil (µg/kg)

Compound Name	No. of Detections (1st Interval/2nd Interval)	Range of Concentrations for Detections (1st Interval/2nd Interval)	Risk-Based Screening Levels
Semivolatile Organic Compounds *(172 Samples Collected — 96 Upper Interval Samples, 76 Lower Interval Samples, 6 Samples Duplicated)*			
bis(2-Ethylhexyl)phthalate (BEHP)	17/9	45.7-800/48.1-5,670	46,000
Chrysene	49/8	46.4-21,000/56-180	88,000
Dibenzo(a,h)anthracene	20/0	62-3,640/0	88
Dibenzofuran	8/0	54.7-1,000/0	31,000
Di-n-butylphthalate	0/1	0/65.3	780,000
Fluoranthene	52/16	44.8-45,000/46.4-284	310,000
Fluorene	10/0	55-1,500/0	310,000
Hexachlorobutadiene	0/1	0/86	1,600
Indeno(1,2,3-cd)pyrene	31/0	74-17,000/0	880
2-Methylnaphthalene	4/0	44.6-524/0	310,000
Naphthalene	7/0	75.8-1,070/0	310,000
Phenanthrene	38/1	49.2-33,500/6.4	310,000
Pyrene	52/18	42.3-41,800/48.7-281	230,000
Pesticides *(136 Samples Collected — 74 Upper Interval Samples, 62 Lower Interval Samples, 6 Samples Duplicated)*			
alpha-BHC	1/0	1.4/0	100
beta-BHC	0/1	0/2.0	350
delta-BHC	3/3	1.2-1.7/1.3-2.8	490
alpha-Chlordane	10/1	1.2-24.7/48.1	470 (alpha + gamma)

Table 4.3.1
SWMUs 14 and 15, and AOC 670 and 684
Organic Compounds in Soil (µg/kg)

Compound Name	No. of Detections (1st Interval/2nd Interval)	Range of Concentrations for Detections (1st Interval/2nd Interval)	Risk-Based Screening Levels
Pesticides *(136 Samples Collected — 74 Upper Interval Samples, 62 Lower Interval Samples, 6 Samples Duplicated)*			
gamma-Chlordane	7/2	1.7-52.5/2-86.9	
4,4'-DDD	9/22	2.4-12.2/2.9-211	2,700
4,4'-DDE	19/17	2-19.7/2-7.8	1,900
4,4'-DDT	26/2	2.4-50/3.3-5	1,900
Dieldrin	5/0	2.4-10/0	40
Endosulfan I	2/0	1.4-1.8/0	47,000
Endosulfan II	4/0	2.5-6.2/0	47,000
Endrin	4/0	2.2-5.6/0	2,300
Endrin aldehyde	6/1	2.2-22/3.6	2,300
Heptachlor	2/1	1.1-1.3/1.6	140
Heptachlor epoxide	7/0	1.4-17.8/0	70
Chlorobenzilate[a]	3/0	25.6-160/0	2,400
Isodrin[a]	2/3	3.2-3.3/3.3-3.8	Not Listed
Polychlorinated Biphenyls *(147 Samples Collected — 81 Upper Interval Samples, 66 Lower Interval Samples, 5 Samples Duplicated)*			
Aroclor-1254	2/0	50-160/0	83
Aroclor-1260	3/0	60-376/0	83
Total Petroleum Hydrocarbons *(90 Samples Collected — 52 Upper Interval Samples, 38 Lower Interval Samples, 2 Samples Duplicated)*			
Total Petroleum Hydrocarbons	12/14	63,000-7,700,000/79,000-13,400,000	Not Listed

Table 4.3.1
SWMUs 14 and 15, and AOC 670 and 684
Organic Compounds in Soil (µg/kg)

Compound Name	No. of Detections (1st Interval/2nd Interval)	Range of Concentrations for Detections (1st Interval/2nd Interval)	Risk-Based Screening Levels
Herbicides (88 Samples Collected — 51 Upper Interval Samples, 37 Lower Interval Samples, 2 Samples Duplicated)			
2,4,5-TP (Silvex)	24/13	5.6-26.3/7.7-57.5	63,000
2,4,5-T	20/19	6.5-18.6/7.0-25.1	78,000
2,4-D	16/8	35.1-68.5/46.1-66.2	78,000
Organophosphate Pesticides (88 Samples Collected — 51 Upper Interval Samples, 37 Lower Interval Samples, 2 Samples Duplicated)			
Parathion	9/5	21.3-37.5/23.3-35.9	47,000
Dioxins (89 Samples Collected — 52 Upper Interval Samples, 37 Lower Interval Samples)			
Total TEQ	52/37	0.771-22.357 pg/g 0.459-23.560 pg/g	1000 pg/g

Note:
[a] = Compound included in the Appendix IX analysis but not in the SW-846 analysis.

Table 4.3.2
SWMUs 14 and 15, AOCs 670 and 684
Inorganic Elements in Soil (mg/kg)

Inorganic Elements	Number of Analyses (upper interval/lower interval)	Number of Detections (upper interval/lower interval)	Range of Concentrations for Detections (upper interval/lower interval)	Risk-Based Screening Level	Upper Tolerance Limit of Background[c]
Aluminum[a]	27/24	27/24	2,600-29,600/11,100-31,200	7,900	25,310/46,180
Iron[a]	27/24	27/24	4,360-31,800/18,100-45,400	Not Listed	30,910/66,170
Lead	77/62	57/46	3.96-20.900/2.97-47.4	400	118/68.69
Nickel	77/62	51/37	4.1-29.0/3.5-23.4	160	33.38/29.9
Potassium[a]	27/24	26/24	711-2,410/1,420-2,550	Not Listed	Nutrient[e]
Silver	77/62	0/0	0/0	39	Not Valid[d]
Sodium[a]	27/24	27/24	153-1,030/285-2,130	Not Listed	Nutrient[e]
Thallium	77/62	10/4	0.073-2.9/0.07-0.86	0.63	0.63/1.3
Antimony	77/62	8/9	42.0-12.4/2.3-8.7	3.1	Not Valid[d]
Arsenic	77/62	52/43	0.89-69/2.0-29.4	0.37	14.81/35.2
Barium	77/62	40/51	2.9-121/8.2-42.6	550	40.33/43.8
Beryllium	77/62	65/49	0.13-1.51/0.18-1.5	0.15	1.466/1.62
Cadmium	77/62	23/6	0.29-3.6/0.22-2.03	3.9	1.05/1.1
Cobalt	77/62	37/32	1.1-6.6/1.5-9.2	470	5.863/14.88
Copper	77/62	58/45	3.7-79.7/3.4-28.2	290	27.6/31.62
Vanadium	77/62	76/60	7.9-72/9.1-84.4	55	77.38/131.6
Zinc	77/62	60/48	5.1-180/7.7-98.9	2,300	214.3/129.6
Selenium	77/62	51/49	0.13-6.2/0.13-3.5	39	2.0/2.7
Mercury	77/62	48/42	0.02-0.24/0.05-0.86	2.3	0.485/.74
Magnesium[a]	27/24	27/24	3,350-7,520/3,540-5,440	Not Listed	9,592/9,179
Manganese[a]	27/24	27/24	42.4-506/176-893	1,092	636.4/1,412
Calcium	27/24	27/24	59,000-275,000/6,250-83,500	Not Listed	Nutrient[e]
Chromium	76/62	77/62	3.6-91/3.6-64.9	39	85.65/83.86
Tin[a]	52/38	3/4	32.8-81/2.3-60.1	4,700	Not Valid[d]
Hexavalent Chromium[b]	52/38	0/0	0/0	39	Not Valid[d]
Cyanide	77/62	1/0	.002/0	160	Not Valid[d]

Notes:
[a] = Elements that are not included in both SW-846 and Appendix IX methods
[b] = Included in duplicate sample analyses only.
[c] = See Appendix J for UTL determination.
[d] = Number of nondetections prevented determination of UTL.
[e] = Elements considered to be nutrients; therefore, UTL was not determined.

Table 4.3.3
SWMUs 14 and 15, and AOCs 670 and 684
Organic Compounds in Shallow Groundwater (µg/L)

Round 1: 5 Samples Collected, 0 Samples Duplicated
Round 2: 5 Samples Collected, 0 Samples Duplicated

Compound Name	Sampling Round	Number of Detections	Range of Concentrations for Detections	Risk-Based Screening Level	Max. Contam. Level
Volatile Organic Compounds					
No VOCs detected					
Semivolatile Organic Compounds (Collected in Round 1 Only)					
bis(2-Ethylhexyl)phthalate	1	5	1.8-11.8	4.8	6
	2	—	No Analysis		
Pesticides					
No pesticides detected.					
Polychlorinated Biphenyls (Collected in Round 1 Only)					
No PCBs detected.					
Herbicides					
DCAA	1	0	—	Not Listed	Not Listed
	2	5	82-103		
Organophosphate Pesticides (Collected in Round 1 Only)					
No organophosphate pesticides detected.					
Dioxins (Collected in Round 1 Only)					
Total TEQs	1	5	0.214-10.211 pg/L	0.5 pg/L	30 pg/L
	2	—	No Analysis		

Table 4.3.4
SWMUs 14, and 15, and AOCs 670 and 684
Organic Compounds in Deep Groundwater (µg/L)

Round 1: 5 Samples Collected, 1 Sample Duplicated
Round 2: 5 Samples Collected, 1 Sample Duplicated

Compound Name	Sampling Round	Number of Detections	Range of Concentrations for Detections	Risk-Based Screening Level	Max. Contam. Level
Volatile Organic Compounds					
Carbon disulfide	1	4	1.2-3.5	2.1	Not Listed
	2	0	—		
Chloroform	1	1	2.0	0.15	100
	2	0	—		
Semivolatile Organic Compounds (Collected in Round 1 Only)					
bis(2-Ethylhexyl)phthalate (BEHP)	1	2	1.7-7.5	4.8	6
	2	—	No Analysis		
Pesticides					
Heptachlor epoxide	1	1	3.24	0.0012	0.2
	2	0	—		
Isodrin	1	2	8.0-11.3	Not Listed	Not Listed
	2	0	—		
Polychlorinated Biphenyls (Collected in Round 1 Only)					
No PCBs detected.					
Herbicides					
2,4-D (1 Sample Collected)	1	1	2.4	6.1	70
(5 Samples Collected)	2	0	—		
2,4,5-T	1	1	0.27	37	50
	2	1	1.5		
2,4,5-TP (Silvex)	1	1	0.72	29	50
	2	0	—		
DCAA	1	—	No Analysis	Not Listed	Not Listed
	2	5	84-117		
Organophosphate Pesticides (Collected in Round 1 Only)					
Parathion	1	1	1.0	22	Not Listed
	2	—	No Analysis		
Dioxins (Collected in Round 1 Only)					
Total TEQ	1	5	0.122-2.152 pg/L	0.5 pg/L	30pg/L
	2	—	No Analysis		

Table 4.3.5
SWMUs 14 and 15, and AOCs 670 and 684
Inorganic Chemicals in Shallow Groundwater (µg/L)

Round 1: 5 Samples Collected, 0 Samples Duplicated
Round 2: 5 Samples Collected, 0 Samples Duplicated

Chemical Name[a]	Sampling Round	Number of Detections	Range of Concentrations for Detections	Risk-Based Screening Level	Upper Tolerance Limit of Background[b]	Max. Contam. Level
Aluminum[c]	1 2	— 1	No Analysis 482-15,300	3,700	Not Valid	Not Listed
Arsenic	1 2	5 0	1.0-7.6 —	0.038	27.99	50
Barium	1 2	2 3	84.5-166 44.2-58.4	260	323	2,000
Calcium[d]	1 2	— 5	No Analysis 74,600-252,000	Not Listed	Nutrient	Not Listed
Chromium[e]	1 2	0 1	— 44.4	18[e]	Not Valid	100
Iron	1 2	— 5	No Analysis 2,130-38,400	Not Listed	45,760	Not Listed
Lead	1 2	5 1	1.3-5.0 19.7	15[e]	4.697	15[e]
Magnesium	1 2	— 5	No Analysis 119,000-190,000	Not Listed	3,866,000	Not Listed
Manganese	1 2	— 5	No Analysis 77.2-2,350	18	3,391	Not Listed
Potassium[d]	1 2	— 5	No Analysis 38,000-66,000	Not Listed	Nutrient	Not Listed
Selenium	1 2	3 0	1.2-1.6 —	18	3.154	50
Sodium[d]	1 2	— 5	No Analysis 596,000-1,270,000	Not Listed	Nutrient	Not Listed
Vanadium[d]	1 2	0 1	— 65.2	26	Not Valid	Not Listed
Zinc[d]	1 2	0 1	— 82.8	1,100	Not Valid	Not Listed
Hexavalent Chromium	1 2		Not Detected No Analysis			
Cyanide	1 2		Not Detected No Analysis			

Notes:
[a] = Only elements with detections are listed. Hexavalent chromium and cyanide were separate analyses.
[b] = See Appendix G for UTL determinations.
[c] = Based on treatment technique AL.
[d] = High percentage of nondetects prevented determination of UTL.
[e] = Element considered to be a nutrient; therefore, UTL was not determined.
[f] = If trivalent chromium, RBSL-3,700 µg/L.

Table 4.3.6
SWMUs 14 and 15, and AOCs 670 and 684
Inorganic Chemicals in Deep Groundwater (µg/L)

Round 1: 5 Samples Collected, 1 Sample Duplicated
Round 2: 5 Samples Collected, 1 Sample Duplicated

Chemical Name[a]	Sampling Round	Number of Detections	Range of Concentrations for Detections	Risk-Based Screening Level	Upper Tolerance Limit of Background[b]	Max. Contam. Level
Arsenic	1 2	5 1	1.7-10.2 5.5	0.038	14.98	50
Barium	1 2	4 5	89.1-268 62.1-246	260	236.9	2,000
Cadmium[c]	1 2	1 3	2.9 1.3-2.9	1.8	Not Valid	5
Calcium[d]	1 2	— 5	No Analysis 169,000-221,000	Not Listed	Nutrient	Not Listed
Iron	1 2	— 2	No Analysis 191-408	Not Listed	8,787	Not Listed
Lead	1 2	3 0	1.3-8.3 —	15[e]	4.263	15[e]
Magnesium	1 2	— 5	No Analysis 869,000-1,195,000	Not Listed	1,114,000	Not Listed
Manganese	1 2	— 5	No Analysis 10.15-109	18	776.2	Not Listed
Potassium[d]	1 2	— 5	No Analysis 222,000-284,000	Not Listed	Nutrient	Not Listed
Selenium	1 2	4 0	1.1-1.7 —	18	2.103	50
Sodium[d]	1 2	— 5	No Analysis -8,025,000	Not Listed	Nutrient	Not Listed
Thallium[e]	1 2	2 0	1.2-1.2 —	0.29[e]	Not Valid	2
Hexavalent Chromium	1 2	— —	Not Detected No Analysis			
Cyanide	1 2	— —	Not Detected No Analysis			

Notes:
[a] = Only elements with detections are listed. Hexavalent chromium and cyanide were separate analyses.
[b] = See Appendix J for UTL determinations.
[c] = Based on treatment technique AL.
[d] = High percentage of nondetects in background samples prevented determination of UTL.
[e] = Thallium carbonate used as surrogate.
[f] = Element considered to be a nutrient; therefore, UTL was not determined.

Table 4.3.7
SWMU 14
Organic Compounds Detected in Sediment (µg/kg)

Compound Name	No. of Detections	Range of Concentrations	Sediment Screening Value
Volatile Organic Compounds *(4 Samples Collected, 0 Samples Duplicated)*			
Acetone	2	156-361	—
Carbon Disulfide	2	4-5	—
Toluene	2	3.6-8.2	—
Methylene Chloride	1	172	—
2-Butanone	2	17.8-36.7	—
1,1-Dichloroethene	1	3.2	—
Tetrachloroethene	1	87.1	—
Trichloroethene	1	37	—
1,2,3-Trichloropropane	1	12.2	—
Vinyl Chloride	1	17.8	—
Xylene	2	1.7-2.8	—
Semivolatile Organic Compounds *(4 Samples Collected, 0 Samples Duplicated)*			
Fluoranthene	4	51.4-12800	—
Pyrene	3	197-11800	380
Benzo(a)anthracene	2	126-7900	160
bis(2-Ethylhexyl)phthalate	1	156	—
Acenaphthene	1	1330	16
Dibenzofuran	1	472	—
Fluorene	1	842	18
Phenanthrene	2	157-7840	140
Chrysene	3	82.7-8490	220
Benzo(b)fluoranthene	4	51.4-9940	—
Anthracene	1	1770	85
Benzo(k)fluoranthene	3	103-8390	—
Benzo(g,h,i)perylene	1	6510	—

Table 4.3.7
SWMU 14
Organic Compounds Detected in Sediment (µg/kg)

Compound Name	No. of Detections	Range of Concentrations	Sediment Screening Value
Semivolatile Organic Compounds *(4 Samples Collected, 0 Samples Duplicated)*			
Benzo(a)pyrene	4	50-12100	230
Dibenzo(a,h)anthracene	1	3000	31
Indeno(1,2,3-cd)pyrene	1	7040	—
Pesticide Compounds *(4 Samples Collected, 0 Samples Duplicated)*			
beta-BHC	2	2.6-3.2	—
4-4'-DDT	3	6.2-25.3	1
4-4'-DDD	3	3.6-338	—
4-4'-DDE	2	39-89.2	—
alpha-Chlordane	3	2.3-58.7	0.5
gamma-Chlordane	2	92.3-98.1	0.5
Appendix IX Herbicide Compounds *(4 Samples Collected, 0 Samples Duplicated)*			
2,4,5-T	2	14.4-19.8	—
2,4-D	2	97.1-116	—
TPH *(4 Samples Collected, 0 Samples Duplicated)*			
TPH	2	780,000-2,100,000	—
Dioxin Compounds *(4 Samples Collected, 0 Samples Duplicated)*			
Dioxin	4	5.133-67.623 (picograms/gram)	—

Note:
— = No reported sediment screening value.

Table 4.3.8
SWMU 14
Inorganic Elements Detected in Sediment (mg/kg)
(4 Samples Collected, 0 Samples Duplicated)

Compound Name	No. of Detections	Range of Concentrations	Sediment Screening Value
Copper	4	10.2-30.3	28
Lead	2	112-148	21
Arsenic	4	5.5-20.3	8
Barium	2	24.5-32.5	—
Beryllium	4	0.46-1.2	—
Cadmium	1	0.63	1
Cobalt	1	7.6	—
Nickel	4	12.7-18.6	20.9
Vanadium	4	27.5-71	—
Zinc	4	51.6-136	68
Selenium	3	0.15-1.4	—
Mercury	2	0.07-0.27	0.1
Chromium	4	37.9-45.8	33

Note:
— = No reported sediment screening value.

Table 4.3.9
SWMU 14
Organic Compounds Detected in Surface Water (µg/L)

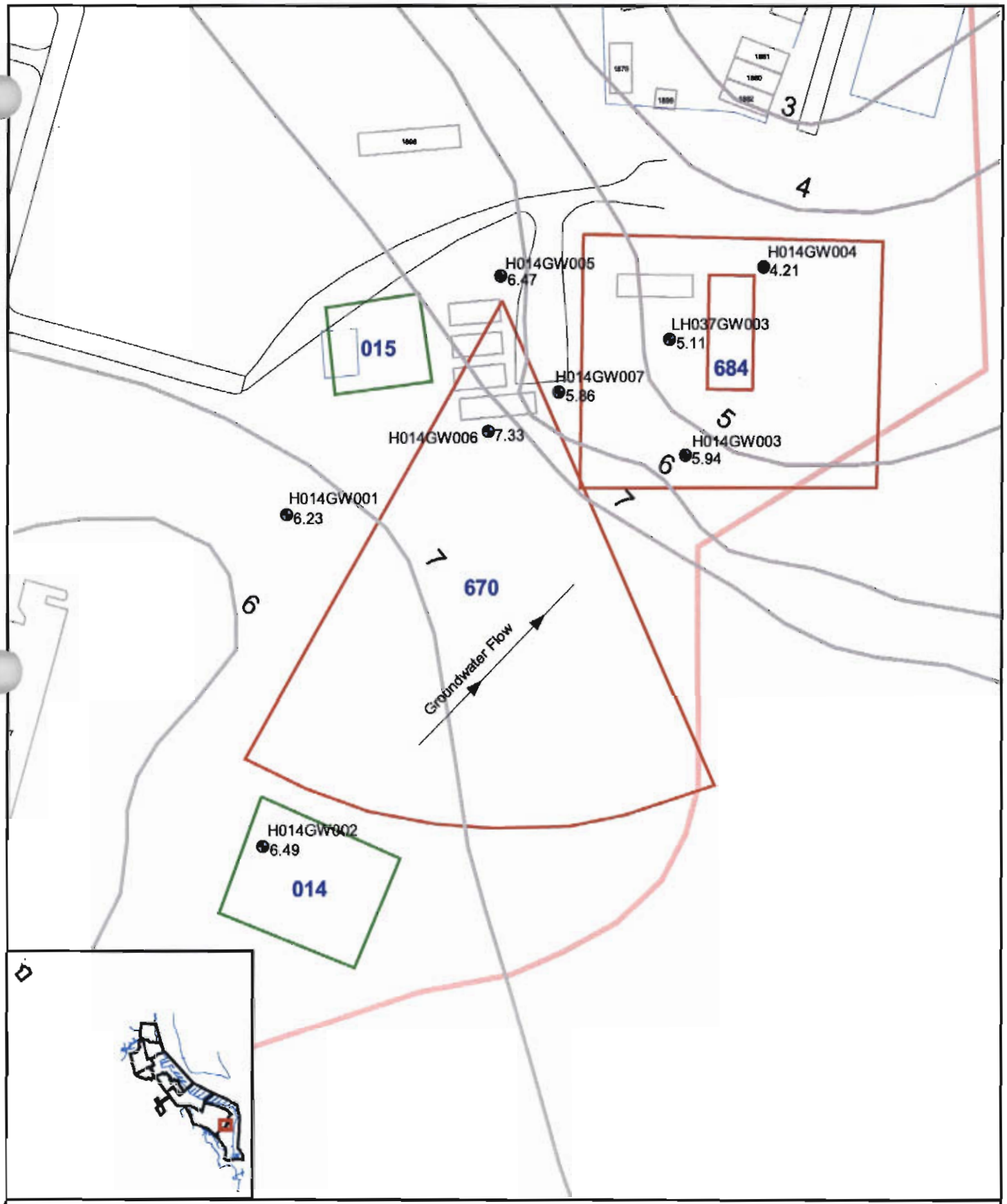
Compound Name	No. of Detections	Range of Concentrations	Chronic Marine Water Quality Criteria
Volatile Organic Compounds *(1 Sample Collected, 0 Samples Duplicated)*			
No VOCs detected			
Semivolatile Organic Compounds *(1 Sample Collected, 0 Samples Duplicated)*			
No SVOCs detected			
Pesticide Compounds *(1 Sample Collected, 0 Samples Duplicated)*			
No pesticides detected			
PCB Compounds *(1 Sample Collected, 0 Samples Duplicated)*			
No PCBs detected			
Appendix IX Herbicide Compounds *(1 Sample Collected, 0 Samples Duplicated)*			
2,4,5-TP	1	0.34	—
Organophosphate Pesticide Compounds *(1 Sample Collected, 0 Samples Duplicated)*			
No organophosphates detected			
Dioxin Compounds *(1 Sample Collected, 0 Samples Duplicated)*			
Dioxins	1	7.327 pg/L	—

Notes:
— = No reported water quality criteria value.

Table 4.3.10
SWMU 14
Inorganic Elements Detected in Surface Water (µg/L)
(1 Sample Collected, 0 Samples Duplicated)

Element	No. of Detections	Range of Concentrations	Chronic Marine Quality Criteria
Lead	1	33.5	8.5
Arsenic	1	338	36
Barium	1	162	—
Nickel	1	18.4	8.3
Vanadium	1	69.6	—
Selenium	1	1.4	71
Mercury	1	0.17	0.025
Hexavalent Chromium		Not Detected	
Cyanide		Not Detected	

Note:
— = No reported water quality criteria value.



Groundwater Monitoring Well
6.49 Groundwater Elevation (Mar 2002)
Shallow Groundwater Elev. Contours (Mar 2002)
Roads
AOC Boundary
SWMU Boundary
Buildings
Zone Boundary

N

0 100 200 Feet

1 inch = 196 feet

Figure C-1
Shallow Groundwater Contours
Combined SWMU 14, Zone H
Charleston Naval Complex

CH2MHILL

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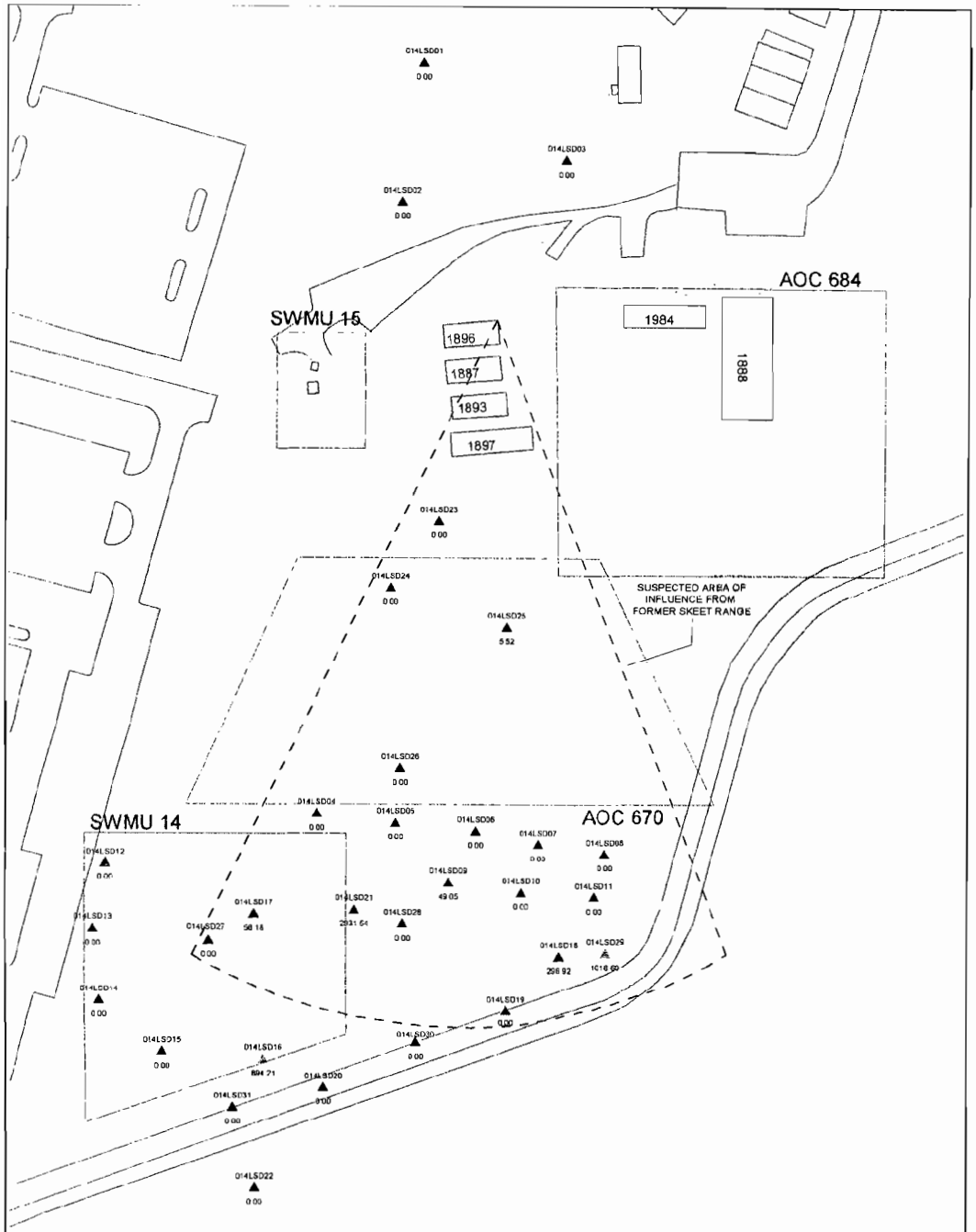
Table 2.6
Lead Shot Analysis Summary for Combined SWMU 14

Sample ID	Initial Wet Mass (kg)	Initial Dry Mass (kg)	Shot Size: Sieve and Inches	Lead Shot Mass (mg)	Lead Shot Concentration (mg/kg)
014LSD0101	7.0974	4.9989	—	0	0
014LSD0201	8.3175	7.5204	—	0	0
014LSD0301	9.2996	7.2959	—	0	0
014LSD0401	8.4644	7.2947	—	0	0
014LSD0501	7.2644	6.2844	—	0	0
014LSD0601	9.7939	7.3786	—	0	0
014LSD0701	7.4900	5.3723	—	0	0
014LSD0801	8.7151	6.9537	—	0	0
014LSD0901	8.3601	6.1162	No. 16 sieve; 0.0469 inches	300	49.05
014LSD1001	9.5173	8.1275	—	0	0
014LSD1101	11.5570	8.1426	—	0	0
014LSD1201	6.2177	5.3266	—	0	0
014LSD1301	8.4807	7.8432	—	0	0
014LSD1401	10.5655	8.2790	—	0	0
014LSD1501	11.7710	8.4280	—	0	0
014LSD1601	8.8273	7.0453	No. 16 sieve; 0.0469 inches	6,300	894.21
014LSD1701	6.6222	5.3399	No. 16 sieve; 0.0469 inches	300	56.18
014LSD1801	6.6898	5.3886	No. 16 sieve; 0.0469 inches	1,600	296.92
014LSD1901	7.2834	6.0579	—	0	0
014LSD2001	5.8627	4.8622	—	0	0
014LSD2101	6.9765	5.7990	No. 16 sieve; 0.0469 inches	17,000	2,931.54
014LSD2201	7.0476	5.3642	—	0	0
014LSD2301	4.1665	3.7163	—	0	0
014LSD2401	3.2431	2.3389	—	0	0
014LSD2501	2.7209	1.8122	No. 16 sieve; 0.0469 inches	10	5.52
014LSD2601	4.2111	2.9215	—	0	0

Table 2.6
Lead Shot Analysis Summary for Combined SWMU 14

Sample ID	Initial Wet Mass (kg)	Initial Dry Mass (kg)	Shot Size: Sieve and Inches	Lead Shot Mass (mg)	Lead Shot Concentration (mg/kg)
014LSD2701	3.3593	2.4085	—	0	0
014LSD2801	4.1724	2.8367	—	0	0
014LSD2901	4.1486	3.0434	No. 16 sieve; 0.0469 inches	3,100	1,018.6
014LSD3001	4.4923	3.5398	—	0	0
014LSD3101	3.8257	2.8192	—	0	0
014LSD3201	3.0422	2.1674	—	0	0
014LSD3301	5.0878	3.5958	—	0	0

Notes:
mg — milligram
mg/kg - milligram per kilogram



LEGEND

LEAD SHOT CONTAMINATION
(mg lead particulate per kg soil)

- X < 400
- 400 < X < 1300 (Above USEPA Residential Cleanup Standards)
- X > 1300 (Above USEPA Industrial Clean Up Standards)

BUILDING
BOUNDARY
FENCE
ROAD
SIDE-WALKS

N

0 100 Feet

COMBINED SWMU 14
CMS REPORT
CHARLESTON NAVAL COMPLEX
Charleston, SC

Figure 2.10
Lead Shot Distribution

ENSAFE

g:/projects/charlstn/zone h/swmu 14/lead_shot

October 6, 1999

	StationID	H014SB012		H014SB013		H014SB014		H014SB016		H014SB017		H014SB018	
	SampleID	014SB01201 (0-1ft)		014SB01301 (0-1ft)		014SB01401 (0-1ft)		014SB01601 (0-1ft)		014SB01701 (0-1ft)		014SB01801 (0-1ft)	
	DateCollected	08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00	
	DateAnalyzed	08/12/2001		08/12/2001		08/12/2001		08/12/2001		08/12/2001		08/12/2001	
	SDGNumber	47308		47308		47308		47308		47308		47308	
Parameter	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Antimony	mg/Kg												
Antimony	ug/Kg												
Thallium	ug/Kg												
Arsenic	mg/Kg												
Lead	mg/Kg	136	J	119	J	81.4	J	185	J	104	J	107	J

	StationID	H014SB019		H014SB020		H014SB021		H014SB022		H014SB023		H014SB024	
	SampleID	014SB01901 (0-1ft)		014SB02001 (0-1ft)		014SB02101 (0-1ft)		014SB02201 (0-1ft)		014SB02301 (0-1ft)		014SB02401 (0-1ft)	
	DateCollected	08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00	
	DateAnalyzed	08/12/2001		08/13/2001		08/12/2001		08/13/2001		08/12/2001		08/12/2001	
	SDGNumber	47308		47308		47308		47308		47308		47308	
Parameter	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Antimony	mg/Kg												
Antimony	ug/Kg												
Thallium	ug/Kg												
Arsenic	mg/Kg												
Lead	mg/Kg	88.2	J	43700	J	193	J	12.8	J	164	J	96.8	J

	StationID	H014SB025		H014SB025		H014SB026		H014SB027		H014SB028		H014SB029	
	SampleID	014CB02501 (0-1ft)		014SB02501 (0-1ft)		014SB02601 (0-1ft)		014SB02701 (0-1ft)		014SB02801 (0-1ft)		014SB02901 (0-1ft)	
	DateCollected	08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00		08/09/2001 0:00		08/09/2001 0:00	
	DateAnalyzed	08/12/2001		08/12/2001		08/12/2001		08/12/2001		08/12/2001		08/12/2001	
	SDGNumber	47308		47308		47313		47313		47313		47313	
Parameter	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Antimony	mg/Kg												
Antimony	ug/Kg												
Thallium	ug/Kg												
Arsenic	mg/Kg												
Lead	mg/Kg	80.2	J	127	J	31	J	288	J	35.8	J	78.2	J

	StationID	H014SB030		H014SB031		H014SB032		H014SB033		H014SB034		H014SB035	
	SampleID	014SB03001 (0-1ft)		014SB03101 (0-1ft)		014SB03201 (0-1ft)		014SB03301 (0-1ft)		014SB03401 (0-1ft)		014CB03501 (0-1ft)	
	DateCollected	08/09/2001 0:00		08/09/2001 0:00		08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00	
	DateAnalyzed	08/12/2001		08/12/2001		08/12/2001		08/12/2001		08/12/2001		08/12/2001	
	SDGNumber	47313		47313		47313		47313		47313		47313	
Parameter	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Antimony	mg/Kg												
Antimony	ug/Kg												
Thallium	ug/Kg												
Arsenic	mg/Kg												
Lead	mg/Kg	149	J	111	J	52.1	J	166	J	41.7	J	35	J

	StationID	H014SB035		H015SB009		H015SB010		H015SB011		H015SB012		H015SB015	
	SampleID	014SB03501 (0-1ft)		015SB00901 (0-1ft)		015SB01001 (0-1ft)		015SB01101 (0-1ft)		015SB01201 (0-1ft)		014SB01501 (0-1ft)	
	DateCollected	08/08/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/08/2001 0:00	
	DateAnalyzed	08/12/2001		08/12/2001		08/12/2001		08/12/2001		08/12/2001		08/12/2001	
	SDGNumber	47313		47296		47296		47296		47296		47308	
Parameter	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Antimony	mg/Kg												
Antimony	ug/Kg												
Thallium	ug/Kg												
Arsenic	mg/Kg			18.5	=	10.4	=	18	=	20.7	=		
Lead	mg/Kg	74.2	J									145	J

	StationID	H670SB036		H670SB037		H670SB037		H670SB038		H670SB039		H670SB056	
	SampleID	670SB03601 (0-1ft)		670CB03701 (0-1ft)		670SB03701 (0-1ft)		670SB03801 (0-1ft)		670SB03901 (0-1ft)		670SB05601 (0-1ft)	
	DateCollected	08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00	
	DateAnalyzed	08/12/2001		08/12/2001		08/12/2001		08/12/2001		08/12/2001		08/12/2001	
	SDGNumber	47308		47308		47308		47308		47308		47313	
Parameter	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Antimony	mg/Kg											0.651	UJ
Antimony	ug/Kg												
Thallium	ug/Kg												
Arsenic	mg/Kg											12.9	=
Lead	mg/Kg	268	J	176	J	32.7	J	51.4	J	288	J	89	J

	StationID	H670SB057		H670SB058		H670SB059		H670SB064		H670SB065		H670SB066	
	SampleID	670SB05701 (0-1ft)		670SB05801 (0-1ft)		670SB05901 (0-1ft)		670SB06401 (0-1ft)		670SB06501 (0-1ft)		670SB06601 (0-1ft)	
	DateCollected	08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00	
	DateAnalyzed	08/12/2001		08/12/2001		08/12/2001		08/13/2001		08/13/2001		08/13/2001	
	SDGNumber	47313		47313		47313		47297		47297		47297	
Parameter	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Antimony	mg/Kg	0.617	UJ	1.02	UJ	0.689	UJ						
Antimony	ug/Kg							0.711	UJ	0.704	R	0.765	UJ
Thallium	ug/Kg												
Arsenic	mg/Kg	8.36	=	8.77	=	10.8	=						
Lead	mg/Kg	38.7	J	35.4	J	29.8	J						

	StationID	H670SB067		H670SB068		H670SB069		H670SB069		H670SB070		H670SB071	
	SampleID	670SB06701 (0-1ft)		670SB06801 (0-1ft)		670CB06901 (0-1ft)		670SB06901 (0-1ft)		670SB07001 (0-1ft)		670SB07101 (0-1ft)	
	DateCollected	08/08/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00	
	DateAnalyzed	08/13/2001		08/12/2001		08/12/2001		08/12/2001		08/12/2001		08/12/2001	
	SDGNumber	47297		47313		47313		47313		47313		47313	
Parameter	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Antimony	mg/Kg			1.44	UJ	2.7	J	1.94	J	15.3	J	1.58	UJ
Antimony	ug/Kg	0.689	R										
Thallium	ug/Kg												
Arsenic	mg/Kg			10.5	=	11.1	=	9.55	=	24.1	=	9.84	=
Lead	mg/Kg			82.6	J	205	J	132	J	3260	J	168	J

	StationID	H684SB053		H684SB053		H684SB054		H684SB055		H684SB056		H684SB057	
	SampleID	684CB05301 (0-1ft)		684SB05301 (0-1ft)		684SB05401 (0-1ft)		684SB05501 (0-1ft)		684SB5601 (0-1ft)		684SB05701 (0-1ft)	
	DateCollected	08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00		08/09/2001 0:00	
	DateAnalyzed	08/12/2001		08/12/2001		08/12/2001		08/12/2001		08/12/2001		08/12/2001	
	SDGNumber	47296		47296		47296		47296		47296		47297	
Parameter	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Antimony	mg/Kg												
Antimony	ug/Kg	0.676	R	0.631	R	0.65	R	0.717	R	0.67	R	0.662	R
Thallium	ug/Kg	0.655	UJ	0.612	UJ	0.63	UJ	1.74	UJ	0.65	UJ		
Arsenic	mg/Kg												
Lead	mg/Kg												

	StationID	H684SB058		H684SB059		H684SB060		H684SB061		H684SB062		H684SB063	
	SampleID	684SB05801 (0-1ft)		684SB05901 (0-1ft)		684SB06001 (0-1ft)		684SB06101 (0-1ft)		684SB06201 (0-1ft)		684SB06301 (0-1ft)	
	DateCollected	08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00	
	DateAnalyzed	08/12/2001		08/12/2001		08/12/2001		08/14/2001		08/14/2001		08/14/2001	
	SDGNumber	47297		47297		47297		47354		47354		47354	
Parameter	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Antimony	mg/Kg							0.595	UJ	0.57	UJ	1.42	J
Antimony	ug/Kg	0.666	R	0.674	R	0.796	UJ						
Thallium	ug/Kg												
Arsenic	mg/Kg												
Lead	mg/Kg												

	StationID	H684SB064		H684SB065		H684SB066		H684SB067		H684SB068		H684SB069	
	SampleID	684SB06401 (0-1ft)		684SB06501 (0-1ft)		684SB06601 (0-1ft)		684SB06701 (0-1ft)		684SB06801 (0-1ft)		684SB06901 (0-1ft)	
	DateCollected	08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00	
	DateAnalyzed	08/14/2001		08/14/2001		08/14/2001		08/14/2001		08/14/2001		08/14/2001	
	SDGNumber	47354		47354		47354		47354		47354		47354	
Parameter	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Antimony	mg/Kg	1.62	J	0.533	UJ	0.799	J	0.565	UJ	0.849	J	0.675	UJ
Antimony	ug/Kg												
Thallium	ug/Kg												
Arsenic	mg/Kg												
Lead	mg/Kg												

	StationID	H684SB070		H684SB071		H684SB072		H684SB073		H684SB074		H684SB074	
	SampleID	684SB07001 (0-1ft)		684SB07101 (0-1ft)		684SB07201 (0-1ft)		684SB07301 (0-1ft)		684CB07401 (0-1ft)		684SB07401 (0-1ft)	
	DateCollected	08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00	
	DateAnalyzed	08/14/2001		08/14/2001		08/14/2001		08/14/2001		08/14/2001		08/14/2001	
	SDGNumber	47354		47354		47354		47354		47354		47354	
Parameter	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Antimony	mg/Kg	0.647	UJ	0.695	UJ	0.702	UJ	0.72	UJ	0.514	UJ	0.542	UJ
Antimony	ug/Kg												
Thallium	ug/Kg												
Arsenic	mg/Kg												
Lead	mg/Kg												

	StationID	H684SB075		H684SB076		H684SB109		H684SB109		H684SB110		H684SB111	
	SampleID	684SB07501 (0-1ft)		684SB07601 (0-1ft)		684CB10901 (0-1ft)		684SB10901 (0-1ft)		684SB11001 (0-1ft)		684SB11101 (0-1ft)	
	DateCollected	08/10/2001 0:00		08/10/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00	
	DateAnalyzed	08/14/2001		08/14/2001		08/13/2001		08/13/2001		08/13/2001		08/12/2001	
	SDGNumber	47354		47354		47297		47297		47297		47297	
Parameter	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Antimony	mg/Kg	0.522	UJ	0.55	UJ								
Antimony	ug/Kg					0.661	R	0.742	R	0.696	R	0.678	R
Thallium	ug/Kg												
Arsenic	mg/Kg												
Lead	mg/Kg												

	StationID	H684SB112		H684SB113		H684SB114		H684SB115		H684SB116	
	SampleID	684SB11201 (0-1ft)		684SB11301 (0-1ft)		684SB11401 (0-1ft)		684SB11501 (0-1ft)		684SB11601 (0-1ft)	
	DateCollected	08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00	
	DateAnalyzed	08/12/2001		08/13/2001		08/13/2001		08/13/2001		08/13/2001	
	SDGNumber	47297		47297		47297		47297		47297	
Parameter	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Antimony	mg/Kg										
Antimony	ug/Kg	0.668	R	1.01	UJ	0.971	UJ	0.602	R	0.628	R
Thallium	ug/Kg										
Arsenic	mg/Kg										
Lead	mg/Kg										

Analytical Data Summary

	StationID	H015SB009		H015SB010		H015SB011		H015SB012		H670SB040	
	SampleID	015SB00901 (0-1ft)		015SB01001 (0-1ft)		015SB01101 (0-1ft)		015SB01201 (0-1ft)		670SB04001 (0-1ft)	
	DateCollected	08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00	
	DateAnalyzed	08/16/2001		08/14/2001		08/13/2001		08/14/2001		08/14/2001	
	SDGNumber	47296		47296		47296		47296		47306	
Parameter	**Units**										
Naphthalene	ug/Kg	45.8	U	42.7	U	47.6	U	41.9	U	352	J
Acenaphthylene	ug/Kg	6.7	J	42.7	U	47.6	U	41.9	U	698	=
Acenaphthene	ug/Kg	33.5	J	20.9	J	47.6	U	59	=	2360	=
Fluorene	ug/Kg	18	J	247	=	47.6	U	254	=	1190	=
Phenanthrene	ug/Kg	233	=	123	=	31.6	J	351	=	13800	=
Anthracene	ug/Kg	54.8	=	30.5	J	7.2	J	77.6	=	3090	=
Flouranthene	ug/Kg	586	=	452	=	246	=	643	=	18100	=
Pyrene	ug/Kg	485	=	357	=	75	=	638	=	27600	=
Benzo(a)Anthracene	ug/Kg	428	=	370	=	63.5	=	447	=	21000	=
Chrysene	ug/Kg	489	=	439	=	90.5	=	533	=	26300	=
Benzo(b)Fluoranthene	ug/Kg	1160	=	740	J	430	J	822	J	17400	J
Benzo(k)Fluoranthene	ug/Kg	108	=	524	=	80.9	=	600	=	14500	J
Benzo(a)Pyrene	ug/Kg	711	=	666	=	99	=	769	=	25500	J
Indeno(1,2,3-c,d)pyrene	ug/Kg	438	=	370	=	187	=	429	=	9050	=
Dibenz(a,h)anthracene	ug/Kg	45.8	U	274	=	47.6	U	306	=	7200	J
Benzo(g,h,i)Perylene	ug/Kg	407	=	316	=	86.8	=	426	=	12900	J
BEQs											
BEQ Concentrations	**ug/Kg**	938.1		1093.7		191.7		1251.3		37616.3	

Analytical Data Summary

	StationID	H670SB041		H670SB042		H670SB043		H670SB044		H670SB044	
	SampleID	670SB04101 (0-1ft)		670SB04201 (0-1ft)		670SB04301 (0-1ft)		670CB04401 (0-1ft)		670CB04401 (0-1ft)	
	DateCollected	08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00	
	DateAnalyzed	08/14/2001		08/14/2001		8/14/01		8/14/01		08/14/2001	
	SDGNumber	47306		47306		47309		47309		47309	
Parameter	**Units**										
Naphthalene	ug/Kg	512	=	490	U	378	U	153	=	153	=
Acenaphthylene	ug/Kg	876	=	490	U	378	U	47.6	U	47.6	U
Acenaphthene	ug/Kg	2860	=	2090	=	1140	=	764	=	764	=
Fluorene	ug/Kg	1340	=	1570	=	687	=	398	=	398	=
Phenanthrene	ug/Kg	16100	=	15500	=	9340	=	4300	=	4300	=
Anthracene	ug/Kg	4090	=	3980	=	1970	=	1130	=	1130	=
Flouranthene	ug/Kg	23100	=	18700	=	12100	=			43800	=
Pyrene	ug/Kg	31600	=	18800	=	20000	=			33500	=
Benzo(a)Anthracene	ug/Kg	17400	=	12900	=	19500	=	4600	=	4600	=
Chrysene	ug/Kg	18500	=	15100	=	26600	=	4590	=	4590	=
Benzo(b)Fluoranthene	ug/Kg	24200	=	16600	=	20900	=	10400	=	52200	=
Benzo(k)Fluoranthene	ug/Kg	16400	=	12900	=	378	U	1070	=	1070	=
Benzo(a)Pyrene	ug/Kg	25000	=	17300	=	21200	=	6580	=	6580	=
Indeno(1,2,3-c,d)pyrene	ug/Kg	11900	=	9070	=	4880	=	2820	=	2820	=
Dibenz(a,h)anthracene	ug/Kg	5500	=	4940	=	378	U	47.6	U	47.6	U
Benzo(g,h,i)Perylene	ug/Kg	12600	=	9160	=	7840	=	3450	=	3450	=
BEQs											
BEQ Concentrations	**ug/Kg**	36032.5		26241.1		25945.5	=	8401.1	=	8401.1	

Analytical Data Summary

	StationID	H670SB048		H670SB049		H670SB050		H670SB051		H670SB052	
	SampleID	670SB04801LR (0-1ft)		670SB04901 (0-1ft)		670SB05001 (0-1ft)		670SB05101 (0-1ft)		670SB05201 (0-1ft)	
	DateCollected	08/08/2001 0:00		08/09/2001 0:00		08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00	
	DateAnalyzed	08/15/2001		08/14/2001		08/14/2001		08/15/2001		08/14/2001	
	SDGNumber	47309		47309		47309		47309		47309	
Parameter	**Units**										
Naphthalene	ug/Kg	1110	=	76.4	=	24.5	J	1040	=	44.9	U
Acenaphthylene	ug/Kg	47.6	U	43.3	U	45.4	U	45.8	U	44.9	U
Acenaphthene	ug/Kg	6080	=	364	=	106	=	4040	=	44.9	U
Fluorene	ug/Kg	3610	=	242	=	46.3	=	1720	=	44.9	U
Phenanthrene	ug/Kg	29600	=	2480	=	627	=	13800	=	45.8	=
Anthracene	ug/Kg	7950	=	607	=	146	=	4600	=	8.9	J
Flouranthene	ug/Kg	43800	=	3600	=	1100	=	23000	=	76.7	=
Pyrene	ug/Kg	33500	=	3170	=	977	=	18700	=	77.1	=
Benzo(a)Anthracene	ug/Kg	22800	=	2240	=	721	=	13000	=	44.9	U
Chrysene	ug/Kg	22800	=	2350	=	799	=	12500	=	44.9	U
Benzo(b)Fluoranthene	ug/Kg	52200	=	4130	=	1850	=	25400	=	112	=
Benzo(k)Fluoranthene	ug/Kg	47.6	U	480	=	171	=	45.8	U	44.9	U
Benzo(a)Pyrene	ug/Kg	34400	=	3230	=	1160	=	16900	=	78.2	=
Indeno(1,2,3-c,d)pyrene	ug/Kg	14800	=	1210	=	571	=	8310	=	166	=
Dibenz(a,h)anthracene	ug/Kg	47.6	U	43.3	U	45.4	U	45.8	U	44.9	U
Benzo(g,h,i)Perylene	ug/Kg	16900	=	1330	=	601	=	8960	=	72.1	=
BEQs											
BEQ Concentrations	**ug/Kg**	43426.8		4016.8		1499.4		21606.6		130.9	

Analytical Data Summary

	StationID	H670SB053		H670SB054		H670SB055		H670SB060		H670SB061	
	SampleID	670SB05301 (0-1ft)		670SB05401 (0-1ft)		670SB05501 (0-1ft)		670SB06001 (0-1ft)		670SB06101 (0-1ft)	
	DateCollected	08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00		08/08/2001 0:00	
	DateAnalyzed	08/14/2001		08/14/2001		08/14/2001		08/14/2001		08/14/2001	
	SDGNumber	47309		47309		47309		47309		47309	
Parameter	**Units**										
Naphthalene	ug/Kg	46.3	U	31.8	J	44.6	U	48	U	43.6	J
Acenaphthylene	ug/Kg	46.3	U	44.1	U	44.6	U	48	U	45.7	U
Acenaphthene	ug/Kg	46.3	U	85.7	=	44.6	U	48	U	178	=
Fluorene	ug/Kg	20.8	J	55	=	44.6	U	48	U	100	=
Phenanthrene	ug/Kg	193	=	680	=	65.5	=	101	=	1170	=
Anthracene	ug/Kg	37.8	J	147	=	14.1	J	20.8	J	296	=
Flouranthene	ug/Kg	208	=	934	=	120	=	191	=	1850	=
Pyrene	ug/Kg	391	=	930	=	109	=	171	=	1940	=
Benzo(a)Anthracene	ug/Kg	952	J	681	=	44.6	U	48	U	1140	=
Chrysene	ug/Kg	1980	J	674	=	78.4	=	162	=	1170	=
Benzo(b)Fluoranthene	ug/Kg	867	=	1380	=	119	=	260	=	2900	=
Benzo(k)Fluoranthene	ug/Kg	46.3	U	44.1	U	44.6	U	48	U	250	=
Benzo(a)Pyrene	ug/Kg	730	=	833	=	94.2	=	177	=	1800	=
Indeno(1,2,3-c,d)pyrene	ug/Kg	268	=	432	=	171	=	218	=	834	=
Dibenz(a,h)anthracene	ug/Kg	46.3	U	44.1	U	44.6	U	48	U	45.7	U
Benzo(g,h,i)Perylene	ug/Kg	285	=	421	=	54.3	=	131	=	1030	=
BEQs											
BEQ Concentrations	**ug/Kg**	964.1		1105.2		148.0		251.6		2313.9	

Analytical Data Summary

	StationID	H670SB062		H670SB063		H684SB043		H670SB044		H670SB045	
	SampleID	670SB06201 (0-1ft)		670SB06301 (0-1ft)		670SB04301 (0-1ft)		670SB04401 (0-1ft)		670SB04501 (0-1ft)	
	DateCollected	08/08/2001 0:00		08/08/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00	
	DateAnalyzed	08/14/2001		08/14/2001		08/14/2001		08/14/2001		08/14/2001	
	SDGNumber	47309		47309		47309		47309		47309	
Parameter	**Units**										
Naphthalene	ug/Kg	47.8	U	73.5	=	378	U	477	U	1310	=
Acenaphthylene	ug/Kg	47.8	U	45.7	U	378	U	477	U	460	U
Acenaphthene	ug/Kg	47.8	U	312	=	1140	=	1730	=	6060	=
Fluorene	ug/Kg	47.8	U	129	=	687	=	1170	=	3100	=
Phenanthrene	ug/Kg	65	=	1630	=	9340	=	12400	=	30600	=
Anthracene	ug/Kg	13.7	J	364	=	1970	=	3170	=	7880	=
Flouranthene	ug/Kg	99.8	=	2820	=	12100	=	18100	=	52600	=
Pyrene	ug/Kg	112	=	2450	=	20000	=	15400	=	44700	=
Benzo(a)Anthracene	ug/Kg	47.8	U	1650	=	19500	=	14200	=	36300	=
Chrysene	ug/Kg	47.8	U	1700	=	26600	=	14400	=	34800	=
Benzo(b)Fluoranthene	ug/Kg	126	=	3680	=	20900	=	26200	=	114000	=
Benzo(k)Fluoranthene	ug/Kg	47.8	U	45.7	U	378	U	477	U	7470	=
Benzo(a)Pyrene	ug/Kg	77.6	=	2420	=	21200	=	18400	=	52600	=
Indeno(1,2,3-c,d)pyrene	ug/Kg	168	=	1030	=	4880	=	7310	=	17900	=
Dibenz(a,h)anthracene	ug/Kg	47.8	U	45.7	U	378	U	477	U	460	U
Benzo(g,h,i)Perylene	ug/Kg	47.8	U	1180	=	7840	=	8160	=	20600	=
BEQs											
BEQ Concentrations	**ug/Kg**	133.6		3080.8		25945.5		23426.3		69759.5	

Analytical Data Summary

	StationID	H684SB045		H684SB046		H684SB046		H670SB047		H684SB047		H684SB048	
	SampleID	684SB04501 (0-1ft)		670SB04601 (0-1ft)		684SB04601 (0-1ft)		670SB04701 (0-1ft)		684SB04701 (0-1ft)		684SB04801 (0-1ft)	
	DateCollected	08/10/2001 0:00		08/09/2001 0:00		08/10/2001 0:00		08/09/2001 0:00		08/10/2001 0:00		08/10/2001 0:00	
	DateAnalyzed	08/16/2001		08/14/2001		08/14/2001		08/14/2001		08/16/2001		08/14/2001	
	SDGNumber	47354		47309		47354		47309		47354		47354	
Parameter	**Units**												
Naphthalene	ug/Kg	179	U	49.4	U	176	U	146	=	44.4	U	406	U
Acenaphthylene	ug/Kg	131	J	49.4	U	176	U	7.3	J	5.1	J	406	U
Acenaphthene	ug/Kg	179	U	125	=	176	U	755	=	44.4	U	406	U
Fluorene	ug/Kg	36.2	J	73.9	=	176	U	422	=	251	=	406	U
Phenanthrene	ug/Kg	1640	=	912	=	176	U	4550	=	44.4	U	516	=
Anthracene	ug/Kg	136	J	211	=	176	U	1160	=	44.4	U	63.2	J
Flouranthene	ug/Kg	10500	=	1460	=	745	=	7400	=	274	=	3960	=
Pyrene	ug/Kg	8160	=	1490	=	58.1	J	5990	=	150	=	2560	=
Benzo(a)Anthracene	ug/Kg	1640	=	1340	=	176	U	5510	=	48.3	=	406	U
Chrysene	ug/Kg	2890	=	1490	=	176	U	5090	=	103	=	1190	=
Benzo(b)Fluoranthene	ug/Kg	2620	=	2550	=	176	UJ	10200	=	405	=	4370	J
Benzo(k)Fluoranthene	ug/Kg	74	J	241	=	176	U	1180	=	71.6	=	406	UJ
Benzo(a)Pyrene	ug/Kg	510	=	1850	=	176	U	6520	=	44.4	U	406	UJ
Indeno(1,2,3-c,d)pyrene	ug/Kg	726	=	739	=	176	U	3040	=	44.4	U	406	U
Dibenz(a,h)anthracene	ug/Kg	179	U	49.4	U	176	U	48.6	U	44.4	U	406	UJ
Benzo(g,h,i)Perylene	ug/Kg	272	=	862	=	176	U	3420	=	44.4	U	406	UJ
BEQs													
BEQ Concentrations	**ug/Kg**	1101.7		2341.5		212.2		8436.2		92.8		1294.9	

Analytical Data Summary

	StationID	H684SB049		H684SB050		H684SB051		H684SB052		H684SB052	
	SampleID	684SB04901 (0-1ft)		684SB05001 (0-1ft)		684SB05101 (0-1ft)		684CB05201 (0-1ft)		684SB05201 (0-1ft)	
	DateCollected	08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00	
	DateAnalyzed	08/16/2001		08/14/2001		08/16/2001		08/16/2001		08/16/2001	
	SDGNumber	47354		47354		47354		47354		47354	
Parameter	**Units**										
Naphthalene	ug/Kg	46	U	178	U	49.6	U	41	U	41.4	U
Acenaphthylene	ug/Kg	46	U	178	U	49.6	U	41	U	41.4	U
Acenaphthene	ug/Kg	114	=	178	U	49.6	U	41	U	41.4	U
Fluorene	ug/Kg	298	=	178	U	49.6	U	41	U	41.4	U
Phenanthrene	ug/Kg	627	=	178	U	49.6	U	41	U	41.4	U
Anthracene	ug/Kg	162	=	178	U	49.6	U	41	U	41.4	U
Flouranthene	ug/Kg	796	=	734	=	209	=	41	U	173	=
Pyrene	ug/Kg	1070	=	178	U	16.7	J	41	U	16.5	J
Benzo(a)Anthracene	ug/Kg	569	=	178	U	49.6	U	41	U	41.4	U
Chrysene	ug/Kg	679	=	178	U	49.6	U	41	U	21	J
Benzo(b)Fluoranthene	ug/Kg	830	J	178	UJ	49.6	UJ	41	UJ	336	J
Benzo(k)Fluoranthene	ug/Kg	546	=	178	UJ	49.6	U	41	U	13.6	J
Benzo(a)Pyrene	ug/Kg	794	=	178	UJ	49.6	U	41	U	26.8	J
Indeno(1,2,3-c,d)pyrene	ug/Kg	496	=	178	U	49.6	U	41	U	41.4	U
Dibenz(a,h)anthracene	ug/Kg	46	U	178	UJ	49.6	U	41	U	41.4	U
Benzo(g,h,i)Perylene	ug/Kg	556	=	178	UJ	49.6	U	41	U	41.4	U
BEQs											
BEQ Concentrations	**ug/Kg**	1012.6		393.5		59.8		49.4		85.4	

Analytical Data Summary

	StationID	H684SB062		H684SB077		H684SB078		H684SB079		H684SB080	
	SampleID	670CB06201 (0-1ft)		684SB07701 (0-1ft)		684SB07801 (0-1ft)		684SB07901 (0-1ft)		684SB08001 (0-1ft)	
	DateCollected	08/09/2001 0:00		08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00	
	DateAnalyzed	08/14/2001		08/14/2001		08/14/2001		08/17/2001		08/16/2001	
	SDGNumber	47309		47354		47354		47354		47354	
Parameter	**Units**										
Naphthalene	ug/Kg	48.3	U	177	U	453	U	36.9	U	8.8	J
Acenaphthylene	ug/Kg	48.3	U	177	U	453	U	36.9	U	42.1	U
Acenaphthene	ug/Kg	36.6	J	177	U	453	U	36.9	U	81.1	=
Fluorene	ug/Kg	17.9	J	1070	=	453	U	36.9	U	256	=
Phenanthrene	ug/Kg	226	=	1220	=	332	J	36.9	U	318	=
Anthracene	ug/Kg	58.9	=	341	=	77.8	J	36.9	U	80.2	=
Flouranthene	ug/Kg	413	=	2600	=	2310	=	16.9	J	749	=
Pyrene	ug/Kg	345	=	2460	=	706	=	19.5	J	1130	=
Benzo(a)Anthracene	ug/Kg	289	=	2550	=	681	=	36.9	U	857	=
Chrysene	ug/Kg	287	=	2740	=	756	=	36.9	U	1180	=
Benzo(b)Fluoranthene	ug/Kg	597	=	4200	J	4160	J	45.6	=	1420	J
Benzo(k)Fluoranthene	ug/Kg	48.3	U	4140	=	1190	=	6.7	J	1320	=
Benzo(a)Pyrene	ug/Kg	393	=	5060	=	1210	=	26.7	J	1670	=
Indeno(1,2,3-c,d)pyrene	ug/Kg	341	=	2530	=	1630	=	36.9	U	990	=
Dibenz(a,h)anthracene	ug/Kg	48.3	U	177	U	453	U	36.9	U	500	=
Benzo(g,h,i)Perylene	ug/Kg	292	=	2450	=	516	=	36.9	U	1150	=
BEQs											
BEQ Concentrations	**ug/Kg**	540.4		6120.6		2096.3		53.5		2511.1	

Analytical Data Summary

	StationID	H684SB081		H684SB083		H684SB084		H684SB085		H684SB086	
	SampleID	684SB08101 (0-1ft)		684SB08301 (0-1ft)		684SB08401 (0-1ft)		684SB08501 (0-1ft)		684CB08601 (0-1ft)	
	DateCollected	08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00	
	DateAnalyzed	08/15/2001		08/17/2001		08/15/2001		08/16/2001		08/16/2001	
	SDGNumber	47354		47354		47354		47354		47354	
Parameter	**Units**										
Naphthalene	ug/Kg	148	U	398	U	389	U	177	U	153	U
Acenaphthylene	ug/Kg	148	U	398	U	389	U	177	U	153	U
Acenaphthene	ug/Kg	148	U	398	U	389	U	876	=	153	U
Fluorene	ug/Kg	148	U	398	U	2220	=	1210	=	153	U
Phenanthrene	ug/Kg	148	U	398	U	499	=	3480	=	123	J
Anthracene	ug/Kg	148	U	398	U	103	J	972	=	24.2	J
Flouranthene	ug/Kg	612	=	1650	=	2140	=	6090	=	788	=
Pyrene	ug/Kg	148	U	123	J	865	=	9260	=	347	=
Benzo(a)Anthracene	ug/Kg	148	U	398	U	733	=	7680	=	296	=
Chrysene	ug/Kg	57.2	J	398	U	804	=	8220	=	364	=
Benzo(b)Fluoranthene	ug/Kg	1190	J	398	UJ	3600	J	9230	J	1560	J
Benzo(k)Fluoranthene	ug/Kg	66.9	J	398	U	1020	=	10900	=	379	J
Benzo(a)Pyrene	ug/Kg	62.7	J	398	U	1070	=	13300	=	525	J
Indeno(1,2,3-c,d)pyrene	ug/Kg	148	U	398	U	1480	=	6300	=	680	=
Dibenz(a,h)anthracene	ug/Kg	148	U	398	U	389	U	177	U	153	UJ
Benzo(g,h,i)Perylene	ug/Kg	148	U	398	U	602	=	6960	=	379	J
BEQs											
BEQ Concentrations	**ug/Kg**	271.2		479.8		1856.8		15826.7		935.8	

Analytical Data Summary

	StationID	H684SB086		H684SB087		H684SB088		H684SB089		H684SB090	
	SampleID	684SB08601 (0-1ft)		684SB08701 (0-1ft)		684SB08801 (0-1ft)		684SB08901 (0-1ft)		684SB09001 (0-1ft)	
	DateCollected	08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00		08/10/2001 0:00	
	DateAnalyzed	08/15/2001		08/15/2001		08/15/2001		08/15/2001		08/15/2001	
	SDGNumber	47354		47355		47355		47355		47355	
Parameter	**Units**										
Naphthalene	ug/Kg	157	U	38.2	U	537	=	616	=	38.8	U
Acenaphthylene	ug/Kg	157	U	38.2	U	161	U	152	U	38.8	U
Acenaphthene	ug/Kg	58.4	J	50.6	=	2120	=	2380	=	38.8	U
Fluorene	ug/Kg	906	=	17.3	J	1160	=	1280	=	38.8	U
Phenanthrene	ug/Kg	309	=	199	=	13200	=	14100	=	38.8	U
Anthracene	ug/Kg	70	J	49.9	=	3430	=	3530	=	38.8	U
Flouranthene	ug/Kg	1060	=	389	=	16400	=	16000	=	18	J
Pyrene	ug/Kg	710	=	509	=	17400	=	16300	=	20.1	J
Benzo(a)Anthracene	ug/Kg	601	=	369	=	9260	=	9860	=	20	J
Chrysene	ug/Kg	697	=	424	=	9570	=	10100	=	21.4	J
Benzo(b)Fluoranthene	ug/Kg	1860	J	583	=	11100	=	11200	=	21	J
Benzo(k)Fluoranthene	ug/Kg	1030	=	449	=	10600	=	11900	=	35	J
Benzo(a)Pyrene	ug/Kg	1150	=	572	=	13100	=	13400	=	31	J
Indeno(1,2,3-c,d)pyrene	ug/Kg	1060	=	393	=	4840	=	5600	=	127	=
Dibenz(a,h)anthracene	ug/Kg	157	U	38.2	U	161	U	152	U	38.8	U
Benzo(g,h,i)Perylene	ug/Kg	783	=	345	=	5230	=	5540	=	88.1	=
BEQs											
BEQ Concentrations	**ug/Kg**	1591.6		730.5		15816.1		16271.1		67.6	

Analytical Data Summary

	StationID	H684SB091		H684SB092		H684SB093		H684SB094	
	SampleID	684SB09101 (0-1ft)		684SB09201 (0-1ft)		684SB09301 (0-1ft)		684SB09401 (0-1ft)	
	DateCollected	08/10/2001 0:00		08/10/2001 0:00		08/09/2001 0:00		08/09/2001 0:00	
	DateAnalyzed	08/15/2001		08/15/2001		08/14/2001		08/14/2001	
	SDGNumber	47355		47355		47306		47306	
Parameter	**Units**								
Naphthalene	ug/Kg	26.7	J	331	=	446	U	1680	=
Acenaphthylene	ug/Kg	42.1	U	174	U	446	U	448	U
Acenaphthene	ug/Kg	210	=	1160	=	1020	J	7040	=
Fluorene	ug/Kg	112	=	267	=	480	=	3840	=
Phenanthrene	ug/Kg	1230	=	3490	=	6620	J	42300	=
Anthracene	ug/Kg	326	=	1060	=	1500	J	10100	=
Flouranthene	ug/Kg	2190	=	6720	=	10400	J	72700	=
Pyrene	ug/Kg	3090	=	9580	=	10400	J	95500	=
Benzo(a)Anthracene	ug/Kg	2400	=	7310	=	6880	J	37100	=
Chrysene	ug/Kg	2560	=	8000	=	8580	J	38400	=
Benzo(b)Fluoranthene	ug/Kg	3440	=	9800	=	8550	J	43900	=
Benzo(k)Fluoranthene	ug/Kg	3290	=	9210	=	7360	J	39300	=
Benzo(a)Pyrene	ug/Kg	3900	=	11900	=	10300	J	49000	=
Indeno(1,2,3-c,d)pyrene	ug/Kg	1980	=	5020	=	5950	J	21800	=
Dibenz(a,h)anthracene	ug/Kg	42.1	U	174	U	3600	J	10000	=
Benzo(g,h,i)Perylene	ug/Kg	2010	=	5480	=	6780	J	24500	=
BEQs									
BEQ Concentrations	**ug/Kg**	4738.5		14300.1		16120.2		69711.4	

Analytical Data Summary

	StationID	H684SB095		H684SB096		H684SB097		H684SB098		H684SB099	
	SampleID	684SB09501 (0-1ft)		684SB09601 (0-1ft)		684SB09701 (0-1ft)		684SB09801 (0-1ft)		684CB09901 (0-1ft)	
	DateCollected	08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00	
	DateAnalyzed	08/14/2001		08/14/2001		08/14/2001		08/15/2001		08/14/2001	
	SDGNumber	47306		47306		47306		47306		47306	
Parameter	**Units**										
Naphthalene	ug/Kg	302	=	1310	=	436	U	158	U	931	U
Acenaphthylene	ug/Kg	185	U	886	U	436	U	158	U	931	U
Acenaphthene	ug/Kg	1850	=	6570	=	436	U	112	J	931	U
Fluorene	ug/Kg	824	=	3480	=	436	U	52.6	J	931	U
Phenanthrene	ug/Kg	11400	=	41600	=	1740	=	822	=	5460	=
Anthracene	ug/Kg	2640	=	9980	=	425	J	198	=	1290	=
Flouranthene	ug/Kg	19000	=	58400	=	2640	=	1650	=	7430	=
Pyrene	ug/Kg	25200	=	86600	=	4740	=	2110	=	10600	=
Benzo(a)Anthracene	ug/Kg	14500	=	52700	=	4050	=	1330	=	10500	=
Chrysene	ug/Kg	16300	=	63600	=	5690	=	1580	=	17900	=
Benzo(b)Fluoranthene	ug/Kg	19900	J	55700	J	3490	J	2000	=	14400	J
Benzo(k)Fluoranthene	ug/Kg	15600	J	50500	J	2040	J	1190	=	931	UJ
Benzo(a)Pyrene	ug/Kg	21300	J	74000	J	5090	J	1970	=	12500	J
Indeno(1,2,3-c,d)pyrene	ug/Kg	9940	=	35600	=	2640	=	1490	=	6550	=
Dibenz(a,h)anthracene	ug/Kg	4770	J	886	UJ	436	UJ	158	U	931	UJ
Benzo(g,h,i)Perylene	ug/Kg	11600	J	43400	J	3320	J	1480	=	7910	J
BEQs											
BEQ Concentrations	**ug/Kg**	30676.3		89854.6		6570.1		2544.5		16603.2	

Analytical Data Summary

	StationID	H684SB099		H684SB100		H684SB101		H684SB102		H684SB103	
	SampleID	684SB09901 (0-1ft)		684SB10001 (0-1ft)		684SB10101 (0-1ft)		684SB10201 (0-1ft)		684SB10301 (0-1ft)	
	DateCollected	08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00	
	DateAnalyzed	08/14/2001		08/14/2001		08/15/2001		08/14/2001		08/14/2001	
	SDGNumber	47306		47306		47306		47306		47306	
Parameter	**Units**										
Naphthalene	ug/Kg	964	U	152	U	38.4	U	37.4	U	5.3	J
Acenaphthylene	ug/Kg	964	U	152	U	38.4	U	37.4	U	41	U
Acenaphthene	ug/Kg	1000	=	152	U	14.3	J	37.4	U	28.3	J
Fluorene	ug/Kg	964	U	152	U	38.4	U	37.4	U	12.5	J
Phenanthrene	ug/Kg	8760	=	401	=	77.9	=	37.4	U	180	=
Anthracene	ug/Kg	1760	=	77.7	J	21.1	J	37.4	U	39.9	J
Flouranthene	ug/Kg	10600	=	408	=	129	=	37.4	U	355	=
Pyrene	ug/Kg	26900	=	1230	=	149	=	37.4	U	324	=
Benzo(a)Anthracene	ug/Kg	18600	=	1400	=	104	=	37.4	U	245	=
Chrysene	ug/Kg	26600	=	2020	=	118	=	37.4	U	287	=
Benzo(b)Fluoranthene	ug/Kg	17100	J	1070	J	149	=	37.4	U	346	=
Benzo(k)Fluoranthene	ug/Kg	7900	J	152	UJ	123	=	37.4	U	302	=
Benzo(a)Pyrene	ug/Kg	25800	J	1510	J	156	=	37.4	U	405	=
Indeno(1,2,3-c,d)pyrene	ug/Kg	8970	=	152	U	197	=	37.4	U	361	=
Dibenz(a,h)anthracene	ug/Kg	964	UJ	152	UJ	38.4	U	37.4	U	218	=
Benzo(g,h,i)Perylene	ug/Kg	12400	J	1020	J	176	=	37.4	U	343	=
BEQs											
BEQ Concentrations	**ug/Kg**	31336.6		1920.1		221.5		43.2		721.5	

Analytical Data Summary

	StationID	H684SB104		H684SB104		H684SB105		H684SB106		H684SB107	
	SampleID	684SB10401 (0-1ft)		684SB10401 (0-1ft)		684SB10501 (0-1ft)		684SB10601 (0-1ft)		684SB10701 (0-1ft)	
	DateCollected	08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00	
	DateAnalyzed	08/14/2001		08/15/2001		08/15/2001		08/15/2001		08/15/2001	
	SDGNumber	47306		47306		47306		47306		47306	
Parameter	**Units**										
Naphthalene	ug/Kg	317	=	317	=	37.8	U	38.1	U	179	U
Acenaphthylene	ug/Kg	156	U	156	U	37.8	U	38.1	U	179	U
Acenaphthene	ug/Kg	1740	=	1740	=	37.8	U	38.1	U	57.9	J
Fluorene	ug/Kg	991	=	991	=	37.8	U	38.1	U	179	U
Phenanthrene	ug/Kg	15600	=	15600	=	37.8	U	38.1	U	433	=
Anthracene	ug/Kg	3040	=	3040	=	37.8	U	38.1	U	109	J
Flouranthene	ug/Kg	12100	=	12100	=	28.3	J	38.1	U	645	=
Pyrene	ug/Kg	36300	R	35300	=	44.3	=	38.1	U	913	=
Benzo(a)Anthracene	ug/Kg	31200	R	28000	=	27.6	J	38.1	U	641	=
Chrysene	ug/Kg	45500	R	37800	=	23.3	J	38.1	U	789	=
Benzo(b)Fluoranthene	ug/Kg	28300	R	29200	=	37.8	U	38.1	U	179	UJ
Benzo(k)Fluoranthene	ug/Kg	156	UJ	156	UJ	37.8	U	38.1	U	179	UJ
Benzo(a)Pyrene	ug/Kg	30600	R	35200	=	29.8	J	38.1	U	885	J
Indeno(1,2,3-c,d)pyrene	ug/Kg	11400	J	11400	J	112	=	38.1	U	946	=
Dibenz(a,h)anthracene	ug/Kg	156	UJ	156	UJ	37.8	U	38.1	U	179	UJ
Benzo(g,h,i)Perylene	ug/Kg	156	UJ	156	UJ	37.8	U	38.1	U	870	J
BEQs											
BEQ Concentrations	**ug/Kg**	0.0		42255.4		64.8		44.0		1243.2	
			42255.4								

Analytical Data Summary

	StationID	H684SB108		H684SB109		H684SB109		H684SB110		H684SB111	
	SampleID	684SB10801 (0-1ft)		684CB10901 (0-1ft)		684SB10901 (0-1ft)		684SB11001 (0-1ft)		684SB11101 (0-1ft)	
	DateCollected	08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00		08/09/2001 0:00	
	DateAnalyzed	08/15/2001		08/14/2001		08/14/2001		08/14/2001		08/14/2001	
	SDGNumber	47306		47297		47297		47297		47297	
Parameter	**Units**										
Naphthalene	ug/Kg	47.4	U	464	U	51.1	U	470	U	183	U
Acenaphthylene	ug/Kg	47.4	U	464	U	51.1	U	470	U	183	U
Acenaphthene	ug/Kg	47.4	U	1750	=	260	=	470	U	183	U
Fluorene	ug/Kg	47.4	U	3320	=	372	=	2680	=	183	U
Phenanthrene	ug/Kg	47.4	U	10200	=	1360	=	737	=	79.4	J
Anthracene	ug/Kg	47.4	U	2400	=	354	=	128	J	183	U
Flouranthene	ug/Kg	13	J	12400	=	1720	=	2780	=	798	=
Pyrene	ug/Kg	15.3	J	12500	=	2020	=	1940	=	176	J
Benzo(a)Anthracene	ug/Kg	47.4	U	6980	=	1310	=	1710	=	195	=
Chrysene	ug/Kg	47.4	U	7440	=	1520	=	2700	=	290	=
Benzo(b)Fluoranthene	ug/Kg	47.4	U	9590	=	1670	=	4560	=	1510	=
Benzo(k)Fluoranthene	ug/Kg	47.4	U	6850	=	1410	=	1190	=	83.4	J
Benzo(a)Pyrene	ug/Kg	47.4	U	9530	=	2090	=	2460	=	206	=
Indeno(1,2,3-c,d)pyrene	ug/Kg	47.4	U	5520	=	831	=	1890	=	558	=
Dibenz(a,h)anthracene	ug/Kg	47.4	U	464	U	462	=	470	U	183	U
Benzo(g,h,i)Perylene	ug/Kg	47.4	U	5240	=	974	=	1250	=	131	J
BEQs											
BEQ Concentrations	**ug/Kg**	54.8		12046.9		2948.7		3525.6		524.9	

Analytical Data Summary

	StationID	H684SB112		H685SB082	
	SampleID	684SB11201 (0-1ft)		684SB08201 (0-1ft)	
	DateCollected	08/09/2001 0:00		08/10/2001 0:00	
	DateAnalyzed	08/14/2001		08/15/2001	
	SDGNumber	47297		47354	
Parameter	**Units**				
Naphthalene	ug/Kg	180	U	49	U
Acenaphthylene	ug/Kg	180	U	49	U
Acenaphthene	ug/Kg	82.3	J	49	U
Fluorene	ug/Kg	1040	=	49	U
Phenanthrene	ug/Kg	487	=	10.2	J
Anthracene	ug/Kg	107	J	10.3	J
Flouranthene	ug/Kg	1260	=	210	=
Pyrene	ug/Kg	773	=	28.3	J
Benzo(a)Anthracene	ug/Kg	654	=	25.2	J
Chrysene	ug/Kg	809	=	23.3	J
Benzo(b)Fluoranthene	ug/Kg	2020	=	414	J
Benzo(k)Fluoranthene	ug/Kg	591	=	42.9	J
Benzo(a)Pyrene	ug/Kg	1050	=	53.1	J
Indeno(1,2,3-c,d)pyrene	ug/Kg	889	=	160	J
Dibenz(a,h)anthracene	ug/Kg	180	U	49	UJ
Benzo(g,h,i)Perylene	ug/Kg	541	=	38.5	J
BEQs					
BEQ Concentrations	**ug/Kg**	1503.0		162.5	

	StationID	H670SB072		H670SB072		H670SB073		H670SB073		H670SB074		H670SB074	
	SampleID	670SB07203 (-ft)		670SB07204 (-ft)		670SB07303 (-ft)		670SB07304 (-ft)		670SB07403 (-ft)		670SB07404 (-ft)	
	DateCollected	10/08/01 00:nn		10/08/01 00:nn		10/08/01 00:nn		10/08/01 00:nn		10/08/01 00:nn		10/08/01 00:nn	
	DateAnalyzed	10/15/2001		10/12/2001		10/15/2001		10/12/2001		10/12/2001		10/12/2001	
	SDGNumber	CNC38		CNC38		CNC38		CNC38		CNC38		CNC38	
Parameter	**Units**	Result	Qual.										
Naphthalene	ug/kg	380	=	45	U	210	=	20	U	21	U	34	U
Acenaphthylene	ug/kg	20	J	4.8	J	74	U	20	U	6	J	6.8	J
Acenaphthene	ug/kg	2400	=	210	=	780	=	51	=	84	=	180	=
Fluorene	ug/kg	1500	=	120	=	440	=	28	=	49	=	98	=
Phenanthrene	ug/kg	17000	=	1400	=	5200	=	380	=	650	=	1200	=
Anthracene	ug/kg	4000	=	380	=	1200	=	100	=	160	=	320	=
Fluoranthene	ug/kg	27000	=	2200	=	9400	=	580	=	890	=	1800	=
Pyrene	ug/kg	20000	=	1800	=	6500	=	750	=	1100	=	1700	=
Benzo(a)Anthracene	ug/kg	16000	=	1500	=	5700	=	540	=	730	=	1200	=
Chrysene	ug/kg	17000	=	1800	=	6700	=	690	=	910	=	1300	=
Benzo(b)Fluoranthene	ug/kg	15000	=	1700	=	5400	=	610	=	990	=	1400	=
Benzo(k)Fluoranthene	ug/kg	18000	=	1200	=	5000	=	430	=	640	=	1100	=
Benzo(a)Pyrene	ug/kg	22000	=	1900	=	9100	=	710	=	1000	=	1600	=
Indeno(1,2,3-c,d)pyrene	ug/kg	13000	=	1100	=	3400	=	360	=	510	=	810	=
Dibenz(a,h)anthracene	ug/kg	3100	J	680	=	1600	J	210	=	300	=	460	=
Benzo(g,h,i)Perylene	ug/kg	12000	=	1400	=	4100	=	400	=	570	=	820	=
BEQs													
BEQ Concentration		29697.0		3023.8		12206.7		1076.0		1530.3		2413.3	

	StationID	H670SB075		H670SB076		H684SB117		H684SB117		H684SB118		H684SB118	
	SampleID	670SB07501 (0-1ft)		670SB07601 (0-1ft)		684SB11703 (-ft)		684SB11704 (-ft)		684SB11803 (-ft)		684SB11804 (-ft)	
	DateCollected	10/08/01 00:nn		10/08/01 00:nn		10/08/01 00:nn		10/08/01 00:nn		10/08/01 00:nn		10/08/01 00:nn	
	DateAnalyzed	10/12/2001		10/12/2001		10/12/2001		10/12/2001		10/14/2001		10/12/2001	
	SDGNumber	CNC38		CNC38		CNC38		CNC38		CNC38		CNC38	
Parameter	**Units**												
Naphthalene	ug/kg	19	UJ	19	U	14	U	19	U	85	J	92	=
Acenaphthylene	ug/kg	19	U	19	U	14	U	19	U	87	U	7.2	J
Acenaphthene	ug/kg	4.2	J	75	=	4.5	J	19	U	380	=	440	=
Fluorene	ug/kg	19	U	30	=	14	U	19	U	230	=	280	=
Phenanthrene	ug/kg	25	J	390	=	28	=	19	=	3300	=	2800	=
Anthracene	ug/kg	8.1	J	110	=	7.4	J	5.7	J	700	=	700	=
Fluoranthene	ug/kg	47	=	780	=	49	=	43	=	4800	=	4300	=
Pyrene	ug/kg	51	J	860	=	50	=	43	=	5600	=	3400	=
Benzo(a)Anthracene	ug/kg	37	J	540	=	34	=	32	=	6500	=	3000	=
Chrysene	ug/kg	54	J	600	=	46	=	41	=	9700	=	3500	=
Benzo(b)Fluoranthene	ug/kg	50	=	630	=	50	=	46	=	4100	=	2300	=
Benzo(k)Fluoranthene	ug/kg	45	=	700	=	33	=	35	=	2900	=	2500	=
Benzo(a)Pyrene	ug/kg	59	J	780	=	50	=	45	=	7200	=	3500	=
Indeno(1,2,3-c,d)pyrene	ug/kg	42	J	390	=	34	=	30	=	2500	=	2400	=
Dibenz(a,h)anthracene	ug/kg	20	J	210	=	18	=	17	J	1600	J	1100	=
Benzo(g,h,i)Perylene	ug/kg	46	=	400	=	43	=	36	=	3400	=	2200	=
BEQs													
BEQ Concentration		92.4		1153.6		80.2		73.2		10148.7		5398.5	

StationID		H684SB119		H684SB119		H684SB119		H684SB120		H684SB120		H684SB121	
SampleID		*684CB11903 (-ft)*		684SB11903 (-ft)		684SB11904 (-ft)		684SB12003 (-ft)		684SB12004 (-ft)		684SB12101 (0-1ft)	
DateCollected		10/08/01 00:nn		10/08/01 00:nn		10/08/01 00:nn		10/08/01 00:nn		10/08/01 00:nn		10/08/01 00:nn	
DateAnalyzed		10/14/2001		10/14/2001		10/12/2001		10/12/2001		10/12/2001		10/12/2001	
SDGNumber		CNC38		CNC38		CNC38		CNC38		CNC38		CNC38	
Parameter	**Units**							f					
Naphthalene	ug/kg	540	=	260	=	20	U	26	U	21	U	18	U
Acenaphthylene	ug/kg	18	J	76	U	20	U	20	U	21	U	18	U
Acenaphthene	ug/kg	2300	=	1300	=	20	U	140	=	7.4	J	18	U
Fluorene	ug/kg	1300	=	700	=	20	U	84	=	5.4	J	18	U
Phenanthrene	ug/kg	16000	=	8800	=	130	=	1100	=	88	=	16	J
Anthracene	ug/kg	3300	=	2000	=	38	=	280	=	29	=	7	J
Fluoranthene	ug/kg	26000	=	15000	=	180	=	1500	=	160	=	60	=
Pyrene	ug/kg	21000	=	13000	=	240	=	1700	=	180	=	69	=
Benzo(a)Anthracene	ug/kg	19000	=	11000	=	150	=	1100	=	120	=	41	=
Chrysene	ug/kg	24000	=	13000	=	200	=	1400	=	160	=	62	=
Benzo(b)Fluoranthene	ug/kg	15000	=	12000	=	200	=	1500	=	160	=	59	=
Benzo(k)Fluoranthene	ug/kg	16000	=	6900	=	180	=	920	=	130	=	58	=
Benzo(a)Pyrene	ug/kg	24000	=	14000	=	270	=	1500	=	170	=	47	=
Indeno(1,2,3-c,d)pyrene	ug/kg	8900	=	6800	=	180	=	850	=	130	=	29	=
Dibenz(a,h)anthracene	ug/kg	4100	J	2900	J	98	=	490	=	68	=	18	J
Benzo(g,h,i)Perylene	ug/kg	8800	=	6500	=	200	=	920	=	140	=	34	=
BEQs													
BEQ Concentration		32574.0		19962.0		423.0		2345.6		280.5		78.5	

	StationID	H684SB122	
	SampleID	684SB12201 (0-1ft)	
	DateCollected	10/08/01 00:nn	
	DateAnalyzed	10/12/2001	
	SDGNumber	CNC38	
Parameter	**Units**		
Naphthalene	ug/kg	14	U
Acenaphthylene	ug/kg	14	U
Acenaphthene	ug/kg	99	=
Fluorene	ug/kg	52	=
Phenanthrene	ug/kg	530	=
Anthracene	ug/kg	140	=
Fluoranthene	ug/kg	810	=
Pyrene	ug/kg	760	=
Benzo(a)Anthracene	ug/kg	510	=
Chrysene	ug/kg	540	=
Benzo(b)Fluoranthene	ug/kg	770	=
Benzo(k)Fluoranthene	ug/kg	510	=
Benzo(a)Pyrene	ug/kg	780	=
Indeno(1,2,3-c,d)pyrene	ug/kg	460	=
Dibenz(a,h)anthracene	ug/kg	250	=
Benzo(g,h,i)Perylene	ug/kg	450	=
BEQs			
BEQ Concentration		1209.6	

	StationID	014SB036		H670SB077	
	SampleID	014SB03601 (-ft)		670SB07701 (0-1ft)	
	DateCollected	10/08/01 00:nn		10/08/01 00:nn	
	DateAnalyzed	10/12/2001		10/12/2001	
	SDGNumber	CNC38		CNC38	
Parameter	**Units**	Result	Qualifier	Result	Qualifier
Arsenic	mg/kg			11	=
Lead	mg/kg	57	=	90	=

	StationID	H670SB078		H670SB079		H670SB080		H670SB081	
	SampleID	670SB07801 (0-1ft)		670SB07901 (0-1ft)		670SB08001 (0-1ft)		670SB08101 (0-1ft)	
	DateCollected	12/19/2001 12:00 AM		12/19/2001 12:00 AM		12/19/2001 12:00 AM		12/19/2001 12:00 AM	
	DateAnalyzed	12/26/2001		12/26/2001		12/26/2001		12/26/2001	
	SDGNumber	CNC58		CNC58		CNC58		CNC58	
Parameter	**Units**								
Acenaphthene	ug/kg	4.6	J	11	U	16	=	10	U
Acenaphthylene	ug/kg	2.4	J	11	U	3.2	J	4.4	J
Anthracene	ug/kg	7.9	J	11	U	29	=	4.1	J
Benzo(a)Anthracene	ug/kg	57	=	11	=	120	=	37	=
Benzo(a)Pyrene	ug/kg	73	=	28	=	130	=	46	=
Benzo(b)Fluoranthene	ug/kg	64	=	18	=	130	=	39	=
Benzo(g,h,i)Perylene	ug/kg	38	=	9.6	J	64	=	18	=
Benzo(k)Fluoranthene	ug/kg	60	=	13	=	110	=	32	=
Chrysene	ug/kg	64	=	16	=	130	=	45	=
Dibenz(a,h)anthracene	ug/kg	28	=	23	=	43	=	25	=
Flouranthene	ug/kg	70	=	14	=	190	=	36	=
Fluorene	ug/kg	2.2	J	11	U	10	J	10	U
Indeno(1,2,3-c,d)pyrene	ug/kg	41	=	9.8	J	69	=	16	=
Naphthalene	ug/kg	10	U	11	U	11	U	10	U
Phenanthrene	ug/kg	29	=	5.6	J	110	=	12	=
Pyrene	ug/kg	68	=	14	=	180	=	41	=
BEQs		**117.86**		**55.03**		**206.13**		**80.57**	

	StationID	H670SB082	
	SampleID	670SB08201 (0-1ft)	
	DateCollected	12/19/2001 12:00 AM	
	DateAnalyzed	12/26/2001	
	SDGNumber	CNC58	
Parameter	**Units**		
Acenaphthene	ug/kg	16	=
Acenaphthylene	ug/kg	3.4	J
Anthracene	ug/kg	30	=
Benzo(a)Anthracene	ug/kg	150	=
Benzo(a)Pyrene	ug/kg	190	=
Benzo(b)Fluoranthene	ug/kg	170	=
Benzo(g,h,i)Perylene	ug/kg	100	=
Benzo(k)Fluoranthene	ug/kg	190	=
Chrysene	ug/kg	170	=
Dibenz(a,h)anthracene	ug/kg	56	=
Flouranthene	ug/kg	220	=
Fluorene	ug/kg	9.7	J
Indeno(1,2,3-c,d)pyrene	ug/kg	93	=
Naphthalene	ug/kg	9.7	U
Phenanthrene	ug/kg	120	=
Pyrene	ug/kg	210	=
BEQs		**289.37**	

	StationID	H014VA004	
	SampleID	014VA004M1	
	DateCollected	1/9/2002 12:00 AM	
	DateAnalyzed	01/17/2002	
	SDGNumber	CNC61	
Parameter	**Units**		
Flashpoint	mm/sec		J

	StationID	H014VA001		H014VA002		H014VA003		H014VA004	
	SampleID	014VA001M1		014VA002M1		014VA003M1		014VA004M1	
	DateCollected	1/9/2002 12:00 AM		1/9/2002 12:00 AM		1/9/2002 12:00 AM		1/9/2002 12:00 AM	
	DateAnalyzed	01/14/2002		01/14/2002		01/14/2002		01/14/2002	
	SDGNumber	CNC61		CNC61		CNC61		CNC61	
Parameter	**Units**								
Antimony, TCLP	mg/l	0.05	U	0.05	U	0.05	U	0.05	U
Arsenic, TCLP	mg/l	0.053	U	0.053	U	0.053	U	0.053	U
Barium, TCLP	mg/l	0.066	J	0.049	J	0.045	J	0.021	J
Cadmium, TCLP	mg/l	0.0071	U	0.0071	U	0.0071	U	0.0071	U
Chromium, TCLP	mg/l	0.017	U	0.017	U	0.017	U	0.017	U
Lead, TCLP	mg/l	0.057	J	0.015	U	0.015	U	0.015	U
Mercury, TCLP	mg/l	0.0072	U	0.0072	U	0.0072	U	0.0072	U
Selenium, TCLP	mg/l	0.042	U	0.042	U	0.042	U	0.042	U
Silver, TCLP	mg/l	0.019	U	0.019	U	0.019	U	0.019	U

	StationID	H014VA005		H014VA006		H014VA007	
	SampleID	014VA005M1		014VA006M1		014VA007M1	
	DateCollected	1/9/2002 12:00 AM		1/9/2002 12:00 AM		1/9/2002 12:00 AM	
	DateAnalyzed	01/14/2002		01/14/2002		01/14/2002	
	SDGNumber	CNC61		CNC61		CNC61	
Parameter	**Units**						
Antimony, TCLP	mg/l	0.05	U	0.05	U	0.05	U
Arsenic, TCLP	mg/l	0.053	U	0.053	U	0.053	U
Barium, TCLP	mg/l	0.035	J	0.028	J	0.039	J
Cadmium, TCLP	mg/l	0.0071	U	0.0071	U	0.0071	U
Chromium, TCLP	mg/l	0.017	U	0.017	U	0.017	U
Lead, TCLP	mg/l	0.02	J	0.015	U	0.032	J
Mercury, TCLP	mg/l	0.0072	U	0.0072	U	0.0072	U
Selenium, TCLP	mg/l	0.042	U	0.042	U	0.042	U
Silver, TCLP	mg/l	0.019	U	0.019	U	0.019	U

	StationID	H014VA001		H014VA002		H014VA003		H014VA004	
	SampleID	014VA001M1		014VA002M1		014VA003M1		014VA004M1	
	DateCollected	1/9/2002 12:00 AM		1/9/2002 12:00 AM		1/9/2002 12:00 AM		1/9/2002 12:00 AM	
	DateAnalyzed	01/15/2002		01/15/2002		01/15/2002		01/21/2002	
	SDGNumber	CNC61		CNC61		CNC61		CNC61	
Parameter	**Units**								
1,4-Dichlorobenzene, TCLP	mg/l	0.1	U	0.1	U	0.1	U	0.1	U
2,4,5-Trichlorophenol, TCLP	mg/l	0.1	U	0.1	U	0.1	U	0.1	U
2,4,6-Trichlorophenol, TCLP	mg/l	0.1	U	0.1	U	0.1	U	0.1	U
2,4-Dinitrotoluene, TCLP	mg/l	0.1	U	0.1	U	0.1	U	0.1	U
2-Methylphenol (o-Cresol), TCLP	mg/l	0.2	U	0.2	U	0.2	U	0.2	U
4-Methylphenol (p-Cresol), TCLP	mg/l	0.2	U	0.2	U	0.2	U	0.2	U
Cresol o,m,p, TCLP	mg/l	0.2	U	0.2	U	0.2	U	0.2	U
Hexachlorobenzene, TCLP	mg/l	0.1	U	0.1	U	0.1	U	0.1	U
Hexachlorobutadiene, TCLP	mg/l	0.1	U	0.1	U	0.1	U	0.1	U
Hexachloroethane, TCLP	mg/l	0.1	U	0.1	U	0.1	U	0.1	U
Nitrobenzene, TCLP	mg/l	0.1	U	0.1	U	0.1	U	0.1	U
Pentachlorophenol, TCLP	mg/l	0.1	U	0.1	U	0.1	U	0.1	UJ
Pyridine, TCLP	mg/l	0.1	U	0.1	U	0.1	U	0.1	U

	StationID	H014VA005		H014VA006		H014VA007	
	SampleID	014VA005M1		014VA006M1		014VA007M1	
	DateCollected	1/9/2002 12:00 AM		1/9/2002 12:00 AM		1/9/2002 12:00 AM	
	DateAnalyzed	01/24/2002		01/15/2002		01/15/2002	
	SDGNumber	CNC61		CNC61		CNC61	
Parameter	**Units**						
1,4-Dichlorobenzene, TCLP	mg/l	0.1	U	0.1	U	0.1	U
2,4,5-Trichlorophenol, TCLP	mg/l	0.1	U	0.1	U	0.1	U
2,4,6-Trichlorophenol, TCLP	mg/l	0.1	U	0.1	U	0.1	U
2,4-Dinitrotoluene, TCLP	mg/l	0.1	U	0.1	U	0.1	U
2-Methylphenol (o-Cresol), TCLP	mg/l	0.2	U	0.2	U	0.2	U
4-Methylphenol (p-Cresol), TCLP	mg/l	0.2	U	0.2	U	0.2	U
Cresol o,m,p, TCLP	mg/l	0.2	U	0.2	U	0.2	U
Hexachlorobenzene, TCLP	mg/l	0.1	U	0.1	U	0.1	U
Hexachlorobutadiene, TCLP	mg/l	0.1	U	0.1	U	0.1	U
Hexachloroethane, TCLP	mg/l	0.1	U	0.1	U	0.1	U
Nitrobenzene, TCLP	mg/l	0.1	U	0.1	U	0.1	U
Pentachlorophenol, TCLP	mg/l	0.1	U	0.1	U	0.1	U
Pyridine, TCLP	mg/l	0.1	U	0.1	U	0.1	U

	StationID	H014VA001		H014VA002		H014VA003	
	SampleID	014VA001M1		014VA002M1		014VA003M1	
	DateCollected	1/9/2002 12:00 AM		1/9/2002 12:00 AM		1/9/2002 12:00 AM	
	DateAnalyzed	01/15/2002		01/15/2002		01/15/2002	
	SDGNumber	CNC61		CNC61		CNC61	
Parameter	**Units**						
1,1-Dichloroethene, TCLP	mg/l	0.1	U	0.1	U	0.1	U
1,2-Dichloroethane, TCLP	mg/l	0.1	U	0.1	U	0.1	U
Benzene, TCLP	mg/l	0.1	U	0.1	U	0.1	U
Carbon Tetrachloride, TCLP	mg/l	0.1	UJ	0.1	U	0.1	U
Chlorobenzene, TCLP	mg/l	0.1	U	0.1	U	0.1	U
Chloroform, TCLP	mg/l	0.1	U	0.1	U	0.1	U
Methyl ethyl ketone (2-Butanone), TCLP	mg/l	0.4	U	0.4	U	0.4	U
Tetrachloroethylene (PCE), TCLP	mg/l	0.1	U	0.1	U	0.1	U
Trichloroethylene (TCE), TCLP	mg/l	0.1	U	0.1	U	0.1	U
Vinyl chloride, TCLP	mg/l	0.1	U	0.1	U	0.1	U

	StationID	H014VA004		H014VA005		H014VA006	
	SampleID	014VA004M1		014VA005M1		014VA006M1	
	DateCollected	1/9/2002 12:00 AM		1/9/2002 12:00 AM		1/9/2002 12:00 AM	
	DateAnalyzed	01/15/2002		01/15/2002		01/15/2002	
	SDGNumber	CNC61		CNC61		CNC61	
Parameter	**Units**						
1,1-Dichloroethene, TCLP	mg/l	0.1	U	0.1	U	0.1	U
1,2-Dichloroethane, TCLP	mg/l	0.1	U	0.1	U	0.1	U
Benzene, TCLP	mg/l	0.1	U	0.1	U	0.1	U
Carbon Tetrachloride, TCLP	mg/l	0.1	U	0.1	U	0.1	U
Chlorobenzene, TCLP	mg/l	0.1	U	0.1	U	0.1	U
Chloroform, TCLP	mg/l	0.1	U	0.1	U	0.1	U
Methyl ethyl ketone (2-Butanone), TCLP	mg/l	0.4	U	0.4	U	0.4	U
Tetrachloroethylene (PCE), TCLP	mg/l	0.1	U	0.1	U	0.1	U
Trichloroethylene (TCE), TCLP	mg/l	0.1	U	0.1	U	0.1	U
Vinyl chloride, TCLP	mg/l	0.1	U	0.1	U	0.1	U

	StationID	H014VA007	
	SampleID	014VA007M1	
	DateCollected	1/9/2002 12:00 AM	
	DateAnalyzed	01/15/2002	
	SDGNumber	CNC61	
Parameter	**Units**		
1,1-Dichloroethene, TCLP	mg/l	0.1	U
1,2-Dichloroethane, TCLP	mg/l	0.1	U
Benzene, TCLP	mg/l	0.1	U
Carbon Tetrachloride, TCLP	mg/l	0.1	U
Chlorobenzene, TCLP	mg/l	0.1	U
Chloroform, TCLP	mg/l	0.1	U
Methyl ethyl ketone (2-Butanone), TCLP	mg/l		
Tetrachloroethylene (PCE), TCLP	mg/l	0.1	U
Trichloroethylene (TCE), TCLP	mg/l	0.1	U
Vinyl chloride, TCLP	mg/l	0.1	U

Data Validation Summary - Charleston Naval Complex - Zone H, SWMU 14

TO: Sam Naik/CH2M HILL/ATL

FROM: Herb Kelly/CH2M HILL/GNA

DATE: September 16, 2001

The purpose of this memorandum is to present the results of the data validation process for the samples collected at SWMU 14 in Zone H. The samples were collected between the dates of August 8 and August 10, 2001.

The specific samples and analytical fractions reviewed are summarized below in Table 1.

The Quality Control areas that were review and the resulting findings are documented within each subsection that follows. This data was validated for compliance with the analytical method requirements. This process also included a review of the data to assess the accuracy, precision, and completeness based upon procedures described in the guidance documents such as the Environmental Protection Agency (EPA) *National Functional Guidelines for Inorganic Data Review (EPA 1994) and National Functional Guidelines for Organic Data Review (EPA 1999)*. Quality assurance/quality control (QA/QC) summary forms and data reports were reviewed.

Samples were submitted to General Engineering Laboratories, Inc., in Charleston, South Carolina, for the following analyses: SW-846 8270 Semivolatile Organic Compounds (SVOC) and Metals following method SW-846 6010.

Sample results that were not within the acceptance limits were appended with a qualifying flag, which consisted of a single- or double-letter code that indicated a possible problem with the data. The qualifying flags originated during the data review and validation processes. These also include the secondary, or the two-digit "sub-qualifier" flags. The secondary qualifiers provide the reasoning behind the assignment of a qualifier flag to the data. The secondary qualifiers are presented and defined below.

Attachment 1 lists the changes in data qualifiers, due to the validation process.

The following primary flags were used to qualify the data:

[=] Detected. The analyte was analyzed for and detected at the concentration shown.

[J] Estimated. The analyte was present but the reported value may not be accurate or precise.

[U] Undetected. The analyte was analyzed for but not detected above the method detection limit.

[UJ] Detection limit estimated. The analyte was analyzed for but qualified as not detected; the result is estimated.

[R] Rejected. The data is not useable.

Secondary Data Validation Qualifiers

Code	Definition
2S	Second Source
BL	Blank
BD	Blank Spike/Blank Spike Duplicate or (LCS/LCSD) Precision
BS	Blank Spike/LCS
CC	Continuing Calibration Verification
DL	Dilution
FD	Field Duplicate
HT	Holding Time
IB	In-Between (metals - B's → J's)
IC	Initial Calibration
IS	Internal Standard
LD	Lab Duplicate
LR	Concentration exceeded Linear Range
MD	MS/MSD or LCS/LCSD Precision
MS	Matrix Spike/Matrix Spike Duplicate
OT	Other (see DV worksheet)
PD	Pesticide Degradation
PS	Post Spike
RE	Re-extraction/Re-analysis
SD	Serial Dilution
SS	Spiked Surrogate
TN	Tune

Table 1 - Chemical Analytical Methods – Field and Quality Control Samples

TABLE 1
Chemical Analytical Methods – Field and Quality Control Samples
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Station ID	Sample ID	Lab Sample ID	Date Collected	Matrix	Sample Type	I.F. Type	Upper Depth	Lower Depth	SW8010 Metals	SW8270 PAH
47296	H015SB009	015SB00901MS	1200065549	8/9/01	SO	MS		0	1	X	
47296	H015SB009	015SB00901SD	1200065550	8/9/01	SO	SD		0	1	X	
47296	H015SB009	015SB00901	47296001	8/9/01	SO	N		0	1	X	X
47296	H015SB010	015SB01001	47296002	8/9/01	SO	N		0	1	X	X
47296	H015SB011	015SB01101	47296003	8/9/01	SO	N		0	1	X	X
47296	H015SB012	015SB01201	47296004	8/9/01	SO	N		0	1	X	X
47296	H684SB053	684SB05301	47296005	8/8/01	SO	N		0	1	X	
47296	H684SB053	684CB05301	47296006	8/8/01	SO	FD		0	1	X	
47296	H684SB054	684SB05401	47296007	8/8/01	SO	N		0	1	X	
47296	H684SB055	684SB05501	47296008	8/8/01	SO	N		0	1	X	
47296	H684SB056	684SB5601	47296009	8/8/01	SO	N		0	1	X	
47297	H684SB057	684SB05701MS	1200065509	8/9/01	SO	MS		0	1	X	
47297	H684SB057	684SB05701SD	1200065510	8/9/01	SO	SD		0	1	X	
47297	H684SB112	684SB11201MS	1200066340	8/9/01	SO	MS		0	1		X
47297	H684SB112	684SB11201SD	1200066341	8/9/01	SO	SD		0	1		X
47297	H684SB057	684SB05701	47297001	8/9/01	SO	N		0	1	X	
47297	H684SB058	684SB05801	47297002	8/9/01	SO	N		0	1	X	

TABLE 1
Chemical Analytical Methods – Field and Quality Control Samples
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Station ID	Sample ID	Lab Sample ID	Date Collected	Matrix	Sample Type	LR Type	Upper Depth	Lower Depth	SW6010 Metals	SW8270 PAHs
47297	H684SB059	684SB05901	47297003	8/9/01	SO	N		0	1	X	
47297	H684SB060	684SB06001	47297004	8/9/01	SO	N		0	1	X	
47297	H684SB113	684SB11301	47297005	8/9/01	SO	N		0	1	X	
47297	H684SB114	684SB11401	47297006	8/9/01	SO	N		0	1	X	
47297	H684SB115	684SB11501	47297007	8/9/01	SO	N		0	1	X	
47297	H684SB116	684SB11601	47297008	8/9/01	SO	N		0	1	X	
47297	H670SB064	670SB06401	47297009	8/8/01	SO	N		0	1	X	
47297	H670SB065	670SB06501	47297010	8/8/01	SO	N		0	1	X	
47297	H670SB066	670SB06601	47297011	8/8/01	SO	N		0	1	X	
47297	H670SB067	670SB06701	47297012	8/8/01	SO	N		0	1	X	
47297	H684SB109	684SB10901	47297013	8/9/01	SO	N		0	1	X	X
47297	H684SB109	684CB10901	47297014	8/9/01	SO	FD		0	1	X	X
47297	H684SB110	684SB11001	47297015	8/9/01	SO	N		0	1	X	X
47297	H684SB111	684SB11101	47297016	8/9/01	SO	N		0	1	X	X
47297	H684SB112	684SB11201	47297017	8/9/01	SO	N		0	1	X	X
47306	H684SB093	684SB09301MS	1200066057	8/9/01	SO	MS		0	1		X
47306	H684SB093	684SB09301SD	1200066058	8/9/01	SO	SD		0	1		X
47306	H684SB093	684SB09301	47306001	8/9/01	SO	N		0	1		X
47306	H684SB094	684SB09401LR	47306002	8/9/01	SO	LR	DL	0	1		X
47306	H684SB094	684SB09401	47306002	8/9/01	SO	N		0	1		X

TABLE 1
Chemical Analytical Methods – Field and Quality Control Samples
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Station ID	Sample ID	Lab Sample ID	Date Collected	Matrix	Sample Type	LR Type	Upper Depth	Lower Depth	SW6010 Metals	SW8270 PAHs
47306	H670SB040	670SB04001	47306003	8/9/01	SO	N		0	1		X
47306	H670SB041	670SB04101LR	47306004	8/9/01	SO	LR	DL	0	1		X
47306	H670SB041	670SB04101	47306004	8/9/01	SO	N		0	1		X
47306	H670SB042	670SB04201	47306005	8/9/01	SO	N		0	1		X
47306	H684SB095	684SB09501LR	47306006	8/9/01	SO	LR	DL	0	1		X
47306	H684SB095	684SB09501	47306006	8/9/01	SO	N		0	1		X
47306	H684SB096	684SB09601	47306007	8/9/01	SO	N		0	1		X
47306	H684SB097	684SB09701	47306008	8/9/01	SO	N		0	1		X
47306	H684SB098	684SB09801	47306009	8/9/01	SO	N		0	1		X
47306	H684SB099	684SB09901	47306010	8/9/01	SO	N		0	1		X
47306	H684SB099	684CB09901	47306011	8/9/01	SO	FD		0	1		X
47306	H684SB100	684SB10001	47306012	8/9/01	SO	N		0	1		X
47306	H684SB101	684SB10101	47306013	8/9/01	SO	N		0	1		X
47306	H684SB102	684SB10201	47306014	8/9/01	SO	N		0	1		X
47306	H684SB103	684SB10301	47306015	8/9/01	SO	N		0	1		X
47306	H684SB104	684SB10401LR	47306016	8/9/01	SO	LR	DL	0	1		X
47306	H684SB104	684SB10401	47306016	8/9/01	SO	N		0	1		X
47306	H684SB105	684SB10501	47306017	8/9/01	SO	N		0	1		X
47306	H684SB106	684SB10601	47306018	8/9/01	SO	N		0	1		X
47306	H684SB107	684SB10701	47306019	8/9/01	SO	N		0	1		X

TABLE 1
Chemical Analytical Methods – Field and Quality Control Samples
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Station ID	Sample ID	Lab Sample ID	Date Collected	Matrix	Sample Type	QC Type	Upper Depth	Lower Depth	SW6010 Metals	SW8270 PAHs
47306	H684SB108	684SB10801	47306020	8/9/01	SO	N		0	1		X
47308	H014SB013	014SB01301MS	1200065529	8/8/01	SO	MS		0	1	X	
47308	H014SB013	014SB01301SD	1200065530	8/8/01	SO	SD		0	1	X	
47308	H014SB013	014SB01301	47308001	8/8/01	SO	N		0	1	X	
47308	H014SB014	014SB01401	47308002	8/8/01	SO	N		0	1	X	
47308	H015SB015	014SB01501	47308003	8/8/01	SO	N		0	1	X	
47308	H014SB016	014SB01601	47308004	8/8/01	SO	N		0	1	X	
47308	H014SB017	014SB01701	47308005	8/8/01	SO	N		0	1	X	
47308	H014SB018	014SB01801	47308006	8/8/01	SO	N		0	1	X	
47308	H014SB019	014SB01901	47308007	8/8/01	SO	N		0	1	X	
47308	H670SB036	670SB03601	47308008	8/9/01	SO	N		0	1	X	
47308	H670SB037	670SB03701	47308009	8/9/01	SO	N		0	1	X	
47308	H670SB037	670CB03701	47308010	8/9/01	SO	FD		0	1	X	
47308	H670SB038	670SB03801	47308011	8/9/01	SO	N		0	1	X	
47308	H670SB039	670SB03901	47308012	8/9/01	SO	N		0	1	X	
47308	H014SB020	014SB02001	47308013	8/8/01	SO	N		0	1	X	
47308	H014SB021	014SB02101	47308014	8/8/01	SO	N		0	1	X	
47308	H014SB022	014SB02201	47308015	8/8/01	SO	N		0	1	X	
47308	H014SB023	014SB02301	47308016	8/8/01	SO	N		0	1	X	
47308	H014SB024	014SB02401	47308017	8/8/01	SO	N		0	1	X	

TABLE 1
Chemical Analytical Methods – Field and Quality Control Samples
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Station ID	Sample ID	Lab Sample ID	Date Collected	Matrix	Sample Type	LR Type	Upper Depth	Lower Depth	SW6010 Metals	SW8270 PAHs
47308	H014SB025	014SB02501	47308018	8/8/01	SO	N		0	1	X	
47308	H014SB025	014CB02501	47308019	8/8/01	SO	FD		0	1	X	
47308	H014SB012	014SB01201	47308020	8/8/01	SO	N		0	1	X	
47309	H670SB053	670SB05301MS	1200066061	8/9/01	SO	MS		0	1		X
47309	H670SB053	670SB05301SD	1200066062	8/9/01	SO	SD		0	1		X
47309	H670SB063	670SB06301	47309001	8/8/01	SO	N		0	1		X
47309	H670SB043	670SB04301	47309002	8/9/01	SO	N					X
47309	H670SB044	670SB04401	47309003	8/9/01	SO	N					X
47309	H670SB044	670CB04401	47309004	8/9/01	SO	FD					X
47309	H670SB044	670CB04401LR	47309004	8/9/01	SO	LR	DL				X
47309	H670SB045	670SB04501LR	47309005	8/9/01	SO	LR	DL	0	1		X
47309	H670SB045	670SB04501	47309005	8/9/01	SO	N		0	1		X
47309	H670SB046	670SB04601	47309006	8/9/01	SO	N		0	1		X
47309	H670SB047	670SB04701LR	47309007	8/9/01	SO	LR	DL	0	1		X
47309	H670SB047	670SB04701	47309007	8/9/01	SO	N		0	1		X
47309	H670SB048	670SB04801LR	47309008	8/8/01	SO	LR	DL	0	1		X
47309	H670SB048	670SB04801	47309008	8/8/01	SO	N		0	1		X
47309	H670SB049	670SB04901LR	47309009	8/9/01	SO	LR	DL	0	1		X
47309	H670SB049	670SB04901	47309009	8/9/01	SO	N		0	1		X
47309	H670SB050	670SB05001	47309010	8/8/01	SO	N		0	1		X

TABLE 1
Chemical Analytical Methods – Field and Quality Control Samples
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Station ID	Sample ID	Lab Sample ID	Date Collected	Matrix	Sample Type	LR Type	Upper Depth	Lower Depth	SW6010 Metals	SW8270 PAHs
47309	H670SB051	670SB05101LR	47309011	8/8/01	SO	LR	DL	0	1		X
47309	H670SB051	670SB05101	47309011	8/8/01	SO	N		0	1		X
47309	H670SB052	670SB05201	47309012	8/8/01	SO	N		0	1		X
47309	H670SB053	670SB05301	47309013	8/8/01	SO	N		0	1		X
47309	H670SB054	670SB05401	47309014	8/8/01	SO	N		0	1		X
47309	H670SB055	670SB05501	47309015	8/8/01	SO	N		0	1		X
47309	H670SB060	670SB06001	47309016	8/8/01	SO	N		0	1		X
47309	H670SB061	670SB06101	47309017	8/8/01	SO	N		0	1		X
47309	H670SB062	670SB06201	47309018	8/8/01	SO	N		0	1		X
47309	H670SB062	670CB06201	47309019	8/9/01	SO	FD		0	1		X
47313	H670SB058	670SB05801MS	1200065514	8/9/01	SO	MS		0	1	X	
47313	H670SB058	670SB05801SD	1200065515	8/9/01	SO	SD		0	1	X	
47313	H670SB068	670SB06801	47313001	8/9/01	SO	N		0	1	X	
47313	H670SB069	670SB06901	47313002	8/9/01	SO	N		0	1	X	
47313	H670SB069	670CB06901	47313003	8/9/01	SO	FD		0	1	X	
47313	H670SB070	670SB07001	47313004	8/9/01	SO	N		0	1	X	
47313	H670SB071	670SB07101	47313005	8/9/01	SO	N		0	1	X	
47313	H670SB056	670SB05601	47313006	8/9/01	SO	N		0	1	X	
47313	H670SB057	670SB05701	47313007	8/9/01	SO	N		0	1	X	
47313	H670SB058	670SB05801	47313008	8/9/01	SO	N		0	1	X	

TABLE 1
Chemical Analytical Methods – Field and Quality Control Samples
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Station ID	Sample ID	Lab Sample ID	Date Collected	Matrix	Sample Type	QC Type	Upper Depth	Lower Depth	SW6010 Metals	SW8270 PAHs
47313	H670SB059	670SB05901	47313009	8/9/01	SO	N		0	1	X	
47313	H014SB026	014SB02601	47313010	8/8/01	SO	N		0	1	X	
47313	H014SB027	014SB02701	47313011	8/8/01	SO	N		0	1	X	
47313	H014SB028	014SB02801	47313012	8/9/01	SO	N		0	1	X	
47313	H014SB029	014SB02901	47313013	8/9/01	SO	N		0	1	X	
47313	H014SB030	014SB03001	47313014	8/9/01	SO	N		0	1	X	
47313	H014SB031	014SB03101	47313015	8/9/01	SO	N		0	1	X	
47313	H014SB032	014SB03201	47313016	8/8/01	SO	N		0	1	X	
47313	H014SB033	014SB03301	47313017	8/8/01	SO	N		0	1	X	
47313	H014SB034	014SB03401	47313018	8/8/01	SO	N		0	1	X	
47313	H014SB035	014SB03501	47313019	8/8/01	SO	N		0	1	X	
47313	H014SB035	014CB03501	47313020	8/8/01	SO	FD		0	1	X	
47317	FIELDQC	015EB009L1MS	1200065569	8/8/01	WG	MS		0	1	X	
47317	FIELDQC	015EB009L1SD	1200065570	8/8/01	WG	SD		0	1	X	
47317	FIELDQC	015EB009L1MS	1200066039	8/8/01	WG	MS		0	1		X
47317	FIELDQC	015EB009L1SD	1200066040	8/8/01	WG	SD		0	1		X
47317	FIELDQC	015EB009L1	47317001	8/8/01	WQ	EB		0	1	X	X
47317	FIELDQC	015EB010L1	47317002	8/9/01	WQ	EB		0	1	X	X
47354	H684SB061	684SB06101MS	1200066074	8/10/01	SO	MS		0	1	X	
47354	H684SB061	684SB06101SD	1200066075	8/10/01	SO	SD		0	1	X	

TABLE 1
Chemical Analytical Methods – Field and Quality Control Samples
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Station ID	Sample ID	Lab Sample ID	Date Collected	Matrix	Sample Type	LR Type	Upper Depth	Lower Depth	SW6010 Metals	SW8270 PAHs
47354	H684SB045	684SB04501MS	1200067519	8/10/01	SO	MS		0	1		X
47354	H684SB045	684SB04501SD	1200067520	8/10/01	SO	SD		0	1		X
47354	H684SB061	684SB06101	47354001	8/10/01	SO	N		0	1	X	
47354	H684SB062	684SB06201	47354002	8/10/01	SO	N		0	1	X	
47354	H684SB063	684SB06301	47354003	8/10/01	SO	N		0	1	X	
47354	H684SB064	684SB06401	47354004	8/10/01	SO	N		0	1	X	
47354	H684SB065	684SB06501	47354005	8/10/01	SO	N		0	1	X	
47354	H684SB066	684SB06601	47354006	8/10/01	SO	N		0	1	X	
47354	H684SB067	684SB06701	47354007	8/10/01	SO	N		0	1	X	
47354	H684SB068	684SB06801	47354008	8/10/01	SO	N		0	1	X	
47354	H684SB069	684SB06901	47354009	8/10/01	SO	N		0	1	X	
47354	H684SB070	684SB07001	47354010	8/10/01	SO	N		0	1	X	
47354	H684SB071	684SB07101	47354011	8/10/01	SO	N		0	1	X	
47354	H684SB072	684SB07201	47354012	8/10/01	SO	N		0	1	X	
47354	H684SB073	684SB07301	47354013	8/10/01	SO	N		0	1	X	
47354	H684SB074	684SB07401	47354014	8/10/01	SO	N		0	1	X	
47354	H684SB074	684CB07401	47354015	8/10/01	SO	FD		0	1	X	
47354	H684SB075	684SB07501	47354016	8/10/01	SO	N		0	1	X	
47354	H684SB076	684SB07601	47354017	8/10/01	SO	N		0	1	X	
47354	H684SB045	684SB04501	47354018	8/10/01	SO	N		0	1		X

TABLE 1
Chemical Analytical Methods – Field and Quality Control Samples
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Station ID	Sample ID	Lab Sample ID	Date Collected	Matrix	Sample Type	TLF Type	Upper Depth	Lower Depth	SW6010 Metals	SW8270 PAHs
47354	H684SB046	684SB04601	47354019	8/10/01	SO	N		0	1		X
47354	H684SB047	684SB04701	47354020	8/10/01	SO	N		0	1		X
47354	H684SB048	684SB04801	47354021	8/10/01	SO	N		0	1		X
47354	H684SB049	684SB04901	47354022	8/10/01	SO	N		0	1		X
47354	H684SB050	684SB05001	47354023	8/10/01	SO	N		0	1		X
47354	H684SB051	684SB05101	47354024	8/10/01	SO	N		0	1		X
47354	H684SB052	684SB05201	47354025	8/10/01	SO	N		0	1		X
47354	H684SB052	684CB05201	47354026	8/10/01	SO	FD		0	1		X
47354	H684SB077	684SB07701	47354027	8/10/01	SO	N		0	1		X
47354	H684SB078	684SB07801	47354028	8/10/01	SO	N		0	1		X
47354	H684SB079	684SB07901	47354029	8/10/01	SO	N		0	1		X
47354	H684SB080	684SB08001	47354030	8/10/01	SO	N		0	1		X
47354	H684SB081	684SB08101	47354031	8/10/01	SO	N		0	1		X
47354	H684SB082	684SB08201	47354032	8/10/01	SO	N		0	1		X
47354	H684SB083	684SB08301	47354033	8/10/01	SO	N		0	1		X
47354	H684SB084	684SB08401	47354034	8/10/01	SO	N		0	1		X
47354	H684SB085	684SB08501	47354035	8/10/01	SO	N		0	1		X
47354	H684SB086	684SB08601	47354036	8/10/01	SO	N		0	1		X
47354	H684SB086	684CB08601	47354037	8/10/01	SO	FD		0	1		X
47355	H684SB087	684SB08701	47355001	8/10/01	SO	N		0	1		X

TABLE 1
Chemical Analytical Methods – Field and Quality Control Samples
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Station ID	Sample ID	Lab Sample ID	Date Collected	Matrix	Sample Type	LR Type	Upper Depth	Lower Depth	SW6010 Metals	SW8270 PAHs
47355	H684SB088	684SB08801LR	47355002	8/10/01	SO	LR	DL	0	1		X
47355	H684SB088	684SB08801	47355002	8/10/01	SO	N		0	1		X
47355	H684SB089	684SB08901LR	47355003	8/10/01	SO	LR	DL	0	1		X
47355	H684SB089	684SB08901	47355003	8/10/01	SO	N		0	1		X
47355	H684SB090	684SB09001	47355004	8/10/01	SO	N		0	1		X
47355	H684SB091	684SB09101	47355005	8/10/01	SO	N		0	1		X
47355	H684SB092	684SB09201	47355006	8/10/01	SO	N		0	1		X
47356	FIELDQC	015EB011L1	47356001	8/10/01	WQ	EB				X	X

MATRIX CODE

SO - Soil
SQ - Soil QC Samples
WQ - Water QC Samples

SAMPLE TYPE CODE

EB - Equipment Blank
FD - Field Duplicate
N - Native Sample
TB - Trip Blank
LR - Laboratory Replicate
MS - Matrix Spike
SD - Matrix Spike Duplicate

LR TYPE CODE

DL - Dilution

ANALYSIS CODE

PAHs - Polyaromatic Hydrocarbons

Organic Parameters

Quality Control Review

The following list represents the QA/QC measures that are typically reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, equipment blanks, and trip blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Surrogate Recoveries** – Surrogate Compounds are added to each sample and the recoveries are used to monitor lab performance and possible matrix interference.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and its duplicate. This information can only be determined when target compounds are detected.
- **GC/MS Tuning** – The mass spectrum of the tuning compound is evaluated for method compliance. The criteria are established to verify the proper mass assignment and mass resolution.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **Internal Standards** – The internal standards (retention time and response) are evaluated for method compliance. The internal standards are used in quantitation of the target parameters and monitor the instrument sensitivity and response for stability during each analysis.

Polyaromatic Hydrocarbons (PAHs) Analyses

The QA/QC parameters for the PAH analyses for all of the samples were within acceptable control limits, except as noted below.

Recoveries - Surrogate, MS/MSD and LCS/LCSD

All Surrogate, Matrix Spike (MS), Matrix Spike Duplicate (MSD), Laboratory Control Sample (LCS) and Laboratory Control Duplicate Sample (LCSD) recoveries were within acceptable quality control limits, except as noted in Table 2 below.

TABLE 2
MS/MSD and LCS/LCSD Recoveries Out of QC Limits: PAHs
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
47306	MS/MSD - H684SB09301	Acenaphthene	156*/170*	25-150	#1	Detects-J
		Phenanthrene	663*/681*			
		Anthracene	206*/213*			
		Fluoranthene	1274*/1220*			
		Pyrene	1529*/1547*			
		Benzo(a)Anthracene	952*/974*			
		Chrysene	1019*/1068*			
		Benzo(b)Fluoranthene	1253*/1025*			
		Benzo(k)Fluoranthene	804*/930*			
		Benzo(a)pyrene	1242*/1206*			
		Indeno(1,2,3-cd)Pyrene	486*/473*			
		Dibenzo(a,h)anthracene	235*/240*			
		Benzo(g,h,I)perylene	521*/480*			
47309	MS/MSD - H670SB05301	Benzo(a)Anthracene	223*/187*	25-150	#13	Detects-J
		Chrysene	308*/304*			
47354	MS/MSD - H684SB04501	Fluoranthene	0*/0*	25-150	#18	No Flags - high native concentration of targets
		Pyrene	0*/0*			

* - out of control limits

- In addition to the samples listed in the Table above, the recoveries of some surrogates were below QC limits in the reanalyses or dilutions of the sample extracts. Unless more

than a single surrogate was out of QC limits, and the sample extract had not been diluted, no flags were applied. There were no flags applied to any sample results due to low surrogate recoveries.

Calibrations

All initial and continuing calibration criteria were met except as noted in Table 3 below.

TABLE 3
Exceptions to Initial Calibration Criteria: PAHs
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

Instrument/Calibration Date	Analyte	%Relative Standard Deviation or R^2 (ICAL) /%Difference (CCAL)	Associated Samples
MSD7-ICAL-08/03	Benzo (b) fluoranthene	0.980	47296 - 2-4 47354 - 19, 21-28, 30-37

Flags were applied to the compounds in the associated samples in the following manner:

- When the percent Relative Standard Deviation (%RSD) or R^2 was out in the initial calibration, all associated samples were qualified. Detected compounds were flagged "J" and non-detected compounds were flagged "UJ", as estimated.

Internal Standard Area

All internal standard areas were within QC limits except as noted in Table 4 below.

TABLE 4
Internal Standard Area out of Criteria: PAHs
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Sample	Internal Standards	Flags applied to compounds associated with IS out
47306	#3	IS#6-45%	Detects-J, non-detects-UJ
	#6	IS#6-44%	
	#7	IS#6-44%	
	#8	IS#6-48%	
	#10	IS$6-43%	
	#11	IS#6-49%	
	#12	IS#6-48%	
	#16	IS#6-37%	
	#19	IS#6-47%	
	#16	IS#5-37%	

TABLE 4
Internal Standard Area out of Criteria: PAHs
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Sample	Internal Standards	Flags applied to compounds associated with IS out
47354	#32	IS#5-35%, IS#6-29%	Detects-J, non-detects-UJ
	#21	IS#6-39%	
	#23	IS#6-44%	
	#37	IS#6-47%	

Field Duplicate Samples

The Relative Percent Differences (RPDs) for some of the Native/Field Duplicate Sample sets were outside acceptable QC limits. Flags are not typically applied to results based upon Duplicate RPD values only, but in conjunction with other QC parameters such as surrogate recoveries internal standard areas, etc. In addition, non-homogeneity in soil matrices is often the reason for poor precision between the native sample and it's field duplicate. No flags were applied to the results based upon the Field Duplicate RPD results.

Inorganic Parameters

Quality Control Review

The following list represents the QA/QC measures that are typically reviewed during the data quality evaluation procedure for inorganic parameters.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Sample preparation, initial calibration blanks/continuing calibration blanks, and equipment blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", in which target parameters have been added prior to digestion/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and its duplicate. This information can only be determined when target compounds are detected.
- **Pre/Post Digestion Spike (MS/MSD)** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **ICP Interference Check Sample** – This sample verifies the lab's interelement and background correction factors.
- **Initial Calibration Verification** – This parameter ensures that the instrument is capable of producing acceptable quantitative data for the target analyte list to be measured.
- **Continuing Calibration Verification** – This one-point, mid-range parameter establishes that the initial calibration is still valid by checking the performance of the instrument on a continual basis.
- **ICP Serial Dilution** – The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to the sample matrix.

Metals Analyses

The QA/QC parameters for the Metals analyses for all of the samples were within acceptable control limits, except as noted below.

Blanks

The Metals target parameters detected in blank samples are listed in Table 5.

TABLE 5
Equipment Blank Contamination: Metals
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Lab Sample ID	Sample ID	Sample Type	Parameter	Lab Result	Units	Flag Concentrations
47297	ICB		ICB	Antimony	5.35	µg/L	<1.34 mg/Kg
	CCB		CCB	Antimony	6.90	µg/L	<1.73 mg/Kg
47308	CCB		CCB	Lead	15.7	µg/L	<3.9 mg/Kg
47313	CCB		CCB	Antimony	6.57	µg/L	<1.64 mg/Kg

If a target parameter was reported in a field sample, and the concentration was below the level determined to be due to blank contamination (5 times the concentration in the associated QC blank samples), it was flagged as "U", not detected.

The results qualified due to blank contamination are listed in Attachment 1.

Recoveries - MS/MSD and LCS/LCSD

All Matrix Spike (MS), Matrix Spike Duplicate (MSD), Laboratory Control Sample (LCS) and Laboratory Control Duplicate Sample (LCSD) recoveries were within acceptable quality control limits, except as noted in Table 6 below:

TABLE 6
MS/MSD and LCS/LCSD Recoveries Out of QC Limits: Metals
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
47296	MS/MSD - H015SB00901	Antimony	27*/24.6*	80-120	47296-1-9	Detects-J, non-detects-R
		Thallium	69.8*/68	80-120	47296-1-9	Detects-J, non-detects-UJ
	LCS-1200065547	Antimony	62.7%	80-120	47296-1-9	Detects-J, non-detects-already flagged due to MS

TABLE 6
MS/MSD and LCS/LCSD Recoveries Out of QC Limits: Metals
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
47297	MS/MSD - H684SB05701	Antimony	25.6*/24.9*	80-120	47297-1-17	Detects-J, non-detects-R
	LCS-1200065507	Antimony	67*	80-120	47297-1-17	Detects-J, non-detects-already flagged due to MS
47308	MS/MSD - H014SB01301	Lead	423*/232*	80-120	47308-1-20	Detects only-J
47313	MS/MSSD - H670SB05801	Antimony	30.2*/32.1*	80-120	47313-1-20	Detects-J, non-detects-UJ
		Lead	171*/136*	80-120	47313-1-20	Detects only-J
	LCS-1200065513	Antimony	71.9*	80-120	47313-1-20	Detects-J, non-detects-UJ
47354	MS/MSD - H684SB06101	Antimony	36.9*/33*	80-120	47354-1-17	Detects-J, non-detects-UJ
	LCS-1200065513	Antimony	71.9*	80-120	47313-1-20	Detects-J, non-detects-UJ

* - out of control limits

Rejected Data

The majority of rejected data were associated with re-runs and dilutions (you can only have a single valid result per sample per target). However, there were selected results qualified as "R", rejected, due to associated QC parameters out of criteria. The rejected data are summarized in Table 7 below.

TABLE 7
Data Qualification Summary: Rejected Data
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Lab Sample ID	Sample ID	Parameter Class	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
47296	47296005	684SB05301	METAL	ANTIMONY	0.631	U	0.631	R	mg/Kg	MS
47296	47296006	684CB05301	METAL	ANTIMONY	0.676	U	0.676	R	mg/Kg	MS
47296	47296007	684SB05401	METAL	ANTIMONY	0.65	U	0.65	R	mg/Kg	MS
47296	47296008	684SB05501	METAL	ANTIMONY	0.717	U	0.717	R	mg/Kg	MS
47296	47296009	684SB5601	METAL	ANTIMONY	0.67	U	0.67	R	mg/Kg	MS
47297	47297001	684SB05701	METAL	ANTIMONY	0.662	U	0.662	R	mg/Kg	MS
47297	47297002	684SB05801	METAL	ANTIMONY	0.666	U	0.666	R	mg/Kg	MS
47297	47297003	684SB05901	METAL	ANTIMONY	0.674	U	0.674	R	mg/Kg	MS
47297	47297007	684SB11501	METAL	ANTIMONY	0.602	U	0.602	R	mg/Kg	MS
47297	47297008	684SB11601	METAL	ANTIMONY	0.628	U	0.628	R	mg/Kg	MS
47297	47297010	670SB06501	METAL	ANTIMONY	0.704	U	0.704	R	mg/Kg	MS
47297	47297012	670SB06701	METAL	ANTIMONY	0.689	U	0.689	R	mg/Kg	MS
47297	47297013	684SB10901	METAL	ANTIMONY	0.742	U	0.742	R	mg/Kg	MS
47297	47297014	684CB10901	METAL	ANTIMONY	0.661	U	0.661	R	mg/Kg	MS
47297	47297015	684SB11001	METAL	ANTIMONY	0.696	U	0.696	R	mg/Kg	MS
47297	47297016	684SB11101	METAL	ANTIMONY	0.678	U	0.678	R	mg/Kg	MS
47297	47297017	684SB11201	METAL	ANTIMONY	0.668	U	0.668	R	mg/Kg	MS

Conclusion

A review of the analytical data submitted regarding the investigation of SWMU 14 in Zone H at the Charleston Naval Complex, Charleston, South Carolina by CH2M HILL has been completed. An overall evaluation of the data indicates that the sample handling, shipment, and analytical procedures have been adequately completed, and that the analytical results should be considered usable as qualified.

The analytical data had minor QC concerns, with regards to selected results for antimony being rejected that affected data usability for those specific results. However, the validation review demonstrated that the analytical systems were generally in control and the data results can be used in the decision making process.

Attachment 1 - Changed ıalifiers and Results
Zone H, SWMU 14 ata Validation

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reason
47296	015SB01001	47296002	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	740	=	740	J	ug/Kg	IC
47296	015SB01101	47296003	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	430	=	430	J	ug/Kg	IC
47296	015SB01201	47296004	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	822	=	822	J	ug/Kg	IC
47296	684CB05301	47296006	SO	METAL	SW6010	ANTIMONY	0.676	U	0.676	R	mg/Kg	MS
47296	684CB05301	47296006	SO	METAL	SW6010	THALLIUM	0.655	U	0.655	UJ	mg/Kg	MS
47296	684SB05301	47296005	SO	METAL	SW6010	ANTIMONY	0.631	U	0.631	R	mg/Kg	MS
47296	684SB05301	47296005	SO	METAL	SW6010	THALLIUM	0.612	U	0.612	UJ	mg/Kg	MS
47296	684SB05401	47296007	SO	METAL	SW6010	ANTIMONY	0.65	U	0.65	R	mg/Kg	MS
47296	684SB05401	47296007	SO	METAL	SW6010	THALLIUM	0.63	U	0.63	UJ	mg/Kg	MS
47296	684SB05501	47296008	SO	METAL	SW6010	ANTIMONY	0.717	U	0.717	R	mg/Kg	MS
47296	684SB05501	47296008	SO	METAL	SW6010	THALLIUM	1.74	U	1.74	UJ	mg/Kg	MS
47296	684SB5601	47296009	SO	METAL	SW6010	ANTIMONY	0.67	U	0.67	R	mg/Kg	MS
47296	684SB5601	47296009	SO	METAL	SW6010	THALLIUM	0.65	U	0.65	UJ	mg/Kg	MS
47297	670SB06401	47297009	SO	METAL	SW6010	ANTIMONY	0.711	=	0.711	UJ	mg/Kg	BL,BS,MS
47297	670SB06501	47297010	SO	METAL	SW6010	ANTIMONY	0.704	U	0.704	R	mg/Kg	MS
47297	670SB06601	47297011	SO	METAL	SW6010	ANTIMONY	0.765	=	0.765	UJ	mg/Kg	BL,BS,MS
47297	670SB06701	47297012	SO	METAL	SW6010	ANTIMONY	0.689	U	0.689	R	mg/Kg	MS
47297	684CB10901	47297014	SO	METAL	SW6010	ANTIMONY	0.661	U	0.661	R	mg/Kg	MS
47297	684SB05701	47297001	SO	METAL	SW6010	ANTIMONY	0.662	U	0.662	R	mg/Kg	MS
47297	684SB05801	47297002	SO	METAL	SW6010	ANTIMONY	0.666	U	0.666	R	mg/Kg	MS
47297	684SB05901	47297003	SO	METAL	SW6010	ANTIMONY	0.674	U	0.674	R	mg/Kg	MS
47297	684SB06001	47297004	SO	METAL	SW6010	ANTIMONY	0.796	=	0.796	UJ	mg/Kg	BL,BS,MS
47297	684SB10901	47297013	SO	METAL	SW6010	ANTIMONY	0.742	U	0.742	R	mg/Kg	MS
47297	684SB11001	47297015	SO	METAL	SW6010	ANTIMONY	0.696	U	0.696	R	mg/Kg	MS
47297	684SB11101	47297016	SO	METAL	SW6010	ANTIMONY	0.678	U	0.678	R	mg/Kg	MS
47297	684SB11201	47297017	SO	METAL	SW6010	ANTIMONY	0.668	U	0.668	R	mg/Kg	MS
47297	684SB11301	47297005	SO	METAL	SW6010	ANTIMONY	1.01	=	1.01	UJ	mg/Kg	BL,BS,MS
47297	684SB11401	47297006	SO	METAL	SW6010	ANTIMONY	0.971	=	0.971	UJ	mg/Kg	BL,BS,MS
47297	684SB11501	47297007	SO	METAL	SW6010	ANTIMONY	0.602	U	0.602	R	mg/Kg	MS
47297	684SB11601	47297008	SO	METAL	SW6010	ANTIMONY	0.628	U	0.628	R	mg/Kg	MS

Attachment 1 - Changed Qualifiers and Results
Zone H, SWMU 14 - Data Validation

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
47306	670SB04001	47306003	SO	SVOA	SW8270	BENZO(a)PYRENE	25500	=	25500	J	ug/Kg	IS
47306	670SB04001	47306003	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	17400	=	17400	J	ug/Kg	IS
47306	670SB04001	47306003	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	12900	=	12900	J	ug/Kg	IS
47306	670SB04001	47306003	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	14500	=	14500	J	ug/Kg	IS
47306	670SB04001	47306003	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	7200	=	7200	J	ug/Kg	IS
47306	670SB04101	47306004	SO	SVOA	SW8270	BENZO(a)PYRENE	25100	E	25100	R	ug/Kg	LR
47306	670SB04101	47306004	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	24200	E	24200	R	ug/Kg	LR
47306	670SB04101	47306004	SO	SVOA	SW8270	FLUORANTHENE	21100	E	21100	R	ug/Kg	LR
47306	670SB04101	47306004	SO	SVOA	SW8270	PYRENE	29200	E	29200	R	ug/Kg	LR
47306	670SB04101LR	47306004	SO	SVOA	SW8270	ACENAPHTHENE	2920	=	2920	R	ug/Kg	DL
47306	670SB04101LR	47306004	SO	SVOA	SW8270	ACENAPHTHYLENE	386	U	386	R	ug/Kg	DL
47306	670SB04101LR	47306004	SO	SVOA	SW8270	ANTHRACENE	4190	=	4190	R	ug/Kg	DL
47306	670SB04101LR	47306004	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	17400	=	17400	R	ug/Kg	DL
47306	670SB04101LR	47306004	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	14100	=	14100	R	ug/Kg	DL
47306	670SB04101LR	47306004	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	15300	=	15300	R	ug/Kg	DL
47306	670SB04101LR	47306004	SO	SVOA	SW8270	CHRYSENE	20100	=	20100	R	ug/Kg	DL
47306	670SB04101LR	47306004	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	6110	=	6110	R	ug/Kg	DL
47306	670SB04101LR	47306004	SO	SVOA	SW8270	FLUORENE	1290	=	1290	R	ug/Kg	DL
47306	670SB04101LR	47306004	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	12800	=	12800	R	ug/Kg	DL
47306	670SB04101LR	47306004	SO	SVOA	SW8270	NAPHTHALENE	551	=	551	R	ug/Kg	DL
47306	670SB04101LR	47306004	SO	SVOA	SW8270	PHENANTHRENE	16500	=	16500	R	ug/Kg	DL
47306	684CB09901	47306011	SO	SVOA	SW8270	BENZO(a)PYRENE	12500	=	12500	J	ug/Kg	IS
47306	684CB09901	47306011	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	14400	=	14400	J	ug/Kg	IS
47306	684CB09901	47306011	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	7910	=	7910	J	ug/Kg	IS
47306	684CB09901	47306011	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	931	U	931	UJ	ug/Kg	IS
47306	684CB09901	47306011	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	931	U	931	UJ	ug/Kg	IS
47306	684SB09301	47306001	SO	SVOA	SW8270	ACENAPHTHENE	1020	=	1020	J	ug/Kg	MS
47306	684SB09301	47306001	SO	SVOA	SW8270	ANTHRACENE	1500	=	1500	J	ug/Kg	MS
47306	684SB09301	47306001	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	6880	=	6880	J	ug/Kg	MS
47306	684SB09301	47306001	SO	SVOA	SW8270	BENZO(a)PYRENE	10300	=	10300	J	ug/Kg	IS,MS

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
47306	684SB09301	47306001	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	8550	=	8550	J	ug/Kg	IS,MS
47306	684SB09301	47306001	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	6780	=	6780	J	ug/Kg	IS,MS
47306	684SB09301	47306001	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	7360	=	7360	J	ug/Kg	IS,MS
47306	684SB09301	47306001	SO	SVOA	SW8270	CHRYSENE	8580	=	8580	J	ug/Kg	MS
47306	684SB09301	47306001	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	3600	=	3600	J	ug/Kg	IS,MS
47306	684SB09301	47306001	SO	SVOA	SW8270	FLUORANTHENE	10400	=	10400	J	ug/Kg	MS
47306	684SB09301	47306001	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	5950	=	5950	J	ug/Kg	MS
47306	684SB09301	47306001	SO	SVOA	SW8270	PHENANTHRENE	6620	=	6620	J	ug/Kg	MS
47306	684SB09301	47306001	SO	SVOA	SW8270	PYRENE	10400	=	10400	J	ug/Kg	MS
47306	684SB09401	47306002	SO	SVOA	SW8270	FLUORANTHENE	56600	E	56600	R	ug/Kg	LR
47306	684SB09401	47306002	SO	SVOA	SW8270	PYRENE	65100	E	65100	R	ug/Kg	LR
47306	684SB09401LR	47306002	SO	SVOA	SW8270	ACENAPHTHENE	9860	=	9860	R	ug/Kg	DL
47306	684SB09401LR	47306002	SO	SVOA	SW8270	ACENAPHTHYLENE	1790	U	1790	R	ug/Kg	DL
47306	684SB09401LR	47306002	SO	SVOA	SW8270	ANTHRACENE	14100	=	14100	R	ug/Kg	DL
47306	684SB09401LR	47306002	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	48600	=	48600	R	ug/Kg	DL
47306	684SB09401LR	47306002	SO	SVOA	SW8270	BENZO(a)PYRENE	66400	=	66400	R	ug/Kg	DL
47306	684SB09401LR	47306002	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	59200	=	59200	R	ug/Kg	DL
47306	684SB09401LR	47306002	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	40800	=	40800	R	ug/Kg	DL
47306	684SB09401LR	47306002	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	46200	=	46200	R	ug/Kg	DL
47306	684SB09401LR	47306002	SO	SVOA	SW8270	CHRYSENE	52600	=	52600	R	ug/Kg	DL
47306	684SB09401LR	47306002	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	1790	U	1790	R	ug/Kg	DL
47306	684SB09401LR	47306002	SO	SVOA	SW8270	FLUORENE	4940	=	4940	R	ug/Kg	DL
47306	684SB09401LR	47306002	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	37000	=	37000	R	ug/Kg	DL
47306	684SB09401LR	47306002	SO	SVOA	SW8270	NAPHTHALENE	2360	=	2360	R	ug/Kg	DL
47306	684SB09401LR	47306002	SO	SVOA	SW8270	PHENANTHRENE	56400	=	56400	R	ug/Kg	DL
47306	684SB09501	47306006	SO	SVOA	SW8270	BENZO(a)PYRENE	21300	=	21300	J	ug/Kg	IS
47306	684SB09501	47306006	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	19900	=	19900	J	ug/Kg	IS
47306	684SB09501	47306006	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	11600	=	11600	J	ug/Kg	IS
47306	684SB09501	47306006	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	15600	=	15600	J	ug/Kg	IS
47306	684SB09501	47306006	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	4770	=	4770	J	ug/Kg	IS

Attachment 1 - Changed Qualifiers and Results
Zone H, SWMU 14 - Data Validation

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
47306	684SB09501	47306006	SO	SVOA	SW8270	PYRENE	25000	E	25000	R	ug/Kg	LR
47306	684SB09501LR	47306006	SO	SVOA	SW8270	ACENAPHTHENE	1860	=	1860	R	ug/Kg	DL
47306	684SB09501LR	47306006	SO	SVOA	SW8270	ACENAPHTHYLENE	462	U	462	R	ug/Kg	DL
47306	684SB09501LR	47306006	SO	SVOA	SW8270	ANTHRACENE	2520	=	2520	R	ug/Kg	DL
47306	684SB09501LR	47306006	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	14300	=	14300	R	ug/Kg	DL
47306	684SB09501LR	47306006	SO	SVOA	SW8270	BENZO(a)PYRENE	21000	=	21000	R	ug/Kg	DL
47306	684SB09501LR	47306006	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	19600	=	19600	R	ug/Kg	DL
47306	684SB09501LR	47306006	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	11900	=	11900	R	ug/Kg	DL
47306	684SB09501LR	47306006	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	14600	=	14600	R	ug/Kg	DL
47306	684SB09501LR	47306006	SO	SVOA	SW8270	CHRYSENE	15600	=	15600	R	ug/Kg	DL
47306	684SB09501LR	47306006	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	462	U	462	R	ug/Kg	DL
47306	684SB09501LR	47306006	SO	SVOA	SW8270	FLUORANTHENE	18800	=	18800	R	ug/Kg	DL
47306	684SB09501LR	47306006	SO	SVOA	SW8270	FLUORENE	776	=	776	R	ug/Kg	DL
47306	684SB09501LR	47306006	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	10800	=	10800	R	ug/Kg	DL
47306	684SB09501LR	47306006	SO	SVOA	SW8270	NAPHTHALENE	291	J	291	R	ug/Kg	DL
47306	684SB09501LR	47306006	SO	SVOA	SW8270	PHENANTHRENE	10800	=	10800	R	ug/Kg	DL
47306	684SB09601	47306007	SO	SVOA	SW8270	BENZO(a)PYRENE	74000	=	74000	J	ug/Kg	IS
47306	684SB09601	47306007	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	55700	=	55700	J	ug/Kg	IS
47306	684SB09601	47306007	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	43400	=	43400	J	ug/Kg	IS
47306	684SB09601	47306007	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	50500	=	50500	J	ug/Kg	IS
47306	684SB09601	47306007	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	886	U	886	UJ	ug/Kg	IS
47306	684SB09701	47306008	SO	SVOA	SW8270	BENZO(a)PYRENE	5090	=	5090	J	ug/Kg	IS
47306	684SB09701	47306008	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	3490	=	3490	J	ug/Kg	IS
47306	684SB09701	47306008	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	3320	=	3320	J	ug/Kg	IS
47306	684SB09701	47306008	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	2040	=	2040	J	ug/Kg	IS
47306	684SB09701	47306008	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	436	U	436	UJ	ug/Kg	IS
47306	684SB09901	47306010	SO	SVOA	SW8270	BENZO(a)PYRENE	25800	=	25800	J	ug/Kg	IS
47306	684SB09901	47306010	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	17100	=	17100	J	ug/Kg	IS
47306	684SB09901	47306010	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	12400	=	12400	J	ug/Kg	IS
47306	684SB09901	47306010	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	7900	=	7900	J	ug/Kg	IS

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
47306	684SB09901	47306010	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	964	U	964	UJ	ug/Kg	IS
47306	684SB10001	47306012	SO	SVOA	SW8270	BENZO(a)PYRENE	1510	=	1510	J	ug/Kg	IS
47306	684SB10001	47306012	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	1070	=	1070	J	ug/Kg	IS
47306	684SB10001	47306012	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	1020	=	1020	J	ug/Kg	IS
47306	684SB10001	47306012	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	152	U	152	UJ	ug/Kg	IS
47306	684SB10001	47306012	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	152	U	152	UJ	ug/Kg	IS
47306	684SB10401	47306016	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	31200	E	31200	R	ug/Kg	LR
47306	684SB10401	47306016	SO	SVOA	SW8270	BENZO(a)PYRENE	30600	E	30600	R	ug/Kg	LR
47306	684SB10401	47306016	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	28300	E	28300	R	ug/Kg	LR
47306	684SB10401	47306016	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	156	U	156	UJ	ug/Kg	IS
47306	684SB10401	47306016	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	156	U	156	UJ	ug/Kg	IS
47306	684SB10401	47306016	SO	SVOA	SW8270	CHRYSENE	45500	E	45500	R	ug/Kg	LR
47306	684SB10401	47306016	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	156	U	156	UJ	ug/Kg	IS
47306	684SB10401	47306016	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	11400	=	11400	J	ug/Kg	IS
47306	684SB10401	47306016	SO	SVOA	SW8270	PYRENE	36300	E	36300	R	ug/Kg	LR
47306	684SB10401LR	47306016	SO	SVOA	SW8270	ACENAPHTHENE	1450	=	1450	R	ug/Kg	DL
47306	684SB10401LR	47306016	SO	SVOA	SW8270	ACENAPHTHYLENE	779	U	779	R	ug/Kg	DL
47306	684SB10401LR	47306016	SO	SVOA	SW8270	ANTHRACENE	2540	=	2540	R	ug/Kg	DL
47306	684SB10401LR	47306016	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	18000	=	18000	R	ug/Kg	DL
47306	684SB10401LR	47306016	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	779	U	779	R	ug/Kg	DL
47306	684SB10401LR	47306016	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	9080	=	9080	R	ug/Kg	DL
47306	684SB10401LR	47306016	SO	SVOA	SW8270	FLUORANTHENE	12800	=	12800	R	ug/Kg	DL
47306	684SB10401LR	47306016	SO	SVOA	SW8270	FLUORENE	840	=	840	R	ug/Kg	DL
47306	684SB10401LR	47306016	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	10900	=	10900	R	ug/Kg	DL
47306	684SB10401LR	47306016	SO	SVOA	SW8270	NAPHTHALENE	269	J	269	R	ug/Kg	DL
47306	684SB10401LR	47306016	SO	SVOA	SW8270	PHENANTHRENE	12500	=	12500	R	ug/Kg	DL
47306	684SB10701	47306019	SO	SVOA	SW8270	BENZO(a)PYRENE	885	=	885	J	ug/Kg	IS
47306	684SB10701	47306019	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	179	U	179	UJ	ug/Kg	IS
47306	684SB10701	47306019	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	870	=	870	J	ug/Kg	IS
47306	684SB10701	47306019	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	179	U	179	UJ	ug/Kg	IS

Attachment 1 - Changed Qualifiers and Results
Zone H, SWMU 14 - Data Validation

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
47306	684SB10701	47306019	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	179	U	179	UJ	ug/Kg	IS
47308	014CB02501	47308019	SO	METAL	SW6010	LEAD	80.2	=	80.2	J	mg/Kg	MS
47308	014SB01201	47308020	SO	METAL	SW6010	LEAD	136	=	136	J	mg/Kg	MS
47308	014SB01301	47308001	SO	METAL	SW6010	LEAD	119	=	119	J	mg/Kg	MS
47308	014SB01401	47308002	SO	METAL	SW6010	LEAD	81.4	=	81.4	J	mg/Kg	MS
47308	014SB01501	47308003	SO	METAL	SW6010	LEAD	145	=	145	J	mg/Kg	MS
47308	014SB01601	47308004	SO	METAL	SW6010	LEAD	185	=	185	J	mg/Kg	MS
47308	014SB01701	47308005	SO	METAL	SW6010	LEAD	104	=	104	J	mg/Kg	MS
47308	014SB01801	47308006	SO	METAL	SW6010	LEAD	107	=	107	J	mg/Kg	MS
47308	014SB01901	47308007	SO	METAL	SW6010	LEAD	88.2	=	88.2	J	mg/Kg	MS
47308	014SB02001	47308013	SO	METAL	SW6010	LEAD	43700	=	43700	J	mg/Kg	MS
47308	014SB02101	47308014	SO	METAL	SW6010	LEAD	193	=	193	J	mg/Kg	MS
47308	014SB02201	47308015	SO	METAL	SW6010	LEAD	12.8	=	12.8	J	mg/Kg	MS
47308	014SB02301	47308016	SO	METAL	SW6010	LEAD	164	=	164	J	mg/Kg	MS
47308	014SB02401	47308017	SO	METAL	SW6010	LEAD	96.8	=	96.8	J	mg/Kg	MS
47308	014SB02501	47308018	SO	METAL	SW6010	LEAD	127	=	127	J	mg/Kg	MS
47308	670CB03701	47308010	SO	METAL	SW6010	LEAD	176	=	176	J	mg/Kg	MS
47308	670SB03601	47308008	SO	METAL	SW6010	LEAD	268	=	268	J	mg/Kg	MS
47308	670SB03701	47308009	SO	METAL	SW6010	LEAD	32.7	=	32.7	J	mg/Kg	MS
47308	670SB03801	47308011	SO	METAL	SW6010	LEAD	51.4	=	51.4	J	mg/Kg	MS
47308	670SB03901	47308012	SO	METAL	SW6010	LEAD	288	=	288	J	mg/Kg	MS
47309	670CB04401	47309004	SO	SVOA	SW8270	BENZO(a)PYRENE	7810	E	7810	R	ug/Kg	LR
47309	670CB04401	47309004	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	12100	E	12100	R	ug/Kg	LR
47309	670CB04401	47309004	SO	SVOA	SW8270	FLUORANTHENE	6730	E	6730	R	ug/Kg	LR
47309	670CB04401	47309004	SO	SVOA	SW8270	PYRENE	6210	E	6210	R	ug/Kg	LR
47309	670CB04401LR	47309004	SO	SVOA	SW8270	ACENAPHTHENE	720	=	720	R	ug/Kg	DL
47309	670CB04401LR	47309004	SO	SVOA	SW8270	ANTHRACENE	1050	=	1050	R	ug/Kg	DL
47309	670CB04401LR	47309004	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	4490	=	4490	R	ug/Kg	DL
47309	670CB04401LR	47309004	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	3350	=	3350	R	ug/Kg	DL
47309	670CB04401LR	47309004	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	1040	=	1040	R	ug/Kg	DL

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reason
47309	670CB04401LR	47309004	SO	SVOA	SW8270	CHRYSENE	4280	=	4280	R	ug/Kg	DL
47309	670CB04401LR	47309004	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	190	U	190	R	ug/Kg	DL
47309	670CB04401LR	47309004	SO	SVOA	SW8270	FLUORENE	376	=	376	R	ug/Kg	DL
47309	670CB04401LR	47309004	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	3140	=	3140	R	ug/Kg	DL
47309	670CB04401LR	47309004	SO	SVOA	SW8270	NAPHTHALENE	136	J	136	R	ug/Kg	DL
47309	670CB04401LR	47309004	SO	SVOA	SW8270	PHENANTHRENE	4110	=	4110	R	ug/Kg	DL
47309	670SB04501	47309005	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	86300	E	86300	R	ug/Kg	LR
47309	670SB04501LR	47309005	SO	SVOA	SW8270	ACENAPHTHENE	8470	=	8470	R	ug/Kg	DL
47309	670SB04501LR	47309005	SO	SVOA	SW8270	ACENAPHTHYLENE	1840	U	1840	R	ug/Kg	DL
47309	670SB04501LR	47309005	SO	SVOA	SW8270	ANTHRACENE	10900	=	10900	R	ug/Kg	DL
47309	670SB04501LR	47309005	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	47400	=	47400	R	ug/Kg	DL
47309	670SB04501LR	47309005	SO	SVOA	SW8270	BENZO(a)PYRENE	65600	=	65600	R	ug/Kg	DL
47309	670SB04501LR	47309005	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	27100	=	27100	R	ug/Kg	DL
47309	670SB04501LR	47309005	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	10900	=	10900	R	ug/Kg	DL
47309	670SB04501LR	47309005	SO	SVOA	SW8270	CHRYSENE	45400	=	45400	R	ug/Kg	DL
47309	670SB04501LR	47309005	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	1840	U	1840	R	ug/Kg	DL
47309	670SB04501LR	47309005	SO	SVOA	SW8270	FLUORANTHENE	71000	=	71000	R	ug/Kg	DL
47309	670SB04501LR	47309005	SO	SVOA	SW8270	FLUORENE	4050	=	4050	R	ug/Kg	DL
47309	670SB04501LR	47309005	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	28700	=	28700	R	ug/Kg	DL
47309	670SB04501LR	47309005	SO	SVOA	SW8270	NAPHTHALENE	1680	J	1680	R	ug/Kg	DL
47309	670SB04501LR	47309005	SO	SVOA	SW8270	PHENANTHRENE	42600	=	42600	R	ug/Kg	DL
47309	670SB04501LR	47309005	SO	SVOA	SW8270	PYRENE	69200	=	69200	R	ug/Kg	DL
47309	670SB04701	47309007	SO	SVOA	SW8270	BENZO(a)PYRENE	8120	E	8120	R	ug/Kg	LR
47309	670SB04701	47309007	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	13300	E	13300	R	ug/Kg	LR
47309	670SB04701	47309007	SO	SVOA	SW8270	FLUORANTHENE	7540	E	7540	R	ug/Kg	LR
47309	670SB04701	47309007	SO	SVOA	SW8270	PYRENE	6720	E	6720	R	ug/Kg	LR
47309	670SB04701LR	47309007	SO	SVOA	SW8270	ACENAPHTHENE	689	=	689	R	ug/Kg	DL
47309	670SB04701LR	47309007	SO	SVOA	SW8270	ACENAPHTHYLENE	486	U	486	R	ug/Kg	DL
47309	670SB04701LR	47309007	SO	SVOA	SW8270	ANTHRACENE	1000	=	1000	R	ug/Kg	DL
47309	670SB04701LR	47309007	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	486	U	486	R	ug/Kg	DL

Attachment 1 - Changed Qualifiers and Results
Zone H, SWMU 14 - Data Validation

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
47309	670SB04701LR	47309007	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	3830	=	3830	R	ug/Kg	DL
47309	670SB04701LR	47309007	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	1020	=	1020	R	ug/Kg	DL
47309	670SB04701LR	47309007	SO	SVOA	SW8270	CHRYSENE	5120	=	5120	R	ug/Kg	DL
47309	670SB04701LR	47309007	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	486	U	486	R	ug/Kg	DL
47309	670SB04701LR	47309007	SO	SVOA	SW8270	FLUORENE	369	J	369	R	ug/Kg	DL
47309	670SB04701LR	47309007	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	4190	=	4190	R	ug/Kg	DL
47309	670SB04701LR	47309007	SO	SVOA	SW8270	NAPHTHALENE	486	U	486	R	ug/Kg	DL
47309	670SB04701LR	47309007	SO	SVOA	SW8270	PHENANTHRENE	4400	=	4400	R	ug/Kg	DL
47309	670SB04801	47309008	SO	SVOA	SW8270	ACENAPHTHENE	6290	E	6290	R	ug/Kg	LR
47309	670SB04801	47309008	SO	SVOA	SW8270	ANTHRACENE	7710	E	7710	R	ug/Kg	LR
47309	670SB04801	47309008	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	23200	E	23200	R	ug/Kg	LR
47309	670SB04801	47309008	SO	SVOA	SW8270	BENZO(a)PYRENE	25800	E	25800	R	ug/Kg	LR
47309	670SB04801	47309008	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	73300	E	73300	R	ug/Kg	LR
47309	670SB04801	47309008	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	17800	E	17800	R	ug/Kg	LR
47309	670SB04801	47309008	SO	SVOA	SW8270	CHRYSENE	21100	E	21100	R	ug/Kg	LR
47309	670SB04801	47309008	SO	SVOA	SW8270	FLUORANTHENE	32800	E	32800	R	ug/Kg	LR
47309	670SB04801	47309008	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	14600	E	14600	R	ug/Kg	LR
47309	670SB04801	47309008	SO	SVOA	SW8270	PHENANTHRENE	25500	E	25500	R	ug/Kg	LR
47309	670SB04801	47309008	SO	SVOA	SW8270	PYRENE	29600	E	29600	R	ug/Kg	LR
47309	670SB04801LR	47309008	SO	SVOA	SW8270	ACENAPHTHYLENE	476	U	476	R	ug/Kg	DL
47309	670SB04801LR	47309008	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	4780	=	4780	R	ug/Kg	DL
47309	670SB04801LR	47309008	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	476	U	476	R	ug/Kg	DL
47309	670SB04801LR	47309008	SO	SVOA	SW8270	FLUORENE	3330	=	3330	R	ug/Kg	DL
47309	670SB04801LR	47309008	SO	SVOA	SW8270	NAPHTHALENE	1090	=	1090	R	ug/Kg	DL
47309	670SB04901	47309009	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	5400	E	5400	R	ug/Kg	LR
47309	670SB04901LR	47309009	SO	SVOA	SW8270	ACENAPHTHENE	310	=	310	R	ug/Kg	DL
47309	670SB04901LR	47309009	SO	SVOA	SW8270	ACENAPHTHYLENE	173	U	173	R	ug/Kg	DL
47309	670SB04901LR	47309009	SO	SVOA	SW8270	ANTHRACENE	528	=	528	R	ug/Kg	DL
47309	670SB04901LR	47309009	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	1920	=	1920	R	ug/Kg	DL
47309	670SB04901LR	47309009	SO	SVOA	SW8270	BENZO(a)PYRENE	2650	=	2650	R	ug/Kg	DL

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
7309	670SB04901LR	47309009	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	1400	=	1400	R	ug/Kg	DL
7309	670SB04901LR	47309009	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	344	=	344	R	ug/Kg	DL
7309	670SB04901LR	47309009	SO	SVOA	SW8270	CHRYSENE	2070	=	2070	R	ug/Kg	DL
7309	670SB04901LR	47309009	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	173	U	173	R	ug/Kg	DL
7309	670SB04901LR	47309009	SO	SVOA	SW8270	FLUORANTHENE	3300	=	3300	R	ug/Kg	DL
7309	670SB04901LR	47309009	SO	SVOA	SW8270	FLUORENE	198	=	198	R	ug/Kg	DL
7309	670SB04901LR	47309009	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	1590	=	1590	R	ug/Kg	DL
7309	670SB04901LR	47309009	SO	SVOA	SW8270	NAPHTHALENE	173	U	173	R	ug/Kg	DL
7309	670SB04901LR	47309009	SO	SVOA	SW8270	PHENANTHRENE	2220	=	2220	R	ug/Kg	DL
7309	670SB04901LR	47309009	SO	SVOA	SW8270	PYRENE	2530	=	2530	R	ug/Kg	DL
7309	670SB05101	47309011	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	17600	E	17600	R	ug/Kg	LR
7309	670SB05101	47309011	SO	SVOA	SW8270	BENZO(a)PYRENE	30900	E	30900	R	ug/Kg	LR
7309	670SB05101	47309011	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	50200	E	50200	R	ug/Kg	LR
7309	670SB05101	47309011	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	12400	E	12400	R	ug/Kg	LR
7309	670SB05101	47309011	SO	SVOA	SW8270	CHRYSENE	17700	E	17700	R	ug/Kg	LR
7309	670SB05101	47309011	SO	SVOA	SW8270	FLUORANTHENE	25900	E	25900	R	ug/Kg	LR
7309	670SB05101	47309011	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	9720	E	9720	R	ug/Kg	LR
7309	670SB05101	47309011	SO	SVOA	SW8270	PHENANTHRENE	17500	E	17500	R	ug/Kg	LR
7309	670SB05101	47309011	SO	SVOA	SW8270	PYRENE	22900	E	22900	R	ug/Kg	LR
7309	670SB05101LR	47309011	SO	SVOA	SW8270	ACENAPHTHENE	2910	=	2910	R	ug/Kg	DL
7309	670SB05101LR	47309011	SO	SVOA	SW8270	ACENAPHTHYLENE	458	U	458	R	ug/Kg	DL
7309	670SB05101LR	47309011	SO	SVOA	SW8270	ANTHRACENE	3230	=	3230	R	ug/Kg	DL
7309	670SB05101LR	47309011	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	2270	=	2270	R	ug/Kg	DL
7309	670SB05101LR	47309011	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	458	U	458	R	ug/Kg	DL
7309	670SB05101LR	47309011	SO	SVOA	SW8270	FLUORENE	1220	=	1220	R	ug/Kg	DL
7309	670SB05101LR	47309011	SO	SVOA	SW8270	NAPHTHALENE	768	=	768	R	ug/Kg	DL
7309	670SB05301	47309013	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	952	=	952	J	ug/Kg	MS
7309	670SB05301	47309013	SO	SVOA	SW8270	CHRYSENE	1980	=	1980	J	ug/Kg	MS
7313	014CB03501	47313020	SO	METAL	SW6010	LEAD	35	=	35	J	mg/Kg	MS
7313	014SB02601	47313010	SO	METAL	SW6010	LEAD	31	=	31	J	mg/Kg	MS

Attachment 1 - Changed Qualifiers and Results
Zone H, SWMU 14 - Data Validation

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
47313	014SB02701	47313011	SO	METAL	SW6010	LEAD	288	=	288	J	mg/Kg	MS
47313	014SB02801	47313012	SO	METAL	SW6010	LEAD	35.8	=	35.8	J	mg/Kg	MS
47313	014SB02901	47313013	SO	METAL	SW6010	LEAD	78.2	=	78.2	J	mg/Kg	MS
47313	014SB03001	47313014	SO	METAL	SW6010	LEAD	149	=	149	J	mg/Kg	MS
47313	014SB03101	47313015	SO	METAL	SW6010	LEAD	111	=	111	J	mg/Kg	MS
47313	014SB03201	47313016	SO	METAL	SW6010	LEAD	52.1	=	52.1	J	mg/Kg	MS
47313	014SB03301	47313017	SO	METAL	SW6010	LEAD	166	=	166	J	mg/Kg	MS
47313	014SB03401	47313018	SO	METAL	SW6010	LEAD	41.7	=	41.7	J	mg/Kg	MS
47313	014SB03501	47313019	SO	METAL	SW6010	LEAD	74.2	=	74.2	J	mg/Kg	MS
47313	670CB06901	47313003	SO	METAL	SW6010	ANTIMONY	2.7	=	2.7	J	mg/Kg	BS,MS
47313	670CB06901	47313003	SO	METAL	SW6010	LEAD	205	=	205	J	mg/Kg	MS
47313	670SB05601	47313006	SO	METAL	SW6010	ANTIMONY	0.651	U	0.651	UJ	mg/Kg	BS,MS
47313	670SB05601	47313006	SO	METAL	SW6010	LEAD	89	=	89	J	mg/Kg	MS
47313	670SB05701	47313007	SO	METAL	SW6010	ANTIMONY	0.617	U	0.617	UJ	mg/Kg	BS,MS
47313	670SB05701	47313007	SO	METAL	SW6010	LEAD	38.7	=	38.7	J	mg/Kg	MS
47313	670SB05801	47313008	SO	METAL	SW6010	ANTIMONY	1.02	=	1.02	UJ	mg/Kg	BL,BS,MS
47313	670SB05801	47313008	SO	METAL	SW6010	LEAD	35.4	=	35.4	J	mg/Kg	MS
47313	670SB05901	47313009	SO	METAL	SW6010	ANTIMONY	0.689	U	0.689	UJ	mg/Kg	BS,MS
47313	670SB05901	47313009	SO	METAL	SW6010	LEAD	29.8	=	29.8	J	mg/Kg	MS
47313	670SB06801	47313001	SO	METAL	SW6010	ANTIMONY	1.44	=	1.44	UJ	mg/Kg	BL,BS,MS
47313	670SB06801	47313001	SO	METAL	SW6010	LEAD	82.6	=	82.6	J	mg/Kg	MS
47313	670SB06901	47313002	SO	METAL	SW6010	ANTIMONY	1.94	=	1.94	J	mg/Kg	BS,MS
47313	670SB06901	47313002	SO	METAL	SW6010	LEAD	132	=	132	J	mg/Kg	MS
47313	670SB07001	47313004	SO	METAL	SW6010	ANTIMONY	15.3	=	15.3	J	mg/Kg	BS,MS
47313	670SB07001	47313004	SO	METAL	SW6010	LEAD	3260	=	3260	J	mg/Kg	MS
47313	670SB07101	47313005	SO	METAL	SW6010	ANTIMONY	1.58	=	1.58	UJ	mg/Kg	BL,BS,MS
47313	670SB07101	47313005	SO	METAL	SW6010	LEAD	168	=	168	J	mg/Kg	MS
47354	684CB05201	47354026	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	41	U	41	UJ	ug/Kg	IC
47354	684CB07401	47354015	SO	METAL	SW6010	ANTIMONY	0.514	U	0.514	UJ	mg/Kg	BS,MS
47354	684CB08601	47354037	SO	SVOA	SW8270	BENZO(a)PYRENE	525	=	525	J	ug/Kg	IS

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Defined Result	Defined Qual	Units	Reason(s)
7354	684CB08601	47354037	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	1560	=	1560	J	ug/Kg	IC,IS
7354	684CB08601	47354037	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	379	=	379	J	ug/Kg	IS
7354	684CB08601	47354037	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	379	=	379	J	ug/Kg	IS
7354	684CB08601	47354037	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	153	U	153	UJ	ug/Kg	IS
7354	684SB04601	47354019	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	176	U	176	UJ	ug/Kg	IC
7354	684SB04801	47354021	SO	SVOA	SW8270	BENZO(a)PYRENE	406	U	406	UJ	ug/Kg	IS
7354	684SB04801	47354021	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	4370	=	4370	J	ug/Kg	IC,IS
7354	684SB04801	47354021	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	406	U	406	UJ	ug/Kg	IS
7354	684SB04801	47354021	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	406	U	406	UJ	ug/Kg	IS
7354	684SB04801	47354021	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	406	U	406	UJ	ug/Kg	IS
7354	684SB04901	47354022	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	830	=	830	J	ug/Kg	IC
7354	684SB05001	47354023	SO	SVOA	SW8270	BENZO(a)PYRENE	178	U	178	UJ	ug/Kg	IS
7354	684SB05001	47354023	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	178	U	178	UJ	ug/Kg	IC,IS
7354	684SB05001	47354023	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	178	U	178	UJ	ug/Kg	IS
7354	684SB05001	47354023	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	178	U	178	UJ	ug/Kg	IS
7354	684SB05001	47354023	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	178	U	178	UJ	ug/Kg	IS
7354	684SB05101	47354024	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	49.6	U	49.6	UJ	ug/Kg	IC
7354	684SB05201	47354025	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	336	=	336	J	ug/Kg	IC
7354	684SB06101	47354001	SO	METAL	SW6010	ANTIMONY	0.595	U	0.595	UJ	mg/Kg	BS,MS
7354	684SB06201	47354002	SO	METAL	SW6010	ANTIMONY	0.57	U	0.57	UJ	mg/Kg	BS,MS
7354	684SB06301	47354003	SO	METAL	SW6010	ANTIMONY	1.42	=	1.42	J	mg/Kg	BS,MS
7354	684SB06401	47354004	SO	METAL	SW6010	ANTIMONY	1.62	=	1.62	J	mg/Kg	BS,MS
7354	684SB06501	47354005	SO	METAL	SW6010	ANTIMONY	0.533	U	0.533	UJ	mg/Kg	BS,MS
7354	684SB06601	47354006	SO	METAL	SW6010	ANTIMONY	0.799	=	0.799	J	mg/Kg	BS,MS
7354	684SB06701	47354007	SO	METAL	SW6010	ANTIMONY	0.565	U	0.565	UJ	mg/Kg	BS,MS
7354	684SB06801	47354008	SO	METAL	SW6010	ANTIMONY	0.849	=	0.849	J	mg/Kg	BS,MS
7354	684SB06901	47354009	SO	METAL	SW6010	ANTIMONY	0.675	U	0.675	UJ	mg/Kg	BS,MS
7354	684SB07001	47354010	SO	METAL	SW6010	ANTIMONY	0.647	U	0.647	UJ	mg/Kg	BS,MS
7354	684SB07101	47354011	SO	METAL	SW6010	ANTIMONY	0.695	U	0.695	UJ	mg/Kg	BS,MS
7354	684SB07201	47354012	SO	METAL	SW6010	ANTIMONY	0.702	U	0.702	UJ	mg/Kg	BS,MS

Attachment 1 - Changed Qualifiers and Results
Zone H, SWMU 14 - Data Validation

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
47354	684SB07301	47354013	SO	METAL	SW6010	ANTIMONY	0.72	U	0.72	UJ	mg/Kg	BS,MS
47354	684SB07401	47354014	SO	METAL	SW6010	ANTIMONY	0.542	U	0.542	UJ	mg/Kg	BS,MS
47354	684SB07501	47354016	SO	METAL	SW6010	ANTIMONY	0.522	U	0.522	UJ	mg/Kg	BS,MS
47354	684SB07601	47354017	SO	METAL	SW6010	ANTIMONY	0.55	U	0.55	UJ	mg/Kg	BS,MS
47354	684SB07701	47354027	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	4200	=	4200	J	ug/Kg	IC
47354	684SB07801	47354028	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	4160	=	4160	J	ug/Kg	IC
47354	684SB08001	47354030	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	1420	=	1420	J	ug/Kg	IC
47354	684SB08101	47354031	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	1190	=	1190	J	ug/Kg	IC
47354	684SB08201	47354032	SO	SVOA	SW8270	BENZO(a)PYRENE	53.1	=	53.1	J	ug/Kg	IS
47354	684SB08201	47354032	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	414	=	414	J	ug/Kg	IC,IS
47354	684SB08201	47354032	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	49	U	49	UJ	ug/Kg	IS
47354	684SB08201	47354032	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	160	=	160	J	ug/Kg	IS
47354	684SB08301	47354033	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	398	U	398	UJ	ug/Kg	IC
47354	684SB08401	47354034	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	3600	=	3600	J	ug/Kg	IC
47354	684SB08501	47354035	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	9230	=	9230	J	ug/Kg	IC
47354	684SB08601	47354036	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	1860	=	1860	J	ug/Kg	IC
47355	684SB08801	47355002	SO	SVOA	SW8270	PYRENE	20700	E	20700	R	ug/Kg	LR
47355	684SB08801LR	47355002	SO	SVOA	SW8270	ACENAPHTHENE	2170	=	2170	R	ug/Kg	DL
47355	684SB08801LR	47355002	SO	SVOA	SW8270	ACENAPHTHYLENE	402	U	402	R	ug/Kg	DL
47355	684SB08801LR	47355002	SO	SVOA	SW8270	ANTHRACENE	3210	=	3210	R	ug/Kg	DL
47355	684SB08801LR	47355002	SO	SVOA	SW8270	BENZO(a)PYRENE	16300	=	16300	R	ug/Kg	DL
47355	684SB08801LR	47355002	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	402	U	402	R	ug/Kg	DL
47355	684SB08801LR	47355002	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	9980	=	9980	R	ug/Kg	DL
47355	684SB08801LR	47355002	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	23100	=	23100	R	ug/Kg	DL
47355	684SB08801LR	47355002	SO	SVOA	SW8270	CHRYSENE	10500	=	10500	R	ug/Kg	DL
47355	684SB08801LR	47355002	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	10100	=	10100	R	ug/Kg	DL
47355	684SB08801LR	47355002	SO	SVOA	SW8270	FLUORANTHENE	16200	=	16200	R	ug/Kg	DL
47355	684SB08801LR	47355002	SO	SVOA	SW8270	FLUORENE	1120	=	1120	R	ug/Kg	DL
47355	684SB08801LR	47355002	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	10100	=	10100	R	ug/Kg	DL
47355	684SB08801LR	47355002	SO	SVOA	SW8270	NAPHTHALENE	402	U	402	R	ug/Kg	DL

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
47355	684SB08801LR	47355002	SO	SVOA	SW8270	PHENANTHRENE	12700	=	12700	R	ug/Kg	DL
47355	684SB08801LR	47355002	SO	SVOA	SW8270	PYRENE	17400	=	17400	R	ug/Kg	DL
47355	684SB08901	47355003	SO	SVOA	SW8270	PYRENE	23700	E	23700	R	ug/Kg	LR
47355	684SB08901LR	47355003	SO	SVOA	SW8270	ACENAPHTHENE	2140	=	2140	R	ug/Kg	DL
47355	684SB08901LR	47355003	SO	SVOA	SW8270	ACENAPHTHYLENE	381	U	381	R	ug/Kg	DL
47355	684SB08901LR	47355003	SO	SVOA	SW8270	ANTHRACENE	3000	=	3000	R	ug/Kg	DL
47355	684SB08901LR	47355003	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	8800	=	8800	R	ug/Kg	DL
47355	684SB08901LR	47355003	SO	SVOA	SW8270	BENZO(a)PYRENE	12200	=	12200	R	ug/Kg	DL
47355	684SB08901LR	47355003	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	8750	=	8750	R	ug/Kg	DL
47355	684SB08901LR	47355003	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	381	U	381	R	ug/Kg	DL
47355	684SB08901LR	47355003	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	11800	=	11800	R	ug/Kg	DL
47355	684SB08901LR	47355003	SO	SVOA	SW8270	CHRYSENE	9700	=	9700	R	ug/Kg	DL
47355	684SB08901LR	47355003	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	381	U	381	R	ug/Kg	DL
47355	684SB08901LR	47355003	SO	SVOA	SW8270	FLUORANTHENE	17600	=	17600	R	ug/Kg	DL
47355	684SB08901LR	47355003	SO	SVOA	SW8270	FLUORENE	1100	=	1100	R	ug/Kg	DL
47355	684SB08901LR	47355003	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	5790	=	5790	R	ug/Kg	DL
47355	684SB08901LR	47355003	SO	SVOA	SW8270	NAPHTHALENE	542	=	542	R	ug/Kg	DL
47355	684SB08901LR	47355003	SO	SVOA	SW8270	PHENANTHRENE	13000	=	13000	R	ug/Kg	DL

Data Validation Summary - Charleston Naval Complex - Zone H, SWMU 14

TO: Sam Naik/CH2M HILL/ATL

FROM: Amy Juchem/CH2M HILL/GNA
Herb Kelly/CH2M HILL/GNA

DATE: February 4, 2002

The purpose of this memorandum is to present the results of the data validation process for the samples collected at SWMU 14 in Zone H. The samples were collected on December 19, 2001.

The specific samples and analytical fractions reviewed are summarized below in Table 1.

The Quality Control areas that were review and the resulting findings are documented within each subsection that follows. This data was validated for compliance with the analytical method requirements. This process also included a review of the data to assess the accuracy, precision, and completeness based upon procedures described in the guidance documents such as the Environmental Protection Agency (EPA) *National Functional Guidelines for Inorganic Data Review (EPA 1994) and National Functional Guidelines for Organic Data Review (EPA 1999)*. Quality assurance/quality control (QA/QC) summary forms and data reports were reviewed.

Samples were submitted to Severn Trent Services, STL Savannah Laboratories, Inc., in Savannah, Georgia for SW-846 8270 Semivolatile Organic Compounds (SVOC).

Sample results that were not within the acceptance limits were appended with a qualifying flag, which consisted of a single- or double-letter code that indicated a possible problem with the data. The qualifying flags originated during the data review and validation processes. These also include the secondary, or the two-digit "sub-qualifier" flags. The secondary qualifiers provide the reasoning behind the assignment of a qualifier flag to the data. The secondary qualifiers are presented and defined below.

Attachment 1 lists the changes in data qualifiers, due to the validation process.

The following primary flags were used to qualify the data:

[=] Detected. The analyte was analyzed for and detected at the concentration shown.

[J] Estimated. The analyte was present but the reported value may not be accurate or precise.

[U] Undetected. The analyte was analyzed for but not detected above the method detection limit.

[UJ] Detection limit estimated. The analyte was analyzed for but qualified as not detected; the result is estimated.

[R] Rejected. The data is not useable.

Secondary Data Validation Qualifiers

Code	Definition
2S	Second Source
BL	Blank
BD	Blank Spike/Blank Spike Duplicate or (LCS/LCSD) Precision
BS	Blank Spike/LCS
CC	Continuing Calibration Verification
DL	Dilution
FD	Field Duplicate
HT	Holding Time
IB	In-Between (metals - B's → J's)
IC	Initial Calibration
IS	Internal Standard
LD	Lab Duplicate
LR	Concentration exceeded Linear Range
MD	MS/MSD or LCS/LCSD Precision
MS	Matrix Spike/Matrix Spike Duplicate
OT	Other (see DV worksheet)
PD	Pesticide Degradation
PS	Post Spike
RE	Re-extraction/Re-analysis
SD	Serial Dilution
SS	Spiked Surrogate
TN	Tune

Table 1 - Chemical Analytical Methods – Field and Quality Control Samples

TABLE 1
Chemical Analytical Methods – Field and Quality Control Samples
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG Number	Site ID	Station ID	Sample ID	Date Collected	Matrix	Lab Sample ID	Sample Type	PAH SW8270
CNC58	670	H670SB078	670SB07801	12/19/01 0842	SO	S118337-1	N	X
CNC58	670	H670SB079	670SB07901	12/19/01 0849	SO	S118337-2	N	X
CNC58	670	H670SB080	670SB08001	12/19/01 0900	SO	S118337-3	N	X
CNC58	670	H670SB081	670SB08101	12/19/01 0905	SO	S118337-4	N	X
CNC58	670	H670SB081	670SB08101MS	12/19/01 0905	SO	S118337-4MS	MS	X
CNC58	670	H670SB081	670SB08101MSD	12/19/01 0905	SO	S118337-4MSD	SD	X
CNC58	670	H670SB082	670SB08201	12/19/01 0915	SO	S118337-5	N	X
CNC58	670	H670EB078	670EB078L1	12/19/01 1900	SQ	S118337-6	EB	X

MATRIX CODE

SO - Soil
SQ - Soil QC Samples

SAMPLE TYPE CODE

EB - Equipment Blank
N - Native Sample
MS - Matrix Spike
SD - Matrix Spike Duplicate

ANALYSIS CODE

PAHs - Polyaromatic Hydrocarbons

Organic Parameters

Quality Control Review

The following list represents the QA/QC measures that are typically reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, equipment blanks, and trip blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Surrogate Recoveries** – Surrogate Compounds are added to each sample and the recoveries are used to monitor lab performance and possible matrix interference.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and its duplicate. This information can only be determined when target compounds are detected.
- **GC/MS Tuning** – The mass spectrum of the tuning compound is evaluated for method compliance. The criteria are established to verify the proper mass assignment and mass resolution.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **Internal Standards** – The internal standards (retention time and response) are evaluated for method compliance. The internal standards are used in quantitation of the target parameters and monitor the instrument sensitivity and response for stability during each analysis.

Polyaromatic Hydrocarbons (PAHs) Analyses

The QA/QC parameters for the PAH analyses for all of the samples were within acceptable control limits, except as noted below.

Blanks

The PAH target parameters detected in blank samples are listed in Table 2.

TABLE 2
Equipment Blank Contamination: PAH
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Lab Sample ID	Sample ID	Sample Type	Parameter	Lab Result	Units	Flag Concentrations
CNC58	18337-6	670EB078L1	EB	Naphthalene	0.16	ug/L	Less than 26.4 ug/Kg

If a target parameter was reported in a field sample, and the concentration was below the level determined to be due to blank contamination (5 times the concentration in the associated QC blank samples), it was flagged as "U", not detected.

The results qualified due to blank contamination are listed in Attachment 1.

Rejected Data

No data was rejected for this sampling event

Conclusion

A review of the analytical data submitted regarding the investigation of SWMU 14 in Zone H at the Charleston Naval Complex, Charleston, South Carolina by CH2M HILL has been completed. An overall evaluation of the data indicates that the sample handling, shipment, and analytical procedures have been adequately completed, and that the analytical results should be considered usable as qualified.

The analytical data had minor QC concerns; however, the validation review demonstrated that the analytical systems were generally in control and the data results can be used in the decision making process.

Attachment 1 - Changed Qualifiers and Results
Zone H, SWMU 14 - Data Validation

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
CNC58	670SB07801	18337-1	SO	SVOA	SW8270	Naphthalene	2	J	10	U	ug/Kg	BL
CNC58	670SB08001	18337-3	SO	SVOA	SW8270	Naphthalene	4.2	J	11	U	ug/Kg	BL
CNC58	670SB08101	18337-4	SO	SVOA	SW8270	Naphthalene	1.7	J	10	U	ug/Kg	BL
CNC58	670SB08201	18337-5	SO	SVOA	SW8270	Naphthalene	4.4	J	9.7	U	ug/Kg	BL

Data Validation Summary - Charleston Naval Complex - Zone H, SWMU 14

TO: Sam Naik/CH2M HILL/ATL

FROM: Amy Juchem/CH2M HILL/GNA
Herb Kelly/CH2M HILL/GNA

DATE: February 5, 2002

The purpose of this memorandum is to present the results of the data validation process for the samples collected at SWMU 14 in Zone H. The samples were collected on October 8, 2001.

The specific samples and analytical fractions reviewed are summarized below in Table 1.

The Quality Control areas that were review and the resulting findings are documented within each subsection that follows. This data was validated for compliance with the analytical method requirements. This process also included a review of the data to assess the accuracy, precision, and completeness based upon procedures described in the guidance documents such as the Environmental Protection Agency (EPA) *National Functional Guidelines for Inorganic Data Review (EPA 1994) and National Functional Guidelines for Organic Data Review (EPA 1999)*. Quality assurance/quality control (QA/QC) summary forms and data reports were reviewed.

Samples were submitted to Severn Trent Services, STL Savannah Laboratories, Inc., in Savannah, Georgia for SW-846 8270 Semivolatile Organic Compounds (SVOC) and Lead and Arsenic following method SW-846 6010.

Sample results that were not within the acceptance limits were appended with a qualifying flag, which consisted of a single- or double-letter code that indicated a possible problem with the data. The qualifying flags originated during the data review and validation processes. These also include the secondary, or the two-digit "sub-qualifier" flags. The secondary qualifiers provide the reasoning behind the assignment of a qualifier flag to the data. The secondary qualifiers are presented and defined below.

Attachment 1 lists the changes in data qualifiers, due to the validation process.

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[UJ] Detection limit estimated. The analyte was analyzed for but qualified as not detected; the result is estimated.

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Secondary Data Validation Qualifiers

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BS	Blank Spike/LCS
CC	Continuing Calibration Verification
DL	Dilution
FD	Field Duplicate
HT	Holding Time
IB	In-Between (metals - B's → J's)
IC	Initial Calibration
IS	Internal Standard
LD	Lab Duplicate
LR	Concentration exceeded Linear Range
MD	MS/MSD or LCS/LCSD Precision
MS	Matrix Spike/Matrix Spike Duplicate
OT	Other (see DV worksheet)
PD	Pesticide Degradation
PS	Post Spike
RE	Re-extraction/Re-analysis
SD	Serial Dilution
SS	Spiked Surrogate
TN	Tune

Table 1 - Chemical Analytical Methods – Field and Quality Control Samples

TABLE 1
Chemical Analytical Methods – Field and Quality Control Samples
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Station ID	Sample ID	Lab Sample ID	Date Collected	Matrix	Sample Type	LR Type	Upper Depth	Lower Depth	SW6010A Lead & Arsenic	SW8270 PAHs
CNC38	H684SB117	684SB11703	S116612*1	10/08/01	SO	N		0	0.5		X
CNC38	H684SB117	684SB11704	S116612*2	10/08/01	SO	N		0.5	1		X
CNC38	H684SB118	684SB11803	S116612*3	10/08/01	SO	N		0	0.5		X
CNC38	H684SB118	684SB11803DL	S116612*3*DL	10/08/01	SO	LR	DL	0	0.5		X
CNC38	H684SB118	684SB11804	S116612*4	10/08/01	SO	N		0.5	1		X
CNC38	H684SB118	684SB11804DL	S116612*4*DL	10/08/01	SO	LR	DL	0.5	1		X
CNC38	H684SB119	684SB11903	S116612*5	10/08/01	SO	N		0	0.5		X
CNC38	H684SB119	684SB11903DL	S116612*5*DL	10/08/01	SO	LR	DL	0	0.5		X
CNC38	H684SB119	684CB11903	S116612*6	10/08/01	SO	FD		0	0.5		X
CNC38	H684SB119	684CB11903DL	S116612*6*DL	10/08/01	SO	LR	DL	0	0.5		X
CNC38	H684SB119	684SB11904	S116612*7	10/08/01	SO	N		0.5	1		X
CNC38	H670SB072	670SB07203	S116612*8	10/08/01	SO	N		0	0.5		X
CNC38	H670SB072	670SB07203DL	S116612*8*DL	10/08/01	SO	LR	DL	0	0.5		X
CNC38	H670SB072	670SB07204	S116612*9	10/08/01	SO	N		0.5	1		X
CNC38	H670SB072	670SB07204DL	S116612*9*DL	10/08/01	SO	LR	DL	0.5	1		X

TABLE 1
Chemical Analytical Methods – Field and Quality Control Samples
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Station ID	Sample ID	Lab Sample ID	Date Collected	Matrix	Sample Type	LR Type	Upper Depth	Lower Depth	SW6010A Lead & Arsenic	SW8270 PAHs
CNC38	H684SB120	684SB12003	S116612*10	10/08/01	SO	N		0	0.5		X
CNC38	H684SB120	684SB12004	S116612*11	10/08/01	SO	N		0.5	1		X
CNC38	H670SB073	670SB07303	S116612*12	10/08/01	SO	N		0	0.5		X
CNC38	H670SB073	670SB07303DL	S116612*12*DL	10/08/01	SO	LR	DL	0	0.5		X
CNC38	H670SB073	670SB07304	S116612*13	10/08/01	SO	N		0.5	1		X
CNC38	H670SB074	670SB07403	S116612*14	10/08/01	SO	N		0	0.5		X
CNC38	H670SB074	670SB07404	S116612*15	10/08/01	SO	N		0.5	1		X
CNC38	H684SB121	684SB12101	S116612*16	10/08/01	SO	N		0	1		X
CNC38	H684SB122	684SB12201	S116612*17	10/08/01	SO	N		0	1		X
CNC38	H670SB075	670SB07501	S116612*18	10/08/01	SO	N		0	1		X
CNC38	H670SB075	670SB07501MS	S116612*18MS	10/08/01	SO	MS		0	1		X
CNC38	H670SB075	670SB07501SD	S116612*18SD	10/08/01	SO	SD		0	1		X
CNC38	H670SB076	670SB07601	S116612*19	10/08/01	SO	N		0	1		X
CNC38	Fieldqc	684EB117L1	S116612*20	10/08/01	SQ	EB				X	X
CNC38	H670SB077	670SB07701	S116612*21	10/08/01	SO	N		0	1	X	
CNC38	014SB036	014SB03601	S116612*22	10/08/01	SO	N		0	1	X	

TABLE 1
Chemical Analytical Methods – Field and Quality Control Samples
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Station ID	Sample ID	Lab Sample ID	Date Collected	Matrix	Sample Type	LR Type	Upper Depth	Lower Depth	SW6010A Lead & Arsenic	SW8270 PAHs

MATRIX CODE

SO - Soil
SQ - Soil QC Samples

SAMPLE TYPE CODE

EB - Equipment Blank
N - Native Sample
FD - Field Duplicate
LR - Laboratory Replicate
MS - Matrix Spike
SD - Matrix Spike Duplicate

LR TYPE CODE

DL - Dilution

ANALYSIS CODE

PAHs – Polyaromatic Hydrocarbons

Organic Parameters

Quality Control Review

The following list represents the QA/QC measures that are typically reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, equipment blanks, and trip blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Surrogate Recoveries** – Surrogate Compounds are added to each sample and the recoveries are used to monitor lab performance and possible matrix interference.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and its duplicate. This information can only be determined when target compounds are detected.
- **GC/MS Tuning** – The mass spectrum of the tuning compound is evaluated for method compliance. The criteria are established to verify the proper mass assignment and mass resolution.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **Internal Standards** – The internal standards (retention time and response) are evaluated for method compliance. The internal standards are used in quantitation of the target parameters and monitor the instrument sensitivity and response for stability during each analysis.

Polyaromatic Hydrocarbons (PAHs) Analyses

The QA/QC parameters for the PAH analyses for all of the samples were within acceptable control limits, except as noted below.

Blanks

The PAH target parameters detected in blank samples are listed in Table 2.

TABLE 2
Equipment Blank Contamination: PAH
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Lab Sample ID	Sample ID	Sample Type	Parameter	Lab Result	Units	Flag Concentrations
CNC38	16612-20	684EB117L1	EB	Naphthalene	0.29	ug/L	Less than 47.9 ug/Kg

If a target parameter was reported in a field sample, and the concentration was below the level determined to be due to blank contamination (5 times the concentration in the associated QC blank samples), it was flagged as "U", not detected.

The results qualified due to blank contamination are listed in Attachment 1.

Recoveries/ Relative Percent Differences (RPDs) - MS/MSD

All Matrix Spike (MS) and Matrix Spike Duplicate (MSD) recoveries and relative percent differences (RPDs) were within acceptable quality control limits, except as noted in Table 3 below.

TABLE 3
MS/MSD Recoveries and RPDs Out of QC Limits: PAHs
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Sample	Parameter	Recovery	Recovery Limits	RPD	RPD Limits	Associated Samples	Flag
CNC38	670SB07501MS/MSD	Naphthalene	46 / 77	25-131	43*	34	#18	Detects – J; Non-Detects – UJ
		Acenaphthene	50 / 76	31-137	39*	19		
		Phenanthrene	82 / 125	39-152	52*	30		
		Anthracene	63 / 100	40-148	45*	27		
		Pyrene	110 / 140	35-142	48*	36		
		Benzo (a) anthracene	97 / 166*	54-137	65*	43		
		Chrysene	120 / 224*	56-133	74*	41		
		Benzo (b) fluoranthene	110 / 141*	43-134	48	51		
		Benzo (a) pyrene	110 / 153*	41-142	58*	55		

TABLE 3
MS/MSD Recoveries and RPDs Out of QC Limits: PAHs
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Sample	Parameter	Recovery	Recovery Limits	RPD	RPD Limits	Associated Samples	Flag
CNC38	670SB07501MS/MSD	Indeno(1,2,3-cd)pyrene	75 / 74	24-136	38*	28	#18	Detects – J; Non-Detects – UJ
		Dibenzo(a,h)anthracene	70 / 109	31-129	53*	24		

* - out of control limits

- All parameters listed above were flagged 'J' for Detects and 'UJ' for Non-Detects due to Relative Percent Differences (RPDs) being outside of criteria. Benzo(b)fluoranthene had not already been flagged due to RPD criteria and was flagged 'J' for Detects only for the Matrix Spike Duplicate Recovery being above the upper control limit.

Field Duplicate Samples

The Relative Percent Differences (RPDs) for some of the Native/Field Duplicate Sample sets were outside acceptable QC limits. Flags are not typically applied to results based upon Duplicate RPD values only, but in conjunction with other QC parameters such as surrogate recoveries internal standard areas, etc. In addition, non-homogeneity in soil matrices is often the reason for poor precision between the native sample and it's field duplicate. No flags were applied to the results based upon the Field Duplicate RPD results.

Calibrations

All initial and continuing calibration criteria were met except as noted in Table 4 below.

TABLE 4
Exceptions to Initial Calibration Criteria: PAHs
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

Instrument/Calibration Date	Analyte	%Relative Standard Deviation	Associated Samples
MSD5973-ICAL-10/14/01 21:22	Dibenzo (a,h) anthracene	15.05%	CNC38 - #3, 5, 5DL, 6, 6DL, 8, 8DL, 12, 12DL, 20

Flags were applied to the compounds in the associated samples in the following manner:

- When the percent Relative Standard Deviation (%RSD) was out in the initial calibration, all associated samples were qualified. Detected compounds were flagged "J" and non-detected compounds were flagged "UJ", as estimated.

Inorganic Parameters

Quality Control Review

The following list represents the QA/QC measures that are typically reviewed during the data quality evaluation procedure for inorganic parameters.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Sample preparation, initial calibration blanks/continuing calibration blanks, and equipment blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", in which target parameters have been added prior to digestion/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and its duplicate. This information can only be determined when target compounds are detected.
- **Pre/Post Digestion Spike (MS/MSD)** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **ICP Interference Check Sample** – This sample verifies the lab's interelement and background correction factors.
- **Initial Calibration Verification** – This parameter ensures that the instrument is capable of producing acceptable quantitative data for the target analyte list to be measured.
- **Continuing Calibration Verification** – This one-point, mid-range parameter establishes that the initial calibration is still valid by checking the performance of the instrument on a continual basis.
- **ICP Serial Dilution** – The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to the sample matrix.

Metals Analyses

The QA/QC parameters for the Metals analyses for all of the samples were within acceptable control limits, except as noted below.

Blanks

The Metals target parameters detected in blank samples are listed in Table 5.

TABLE 5
Blank Contamination: Metals
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Lab Sample ID	Sample ID	Sample Type	Parameter	Lab Result	Units	Flag Concentrations
CNC38	PB		PB	Arsenic	0.612	mg/Kg	<3.06 mg/Kg

If a target parameter was reported in a field sample, and the concentration was below the level determined to be due to blank contamination (5 times the concentration in the associated QC blank samples), it was flagged as "U", not detected.

All results were greater than five times the blank value; therefore, no results were qualified due to blank contamination.

Rejected Data

The majority of rejected data were associated with re-runs and dilutions (you can only have a single valid result per sample per target). However, there were selected results qualified as "R", rejected, due to associated QC parameters out of criteria. The rejected data are summarized in Table 6 below.

TABLE 6
Data Qualification Summary: Rejected Data
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Lab Sample ID	Sample ID	Parameter Class	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
CNC38	S116612*8	670SB07203	SVOC	INDENO(1,2,3-c,d)PYRENE	11000	E	11000	R	ug/kg	LR
CNC38	S116612*8	670SB07203	SVOC	BENZO(a)ANTHRACENE	15000	E	15000	R	ug/kg	LR
CNC38	S116612*8	670SB07203	SVOC	PHENANTHRENE	16000	E	16000	R	ug/kg	LR
CNC38	S116612*8	670SB07203	SVOC	FLUORANTHENE	26000	E	26000	R	ug/kg	LR
CNC38	S116612*8	670SB07203	SVOC	CHRYSENE	16000	E	16000	R	ug/kg	LR
CNC38	S116612*8	670SB07203	SVOC	BENZO(k)FLUORANTHENE	14000	E	14000	R	ug/kg	LR
CNC38	S116612*8	670SB07203	SVOC	BENZO(g,h,i)PERYLENE	9600	E	9600	R	ug/kg	LR
CNC38	S116612*8	670SB07203	SVOC	BENZO(b)FLUORANTHENE	16000	E	16000	R	ug/kg	LR
CNC38	S116612*8	670SB07203	SVOC	BENZO(a)PYRENE	20000	E	20000	R	ug/kg	LR
CNC38	S116612*8	670SB07203	SVOC	PYRENE	19000	E	19000	R	ug/kg	LR
CNC38	S116612*8*DL	670SB07203DL	SVOC	NAPHTHALENE	430	=	430	R	ug/kg	DL
CNC38	S116612*8*DL	670SB07203DL	SVOC	ACENAPHTHENE	2500	=	2500	R	ug/kg	DL
CNC38	S116612*8*DL	670SB07203DL	SVOC	ACENAPHTHYLENE	380	U	380	R	ug/kg	DL
CNC38	S116612*8*DL	670SB07203DL	SVOC	ANTHRACENE	4300	=	4300	R	ug/kg	DL
CNC38	S116612*8*DL	670SB07203DL	SVOC	DIBENZ(a,h)ANTHRACENE	4900	=	4900	R	ug/kg	DL
CNC38	S116612*8*DL	670SB07203DL	SVOC	FLUORENE	1600	=	1600	R	ug/kg	DL
CNC38	S116612*9	670SB07204	SVOC	PYRENE	2200	E	2200	R	ug/kg	LR
CNC38	S116612*9	670SB07204	SVOC	BENZO(a)PYRENE	2200	E	2200	R	ug/kg	LR
CNC38	S116612*9	670SB07204	SVOC	FLUORANTHENE	1900	E	1900	R	ug/kg	LR
CNC38	S116612*9*DL	670SB07204DL	SVOC	BENZO(g,h,i)PERYLENE	1300	=	1300	R	ug/kg	DL
CNC38	S116612*9*DL	670SB07204DL	SVOC	PHENANTHRENE	1300	=	1300	R	ug/kg	DL
CNC38	S116612*9*DL	670SB07204DL	SVOC	NAPHTHALENE	42	J	42	R	ug/kg	DL
CNC38	S116612*9*DL	670SB07204DL	SVOC	INDENO(1,2,3-c,d)PYRENE	910	=	910	R	ug/kg	DL
CNC38	S116612*9*DL	670SB07204DL	SVOC	FLUORENE	110	=	110	R	ug/kg	DL
CNC38	S116612*9*DL	670SB07204DL	SVOC	DIBENZ(a,h)ANTHRACENE	350	=	350	R	ug/kg	DL
CNC38	S116612*9*DL	670SB07204DL	SVOC	BENZO(k)FLUORANTHENE	1100	=	1100	R	ug/kg	DL
CNC38	S116612*9*DL	670SB07204DL	SVOC	BENZO(b)FLUORANTHENE	1700	=	1700	R	ug/kg	DL
CNC38	S116612*9*DL	670SB07204DL	SVOC	BENZO(a)ANTHRACENE	1400	=	1400	R	ug/kg	DL
CNC38	S116612*9*DL	670SB07204DL	SVOC	ANTHRACENE	340	=	340	R	ug/kg	DL
CNC38	S116612*9*DL	670SB07204DL	SVOC	ACENAPHTHYLENE	48	U	48	R	ug/kg	DL

TABLE 6
Data Qualification Summary: Rejected Data
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Lab Sample ID	Sample ID	Parameter Class	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
CNC38	S116612*9*DL	670SB07204DL	SVOC	ACENAPHTHENE	190	=	190	R	ug/kg	DL
CNC38	S116612*9*DL	670SB07204DL	SVOC	CHRYSENE	1600	=	1600	R	ug/kg	DL
CNC38	S116612*12	670SB07303	SVOC	FLUORANTHENE	8300	E	8300	R	ug/kg	LR
CNC38	S116612*12	670SB07303	SVOC	BENZO(a)PYRENE	7900	E	7900	R	ug/kg	LR
CNC38	S116612*12*DL	670SB07303DL	SVOC	BENZO(g,h,i)PERYLENE	5800	=	5800	R	ug/kg	DL
CNC38	S116612*12*DL	670SB07303DL	SVOC	PHENANTHRENE	5900	=	5900	R	ug/kg	DL
CNC38	S116612*12*DL	670SB07303DL	SVOC	NAPHTHALENE	230	J	230	R	ug/kg	DL
CNC38	S116612*12*DL	670SB07303DL	SVOC	INDENO(1,2,3-c,d)PYRENE	4700	=	4700	R	ug/kg	DL
CNC38	S116612*12*DL	670SB07303DL	SVOC	FLUORENE	520	=	520	R	ug/kg	DL
CNC38	S116612*12*DL	670SB07303DL	SVOC	DIBENZ(a,h)ANTHRACENE	2200	=	2200	R	ug/kg	DL
CNC38	S116612*12*DL	670SB07303DL	SVOC	BENZO(k)FLUORANTHENE	5400	=	5400	R	ug/kg	DL
CNC38	S116612*12*DL	670SB07303DL	SVOC	PYRENE	7400	=	7400	R	ug/kg	DL
CNC38	S116612*12*DL	670SB07303DL	SVOC	BENZO(b)FLUORANTHENE	6300	=	6300	R	ug/kg	DL
CNC38	S116612*12*DL	670SB07303DL	SVOC	BENZO(a)ANTHRACENE	6400	=	6400	R	ug/kg	DL
CNC38	S116612*12*DL	670SB07303DL	SVOC	ANTHRACENE	1400	=	1400	R	ug/kg	DL
CNC38	S116612*12*DL	670SB07303DL	SVOC	ACENAPHTHYLENE	290	U	290	R	ug/kg	DL
CNC38	S116612*12*DL	670SB07303DL	SVOC	ACENAPHTHENE	870	=	870	R	ug/kg	DL
CNC38	S116612*12*DL	670SB07303DL	SVOC	CHRYSENE	7600	=	7600	R	ug/kg	DL
CNC38	S116612*6	684CB11903	SVOC	CHRYSENE	21000	E	21000	R	ug/kg	LR
CNC38	S116612*6	684CB11903	SVOC	BENZO(a)ANTHRACENE	17000	E	17000	R	ug/kg	LR
CNC38	S116612*6	684CB11903	SVOC	BENZO(a)PYRENE	20000	E	20000	R	ug/kg	LR
CNC38	S116612*6	684CB11903	SVOC	BENZO(b)FLUORANTHENE	14000	E	14000	R	ug/kg	LR
CNC38	S116612*6	684CB11903	SVOC	FLUORANTHENE	22000	E	22000	R	ug/kg	LR
CNC38	S116612*6	684CB11903	SVOC	PHENANTHRENE	14000	E	14000	R	ug/kg	LR
CNC38	S116612*6	684CB11903	SVOC	PYRENE	19000	E	19000	R	ug/kg	LR
CNC38	S116612*6	684CB11903	SVOC	BENZO(k)FLUORANTHENE	11000	E	11000	R	ug/kg	LR
CNC38	S116612*6*DL	684CB11903DL	SVOC	INDENO(1,2,3-c,d)PYRENE	11000	=	11000	R	ug/kg	DL
CNC38	S116612*6*DL	684CB11903DL	SVOC	NAPHTHALENE	600	=	600	R	ug/kg	DL
CNC38	S116612*6*DL	684CB11903DL	SVOC	FLUORENE	1400	=	1400	R	ug/kg	DL
CNC38	S116612*6*DL	684CB11903DL	SVOC	DIBENZ(a,h)ANTHRACENE	5400	=	5400	R	ug/kg	DL
CNC38	S116612*6*DL	684CB11903DL	SVOC	BENZO(g,h,i)PERYLENE	12000	=	12000	R	ug/kg	DL
CNC38	S116612*6*DL	684CB11903DL	SVOC	ANTHRACENE	4000	=	4000	R	ug/kg	DL

TABLE 6
Data Qualification Summary: Rejected Data
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Lab Sample ID	Sample ID	Parameter Class	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
CNC38	S116612*6*DL	684CB11903DL	SVOC	ACENAPHTHYLENE	380	U	380	R	ug/kg	DL
CNC38	S116612*6*DL	684CB11903DL	SVOC	ACENAPHTHENE	2600	=	2600	R	ug/kg	DL
CNC38	S116612*3	684SB11803	SVOC	CHRYSENE	9100	E	9100	R	ug/kg	LR
CNC38	S116612*3*DL	684SB11803DL	SVOC	ANTHRACENE	750	=	750	R	ug/kg	DL
CNC38	S116612*3*DL	684SB11803DL	SVOC	DIBENZ(a,h)ANTHRACENE	1500	=	1500	R	ug/kg	DL
CNC38	S116612*3*DL	684SB11803DL	SVOC	PYRENE	6900	=	6900	R	ug/kg	DL
CNC38	S116612*3*DL	684SB11803DL	SVOC	PHENANTHRENE	3600	=	3600	R	ug/kg	DL
CNC38	S116612*3*DL	684SB11803DL	SVOC	NAPHTHALENE	200	J	200	R	ug/kg	DL
CNC38	S116612*3*DL	684SB11803DL	SVOC	INDENO(1,2,3-c,d)PYRENE	2800	=	2800	R	ug/kg	DL
CNC38	S116612*3*DL	684SB11803DL	SVOC	FLUORANTHENE	4900	=	4900	R	ug/kg	DL
CNC38	S116612*3*DL	684SB11803DL	SVOC	FLUORENE	240	J	240	R	ug/kg	DL
CNC38	S116612*3*DL	684SB11803DL	SVOC	BENZO(k)FLUORANTHENE	2800	=	2800	R	ug/kg	DL
CNC38	S116612*3*DL	684SB11803DL	SVOC	BENZO(g,h,i)PERYLENE	3900	=	3900	R	ug/kg	DL
CNC38	S116612*3*DL	684SB11803DL	SVOC	BENZO(b)FLUORANTHENE	4400	=	4400	R	ug/kg	DL
CNC38	S116612*3*DL	684SB11803DL	SVOC	BENZO(a)ANTHRACENE	7100	=	7100	R	ug/kg	DL
CNC38	S116612*3*DL	684SB11803DL	SVOC	ACENAPHTHYLENE	350	U	350	R	ug/kg	DL
CNC38	S116612*3*DL	684SB11803DL	SVOC	ACENAPHTHENE	450	=	450	R	ug/kg	DL
CNC38	S116612*3*DL	684SB11803DL	SVOC	BENZO(a)PYRENE	7300	=	7300	R	ug/kg	DL
CNC38	S116612*4	684SB11804	SVOC	CHRYSENE	3900	E	3900	R	ug/kg	LR
CNC38	S116612*4	684SB11804	SVOC	BENZO(k)FLUORANTHENE	2300	E	2300	R	ug/kg	LR
CNC38	S116612*4	684SB11804	SVOC	PYRENE	4300	E	4300	R	ug/kg	LR
CNC38	S116612*4	684SB11804	SVOC	PHENANTHRENE	2900	E	2900	R	ug/kg	LR
CNC38	S116612*4	684SB11804	SVOC	INDENO(1,2,3-c,d)PYRENE	2000	E	2000	R	ug/kg	LR
CNC38	S116612*4	684SB11804	SVOC	BENZO(g,h,i)PERYLENE	2000	E	2000	R	ug/kg	LR
CNC38	S116612*4	684SB11804	SVOC	BENZO(b)FLUORANTHENE	2900	E	2900	R	ug/kg	LR
CNC38	S116612*4	684SB11804	SVOC	BENZO(a)PYRENE	3600	E	3600	R	ug/kg	LR
CNC38	S116612*4	684SB11804	SVOC	BENZO(a)ANTHRACENE	3000	E	3000	R	ug/kg	LR
CNC38	S116612*4	684SB11804	SVOC	FLUORANTHENE	3700	E	3700	R	ug/kg	LR
CNC38	S116612*4*DL	684SB11804DL	SVOC	ACENAPHTHENE	420	=	420	R	ug/kg	DL
CNC38	S116612*4*DL	684SB11804DL	SVOC	ACENAPHTHYLENE	93	U	93	R	ug/kg	DL
CNC38	S116612*4*DL	684SB11804DL	SVOC	ANTHRACENE	640	=	640	R	ug/kg	DL
CNC38	S116612*4*DL	684SB11804DL	SVOC	DIBENZ(a,h)ANTHRACENE	810	=	810	R	ug/kg	DL

TABLE 6
Data Qualification Summary: Rejected Data
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Lab Sample ID	Sample ID	Parameter Class	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
CNC38	S116612*4*DL	684SB11804DL	SVOC	FLUORENE	260	=	260	R	ug/kg	DL
CNC38	S116612*4*DL	684SB11804DL	SVOC	NAPHTHALENE	89	J	89	R	ug/kg	DL
CNC38	S116612*5	684SB11903	SVOC	FLUORANTHENE	14000	E	14000	R	ug/kg	LR
CNC38	S116612*5	684SB11903	SVOC	PHENANTHRENE	8300	E	8300	R	ug/kg	LR
CNC38	S116612*5	684SB11903	SVOC	BENZO(b)FLUORANTHENE	11000	E	11000	R	ug/kg	LR
CNC38	S116612*5	684SB11903	SVOC	BENZO(a)PYRENE	13000	E	13000	R	ug/kg	LR
CNC38	S116612*5	684SB11903	SVOC	BENZO(a)ANTHRACENE	10000	E	10000	R	ug/kg	LR
CNC38	S116612*5	684SB11903	SVOC	PYRENE	11000	E	11000	R	ug/kg	LR
CNC38	S116612*5	684SB11903	SVOC	CHRYSENE	12000	E	12000	R	ug/kg	LR
CNC38	S116612*5*DL	684SB11903DL	SVOC	BENZO(k)FLUORANTHENE	8300	=	8300	R	ug/kg	DL
CNC38	S116612*5*DL	684SB11903DL	SVOC	NAPHTHALENE	280	=	280	R	ug/kg	DL
CNC38	S116612*5*DL	684SB11903DL	SVOC	INDENO(1,2,3-c,d)PYRENE	6600	=	6600	R	ug/kg	DL
CNC38	S116612*5*DL	684SB11903DL	SVOC	DIBENZ(a,h)ANTHRACENE	3100	=	3100	R	ug/kg	DL
CNC38	S116612*5*DL	684SB11903DL	SVOC	BENZO(g,h,i)PERYLENE	7000	=	7000	R	ug/kg	DL
CNC38	S116612*5*DL	684SB11903DL	SVOC	ANTHRACENE	2200	=	2200	R	ug/kg	DL
CNC38	S116612*5*DL	684SB11903DL	SVOC	ACENAPHTHYLENE	150	U	150	R	ug/kg	DL
CNC38	S116612*5*DL	684SB11903DL	SVOC	ACENAPHTHENE	1400	=	1400	R	ug/kg	DL
CNC38	S116612*5*DL	684SB11903DL	SVOC	FLUORENE	780	=	780	R	ug/kg	DL

Conclusion

A review of the analytical data submitted regarding the investigation of SWMU 14 in Zone H at the Charleston Naval Complex, Charleston, South Carolina by CH2M HILL has been completed. An overall evaluation of the data indicates that the sample handling, shipment, and analytical procedures have been adequately completed, and that the analytical results should be considered usable as qualified.

The analytical data had minor QC concerns, with regards to selected results for antimony being rejected that affected data usability for those specific results. However, the validation review demonstrated that the analytical systems were generally in control and the data results can be used in the decision making process.

Attachment 1 - Changed Qualifiers and Results
Zone H, SWMU 1 Data Validation

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
NC38	670SB07203	S116612*8	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	15000	E	15000	R	ug/kg	LR
NC38	670SB07203	S116612*8	SO	SVOA	SW8270	BENZO(a)PYRENE	20000	E	20000	R	ug/kg	LR
NC38	670SB07203	S116612*8	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	16000	E	16000	R	ug/kg	LR
NC38	670SB07203	S116612*8	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	9600	E	9600	R	ug/kg	LR
NC38	670SB07203	S116612*8	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	14000	E	14000	R	ug/kg	LR
NC38	670SB07203	S116612*8	SO	SVOA	SW8270	CHRYSENE	16000	E	16000	R	ug/kg	LR
NC38	670SB07203	S116612*8	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	3100	=	3100	J	ug/kg	IC
NC38	670SB07203	S116612*8	SO	SVOA	SW8270	FLUORANTHENE	26000	E	26000	R	ug/kg	LR
NC38	670SB07203	S116612*8	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	11000	E	11000	R	ug/kg	LR
NC38	670SB07203	S116612*8	SO	SVOA	SW8270	PHENANTHRENE	16000	E	16000	R	ug/kg	LR
NC38	670SB07203	S116612*8	SO	SVOA	SW8270	PYRENE	19000	E	19000	R	ug/kg	LR
NC38	670SB07203DL	S116612*8*DL	SO	SVOA	SW8270	ACENAPHTHENE	2500	=	2500	R	ug/kg	DL
NC38	670SB07203DL	S116612*8*DL	SO	SVOA	SW8270	ACENAPHTHYLENE	380	U	380	R	ug/kg	DL
NC38	670SB07203DL	S116612*8*DL	SO	SVOA	SW8270	ANTHRACENE	4300	=	4300	R	ug/kg	DL
NC38	670SB07203DL	S116612*8*DL	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	4900	=	4900	R	ug/kg	DL
NC38	670SB07203DL	S116612*8*DL	SO	SVOA	SW8270	FLUORENE	1600	=	1600	R	ug/kg	DL
NC38	670SB07203DL	S116612*8*DL	SO	SVOA	SW8270	NAPHTHALENE	430	=	430	R	ug/kg	DL
NC38	670SB07204	S116612*9	SO	SVOA	SW8270	BENZO(a)PYRENE	2200	E	2200	R	ug/kg	LR
NC38	670SB07204	S116612*9	SO	SVOA	SW8270	FLUORANTHENE	1900	E	1900	R	ug/kg	LR
NC38	670SB07204	S116612*9	SO	SVOA	SW8270	NAPHTHALENE	45	=	45	U	ug/kg	BL
NC38	670SB07204	S116612*9	SO	SVOA	SW8270	PYRENE	2200	E	2200	R	ug/kg	LR
NC38	670SB07204DL	S116612*9*DL	SO	SVOA	SW8270	ACENAPHTHENE	190	=	190	R	ug/kg	DL
NC38	670SB07204DL	S116612*9*DL	SO	SVOA	SW8270	ACENAPHTHYLENE	48	U	48	R	ug/kg	DL
NC38	670SB07204DL	S116612*9*DL	SO	SVOA	SW8270	ANTHRACENE	340	=	340	R	ug/kg	DL
NC38	670SB07204DL	S116612*9*DL	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	1400	=	1400	R	ug/kg	DL
NC38	670SB07204DL	S116612*9*DL	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	1700	=	1700	R	ug/kg	DL
NC38	670SB07204DL	S116612*9*DL	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	1300	=	1300	R	ug/kg	DL
NC38	670SB07204DL	S116612*9*DL	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	1100	=	1100	R	ug/kg	DL
NC38	670SB07204DL	S116612*9*DL	SO	SVOA	SW8270	CHRYSENE	1600	=	1600	R	ug/kg	DL
NC38	670SB07204DL	S116612*9*DL	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	350	=	350	R	ug/kg	DL

Attachment 1 - Changed Qualifiers and Results
Zone H, SWMU 14 - Data Validation

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
NC38	670SB07204DL	S116612*9*DL	SO	SVOA	SW8270	FLUORENE	110	=	110	R	ug/kg	DL
NC38	670SB07204DL	S116612*9*DL	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	910	=	910	R	ug/kg	DL
NC38	670SB07204DL	S116612*9*DL	SO	SVOA	SW8270	NAPHTHALENE	42	J	42	R	ug/kg	DL
NC38	670SB07204DL	S116612*9*DL	SO	SVOA	SW8270	PHENANTHRENE	1300	=	1300	R	ug/kg	DL
NC38	670SB07303	S116612*12	SO	SVOA	SW8270	BENZO(a)PYRENE	7900	E	7900	R	ug/kg	LR
NC38	670SB07303	S116612*12	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	1600	=	1600	J	ug/kg	IC
NC38	670SB07303	S116612*12	SO	SVOA	SW8270	FLUORANTHENE	8300	E	8300	R	ug/kg	LR
NC38	670SB07303DL	S116612*12*DL	SO	SVOA	SW8270	ACENAPHTHENE	870	=	870	R	ug/kg	DL
NC38	670SB07303DL	S116612*12*DL	SO	SVOA	SW8270	ACENAPHTHYLENE	290	U	290	R	ug/kg	DL
NC38	670SB07303DL	S116612*12*DL	SO	SVOA	SW8270	ANTHRACENE	1400	=	1400	R	ug/kg	DL
NC38	670SB07303DL	S116612*12*DL	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	6400	=	6400	R	ug/kg	DL
NC38	670SB07303DL	S116612*12*DL	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	6300	=	6300	R	ug/kg	DL
NC38	670SB07303DL	S116612*12*DL	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	5800	=	5800	R	ug/kg	DL
NC38	670SB07303DL	S116612*12*DL	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	5400	=	5400	R	ug/kg	DL
NC38	670SB07303DL	S116612*12*DL	SO	SVOA	SW8270	CHRYSENE	7600	=	7600	R	ug/kg	DL
NC38	670SB07303DL	S116612*12*DL	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	2200	=	2200	R	ug/kg	DL
NC38	670SB07303DL	S116612*12*DL	SO	SVOA	SW8270	FLUORENE	520	=	520	R	ug/kg	DL
NC38	670SB07303DL	S116612*12*DL	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	4700	=	4700	R	ug/kg	DL
NC38	670SB07303DL	S116612*12*DL	SO	SVOA	SW8270	NAPHTHALENE	230	J	230	R	ug/kg	DL
NC38	670SB07303DL	S116612*12*DL	SO	SVOA	SW8270	PHENANTHRENE	5900	=	5900	R	ug/kg	DL
NC38	670SB07303DL	S116612*12*DL	SO	SVOA	SW8270	PYRENE	7400	=	7400	R	ug/kg	DL
NC38	670SB07304	S116612*13	SO	SVOA	SW8270	NAPHTHALENE	8.7	J	20	U	ug/kg	BL
NC38	670SB07403	S116612*14	SO	SVOA	SW8270	NAPHTHALENE	21	=	21	U	ug/kg	BL
NC38	670SB07404	S116612*15	SO	SVOA	SW8270	NAPHTHALENE	34	=	34	U	ug/kg	BL
NC38	670SB07501	S116612*18	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	37	=	37	J	ug/kg	MD
NC38	670SB07501	S116612*18	SO	SVOA	SW8270	BENZO(a)PYRENE	59	=	59	J	ug/kg	MD
NC38	670SB07501	S116612*18	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	50	=	50	J	ug/kg	MS
NC38	670SB07501	S116612*18	SO	SVOA	SW8270	CHRYSENE	54	=	54	J	ug/kg	MD
NC38	670SB07501	S116612*18	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	20	=	20	J	ug/kg	MD
NC38	670SB07501	S116612*18	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	42	=	42	J	ug/kg	MD

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
NC38	670SB07501	S116612*18	SO	SVOA	SW8270	NAPHTHALENE	19	U	19	UJ	ug/kg	MD
NC38	670SB07501	S116612*18	SO	SVOA	SW8270	PHENANTHRENE	25	=	25	J	ug/kg	MD
NC38	670SB07501	S116612*18	SO	SVOA	SW8270	PYRENE	51	=	51	J	ug/kg	MD
NC38	670SB07601	S116612*19	SO	SVOA	SW8270	NAPHTHALENE	14	J	19	U	ug/kg	BL
NC38	684CB11903	S116612*6	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	17000	E	17000	R	ug/kg	LR
NC38	684CB11903	S116612*6	SO	SVOA	SW8270	BENZO(a)PYRENE	20000	E	20000	R	ug/kg	LR
NC38	684CB11903	S116612*6	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	14000	E	14000	R	ug/kg	LR
NC38	684CB11903	S116612*6	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	11000	E	11000	R	ug/kg	LR
NC38	684CB11903	S116612*6	SO	SVOA	SW8270	CHRYSENE	21000	E	21000	R	ug/kg	LR
NC38	684CB11903	S116612*6	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	4100	=	4100	J	ug/kg	IC
NC38	684CB11903	S116612*6	SO	SVOA	SW8270	FLUORANTHENE	22000	E	22000	R	ug/kg	LR
NC38	684CB11903	S116612*6	SO	SVOA	SW8270	PHENANTHRENE	14000	E	14000	R	ug/kg	LR
NC38	684CB11903	S116612*6	SO	SVOA	SW8270	PYRENE	19000	E	19000	R	ug/kg	LR
NC38	684CB11903DL	S116612*6*DL	SO	SVOA	SW8270	ACENAPHTHENE	2600	=	2600	R	ug/kg	DL
NC38	684CB11903DL	S116612*6*DL	SO	SVOA	SW8270	ACENAPHTHYLENE	380	U	380	R	ug/kg	DL
NC38	684CB11903DL	S116612*6*DL	SO	SVOA	SW8270	ANTHRACENE	4000	=	4000	R	ug/kg	DL
NC38	684CB11903DL	S116612*6*DL	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	12000	=	12000	R	ug/kg	DL
NC38	684CB11903DL	S116612*6*DL	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	5400	=	5400	R	ug/kg	DL
NC38	684CB11903DL	S116612*6*DL	SO	SVOA	SW8270	FLUORENE	1400	=	1400	R	ug/kg	DL
NC38	684CB11903DL	S116612*6*DL	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	11000	=	11000	R	ug/kg	DL
NC38	684CB11903DL	S116612*6*DL	SO	SVOA	SW8270	NAPHTHALENE	600	=	600	R	ug/kg	DL
NC38	684SB11803	S116612*3	SO	SVOA	SW8270	CHRYSENE	9100	E	9100	R	ug/kg	LR
NC38	684SB11803	S116612*3	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	1600	=	1600	J	ug/kg	IC
NC38	684SB11803DL	S116612*3*DL	SO	SVOA	SW8270	ACENAPHTHENE	450	=	450	R	ug/kg	DL
NC38	684SB11803DL	S116612*3*DL	SO	SVOA	SW8270	ACENAPHTHYLENE	350	U	350	R	ug/kg	DL
NC38	684SB11803DL	S116612*3*DL	SO	SVOA	SW8270	ANTHRACENE	750	=	750	R	ug/kg	DL
NC38	684SB11803DL	S116612*3*DL	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	7100	=	7100	R	ug/kg	DL
NC38	684SB11803DL	S116612*3*DL	SO	SVOA	SW8270	BENZO(a)PYRENE	7300	=	7300	R	ug/kg	DL
NC38	684SB11803DL	S116612*3*DL	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	4400	=	4400	R	ug/kg	DL
NC38	684SB11803DL	S116612*3*DL	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	3900	=	3900	R	ug/kg	DL

Attachment 1 - Changed Qualifiers and Results
Zone H, SWMU 14 - Data Validation

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
CNC38	684SB11803DL	S116612*3*DL	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	2800	=	2800	R	ug/kg	DL
CNC38	684SB11803DL	S116612*3*DL	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	1500	=	1500	R	ug/kg	DL
CNC38	684SB11803DL	S116612*3*DL	SO	SVOA	SW8270	FLUORANTHENE	4900	=	4900	R	ug/kg	DL
CNC38	684SB11803DL	S116612*3*DL	SO	SVOA	SW8270	FLUORENE	240	J	240	R	ug/kg	DL
CNC38	684SB11803DL	S116612*3*DL	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	2800	=	2800	R	ug/kg	DL
CNC38	684SB11803DL	S116612*3*DL	SO	SVOA	SW8270	NAPHTHALENE	200	J	200	R	ug/kg	DL
CNC38	684SB11803DL	S116612*3*DL	SO	SVOA	SW8270	PHENANTHRENE	3600	=	3600	R	ug/kg	DL
CNC38	684SB11803DL	S116612*3*DL	SO	SVOA	SW8270	PYRENE	6900	=	6900	R	ug/kg	DL
CNC38	684SB11804	S116612*4	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	3000	E	3000	R	ug/kg	LR
CNC38	684SB11804	S116612*4	SO	SVOA	SW8270	BENZO(a)PYRENE	3600	E	3600	R	ug/kg	LR
CNC38	684SB11804	S116612*4	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	2900	E	2900	R	ug/kg	LR
CNC38	684SB11804	S116612*4	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	2000	E	2000	R	ug/kg	LR
CNC38	684SB11804	S116612*4	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	2300	E	2300	R	ug/kg	LR
CNC38	684SB11804	S116612*4	SO	SVOA	SW8270	CHRYSENE	3900	E	3900	R	ug/kg	LR
CNC38	684SB11804	S116612*4	SO	SVOA	SW8270	FLUORANTHENE	3700	E	3700	R	ug/kg	LR
CNC38	684SB11804	S116612*4	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	2000	E	2000	R	ug/kg	LR
CNC38	684SB11804	S116612*4	SO	SVOA	SW8270	PHENANTHRENE	2900	E	2900	R	ug/kg	LR
CNC38	684SB11804	S116612*4	SO	SVOA	SW8270	PYRENE	4300	E	4300	R	ug/kg	LR
CNC38	684SB11804DL	S116612*4*DL	SO	SVOA	SW8270	ACENAPHTHENE	420	=	420	R	ug/kg	DL
CNC38	684SB11804DL	S116612*4*DL	SO	SVOA	SW8270	ACENAPHTHYLENE	93	U	93	R	ug/kg	DL
CNC38	684SB11804DL	S116612*4*DL	SO	SVOA	SW8270	ANTHRACENE	640	=	640	R	ug/kg	DL
CNC38	684SB11804DL	S116612*4*DL	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	810	=	810	R	ug/kg	DL
CNC38	684SB11804DL	S116612*4*DL	SO	SVOA	SW8270	FLUORENE	260	=	260	R	ug/kg	DL
CNC38	684SB11804DL	S116612*4*DL	SO	SVOA	SW8270	NAPHTHALENE	89	J	89	R	ug/kg	DL
CNC38	684SB11903	S116612*5	SO	SVOA	SW8270	BENZO(a)ANTHRACENE	10000	E	10000	R	ug/kg	LR
CNC38	684SB11903	S116612*5	SO	SVOA	SW8270	BENZO(a)PYRENE	13000	E	13000	R	ug/kg	LR
CNC38	684SB11903	S116612*5	SO	SVOA	SW8270	BENZO(b)FLUORANTHENE	11000	E	11000	R	ug/kg	LR
CNC38	684SB11903	S116612*5	SO	SVOA	SW8270	CHRYSENE	12000	E	12000	R	ug/kg	LR
CNC38	684SB11903	S116612*5	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	2900	=	2900	J	ug/kg	IC
CNC38	684SB11903	S116612*5	SO	SVOA	SW8270	FLUORANTHENE	14000	E	14000	R	ug/kg	LR

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
NC38	684SB11903	S116612*5	SO	SVOA	SW8270	PHENANTHRENE	8300	E	8300	R	ug/kg	LR
NC38	684SB11903	S116612*5	SO	SVOA	SW8270	PYRENE	11000	E	11000	R	ug/kg	LR
NC38	684SB11903DL	S116612*5*DL	SO	SVOA	SW8270	ACENAPHTHENE	1400	=	1400	R	ug/kg	DL
NC38	684SB11903DL	S116612*5*DL	SO	SVOA	SW8270	ACENAPHTHYLENE	150	U	150	R	ug/kg	DL
NC38	684SB11903DL	S116612*5*DL	SO	SVOA	SW8270	ANTHRACENE	2200	=	2200	R	ug/kg	DL
NC38	684SB11903DL	S116612*5*DL	SO	SVOA	SW8270	BENZO(g,h,i)PERYLENE	7000	=	7000	R	ug/kg	DL
NC38	684SB11903DL	S116612*5*DL	SO	SVOA	SW8270	BENZO(k)FLUORANTHENE	8300	=	8300	R	ug/kg	DL
NC38	684SB11903DL	S116612*5*DL	SO	SVOA	SW8270	DIBENZ(a,h)ANTHRACENE	3100	=	3100	R	ug/kg	DL
NC38	684SB11903DL	S116612*5*DL	SO	SVOA	SW8270	FLUORENE	780	=	780	R	ug/kg	DL
NC38	684SB11903DL	S116612*5*DL	SO	SVOA	SW8270	INDENO(1,2,3-c,d)PYRENE	6600	=	6600	R	ug/kg	DL
NC38	684SB11903DL	S116612*5*DL	SO	SVOA	SW8270	NAPHTHALENE	280	=	280	R	ug/kg	DL
NC38	684SB12003	S116612*10	SO	SVOA	SW8270	NAPHTHALENE	26	=	26	U	ug/kg	BL
NC38	684SB12201	S116612*17	SO	SVOA	SW8270	NAPHTHALENE	14	J	14	U	ug/kg	BL

Data Validation Summary - Charleston Naval Complex - Zone H, SWMU 14

TO: Sam Naik/CH2M HILL/ATL

FROM: Amy Juchem/CH2M HILL/GNA
Herb Kelly/CH2M HILL/GNA

DATE: February 6, 2002

The purpose of this memorandum is to present the results of the data validation process for the samples collected at SWMU 14 in Zone H. The samples were collected on January 9, 2002.

The specific samples and analytical fractions reviewed are summarized below in Table 1.

The Quality Control areas that were review and the resulting findings are documented within each subsection that follows. This data was validated for compliance with the analytical method requirements. This process also included a review of the data to assess the accuracy, precision, and completeness based upon procedures described in the guidance documents such as the Environmental Protection Agency (EPA) *National Functional Guidelines for Inorganic Data Review (EPA 1994) and National Functional Guidelines for Organic Data Review (EPA 1999)*. Quality assurance/quality control (QA/QC) summary forms and data reports were reviewed.

Samples were submitted to Severn Trent Services, STL Savannah Laboratories, Inc., in Savannah, Georgia for Flashpoint analysis by method SW-846 1030 and the Toxicity Characteristic Leaching Procedure (TCLP). The "leachate" was then analyzed for SW-846 8270 Semivolatile Organic Compounds (SVOC), SW-846 8260 Volatile Organic Compounds (VOC) and Metals following method SW-846 6010.

Sample results that were not within the acceptance limits were appended with a qualifying flag, which consisted of a single- or double-letter code that indicated a possible problem with the data. The qualifying flags originated during the data review and validation processes. These also include the secondary, or the two-digit "sub-qualifier" flags. The secondary qualifiers provide the reasoning behind the assignment of a qualifier flag to the data. The secondary qualifiers are presented and defined below.

Attachment 1 lists the changes in data qualifiers, due to the validation process.

The following primary flags were used to qualify the data:

[=] Detected. The analyte was analyzed for and detected at the concentration shown.

[J] Estimated. The analyte was present but the reported value may not be accurate or precise.

[U] Undetected. The analyte was analyzed for but not detected above the method detection limit.

[UJ] Detection limit estimated. The analyte was analyzed for but qualified as not detected; the result is estimated.

[R] Rejected. The data is not useable.

Secondary Data Validation Qualifiers

Code	Definition
2S	Second Source
BL	Blank
BD	Blank Spike/Blank Spike Duplicate or (LCS/LCSD) Precision
BS	Blank Spike/LCS
CC	Continuing Calibration Verification
DL	Dilution
FD	Field Duplicate
HT	Holding Time
IB	In-Between (metals - B's → J's)
IC	Initial Calibration
IS	Internal Standard
LD	Lab Duplicate
LR	Concentration exceeded Linear Range
MD	MS/MSD or LCS/LCSD Precision
MS	Matrix Spike/Matrix Spike Duplicate
OT	Other (see DV worksheet)
PD	Pesticide Degradation
PS	Post Spike
RE	Re-extraction/Re-analysis
SD	Serial Dilution
SS	Spiked Surrogate
TN	Tune

Table 1 - Chemical Analytical Methods – Field and Quality Control Samples

TABLE 1
Chemical Analytical Methods – Field and Quality Control Samples
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Station ID	Sample ID	Lab Sample ID	Date Collected	Matrix	Sample Type	SW6010 TCLP Metals	SW8260 TCLP VOC	SW8270 TCLP SVOC	SW1030 Flashpoint
CNC61	H014VA001	014VA001M1	S240172*1	01/09/02	SO	N	X	X	X	
CNC61	H014VA001	014VA001M1MS	S240172*1S	01/09/02	SO	MS	X	X		
CNC61	H014VA001	014VA001M1SD	S240172*1SD	01/09/02	SO	SD	X	X		
CNC61	H014VA002	014VA002M1	S240172*2	01/09/02	SO	N	X	X	X	
CNC61	H014VA003	014VA003M1	S240172*3	01/09/02	SO	N	X	X	X	
CNC61	H014VA004	014VA004M1	S240172*7	01/09/02	SO	N	X	X	X	X
CNC61	H014VA005	014VA005M1	S240172*4	01/09/02	SO	N	X	X	X	
CNC61	H014VA006	014VA006M1	S240172*5	01/09/02	SO	N	X	X	X	
CNC61	H014VA007	014VA007M1	S240172*6	01/09/02	SO	N	X	X	X	

MATRIX CODE

SO - Soil

SAMPLE TYPE CODE

N - Native Sample
MS - Matrix Spike
SD - Matrix Spike Duplicate

Organic Parameters

Quality Control Review

The following list represents the QA/QC measures that are typically reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, equipment blanks, and trip blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Surrogate Recoveries** – Surrogate Compounds are added to each sample and the recoveries are used to monitor lab performance and possible matrix interference.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and its duplicate. This information can only be determined when target compounds are detected.
- **GC/MS Tuning** – The mass spectrum of the tuning compound is evaluated for method compliance. The criteria are established to verify the proper mass assignment and mass resolution.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **Internal Standards** – The internal standards (retention time and response) are evaluated for method compliance. The internal standards are used in quantitation of the target parameters and monitor the instrument sensitivity and response for stability during each analysis.

Volatile Organic Compounds

The QA/QC parameters for the Volatile Organic Compound analyses by method SW-846 8260 for all of the samples were within acceptable control limits, except as noted below.

Recoveries/ Relative Percent Differences (RPDs) - MS/MSD

All Matrix Spike (MS) and Matrix Spike Duplicate (MSD) recoveries and relative percent differences (RPDs) were within acceptable quality control limits, except as noted in Table 2 below.

TABLE 2
MS/MSD Recoveries and RPDs Out of QC Limits: VOC
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Sample	Parameter	Recovery	Recovery Limits	RPD	RPD Limits	Associated Samples	Flag
CNC61	014VA001M1MS/MSD	Carbon Tetrachloride	88 / 104	57-128	17*	13	#1	Detects – J; Non-Detects – UJ

* - out of control limits

Semivolatile Organic Compounds

The QA/QC parameters for the Semivolatile Organic Compound analyses by method SW-846 8270 for all of the samples were within acceptable control limits, except as noted below.

Initial and Continuing Calibration Criteria

All initial calibration criteria and continuing calibration criteria were met except as noted in Table 3.

TABLE 3
Exceptions to Initial Calibration Criteria and Continuing Calibration Criteria: SVOC
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

Instrument/Calibration Date	Analyte	%Relative Standard Deviation or R^2 (ICAL)/ %Difference (CCAL)	Associated Samples
MSJ5971-ICAL-01/21, 1442	Pentachlorophenol	R^2=0.988	CNC61-7
MSE5973-CCAL-01/19, 1219	2,4-Dinitrotoluene	29.9% high	CNC61-1,2,3,5,6

Flags were applied to the compounds in the associated samples in the following manner:

- When the percent Relative Standard Deviation (%RSD) or correlation coefficient (R^2) was out in the initial calibration, all associated samples were qualified. Detected compounds were flagged "J" and non-detected compounds were flagged "UJ", as estimated.
- When the percent difference (%D) was low in the continuing calibration standards, detected compounds were flagged "J" and non-detected compounds were flagged "UJ", as estimated.
- When the percent difference was high, detected compounds were flagged "J", as estimated. Non-detected compounds were not flagged.

Inorganic Parameters

Quality Control Review

The following list represents the QA/QC measures that are typically reviewed during the data quality evaluation procedure for inorganic parameters.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Sample preparation, initial calibration blanks/continuing calibration blanks, and equipment blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", in which target parameters have been added prior to digestion/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and its duplicate. This information can only be determined when target compounds are detected.
- **Pre/Post Digestion Spike (MS/MSD)** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **ICP Interference Check Sample** – This sample verifies the lab's interelement and background correction factors.
- **Initial Calibration Verification** – This parameter ensures that the instrument is capable of producing acceptable quantitative data for the target analyte list to be measured.
- **Continuing Calibration Verification** – This one-point, mid-range parameter establishes that the initial calibration is still valid by checking the performance of the instrument on a continual basis.
- **ICP Serial Dilution** – The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to the sample matrix.

Metals Analyses

The QA/QC parameters for the Metals analyses for all of the samples were within acceptable control limits, except as noted below.

Blanks

The Metals target parameters detected in blank samples are listed in Table 4.

TABLE 4
Blank Contamination: Metals
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Lab Sample ID	Sample ID	Sample Type	Parameter	Lab Result	Units	Flag Concentrations
CNC61	CCB		CCB	Barium	2.03	ug/L	< 0.01015 mg/L
CNC61	CCB		CCB	Cadmium	0.838	ug/L	< 0.00419 mg/L
CNC61	CCB		CCB	Chromium	1.83	ug/L	< 0.00915 mg/L
CNC61	CCB		CCB	Lead	3.47	ug/L	< 0.01735 mg/L
CNC61	CCB		CCB	Selenium	0.6128.01	ug/L	< 0.04005 mg/L

If a target parameter was reported in a field sample, and the concentration was below the level determined to be due to blank contamination (5 times the concentration in the associated QC blank samples), it was flagged as "U", not detected.

All results were greater than five times the blank value; therefore, no results were qualified due to blank contamination.

General Chemistry Analyses

The QA/QC parameters for the Flashpoint analysis for all of the samples were within acceptable control limits.

Rejected Data

No data was rejected for this sampling event.

Conclusion

A review of the analytical data submitted regarding the investigation of SWMU 14 in Zone H at the Charleston Naval Complex, Charleston, South Carolina by CH2M HILL has been completed. An overall evaluation of the data indicates that the sample handling, shipment, and analytical procedures have been adequately completed, and that the analytical results should be considered usable as qualified.

The analytical data had minor QC concerns, with regards to selected results for antimony being rejected that affected data usability for those specific results. However, the validation review demonstrated that the analytical systems were generally in control and the data results can be used in the decision making process.

Attachment 1 - Changed Qualifiers and Results
Zone H, SWMU 14 - Data Validation

SDG	Sample ID	Lab Sample ID	Matrix	Parameter Class	Analytical Method	Leach Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
CNC61	014VA001M1	S240172*1	SO	VOA	SW8260	1311	Carbon Tetrachloride, TCLP	0.1	U	0.1	UJ	mg/L	MD
CNC61	014VA004M1	S240172*7	SO	SVOA	SW8270	1311	Pentachlorophenol, TCLP	0.1	U	0.1	UJ	mg/L	IC

47308

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 1 of

atory:	GEL, Charleston, SC
ct Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	
TAT:	7-10 day package
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see 3rd page of COC
EDD:	CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
SB00901	H015SB009	0	1	8-9-01/1400	SO	2	X				X			H015SB004 - N	47296 001
SB01001	H015SB010	0	1	8-9-01/1402	SO	2	X				X			H015SB004 - E	002
SB01101	H015SB011	0	1	8-9-01/1404	SO	2	X				X			H015SB004 - S	003
SB01201	H015SB012	0	1	8-9-01/1406	SO	2	X				X			H015SB004 - W	004
SB04501	H684SB045	0	1		SO						X			H684SB003 - N	
SB04501MS	H684SB045	0	1		SO						X			H684SB003 - N	MS NE
SB04501MSD	H684SB045	0	1		SO						X			H684SB003 - N	MSD
SB04601	H684SB046	0	1		SO						X			H684SB003 - E	
SB04701	H684SB047	0	1		SO						X			H684SB003 - S	
SB04801	H684SB048	0	1		SO						X			H684SB003 - W	
SB04901	H684SB049	0	1		SO						X			H684SB004 - N	
SB05001	H684SB050	0	1		SO						X			H684SB004 - E	
SB05101	H684SB051	0	1		SO						X			H684SB004 - S	
SB05201	H684SB052	0	1		SO						X			H684SB004 - W	
CB05201	H684SB052	0	1		SO						X			H684SB004 - W	
SB05301	H684SB053	0	1	8-8-01/1515	SO	1		X	X					H684SB009 - N	47296 005
CB05301	H684SB053	0	1	8-8-01/1515	SO	1		X	X					H684SB009 - N	006
SB05401	H684SB054	0	1	8-8-01/1519	SO	1		X	X					H684SB009 - E	007
SB05501	H684SB055	0	1	8-8-01/1520	SO	1		X	X					H684SB009 - S	008
SB05601	H684SB056	0	1	8-8-01/1522	SO	1		X	X					H684SB009 - W	009

ed By Darryl Gates Date/Time Relinquished by: [signature] Date/Time 8-9-01/1720

nal Samplers: Chris Bluydy / Mark Yarbourgh

ed By Lab: [signature] Date/Time 8/10/01 1000 Relinquished by: Date/Time

ed By: Date/Time Shipped Via: UPS FedEx Hand Other Tracking#:

ks: Temperature:

Receipt Exceptions:

7

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 2 of 10

Laboratory:	GEL, Charleston, SC
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	
TAT:	
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see 3rd page of COC
EDD:	CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H684SB05701	H684SB057	0	1	8-9-01/1520	SO	1		X						H684SB014 - N	47297 001
H684SB05801	H684SB058	0	1	8-9-01/1522	SO	1		X						H684SB014 - E	002
H684SB05901	H684SB059	0	1	8-9-01/1524	SO	1		X						H684SB014 - S	003
H684SB06001	H684SB060	0	1	8-9-01/1526	SO	1		X						H684SB014 - W	004
H684SB06101	H684SB061	0	1		SO			X						H684SB013 - N	
H684SB06201	H684SB062	0	1		SO			X						H684SB013 - E	
H684SB06301	H684SB063	0	1		SO			X						H684SB013 - S	
H684SB06401	H684SB064	0	1		SO			X						H684SB013 - W	
H684SB06501	H684SB065	0	1		SO			X						H684SB012 - N	
H684SB06601	H684SB066	0	1		SO			X						H684SB012 - E	
H684SB06701	H684SB067	0	1		SO			X						H684SB012 - S	
H684SB06801	H684SB068	0	1		SO			X						H684SB012 - W	
H684SB06901	H684SB069	0	1		SO			X						H684SB018 - N	
H684SB07001	H684SB070	0	1		SO			X						H684SB018 - E	
H684SB07101	H684SB071	0	1		SO			X						H684SB018 - S	
H684SB07201	H684SB072	0	1		SO			X						H684SB018 - W	
H684SB07301	H684SB073	0	1		SO			X						H684SB017 - N	
H684SB07401	H684SB074	0	1		SO			X						H684SB017 - E	
H684CB07401	H684SB074	0	1		SO			X						H684SB017 - E	
H684SB07501	H684SB075	0	1		SO			X						H684SB017 - S	

Sampled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

Additional Samplers: Chris Blundy, Mark Yarbrough

Received By Lab: Mike Kendrick Date/Time 8/10/01 1000

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 3 of 10

ratory: GEL, Charleston, SC

ct Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
4SB07601	H684SB076	0	1		SO			X						H684SB017 - W	
4SB07701	H684SB077	0	1		SO						X			H684SB020 - N	
4SB07801	H684SB078	0	1		SO						X			H684SB020 - E	
4SB07901	H684SB079	0	1		SO						X			H684SB020 - S	
4SB08001	H684SB080	0	1		SO						X			H684SB020 - W	
4SB08101	H684SB081	0	1		SO						X			H684SB021 - N	
4SB08201	H684SB082	0	1		SO						X			H684SB021 - E	
4SB08301	H684SB083	0	1		SO						X			H684SB021 - S	
4SB08401	H684SB084	0	1		SO						X			H684SB021 - W	
4SB08501	H684SB085	0	1		SO						X			H684SB023 - N	
4SB08601	H684SB086	0	1		SO						X			H684SB023 - E	
4CB08601	H684SB086	0	1		SO						X			H684SB023 - E	
4SB08701	H684SB087	0	1		SO						X			H684SB023 - S	
4SB08801	H684SB088	0	1		SO						X			H684SB023 - W	
4SB08901	H684SB089	0	1		SO						X			H684SB024 - N	
4SB09001	H684SB090	0	1		SO						X			H684SB024 - E	
4SB09101	H684SB091	0	1		SO						X			H684SB024 - S	
4SB09201	H684SB092	0	1		SO						X			H684SB024 - W	417206 [illegible]
4SB09301	H684SB093	0	1	8-9-01/1055	SO	1					X			H684SB044 - N	417207 [illegible]
4SB09401	H684SB094	0	1	8-9-01/1057	SO	1					X			H684SB044 - E	[illegible]

ked By Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

ional Samplers: Chris Blunda Mark Yarbrough

ived By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

ived By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

arks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 4 of 10

ratory: GEL, Charleston, SC

ct Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
4SB09501	H684SB095	0	1	8-9-01/1059	SO	1					X			H684SB044 - S	47297 ~~D07~~
4SB09601	H684SB096	0	1	8-9-01/1101	SO	1					X			H684SB044 - W	47306 ~~D08~~
4SB09701	H684SB097	0	1	8-9-01/1120	SO	1					X			H684SB043 - N	~~D09~~
4SB09801	H684SB098	0	1	8-9-01/1122	SO	1					X			H684SB043 - E	~~D10~~
4SB09901	H684SB099	0	1	8-9-01/1124	SO	1					X			H684SB043 - S	~~D11~~
4CB09901	H684SB099	0	1	8-9-01/1124	SO	1					X			H684SB043 - S	~~D12~~
4SB10001	H684SB100	0	1	8-9-01/1126	SO	1					X			H684SB043 - W	~~D13~~
4SB10101	H684SB101	0	1	8-9-01/1140	SO	1					X			H684SB035 - N	~~D14~~
4SB10201	H684SB102	0	1	8-9-01/1142	SO	1					X			H684SB035 - E	~~D15~~
4SB10301	H684SB103	0	1	8-9-01/1144	SO	1					X			H684SB035 - S	~~D16~~
4SB10401	H684SB104	0	1	8-9-01/1146	SO	1					X			H684SB035 - W	~~D17~~
4SB10501	H684SB105	0	1	8-9-01/1340	SO	1					X			H684SB036 - N	~~D18~~
4SB10601	H684SB106	0	1	8-9-01/1342	SO	1					X			H684SB036 - E	~~D19~~
4SB10701	H684SB107	0	1	8-9-01/1344	SO	1					X			H684SB036 - S	D19
4SB10801	H684SB108	0	1	8-9-01/1346	SO	1					X			H684SB036 - W	D2
4SB10901	H684SB109	0	1	8-9-01/1442	SO	2		X			X			H684SB015 - N	47297 D13 ~~D07~~
4CB10901	H684SB109	0	1	8-9-01/1442	SO	2		X			X			H684SB015 - N	D14 ~~D08~~
4SB11001	H684SB110	0	1	8-9-01/1444	SO	2		X			X			H684SB015 - E	D15 ~~D09~~
4SB11101	H684SB111	0	1	8-9-01/1446	SO	2		X			X			H684SB015 - S	D16 ~~D10~~
4SB11201	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	D17 ~~D11~~

pled By: Darrel Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1220

ional Samplers: Chris Blandy, Mark Yarbrough

ived By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

ived By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

arks:

Temperature:

Rec' Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 5 of 10

atory: GEL, Charleston, SC

ct Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
SB11201MS	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	MS
SB11201SD	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	MSD 005
SB11301	H684SB113	0	1	8-9-01/1305	SO	1		X						H684SB016 - N	47297 007
SB11401	H684SB114	0	1	8-9-01/1307	SO	1		X						H684SB016 - E	006
SB11501	H684SB115	0	1	8-9-01/1309	SO	1		X						H684SB016 - S	0007
SB11601	H684SB116	0	1	8-9-01/1311	SO	1		X						H684SB016 - W	008 010
SB03601	H670SB036	0	1	8-9-01/0905	SO	1	1			X				H670SB026 - N	47308 008
SB03701	H670SB037	0	1	8-9-01/0907	SO	1				X				H670SB026 - E	009
CB03701	H670SB037	0	1	8-9-01/0907	SO	1				X				H670SB026 - E	010
SB03801	H670SB038	0	1	8-9-01/0909	SO	1				X				H670SB026 - S	011
SB03901	H670SB039	0	1	8-9-01/0911	SO	1				X				H670SB026 - W	012
SB04001	H670SB040	0	1	8-9-01/1025	SO	1					X			H670SB031 - N	~~47297~~ 47309 003
SB04101	H670SB041	0	1	8-9-01/1027	SO	1					X			H670SB031 - E	004
SB04201	H670SB042	0	1	8-9-01/1029	SO	1					X			H670SB031 - S	005
SB04301	H670SB043	0	1	8-9-01/1031	SO	1					X			H670SB031 - W	47309 002
SB04401	H670SB044	0	1	8-9-01/1005	SO	1					X			H670SB034 - N	003
CB04401	H670SB044	0	1	8-9-01/1005	SO	1					X			H670SB034 - N	004
SB04501	H670SB045	0	1	8-9-01/1007	SO	1					X			H670SB034 - E	005
SB04601	H670SB046	0	1	8-9-01/1009	SO	1					X			H670SB034 - S	006
SB04701	H670SB047	0	1	8-9-01/1011	SO	1					X			H670SB034 - W	007

led By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

onal Samplers: Chris Blanchard, Mark Yarbrough

ved By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

ved By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

arks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 6 of 10

Laboratory:	GEL, Charleston, SC
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	
TAT:	
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see 3rd page of COC
EDD:	CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B) 1 - 4 oz jar	Lead (SW6010B) 1 - 4 oz jar	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H670SB04801	H670SB048	0	1	8-9-01/0935	SO	1					X			H670SB003 - N	47309 008
H670SB04901	H670SB049	0	1	8-9-01/0937	SO	1					X			H670SB003 - E	009
H670SB05001	H670SB050	0	1	8-9-01/0939	SO	1					X			H670SB003 - S	010
H670SB05101	H670SB051	0	1	8-9-01/0941	SO	1					X			H670SB003 - W	011
H670SB05201	H670SB052	0	1	8-8-01/1450	SO	1					X			H670SB029 - N	012
H670SB05301	H670SB053	0	1	8-8-01/1452	SO	1					X			H670SB029 - E	013
H670SB05301MS	H670SB053	0	1	8-8-01/1452	SO	1					X			H670SB029 - E	MS
H670SB05301SD	H670SB053	0	1	8-8-01/1452	SO	1					X			H670SB029 - E	MSD
H670SB05401	H670SB054	0	1	8-8-01/1454	SO	1					X			H670SB029 - S	47309 014
H670SB05501	H670SB055	0	1	8-8-01/1456	SO	1					X			H670SB029 - W	015
H670SB05601	H670SB056	0	1	8-9-01/0745	SO	1	X	X		X				H670SB012 - N	47313 006
H670SB05701	H670SB057	0	1	8-9-01/0747	SO	1	X	X		X				H670SB012 - E	007
H670SB05801	H670SB058	0	1	8-9-01/0749	SO	1	X	X		X				H670SB012 - S	008
H670SB05801MS	H670SB058	0	1	8-9-01/0749	SO	1	X	X		X				H670SB012 - S	MS
H670SB05801SD	H670SB058	0	1	8-9-01/0749	SO	1	X	X		X				H670SB012 - S	MSD
H670SB05901	H670SB059	0	1	8-9-01/0751	SO	1	X	X		X				H670SB012 - W	009
H670SB06001	H670SB060	0	1	8-8-01/1410	SO	1					X			H670SB005 - N	47309 016
H670SB06101	H670SB061	0	1	8-8-01/1412	SO	1					X			H670SB005 - E	017
H670SB06201	H670SB062	0	1	8-8-01/1414	SO	1					X			H670SB005 - S	018
H670CB06201	H670SB062	0	1	8-8-01/1414	SO	1					X			H670SB005 - S	019

Sampled By: Darryl Gates Date/Time: Relinquished by: [signature] Date/Time: 8-9-01/1720

Additional Samplers: Chris Blundy, Mark Yarbrough

Received By Lab: [signature] Date/Time: 8/10/01 1000 Relinquished by: Date/Time:

Received By: Date/Time: Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks: Temperature:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 7 o.

ratory: GEL, Charleston, SC

ct Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
0SB06301	H670SB063	0	1	8-8-01/1416	SO	1					X			H670SB005 - W	47304 001
0SB06401	H670SB064	0	1	8-8-01/1430	SO	1		X						H670SB009 - N	47297 009
0SB06501	H670SB065	0	1	8-8-01/1432	SO	1		X						H670SB009 - E	010
0SB06601	H670SB066	0	1	8-8-01/1434	SO	1		X						H670SB009 - S	011
0SB06701	H670SB067	0	1	8-8-01/1436	SO	1		X						H670SB009 - W	012
0SB06801	H670SB068	0	1	8-9-01/0845	SO	1	X	X		X				H670SB023 - N	47313 001
0SB06901	H670SB069	0	1	8-9-01/0847	SO	1	X	X		X				H670SB023 - E	002
0CB06901	H670SB069	0	1	8-9-01/0847	SO	1	X	X		X				H670SB023 - E	003
0SB07001	H670SB070	0	1	8-9-01/0849	SO	1	X	X		X				H670SB023 - S	004
0SB07101	H670SB071	0	1	8-9-01/0851	SO	1	X	X		X				H670SB023 - W	005
4SB01201	H014SB012	0	1	8-8-01/1030	SO	1				X				H014SB005 - N	47308 020
4SB01301	H014SB013	0	1	8-8-01/1032	SO	1				X				H014SB005 - E	47308 001
4SB01301MS	H014SB013	0	1	8-8-01/1032	SO	1				X				H014SB005 - E	MS
4SB01301SD	H014SB013	0	1	8-8-01/1032	SO	1				X				H014SB005 - E	MSD
4SB01401	H014SB014	0	1	8-8-01/1034	SO	1				X				H014SB005 - S	002
4SB01501	H014SB015	0	1	8-8-01/1036	SO	1				X				H014SB005 - W	003
4SB01601	H014SB016	0	1	8-8-01/1050	SO	1				X				H014SB006 - N	004
4SB01701	H014SB017	0	1	8-8-01/1052	SO	1				X				H014SB006 - E	005
4SB01801	H014SB018	0	1	8-8-01/1054	SO	1				X				H014SB006 - S	006
4SB01901	H014SB019	0	1	8-8-01/1056	SO	1				X				H014SB006 - W	007

oled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

ional Samplers: Chris Blundy, Mark Yarborough

ived By Lab: Mike Kamber Date/Time 8/10/01 1000

Relinquished by: Date/Time

ived By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

arks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 8 of 10

ratory: GEL, Charleston, SC

ct Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B) (1 - 4 oz jar Nitric)	Lead (SW6010B)	PAHs (SW8270C) (1 - 4 oz jar)			alias	Comments
4SB02001	H014SB020	0	1	8-8-01/1345	SO	1				X				H014SB010 - N	47308 013
4SB02101	H014SB021	0	1	8-8-01/1347	SO	1				X				H014SB010 - E	014
4SB02201	H014SB022	0	1	8-8-01/1348	SO	1				X				H014SB010 - S	015
4SB02301	H014SB023	0	1	8-8-01/1350	SO	1				X				H014SB010 - W	016
4SB02401	H014SB024	0	1	8-8-01/1130	SO	1				X				014SD21 - N	017
4SB02501	H014SB025	0	1	8-8-01/1132	SO	1				X				014SD21 - E	018
4CB02501	H014SB025	0	1	8-8-01/1132	SO	1				X				014SD21 - E	019
4SB02601	H014SB026	0	1	8-8-01/1134	SO	1				X				014SD21 - S	47313 010
4SB02701	H014SB027	0	1	8-8-01/1136	SO	1				X				014SD21 - W	011
4SB02801	H014SB028	0	1	8-9-01/0810	SO	1				X				014SD29 - N	012
4SB02901	H014SB029	0	1	8-9-01/0812	SO	1				X				014SD29 - E	013
4SB03001	H014SB030	0	1	8-9-01/0814	SO	1				X				014SD29 - S	014
4SB03101	H014SB031	0	1	8-9-01/0816	SO	1				X				014SD29 - W	015
4SB03201	H014SB032	0	1	8-8-01/1146	SO	1				X				014SD16 - N	016
4SB03301	H014SB033	0	1	8-8-01/1148	SO	1				X				014SD16 - E	017
4SB03401	H014SB034	0	1	8-8-01/1150	SO	1				X				014SD16 - S	018
4SB03501	H014SB035	0	1	8-8-01/1152	SO	1				X				014SD16 - W	019
4CB03501	H014SB035	0	1	8-8-01/1152	SO	1				X				014SD16 - W	020
5EB009L1	H015EB009	0	1	8-8-01/1015	SO	3	X	X	X	X	X			Water	47317 001
5EB010L1	H015EB010	0	1	8-9-01/1550	SO	3	X	X		X	X			Water	002

led By: Daniel Gates Date/Time

Relinquished by: Date/Time 8-9-01/1720

ional Samplers: Chris Blundell, Mark Gardenhyr

ived By Lab: Mike Bairdow Date/Time 8/10/01 0000

Relinquished by: Date/Time

ived By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

arks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 9 o.

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B) 1 - 4 oz jar	Lead (SW6010B) 1 - 4 oz jar	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H015EB011L1	H015EB011				SQ		X	X		X	X				EB ~~4731703~~

Sampled By

Date/Time

Relinquished by:

Date/Time 8-9-01/1720

Additional Samplers:

Received By Lab: [signature]

Date/Time 8/10/01 1000

Relinquished by:

Date/Time

Received By:

Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

47313

I2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 1 of 10

y: GEL, Charleston, SC

me: Charleston Navy Complex

Site Name: Zone H, SWMU 14

ject Number:

TAT: 7-10 day package

ect Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

d Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

nple ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B) 1 - 4 oz jar	Lead (SW6010B) 1 - 4 oz jar	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
0901	H015SB009	0	1	8-9-01/1400	SO	2	X				X			H015SB004 - N	47296 001
1001	H015SB010	0	1	8-9-01/1402	SO	2	X				X			H015SB004 - E	002
1101	H015SB011	0	1	8-9-01/1404	SO	2	X				X			H015SB004 - S	003
1201	H015SB012	0	1	8-9-01/1406	SO	2	X				X			H015SB004 - W	004
4501	H684SB045	0	1		SO						X			H684SB003 - N	
4501MS	H684SB045	0	1		SO						X			H684SB003 - N	MS NE
4501MSD	H684SB045	0	1		SO						X			H684SB003 - N	MSD
4601	H684SB046	0	1		SO						X			H684SB003 - E	
4701	H684SB047	0	1		SO						X			H684SB003 - S	
4801	H684SB048	0	1		SO						X			H684SB003 - W	
4901	H684SB049	0	1		SO						X			H684SB004 - N	
5001	H684SB050	0	1		SO						X			H684SB004 - E	
5101	H684SB051	0	1		SO						X			H684SB004 - S	
5201	H684SB052	0	1		SO						X			H684SB004 - W	
5201	H684SB052	0	1		SO						X			H684SB004 - W	
5301	H684SB053	0	1	8-8-01/1515	SO	1		X	X					H684SB009 - N	47296 005
5301	H684SB053	0	1	8-8-01/1515	SO	1		X	X					H684SB009 - N	006
5401	H684SB054	0	1	8-8-01/1519	SO	1		X	X					H684SB009 - E	007
5501	H684SB055	0	1	8-8-01/1520	SO	1		X	X					H684SB009 - S	008
5601	H684SB056	0	1	8-8-01/1522	SO	1		X	X					H684SB009 - W	009

Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

mplers: Chris Blundy / Mark Yarbourgh

Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Temperature:

ceipt E ntions:

8

CH2M HILL Chain of Custody/ Laboratory Analysis Form

tory: GEL, Charleston, SC

Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B) 1 - 4 oz jar	Lead (SW6010B) 1 - 4 oz jar	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
B05701	H684SB057	0	1	8-9-01/1520	SO	1		X						H684SB014 - N	47297 001
B05801	H684SB058	0	1	8-9-01/1522	SO	1		X						H684SB014 - E	002
B05901	H684SB059	0	1	8-9-01/1524	SO	1		X						H684SB014 - S	003
B06001	H684SB060	0	1	8-9-01/1526	SO	1		X						H684SB014 - W	004
B06101	H684SB061	0	1		SO			X						H684SB013 - N	
B06201	H684SB062	0	1		SO			X						H684SB013 - E	
B06301	H684SB063	0	1		SO			X						H684SB013 - S	
B06401	H684SB064	0	1		SO			X						H684SB013 - W	
B06501	H684SB065	0	1		SO			X						H684SB012 - N	
B06601	H684SB066	0	1		SO			X						H684SB012 - E	
B06701	H684SB067	0	1		SO			X						H684SB012 - S	
B06801	H684SB068	0	1		SO			X						H684SB012 - W	
B06901	H684SB069	0	1		SO			X						H684SB018 - N	
B07001	H684SB070	0	1		SO			X						H684SB018 - E	
B07101	H684SB071	0	1		SO			X						H684SB018 - S	
B07201	H684SB072	0	1		SO			X						H684SB018 - W	
B07301	H684SB073	0	1		SO			X						H684SB017 - N	
B07401	H684SB074	0	1		SO			X						H684SB017 - E	
B07401	H684SB074	0	1		SO			X						H684SB017 - E	
B07501	H684SB075	0	1		SO			X						H684SB017 - S	

By: Darryl Gates Date/Time

Relinquished by: [illegible] Date/Time 8-9-01/1720

of Samplers: Chris Blunden, Mark Wachsmith

d By Lab: Mike Kendzor Date/Time 8/10/01 1000

Relinquished by: Date/Time

d By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 3 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H684SB07601	H684SB076	0	1		SO			X						H684SB017 - W	
H684SB07701	H684SB077	0	1		SO						X			H684SB020 - N	
H684SB07801	H684SB078	0	1		SO						X			H684SB020 - E	
H684SB07901	H684SB079	0	1		SO						X			H684SB020 - S	
H684SB08001	H684SB080	0	1		SO						X			H684SB020 - W	
H684SB08101	H684SB081	0	1		SO						X			H684SB021 - N	
H684SB08201	H684SB082	0	1		SO						X			H684SB021 - E	
H684SB08301	H684SB083	0	1		SO						X			H684SB021 - S	
H684SB08401	H684SB084	0	1		SO						X			H684SB021 - W	
H684SB08501	H684SB085	0	1		SO						X			H684SB023 - N	
H684SB08601	H684SB086	0	1		SO						X			H684SB023 - E	
H684CB08601	H684SB086	0	1		SO						X			H684SB023 - E	
H684SB08701	H684SB087	0	1		SO						X			H684SB023 - S	
H684SB08801	H684SB088	0	1		SO						X			H684SB023 - W	
H684SB08901	H684SB089	0	1		SO						X			H684SB024 - N	
H684SB09001	H684SB090	0	1		SO						X			H684SB024 - E	
H684SB09101	H684SB091	0	1		SO						X			H684SB024 - S	
H684SB09201	H684SB092	0	1		SO						X			H684SB024 - W	47306 006
H684SB09301	H684SB093	0	1	8-9-01/1055	SO	1					X			H684SB044 - N	~~47297 006~~
H684SB09401	H684SB094	0	1	8-9-01/1057	SO	1					X			H684SB044 - E	~~[illegible]~~

Sampled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

Additional Samplers: Chris, Blundy, Mark Yarbough

Received By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 4 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) (1 - 4 oz jar)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) (1 - 4 oz jar)			alias	Comments
H684SB09501	H684SB095	0	1	8-9-01/1059	SO	1					X			H684SB044 - S	47299 ~~D07~~
H684SB09601	H684SB096	0	1	8-9-01/1101	SO	1					X			H684SB044 - W	47306 ~~D08~~
H684SB09701	H684SB097	0	1	8-9-01/1120	SO	1					X			H684SB043 - N	~~D07~~ ~~D08~~
H684SB09801	H684SB098	0	1	8-9-01/1122	SO	1					X			H684SB043 - E	~~D10~~ D09
H684SB09901	H684SB099	0	1	8-9-01/1124	SO	1					X			H684SB043 - S	~~D11~~ 010
H684CB09901	H684SB099	0	1	8-9-01/1124	SO	1					X			H684SB043 - S	~~D12~~ 011
H684SB10001	H684SB100	0	1	8-9-01/1126	SO	1					X			H684SB043 - W	~~D13~~ 012
H684SB10101	H684SB101	0	1	8-9-01/1140	SO	1					X			H684SB035 - N	~~D14~~ 013
H684SB10201	H684SB102	0	1	8-9-01/1142	SO	1					X			H684SB035 - E	~~D15~~ 014
H684SB10301	H684SB103	0	1	8-9-01/1144	SO	1					X			H684SB035 - S	~~D16~~ 015
H684SB10401	H684SB104	0	1	8-9-01/1146	SO	1					X			H684SB035 - W	~~D17~~ 016
H684SB10501	H684SB105	0	1	8-9-01/1340	SO	1					X			H684SB036 - N	~~D18~~ 017
H684SB10601	H684SB106	0	1	8-9-01/1342	SO	1					X			H684SB036 - E	~~D19~~ 018
H684SB10701	H684SB107	0	1	8-9-01/1344	SO	1					X			H684SB036 - S	019
H684SB10801	H684SB108	0	1	8-9-01/1346	SO	1					X			H684SB036 - W	020
H684SB10901	H684SB109	0	1	8-9-01/1442	SO	2		X			X			H684SB015 - N	47297 ~~D20~~ 021
H684CB10901	H684SB109	0	1	8-9-01/1442	SO	2		X			X			H684SB015 - N	022 ~~D08~~
H684SB11001	H684SB110	0	1	8-9-01/1444	SO	2		X			X			H684SB015 - E	023 ~~D07~~
H684SB11101	H684SB111	0	1	8-9-01/1446	SO	2		X			X			H684SB015 - S	024 ~~D10~~
H684SB11201	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	MS 025 ~~D11~~

Sampled By: Darrell Gates

Date/Time:

Relinquished by: [signature]

Date/Time: 8-9-01/1220

Additional Samplers: Chris Blundy, Mark Yarbrough

Received By Lab: [signature]

Date/Time: 8/10/01 1000

Relinquished by:

Date/Time:

Received By:

Date/Time:

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 5 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H684SB11201MS	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	MS
H684SB11201SD	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	MSD 005
H684SB11301	H684SB113	0	1	8-9-01/1305	SO	1		X						H684SB016 - N	47297 007 .3
H684SB11401	H684SB114	0	1	8-9-01/1307	SO	1		X						H684SB016 - E	006
H684SB11501	H684SB115	0	1	8-9-01/1309	SO	1		X						H684SB016 - S	007
H684SB11601	H684SB116	0	1	8-9-01/1311	SO	1		X						H684SB016 - W	008 010
H670SB03601	H670SB036	0	1	8-9-01/0905	SO	1	1			X				H670SB026 - N	47308 008 .6
H670SB03701	H670SB037	0	1	8-9-01/0907	SO	1				X				H670SB026 - E	009
H670CB03701	H670SB037	0	1	8-9-01/0907	SO	1				X				H670SB026 - E	010
H670SB03801	H670SB038	0	1	8-9-01/0909	SO	1				X				H670SB026 - S	011
H670SB03901	H670SB039	0	1	8-9-01/0911	SO	1				X				H670SB026 - W	012
H670SB04001	H670SB040	0	1	8-9-01/1025	SO	1					X			H670SB031 - N	~~47297 0~~ 47309 003 .4
H670SB04101	H670SB041	0	1	8-9-01/1027	SO	1					X			H670SB031 - E	004
H670SB04201	H670SB042	0	1	8-9-01/1029	SO	1					X			H670SB031 - S	005
H670SB04301	H670SB043	0	1	8-9-01/1031	SO	1					X			H670SB031 - W	47309 002 .7
H670SB04401	H670SB044	0	1	8-9-01/1005	SO	1					X			H670SB034 - N	003
H670CB04401	H670SB044	0	1	8-9-01/1005	SO	1					X			H670SB034 - N	004
H670SB04501	H670SB045	0	1	8-9-01/1007	SO	1					X			H670SB034 - E	005
H670SB04601	H670SB046	0	1	8-9-01/1009	SO	1					X			H670SB034 - S	006
H670SB04701	H670SB047	0	1	8-9-01/1011	SO	1					X			H670SB034 - W	007

Sampled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

Additional Samplers: Chris Blanpy, Mark Yarborough

Received By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 6 of 10

aboratory:	GEL, Charleston, SC
roject Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	
TAT:	
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see 3rd page of COC
EDD:	CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H670SB04801	H670SB048	0	1	8-9-01/0935	SO	1					X			H670SB003 - N	47309 008
H670SB04901	H670SB049	0	1	8-9-01/0937	SO	1					X			H670SB003 - E	009
H670SB05001	H670SB050	0	1	8-9-01/0939	SO	1					X			H670SB003 - S	010
H670SB05101	H670SB051	0	1	8-9-01/0941	SO	1					X			H670SB003 - W	011
H670SB05201	H670SB052	0	1	8-8-01/1450	SO	1					X			H670SB029 - N	012
H670SB05301	H670SB053	0	1	8-8-01/1452	SO	1					X			H670SB029 - E	013
H670SB05301MS	H670SB053	0	1	8-8-01/1452	SO	1					X			H670SB029 - E	MS
H670SB05301SD	H670SB053	0	1	8-8-01/1452	SO	1					X			H670SB029 - E	MSD
H670SB05401	H670SB054	0	1	8-8-01/1454	SO	1					X			H670SB029 - S	47309 014
H670SB05501	H670SB055	0	1	8-8-01/1456	SO	1					X			H670SB029 - W	015
H670SB05601	H670SB056	0	1	8-9-01/0745	SO	1	X	X		X				H670SB012 - N	47313 006
H670SB05701	H670SB057	0	1	8-9-01/0747	SO	1	X	X		X				H670SB012 - E	007
H670SB05801 A4(1)	H670SB058	0	1	8-9-01/0749	SO	1	X	X		X				H670SB012 - S	008
H670SB05801MS	H670SB058	0	1	8-9-01/0749	SO	1	X	X		X				H670SB012 - S	MS
H670SB05801SD	H670SB058	0	1	8-9-01/0749	SO	1	X	X		X				H670SB012 - S	MSD
H670SB05901	H670SB059	0	1	8-9-01/0751	SO	1	X	X		X				H670SB012 - W	009
H670SB06001	H670SB060	0	1	8-8-01/1410	SO	1					X			H670SB005 - N	47309 016
H670SB06101	H670SB061	0	1	8-8-01/1412	SO	1					X			H670SB005 - E	017
H670SB06201	H670SB062	0	1	8-8-01/1414	SO	1					X			H670SB005 - S	018
H670CB06201	H670SB062	0	1	8-8-01/1414	SO	1					X			H670SB005 - S	019

.2 .8 .7

ampled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

dditional Samplers: Chris Blundy, Mark Yarbrough

eceived By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

eceived By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

emarks:

Temperature:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 7 of 10

aboratory: GEL, Charleston, SC

roject Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments	
I670SB06301	H670SB063	0	1	8-8-01/1416	SO	1					X			H670SB005 - W	47309 001	.2
I670SB06401	H670SB064	0	1	8-8-01/1430	SO	1		X						H670SB009 - N	47297 009	.3
I670SB06501	H670SB065	0	1	8-8-01/1432	SO	1		X						H670SB009 - E	010	
I670SB06601	H670SB066	0	1	8-8-01/1434	SO	1		X						H670SB009 - S	011	
I670SB06701	H670SB067	0	1	8-8-01/1436	SO	1		X						H670SB009 - W	012	
I670SB06801	H670SB068	0	1	8-9-01/0845	SO	1	X	X		X				H670SB023 - N	47313 001	.8
I670SB06901	H670SB069	0	1	8-9-01/0847	SO	1	X	X		X				H670SB023 - E	002	
I670CB06901	H670SB069	0	1	8-9-01/0847	SO	1	X	X		X				H670SB023 - E	003	
I670SB07001	H670SB070	0	1	8-9-01/0849	SO	1	X	X		X				H670SB023 - S	004	
I670SB07101	H670SB071	0	1	8-9-01/0851	SO	1	X	X		X				H670SB023 - W	005	
I014SB01201	H014SB012	0	1	8-8-01/1030	SO	1				X				H014SB005 - N	47308 020	.6
I014SB01301	H014SB013	0	1	8-8-01/1032	SO	1				X				H014SB005 - E	47308 001	
I014SB01301MS	H014SB013	0	1	8-8-01/1032	SO	1				X				H014SB005 - E	MS	
I014SB01301SD	H014SB013	0	1	8-8-01/1032	SO	1				X				H014SB005 - E	MSD	
I014SB01401	H014SB014	0	1	8-8-01/1034	SO	1				X				H014SB005 - S	002	
I014SB01501	H014SB015	0	1	8-8-01/1036	SO	1				X				H014SB005 - W	003	
I014SB01601	H014SB016	0	1	8-8-01/1050	SO	1				X				H014SB006 - N	004	
I014SB01701	H014SB017	0	1	8-8-01/1052	SO	1				X				H014SB006 - E	005	
I014SB01801	H014SB018	0	1	8-8-01/1054	SO	1				X				H014SB006 - S	006	
I014SB01901	H014SB019	0	1	8-8-01/1056	SO	1				X				H014SB006 - W	007	

ampled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

dditional Samplers: Chris Blundy, Mark Yarborough

eceived By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

eceived By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

emarks:

Temperature:

H2M HILL Chain of Custody/ Laboratory Analysis Form

ry: GEL, Charleston, SC

lame: Charleston Navy Complex

Site Name: Zone H, SWMU 14

oject Number:

TAT:

oject Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30348-1278

nd Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

mple ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
02001	H014SB020	0	1	8-8-01/1345	SO	1				X				H014SB010 - N	47308 013
02101	H014SB021	0	1	8-8-01/1347	SO	1				X				H014SB010 - E	014
02201	H014SB022	0	1	8-8-01/1348	SO	1				X				H014SB010 - S	015
02301	H014SB023	0	1	8-8-01/1350	SO	1				X				H014SB010 - W	016
02401	H014SB024	0	1	8-8-01/1130	SO	1				X				014SD21 - N	017
02501	H014SB025	0	1	8-8-01/1132	SO	1				X				014SD21 - E	018
02501	H014SB025	0	1	8-8-01/1138	SO	1				X				014SD21 - E	019
02601	H014SB026	0	1	8-8-01/1134	SO	1				X				014SD21 - S	47313 010
02701	H014SB027	0	1	8-8-01/1136	SO	1				X				014SD21 - W	011
02801	H014SB028	0	1	8-9-01/0810	SO	1				X				014SD29 - N	012
02901	H014SB029	0	1	8-9-01/0812	SO	1				X				014SD29 - E	013
03001	H014SB030	0	1	8-9-01/0814	SO	1				X				014SD29 - S	014
03101	H014SB031	0	1	8-9-01/0816	SO	1				X				014SD29 - W	015
03201	H014SB032	0	1	8-8-01/1146	SO	1				X				014SD16 - N	016
03301	H014SB033	0	1	8-8-01/1148	SO	1				X				014SD16 - E	017
03401	H014SB034	0	1	8-8-01/1150	SO	1				X				014SD16 - S	018
03501	H014SB035	0	1	8-8-01/1152	SO	1				X				014SD16 - W	019
03501	H014SB035	0	1	8-8-01/1152	SO	1				X				014SD16 - W	020
3009L1	H015EB009	0	1	8-8-01/1015	SO	3	X	X	X	X	X			Water	47317 001
3010L1	H015EB010	0	1	8-9-01/1550	SO	3	X	X		X	X			Water	002

By: Chris Darnell Gates Date/Time

Relinquished by: Date/Time 8-9-01/1720

Samplers: Chris Blimpo, MARK Hardbarger

By Lab: Mike Bainbow Date/Time 8/10/01 0000

Relinquished by: Date/Time

By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 9 of 10

oratory: GEL, Charleston, SC

oject Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B) 1 - 4 oz jar	Lead (SW6010B) 1 - 4 oz jar	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
015EB011L1	H015EB011				SQ		X	X		X	X				EB 47317003

Sampled By

Date/Time

Relinquished by:

Date/Time 8-9-01/1720

Additional Samplers:

Received By Lab: [signature]

Date/Time 8/10/01 1000

Relinquished by:

Date/Time

Received By:

Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Receipt Exceptions:

47317

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 1 of 10

ratory:	GEL, Charleston, SC
ect Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	
TAT:	7-10 day package
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see 3rd page of COC
EDD:	CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
5SB00901	H015SB009	0	1	8-9-01/1400	SO	2	X				X			H015SB004 - N	47296 001
5SB01001	H015SB010	0	1	8-9-01/1402	SO	2	X				X			H015SB004 - E	002
5SB01101	H015SB011	0	1	8-9-01/1404	SO	2	X				X			H015SB004 - S	003
5SB01201	H015SB012	0	1	8-9-01/1406	SO	2	X				X			H015SB004 - W	004
4SB04501	H684SB045	0	1		SO						X			H684SB003 - N	
4SB04501MS	H684SB045	0	1		SO						X			H684SB003 - N	MS NL
4SB04501MSD	H684SB045	0	1		SO						X			H684SB003 - N	MSD
4SB04601	H684SB046	0	1		SO						X			H684SB003 - E	
4SB04701	H684SB047	0	1		SO						X			H684SB003 - S	
4SB04801	H684SB048	0	1		SO						X			H684SB003 - W	
4SB04901	H684SB049	0	1		SO						X			H684SB004 - N	
4SB05001	H684SB050	0	1		SO						X			H684SB004 - E	
4SB05101	H684SB051	0	1		SO						X			H684SB004 - S	
4SB05201	H684SB052	0	1		SO						X			H684SB004 - W	
4CB05201	H684SB052	0	1		SO						X			H684SB004 - W	
4SB05301	H684SB053	0	1	8-8-01/1515	SO	1		X	X					H684SB009 - N	47296 005
4CB05301	H684SB053	0	1	8-8-01/1515	SO	1		X	X					H684SB009 - N	006
4SB05401	H684SB054	0	1	8-8-01/1519	SO	1		X	X					H684SB009 - E	007
4SB05501	H684SB055	0	1	8-8-01/1520	SO	1		X	X					H684SB009 - S	008
4SB05601	H684SB056	0	1	8-8-01/1522	SO	1		X	X					H684SB009 - W	009

pled By: Darryl Gates	Date/Time	Relinquished by: [signature]	Date/Time 8-9-01/1720
ional Samplers: Chris Bluvey / Mark Yarbourgh			
ived By Lab: [signature]	Date/Time 8/10/01 1000	Relinquished by:	Date/Time
ived By:	Date/Time	Shipped Via: UPS FedEx Hand Other Tracking#:	
arks:		Temperature:	

'H2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 2 of 10

ory: GEL, Charleston, SC

Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

roject Number:

TAT:

oject Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

nd Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

ample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
305701	H684SB057	0	1	8-9-01/1520	SO	1		X						H684SB014 - N	47297 001
305801	H684SB058	0	1	8-9-01/1522	SO	1		X						H684SB014 - E	002
305901	H684SB059	0	1	8-9-01/1524	SO	1		X						H684SB014 - S	003
306001	H684SB060	0	1	8-9-01/1526	SO	1		X						H684SB014 - W	004
306101	H684SB061	0	1		SO			X						H684SB013 - N	
306201	H684SB062	0	1		SO			X						H684SB013 - E	
306301	H684SB063	0	1		SO			X						H684SB013 - S	
306401	H684SB064	0	1		SO			X						H684SB013 - W	
306501	H684SB065	0	1		SO			X						H684SB012 - N	
306601	H684SB066	0	1		SO			X						H684SB012 - E	
306701	H684SB067	0	1		SO			X						H684SB012 - S	
306801	H684SB068	0	1		SO			X						H684SB012 - W	
306901	H684SB069	0	1		SO			X						H684SB018 - N	
307001	H684SB070	0	1		SO			X						H684SB018 - E	
307101	H684SB071	0	1		SO			X						H684SB018 - S	
307201	H684SB072	0	1		SO			X						H684SB018 - W	
307301	H684SB073	0	1		SO			X						H684SB017 - N	
307401	H684SB074	0	1		SO			X						H684SB017 - E	
B07401	H684SB074	0	1		SO			X						H684SB017 - E	
307501	H684SB075	0	1		SO			X						H684SB017 - S	

By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

Samplers: Chris Blundy, Mark Yarbrough

By Lab: Mike Kanobar Date/Time 8/10/01 1000

Relinquished by: Date/Time

By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Temperature:

Receipt ptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 3 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B) 1 - 4 oz jar	Lead (SW6010B) 1 - 4 oz jar	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H684SB07601	H684SB076	0	1		SO			X						H684SB017 - W	
H684SB07701	H684SB077	0	1		SO						X			H684SB020 - N	
H684SB07801	H684SB078	0	1		SO						X			H684SB020 - E	
H684SB07901	H684SB079	0	1		SO						X			H684SB020 - S	
H684SB08001	H684SB080	0	1		SO						X			H684SB020 - W	
H684SB08101	H684SB081	0	1		SO						X			H684SB021 - N	
H684SB08201	H684SB082	0	1		SO						X			H684SB021 - E	
H684SB08301	H684SB083	0	1		SO						X			H684SB021 - S	
H684SB08401	H684SB084	0	1		SO						X			H684SB021 - W	
H684SB08501	H684SB085	0	1		SO						X			H684SB023 - N	
H684SB08601	H684SB086	0	1		SO						X			H684SB023 - E	
H684CB08601	H684SB086	0	1		SO						X			H684SB023 - E	
H684SB08701	H684SB087	0	1		SO						X			H684SB023 - S	
H684SB08801	H684SB088	0	1		SO						X			H684SB023 - W	
H684SB08901	H684SB089	0	1		SO						X			H684SB024 - N	
H684SB09001	H684SB090	0	1		SO						X			H684SB024 - E	
H684SB09101	H684SB091	0	1		SO						X			H684SB024 - S	
H684SB09201	H684SB092	0	1		SO						X			H684SB024 - W	47306 006
H684SB09301	H684SB093	0	1	8-9-01/1055	SO	1					X			H684SB044 - N	~~47297 007~~
H684SB09401	H684SB094	0	1	8-9-01/1057	SO	1					X			H684SB044 - E	~~[illegible]~~

Sampled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

Additional Samplers: Chris Blundy, Mark Yarbough

Received By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 4 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H684SB09501	H684SB095	0	1	8-9-01/1059	SO	1					X			H684SB044 - S	47299 ~~007~~
H684SB09601	H684SB096	0	1	8-9-01/1101	SO	1					X			H684SB044 - W	47306 ~~008~~
H684SB09701	H684SB097	0	1	8-9-01/1120	SO	1					X			H684SB043 - N	~~004~~ 008
H684SB09801	H684SB098	0	1	8-9-01/1122	SO	1					X			H684SB043 - E	~~005~~ 009
H684SB09901	H684SB099	0	1	8-9-01/1124	SO	1					X			H684SB043 - S	~~006~~ 010
H684CB09901	H684SB099	0	1	8-9-01/1124	SO	1					X			H684SB043 - S	~~007~~ 011
H684SB10001	H684SB100	0	1	8-9-01/1126	SO	1					X			H684SB043 - W	~~008~~ 012
H684SB10101	H684SB101	0	1	8-9-01/1140	SO	1					X			H684SB035 - N	~~009~~ 013
H684SB10201	H684SB102	0	1	8-9-01/1142	SO	1					X			H684SB035 - E	~~010~~ 014
H684SB10301	H684SB103	0	1	8-9-01/1144	SO	1					X			H684SB035 - S	~~011~~ 015
H684SB10401	H684SB104	0	1	8-9-01/1146	SO	1					X			H684SB035 - W	~~012~~ 016
H684SB10501	H684SB105	0	1	8-9-01/1340	SO	1					X			H684SB036 - N	~~013~~ 017
H684SB10601	H684SB106	0	1	8-9-01/1342	SO	1					X			H684SB036 - E	~~014~~ 018
H684SB10701	H684SB107	0	1	8-9-01/1344	SO	1					X			H684SB036 - S	019
H684SB10801	H684SB108	0	1	8-9-01/1346	SO	1					X			H684SB036 - W	020
H684SB10901	H684SB109	0	1	8-9-01/1442	SO	2		X			X			H684SB015 - N	47297 013 ~~007~~
H684CB10901	H684SB109	0	1	8-9-01/1442	SO	2		X			X			H684SB015 - N	014 ~~008~~
H684SB11001	H684SB110	0	1	8-9-01/1444	SO	2		X			X			H684SB015 - E	015 ~~009~~
H684SB11101	H684SB111	0	1	8-9-01/1446	SO	2		X			X			H684SB015 - S	016 ~~010~~
H684SB11201	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	017 ~~011~~

Sampled By: Darrel Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1220

Additional Samplers: Chris Blandy, Mark Yarbrough

Received By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 5 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605
ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B) 1 - 4 oz jar	Lead (SW6010B) 1 - 4 oz jar	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H684SB11201MS	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	MS
H684SB11201SD	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	MSD 005 ~~004~~
H684SB11301	H684SB113	0	1	8-9-01/1305	SO	1		X						H684SB016 - N	47297 ~~001~~ .3
H684SB11401	H684SB114	0	1	8-9-01/1307	SO	1		X						H684SB016 - E	006 ~~002~~
H684SB11501	H684SB115	0	1	8-9-01/1309	SO	1		X						H684SB016 - S	007 ~~003~~
H684SB11601	H684SB116	0	1	8-9-01/1311	SO	1		X						H684SB016 - W	008 ~~010~~
H670SB03601	H670SB036	0	1	8-9-01/0905	SO	1	1			X				H670SB026 - N	47308 008 .6
H670SB03701	H670SB037	0	1	8-9-01/0907	SO	1				X				H670SB026 - E	009
H670CB03701	H670SB037	0	1	8-9-01/0907	SO	1				X				H670SB026 - E	010
H670SB03801	H670SB038	0	1	8-9-01/0909	SO	1				X				H670SB026 - S	011
H670SB03901	H670SB039	0	1	8-9-01/0911	SO	1				X				H670SB026 - W	012
H670SB04001	H670SB040	0	1	8-9-01/1025	SO	1					X			H670SB031 - N	~~47297~~ ~~47309~~ 001
H670SB04101	H670SB041	0	1	8-9-01/1027	SO	1					X			H670SB031 - E	004
H670SB04201	H670SB042	0	1	8-9-01/1029	SO	1					X			H670SB031 - S	005
H670SB04301	H670SB043	0	1	8-9-01/1031	SO	1					X			H670SB031 - W	47309 002 .7
H670SB04401	H670SB044	0	1	8-9-01/1005	SO	1					X			H670SB034 - N	003
H670CB04401	H670SB044	0	1	8-9-01/1005	SO	1					X			H670SB034 - N	004
H670SB04501	H670SB045	0	1	8-9-01/1007	SO	1					X			H670SB034 - E	005
H670SB04601	H670SB046	0	1	8-9-01/1009	SO	1					X			H670SB034 - S	006
H670SB04701	H670SB047	0	1	8-9-01/1011	SO	1					X			H670SB034 - W	007

Sampled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

Additional Samplers: Chris Blanpy, Mark Yarborough

Received By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 6 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H670SB04801	H670SB048	0	1	8-9-01/ 0935	SO	1					X			H670SB003 - N	47309 008
H670SB04901	H670SB049	0	1	8-9-01/ 0937	SO	1					X			H670SB003 - E	009
H670SB05001	H670SB050	0	1	8-9-01/ 0939	SO	1					X			H670SB003 - S	010
H670SB05101	H670SB051	0	1	8-9-01/ 0941	SO	1					X			H670SB003 - W	011
H670SB05201	H670SB052	0	1	8-8-01/ 1450	SO	1					X			H670SB029 - N	012
H670SB05301	H670SB053	0	1	8-8-01/ 1452	SO	1					X			H670SB029 - E	013
H670SB05301MS	H670SB053	0	1	8-8-01/ 1452	SO	1					X			H670SB029 - E	MS
H670SB05301SD	H670SB053	0	1	8-8-01/ 1452	SO	1					X			H670SB029 - E	MSD
H670SB05401	H670SB054	0	1	8-8-01/ 1454	SO	1					X			H670SB029 - S	47309 014
H670SB05501	H670SB055	0	1	8-8-01/ 1456	SO	1					X			H670SB029 - W	015
H670SB05601	H670SB056	0	1	8-9-01/ 0745	SO	1	X	X		X				H670SB012 - N	47313 006
H670SB05701	H670SB057	0	1	8-9-01/ 0747	SO	1	X	X		X				H670SB012 - E	007
H670SB05801	H670SB058	0	1	8-9-01/ 0749	SO	1	X	X		X				H670SB012 - S	008
H670SB05801MS	H670SB058	0	1	8-9-01/ 0749	SO	1	X	X		X				H670SB012 - S	MS
H670SB05801SD	H670SB058	0	1	8-9-01/ 0749	SO	1	X	X		X				H670SB012 - S	MSD
H670SB05901	H670SB059	0	1	8-9-01/ 0751	SO	1	X	X		X				H670SB012 - W	009
H670SB06001	H670SB060	0	1	8-8-01/ 1410	SO	1					X			H670SB005 - N	47309 016
H670SB06101	H670SB061	0	1	8-8-01/ 1412	SO	1					X			H670SB005 - E	017
H670SB06201	H670SB062	0	1	8-8-01/ 1414	SO	1					X			H670SB005 - S	018
H670CB06201	H670SB062	0	1	8-8-01/ 1414	SO	1					X			H670SB005 - S	019

Sampled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

Additional Samplers: Chris Blunos, Mark [illegible]

Received By Lab: Mike [illegible] Date/Time 8/10/01 1000

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

2M HILL Chain of Custody/ Laboratory Analysis Form

: GEL, Charleston, SC

ne: Charleston Navy Complex

Site Name: Zone H, SWMU 14

ect Number:

TAT:

ct Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

l Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

ple ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B) 1 - 4 oz jar	Lead (SW6010B) 1 - 4 oz jar	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments	
6301	H670SB063	0	1	8-8-01/1416	SO	1					X			H670SB005 - W	47309 001	.7
6401	H670SB064	0	1	8-8-01/1430	SO	1		X						H670SB009 - N	47297 009	.3
6501	H670SB065	0	1	8-8-01/1432	SO	1		X						H670SB009 - E	010	
6601	H670SB066	0	1	8-8-01/1434	SO	1		X						H670SB009 - S	011	
6701	H670SB067	0	1	8-8-01/1436	SO	1		X						H670SB009 - W	012	
6801	H670SB068	0	1	8-9-01/0845	SO	1	X	X		X				H670SB023 - N	47313 001	.8
6901	H670SB069	0	1	8-9-01/0847	SO	1	X	X		X				H670SB023 - E	002	
6901	H670SB069	0	1	8-9-01/0847	SO	1	X	X		X				H670SB023 - E	003	
7001	H670SB070	0	1	8-9-01/0849	SO	1	X	X		X				H670SB023 - S	004	
7101	H670SB071	0	1	8-9-01/0851	SO	1	X	X		X				H670SB023 - W	005	
1201	H014SB012	0	1	8-8-01/1030	SO	4				X				H014SB005 - N	47308 020	.6
1301	H014SB013	0	1	8-8-01/1032	SO	4				X				H014SB005 - E	47308 001	
1301MS	H014SB013	0	1	8-8-01/1032	SO	4				X				H014SB005 - E	MS	
1301SD	H014SB013	0	1	8-8-01/1032	SO	4				X				H014SB005 - E	MSD	
1401	H014SB014	0	1	8-8-01/1034	SO	4				X				H014SB005 - S	002	
1501	H014SB015	0	1	8-8-01/1036	SO	4				X				H014SB005 - W	003	
1601	H014SB016	0	1	8-8-01/1050	SO	4				X				H014SB006 - N	004	
1701	H014SB017	0	1	8-8-01/1052	SO	4				X				H014SB006 - E	005	
1801	H014SB018	0	1	8-8-01/1054	SO	4				X				H014SB006 - S	006	
1901	H014SB019	0	1	8-8-01/1056	SO	4				X				H014SB006 - W	007	

Daryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

amplers: Chris Glunz, Mark Yarbrough

Lab: Mike Kimbrow Date/Time 8/10/01 1000

Relinquished by: Date/Time

Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Temperature:

ceipt Exceptions:

'2M HILL Chain of Custody/ Laboratory Analysis Form

:: GEL, Charleston, SC
me: Charleston Navy Complex
Site Name: Zone H, SWMU 14
ject Number:
TAT:
ect Manager:
Level: Level 3
Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605
ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
d Report To: see 3rd page of COC
EDD: CNC format
Lab Batch/SDG:

nple ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
)2001	H014SB020	0	1	8-8-01/1345	SO	1				X				H014SB010 - N	47308 013
)2101	H014SB021	0	1	8-8-01/1347	SO	1				X				H014SB010 - E	014
)2201	H014SB022	0	1	8-8-01/1348	SO	1				X				H014SB010 - S	015
)2301	H014SB023	0	1	8-8-01/1350	SO	1				X				H014SB010 - W	016
)2401	H014SB024	0	1	8-8-01/1130	SO	1				X				014SD21 - N	017
)2501	H014SB025	0	1	8-8-01/1132	SO	1				X				014SD21 - E	018
)2501	H014SB025	0	1	8-8-01/1132	SO	1				X				014SD21 - E	019
)2601	H014SB026	0	1	8-8-01/1134	SO	1				X				014SD21 - S	47313 010
)2701	H014SB027	0	1	8-8-01/1136	SO	1				X				014SD21 - W	011
)2801	H014SB028	0	1	8-9-01/0810	SO	1				X				014SD29 - N	012
)2901	H014SB029	0	1	8-9-01/0812	SO	1				X				014SD29 - E	013
)3001	H014SB030	0	1	8-9-01/0814	SO	1				X				014SD29 - S	014
)3101	H014SB031	0	1	8-9-01/0816	SO	1				X				014SD29 - W	015
03201	H014SB032	0	1	8-8-01/1146	SO	1				X				014SD16 - N	016
03301	H014SB033	0	1	8-8-01/1148	SO	1				X				014SD16 - E	017
03401	H014SB034	0	1	8-8-01/1150	SO	1				X				014SD16 - S	018
03501	H014SB035	0	1	8-8-01/1152	SO	1				X				014SD16 - W	019
03501	H014SB035	0	1	8-8-01/1152	SO	1				X				014SD16 - W	020
009L1	H015EB009	0	1	8-8-01/1015	SO	3	X	X	X	X	X			Water	47317 001
010L1	H015EB010	0	1	8-9-01/1550	SO	3	X	X		X	X			Water	002

y: Darnel Gates Date/Time
Relinquished by: Date/Time 8-9-01/1720
Samplers: Chris Blimpo, Mark Hardwood
ly Lab: Date/Time 8/10/01 0000
Relinquished by: Date/Time
ly: Date/Time
Shipped Via: UPS FedEx Hand Other Tracking#:
Temperature:
eceipt F ptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

ratory: GEL, Charleston, SC

ect Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
15EB011L1	H015EB011				SQ		X	X		X	X				EB ~~47317003~~

ampled By

Date/Time

Relinquished by:

Date/Time 8-9-01/1720

dditional Samplers:

eceived By Lab: [signature]

Date/Time 8/10/01 1000

Relinquished by:

Date/Time

eceived By:

Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

emarks:

Temperature:

Receipt Exceptions:

47356

CH2M HILL Chain of Custody/ Laboratory Analysis Form 47355 % 47356 %

COC Tracking #: **ZH014-080501-01** page 1 of 10

Laboratory:	GEL, Charleston, SC
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	
TAT:	7-10 day package
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see 3rd page of COC
EDD:	CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B) 1 - 4 oz jar	Lead (SW6010B) 1 - 4 oz jar	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H015SB00901	H015SB009	0	1		SO		X				X			H015SB004 - N	
H015SB01001	H015SB010	0	1		SO		X				X			H015SB004 - E	
H015SB01101	H015SB011	0	1		SO		X				X			H015SB004 - S	
H015SB01201	H015SB012	0	1		SO		X				X			H015SB004 - W	
H684SB04501	H684SB045	0	1	8-10-01/0805	SO	1					X			H684SB003 - N	
H684SB04501MS	H684SB045	0	1	8-10-01/0805	SO	1					X			H684SB003 - N	MS
H684SB04501MSD	H684SB045	0	1	8-10-01/0805	SO	1					X			H684SB003 - N	MSD
H684SB04601	H684SB046	0	1	8-10-01/0807	SO	1					X			H684SB003 - E	
H684SB04701	H684SB047	0	1	8-10-01/0809	SO	1					X			H684SB003 - S	[illegible]
H684SB04801	H684SB048	0	1	8-10-01/0811	SO	1					X			H684SB003 - W	
H684SB04901	H684SB049	0	1	8-10-01/0745	SO	1					X			H684SB004 - N	
H684SB05001	H684SB050	0	1	8-10-01/0747	SO	1					X			H684SB004 - E	
H684SB05101	H684SB051	0	1	8-10-01/0749	SO	1					X			H684SB004 - S	
H684SB05201	H684SB052	0	1	8-10-01/0751	SO	1					X			H684SB004 - W	
H684CB05201	H684SB052	0	1	8-10-01/0751	SO	1					X			H684SB004 - W	
H684SB05301	H684SB053	0	1		SO			X	X					H684SB009 - N	
H684CB05301	H684SB053	0	1		SO			X	X					H684SB009 - N	
H684SB05401	H684SB054	0	1		SO			X	X					H684SB009 - E	
H684SB05501	H684SB055	0	1		SO			X	X					H684SB009 - S	
H684SB05601	H684SB056	0	1		SO			X	X					H684SB009 - W	

Sampled By: Darryl Gates Date/Time: 8-10-01

Relinquished by: [signature] Date/Time: 8-10-01

Additional Samplers: Chris Blundy / Mark Varborough

Received By Lab: Patricia Dover Date/Time: 8/10/01 13:45

Relinquished by: Date/Time:

Received By: Date/Time:

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) (1 - 4 oz jar)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) (1 - 4 oz jar)			alias	Comments
H684SB05701	H684SB057	0	1		SO			X						H684SB014 - N	
H684SB05801	H684SB058	0	1		SO			X						H684SB014 - E	
H684SB05901	H684SB059	0	1		SO			X						H684SB014 - S	
H684SB06001	H684SB060	0	1		SO			X						H684SB014 - W	
06 H684SB06101	H684SB061	0	1	8-10-01/0835	SO	1		X						H684SB013 - N	
H684SB06201	H684SB062	0	1	8-10-01/0837	SO	1		X						H684SB013 - E	
H684SB06301	H684SB063	0	1	8-10-01/0839	SO	1		X						H684SB013 - S	
H684SB06401	H684SB064	0	1	8-10-01/0841	SO	1		X						H684SB013 - W	
H684SB06501	H684SB065	0	1	8-10-01/0905	SO	1		X						H684SB012 - N	
H684SB06601	H684SB066	0	1	8-10-01/0907	SO	1		X						H684SB012 - E	
H684SB06701	H684SB067	0	1	8-10-01/0909	SO	1		X						H684SB012 - S	
H684SB06801	H684SB068	0	1	8-10-01/0911	SO	1		X						H684SB012 - W	
H684SB06901	H684SB069	0	1	8-10-01/0920	SO	1		X						H684SB018 - N	
H684SB07001	H684SB070	0	1	8-10-01/0922	SO	1		X						H684SB018 - E	
H684SB07101	H684SB071	0	1	8-10-01/0924	SO	1		X						H684SB018 - S	
H684SB07201	H684SB072	0	1	8-10-01/0926	SO	1		X						H684SB018 - W	
H684SB07301	H684SB073	0	1	8-10-01/0940	SO	1		X						H684SB017 - N	
H684SB07401	H684SB074	0	1	8-10-01/0942	SO	1		X						H684SB017 - E	
H684CB07401	H684SB074	0	1	8-10-01/0942	SO	1		X						H684SB017 - E	
H684SB07501	H684SB075	0	1	8-10-01/0944	SO	1		X						H684SB017 - S	

Sampled By: Darryl Gates Date/Time: 8-10-01

Relinquished by: Chris Bluey Date/Time: 8-10-01/134

Additional Samplers: Chris Bluey / Mack Yarborough

Received By Lab: Patricia Dover Date/Time: 8/10/01 13:45

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H684SB07601	H684SB076	0	1	8-10-01/0946	SO	1		X						H684SB017 - W	
H684SB07701	H684SB077	0	1	8-10-01/1026	SO	1					X			H684SB020 - N	
H684SB07801	H684SB078	0	1	8-10-01/1028	SO	1					X			H684SB020 - E	
H684SB07901	H684SB079	0	1	8-10-01/1030	SO	1					X			H684SB020 - S	
H684SB08001	H684SB080	0	1	8-10-01/1032	SO	1					X			H684SB020 - W	
H684SB08101	H684SB081	0	1	8-10-01/1006	SO	1					X			H684SB021 - N	
H684SB08201	H684SB082	0	1	8-10-01/1008	SO	1					X			H684SB021 - E	
H684SB08301	H684SB083	0	1	8-10-01/1010	SO	1					X			H684SB021 - S	
H684SB08401	H684SB084	0	1	8-10-01/1012	SO	1					X			H684SB021 - W	
H684SB08501	H684SB085	0	1	8-10-01/1045	SO	1					X			H684SB023 - N	
H684SB08601	H684SB086	0	1	8-10-01/1047	SO	1					X			H684SB023 - E	
H684CB08601	H684SB086	0	1	8-10-01/1047	SO	1					X			H684SB023 - E	
H684SB08701	H684SB087	0	1	8-10-01/1049	SO	1					X			H684SB023 - S	
H684SB08801	H684SB088	0	1	8-10-01/1051	SO	1					X			H684SB023 - W	
H684SB08901	H684SB089	0	1	8-10-01/1100	SO	1					X			H684SB024 - N	
H684SB09001	H684SB090	0	1	8-10-01/1102	SO	1					X			H684SB024 - E	
H684SB09101	H684SB091	0	1	8-10-01/1104	SO	1					X			H684SB024 - S	
H684SB09201	H684SB092	0	1	8-10-01/1106	SO	1					X			H684SB024 - W	
H684SB09301	H684SB093	0	1		SO						X			H684SB044 - N	
H684SB09401	H684SB094	0	1		SO						X			H684SB044 - E	

Sampled By: Darrel Gates Date/Time: 8-10-01

Relinquished by: [signature] Date/Time: 8/10-01/1345

Additional Samplers: Chris Blomay / Mark Lumborough

Received By Lab: Patricia Oliver Date/Time: 8/10/01 13:45

Relinquished by: Date/Time:

Received By: Date/Time:

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature: 5°

Receipt Exceptions:

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
											1-4 oz jar 32oz-1 Poly	1-4 oz jar 2-1 liter			
H015EB011L1	H015EB011			8-10-01 / 1115	SQ	3	X	X		X	X				EB

Sampled By Darryl Gates Date/Time 8-10-01

Additional Samplers: Chris Bivins / Mack Yarborough.

Received By Lab: Patrice Davis Date/Time 8/10/01 12:45

Received By: Date/Time

Remarks:

Relinquished by: Date/Time 8-10-01/1345

Relinquished by: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Temperature:

47296

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 1 of 10

Laboratory:	GEL, Charleston, SC
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	
TAT:	7-10 day package
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see 3rd page of COC
EDD:	CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H015SB00901	H015SB009	0	1	8-9-01/1400	SO	2	X				X			H015SB004 - N	47296 001
H015SB01001	H015SB010	0	1	8-9-01/1402	SO	2	X				X			H015SB004 - E	002
H015SB01101	H015SB011	0	1	8-9-01/1404	SO	2	X				X			H015SB004 - S	003
H015SB01201	H015SB012	0	1	8-9-01/1406	SO	2	X				X			H015SB004 - W	004
H684SB04501	H684SB045	0	1		SO						X			H684SB003 - N	
H684SB04501MS	H684SB045	0	1		SO						X			H684SB003 - N	MS NA
H684SB04501MSD	H684SB045	0	1		SO						X			H684SB003 - N	MSD
H684SB04601	H684SB046	0	1		SO						X			H684SB003 - E	
H684SB04701	H684SB047	0	1		SO						X			H684SB003 - S	
H684SB04801	H684SB048	0	1		SO						X			H684SB003 - W	
H684SB04901	H684SB049	0	1		SO						X			H684SB004 - N	
H684SB05001	H684SB050	0	1		SO						X			H684SB004 - E	
H684SB05101	H684SB051	0	1		SO						X			H684SB004 - S	
H684SB05201	H684SB052	0	1		SO						X			H684SB004 - W	
H684CB05201	H684SB052	0	1		SO						X			H684SB004 - W	
H684SB05301	H684SB053	0	1	8-8-01/1515	SO	1		X	X					H684SB009 - N	47296 005
H684CB05301	H684SB053	0	1	8-8-01/1515	SO	1		X	X					H684SB009 - N	006
H684SB05401	H684SB054	0	1	8-8-01/1519	SO	1		X	X					H684SB009 - E	007
H684SB05501	H684SB055	0	1	8-8-01/1520	SO	1		X	X					H684SB009 - S	008
H684SB05601	H684SB056	0	1	8-8-01/1522	SO	1		X	X					H684SB009 - W	009

Sampled By: Darryl Gates Date/Time:

Relinquished by: [signature] Date/Time: 8-9-01/1720

Additional Samplers: Chris Bluyas / Marie Yarbourgh

Received By Lab: [signature] Date/Time: 8/10/01 1000

Relinquished by: Date/Time:

Received By: Date/Time:

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 2 of ..

ratory: GEL, Charleston, SC

ct Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
4SB05701	H684SB057	0	1	8-9-01/1520	SO	1		X						H684SB014 - N	47297 001
4SB05801	H684SB058	0	1	8-9-01/1522	SO	1		X						H684SB014 - E	002
4SB05901	H684SB059	0	1	8-9-01/1524	SO	1		X						H684SB014 - S	003
4SB06001	H684SB060	0	1	8-9-01/1526	SO	1		X						H684SB014 - W	004
4SB06101	H684SB061	0	1		SO			X						H684SB013 - N	
4SB06201	H684SB062	0	1		SO			X						H684SB013 - E	
4SB06301	H684SB063	0	1		SO			X						H684SB013 - S	
4SB06401	H684SB064	0	1		SO			X						H684SB013 - W	
4SB06501	H684SB065	0	1		SO			X						H684SB012 - N	
4SB06601	H684SB066	0	1		SO			X						H684SB012 - E	
4SB06701	H684SB067	0	1		SO			X						H684SB012 - S	
4SB06801	H684SB068	0	1		SO			X						H684SB012 - W	
4SB06901	H684SB069	0	1		SO			X						H684SB018 - N	
4SB07001	H684SB070	0	1		SO			X						H684SB018 - E	
4SB07101	H684SB071	0	1		SO			X						H684SB018 - S	
4SB07201	H684SB072	0	1		SO			X						H684SB018 - W	
4SB07301	H684SB073	0	1		SO			X						H684SB017 - N	
4SB07401	H684SB074	0	1		SO			X						H684SB017 - E	
4CB07401	H684SB074	0	1		SO			X						H684SB017 - E	
4SB07501	H684SB075	0	1		SO			X						H684SB017 - S	

ted By Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

onal Samplers: Chris Blundy, Mark Yarbrough

ved By Lab: Mike Kanber Date/Time 8/10/01 1000

Relinquished by: Date/Time

ved By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

rks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 3 of 10

atory: GEL, Charleston, SC

ct Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
SB07601	H684SB076	0	1		SO			X						H684SB017 - W	
SB07701	H684SB077	0	1		SO						X			H684SB020 - N	
SB07801	H684SB078	0	1		SO						X			H684SB020 - E	
SB07901	H684SB079	0	1		SO						X			H684SB020 - S	
SB08001	H684SB080	0	1		SO						X			H684SB020 - W	
SB08101	H684SB081	0	1		SO						X			H684SB021 - N	
SB08201	H684SB082	0	1		SO						X			H684SB021 - E	
SB08301	H684SB083	0	1		SO						X			H684SB021 - S	
SB08401	H684SB084	0	1		SO						X			H684SB021 - W	
SB08501	H684SB085	0	1		SO						X			H684SB023 - N	
SB08601	H684SB086	0	1		SO						X			H684SB023 - E	
CB08601	H684SB086	0	1		SO						X			H684SB023 - E	
SB08701	H684SB087	0	1		SO						X			H684SB023 - S	
SB08801	H684SB088	0	1		SO						X			H684SB023 - W	
SB08901	H684SB089	0	1		SO						X			H684SB024 - N	
SB09001	H684SB090	0	1		SO						X			H684SB024 - E	
SB09101	H684SB091	0	1		SO						X			H684SB024 - S	
SB09201	H684SB092	0	1		SO						X			H684SB024 - W	47306 006
SB09301	H684SB093	0	1	8-9-01/1055	SO	1					X			H684SB044 - N	[illegible]
SB09401	H684SB094	0	1	8-9-01/1057	SO	1					X			H684SB044 - E	[illegible]

led By Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

onal Samplers: Chris, Blundy, Mark Yarbough

ved By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

ived By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

rks:

Temperature:

Rec Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 4 o.

ratory: GEL, Charleston, SC

ct Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
4SB09501	H684SB095	0	1	8-9-01/1059	SO	1					X			H684SB044 - S	47297 ~~D07~~
4SB09601	H684SB096	0	1	8-9-01/1101	SO	1					X			H684SB044 - W	47306 ~~D08~~
4SB09701	H684SB097	0	1	8-9-01/1120	SO	1					X			H684SB043 - N	~~D09~~
4SB09801	H684SB098	0	1	8-9-01/1122	SO	1					X			H684SB043 - E	~~D10~~
4SB09901	H684SB099	0	1	8-9-01/1124	SO	1					X			H684SB043 - S	D11
4CB09901	H684SB099	0	1	8-9-01/1124	SO	1					X			H684SB043 - S	D12
4SB10001	H684SB100	0	1	8-9-01/1126	SO	1					X			H684SB043 - W	D13
4SB10101	H684SB101	0	1	8-9-01/1140	SO	1					X			H684SB035 - N	D14
4SB10201	H684SB102	0	1	8-9-01/1142	SO	1					X			H684SB035 - E	D15
4SB10301	H684SB103	0	1	8-9-01/1144	SO	1					X			H684SB035 - S	D16
4SB10401	H684SB104	0	1	8-9-01/1146	SO	1					X			H684SB035 - W	D17
4SB10501	H684SB105	0	1	8-9-01/1340	SO	1					X			H684SB036 - N	D18
4SB10601	H684SB106	0	1	8-9-01/1342	SO	1					X			H684SB036 - E	D19
4SB10701	H684SB107	0	1	8-9-01/1344	SO	1					X			H684SB036 - S	D19
4SB10801	H684SB108	0	1	8-9-01/1346	SO	1					X			H684SB036 - W	D20
4SB10901	H684SB109	0	1	8-9-01/1442	SO	2		X			X			H684SB015 - N	47297 ~~D21~~
4CB10901	H684SB109	0	1	8-9-01/1442	SO	2		X			X			H684SB015 - N	D14 ~~D08~~
4SB11001	H684SB110	0	1	8-9-01/1444	SO	2		X			X			H684SB015 - E	D15 ~~D07~~
4SB11101	H684SB111	0	1	8-9-01/1446	SO	2		X			X			H684SB015 - S	D16 ~~D10~~
4SB11201	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	D02 D17 ~~D11~~

led By: Darrel Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1220

onal Samplers: Chris Blundy, Mark Yarbrough

ived By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

ived By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

rks:

Temperature:

Receipt Exceptions:

Laboratory: GEL, Charleston, SC
Project Name: Charleston Navy Complex
Site Name: Zone H, SWMU 14
Project Number:
TAT:
Project Manager:
Level: Level 3
Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605
ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To: see 3rd page of COC
EDD: CNC format
Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
								1 - 4 oz jar			1 - 4 oz jar				
H684SB11201MS	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	MS
H684SB11201SD	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	MSD
H684SB11301	H684SB113	0	1	8-9-01/1305	SO	1		X						H684SB016 - N	47297 ~~005~~ ~~007~~
H684SB11401	H684SB114	0	1	8-9-01/1307	SO	1		X						H684SB016 - E	006 ~~008~~
H684SB11501	H684SB115	0	1	8-9-01/1309	SO	1		X						H684SB016 - S	007 ~~009~~
H684SB11601	H684SB116	0	1	8-9-01/1311	SO	1		X						H684SB016 - W	008 ~~010~~
H670SB03601	H670SB036	0	1	8-9-01/0905	SO	1	1			X				H670SB026 - N	47308 008
H670SB03701	H670SB037	0	1	8-9-01/0907	SO	1				X				H670SB026 - E	009
H670CB03701	H670SB037	0	1	8-9-01/0907	SO	1				X				H670SB026 - E	010
H670SB03801	H670SB038	0	1	8-9-01/0909	SO	1				X				H670SB026 - S	011
H670SB03901	H670SB039	0	1	8-9-01/0911	SO	1				X				H670SB026 - W	012
H670SB04001	H670SB040	0	1	8-9-01/1025	SO	1					X			H670SB031 - N	~~47297~~ ~~47308~~ 003
H670SB04101	H670SB041	0	1	8-9-01/1027	SO	1					X			H670SB031 - E	004
H670SB04201	H670SB042	0	1	8-9-01/1029	SO	1					X			H670SB031 - S	005
H670SB04301	H670SB043	0	1	8-9-01/1031	SO	1					X			H670SB031 - W	47309 002
H670SB04401	H670SB044	0	1	8-9-01/1005	SO	1					X			H670SB034 - N	003
H670CB04401	H670SB044	0	1	8-9-01/1005	SO	1					X			H670SB034 - N	004
H670SB04501	H670SB045	0	1	8-9-01/1007	SO	1					X			H670SB034 - E	005
H670SB04601	H670SB046	0	1	8-9-01/1009	SO	1					X			H670SB034 - S	006
H670SB04701	H670SB047	0	1	8-9-01/1011	SO	1					X			H670SB034 - W	007

Sampled By: Darryl Gates Date/Time
Relinquished by: [signature] Date/Time 8-9-01/1720
Additional Samplers: Chris Blanton, Mark Yarbrough
Received By Lab: [signature] Date/Time 8/10/01 1000
Relinquished by: Date/Time
Received By: Date/Time
Shipped Via: UPS FedEx Hand Other Tracking#:
Remarks:
Temperature:
Receipt Exceptions:

CH2M ...L Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 6 o...

...ratory: GEL, Charleston, SC

...ct Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
0SB04801	H670SB048	0	1	8-9-01/0935	SO	1					X			H670SB003 - N	47309 008
0SB04901	H670SB049	0	1	8-9-01/0937	SO	1					X			H670SB003 - E	009
0SB05001	H670SB050	0	1	8-9-01/0939	SO	1					X			H670SB003 - S	010
0SB05101	H670SB051	0	1	8-9-01/0941	SO	1					X			H670SB003 - W	011
0SB05201	H670SB052	0	1	8-8-01/1450	SO	1					X			H670SB029 - N	012
0SB05301	H670SB053	0	1	8-8-01/1452	SO	1					X			H670SB029 - E	013
0SB05301MS	H670SB053	0	1	8-8-01/1452	SO	1					X			H670SB029 - E	MS
0SB05301SD	H670SB053	0	1	8-8-01/1452	SO	1					X			H670SB029 - E	MSD
0SB05401	H670SB054	0	1	8-8-01/1454	SO	1					X			H670SB029 - S	47309 014
0SB05501	H670SB055	0	1	8-8-01/1456	SO	1					X			H670SB029 - W	015
0SB05601	H670SB056	0	1	8-9-01/0745	SO	1	X	X		X				H670SB012 - N	47313 006
0SB05701	H670SB057	0	1	8-9-01/0747	SO	1	X	X		X				H670SB012 - E	007
0SB05801	H670SB058	0	1	8-9-01/0749	SO	1	X	X		X				H670SB012 - S	008
0SB05801MS	H670SB058	0	1	8-9-01/0749	SO	1	X	X		X				H670SB012 - S	MS
0SB05801SD	H670SB058	0	1	8-9-01/0749	SO	1	X	X		X				H670SB012 - S	MSD
0SB05901	H670SB059	0	1	8-9-01/0751	SO	1	X	X		X				H670SB012 - W	009
0SB06001	H670SB060	0	1	8-8-01/1410	SO	1					X			H670SB005 - N	47309 016
0SB06101	H670SB061	0	1	8-8-01/1412	SO	1					X			H670SB005 - E	017
0SB06201	H670SB062	0	1	8-8-01/1414	SO	1					X			H670SB005 - S	018
0CB06201	H670SB062	0	1	8-8-01/1414	SO	1					X			H670SB005 - S	019

...ed By Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

...nal Samplers: Chris Blunt, Mark Yarbrough

...ed By Lab: Mike Kuiber Date/Time 8/10/01 1000

Relinquished by: Date/Time

...ed By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

...ks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 7 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H670SB06301	H670SB063	0	1	8-8-01/1416	SO	1					X			H670SB005 - W	47304 001
H670SB06401	H670SB064	0	1	8-8-01/1430	SO	1		X						H670SB009 - N	47297 009
H670SB06501	H670SB065	0	1	8-8-01/1432	SO	1		X						H670SB009 - E	010
H670SB06601	H670SB066	0	1	8-8-01/1434	SO	1		X						H670SB009 - S	011
H670SB06701	H670SB067	0	1	8-8-01/1436	SO	1		X						H670SB009 - W	012
H670SB06801	H670SB068	0	1	8-9-01/0845	SO	1	X	X		X				H670SB023 - N	47313 001
H670SB06901	H670SB069	0	1	8-9-01/0847	SO	1	X	X		X				H670SB023 - E	002
H670CB06901	H670SB069	0	1	8-9-01/0847	SO	1	X	X		X				H670SB023 - E	003
H670SB07001	H670SB070	0	1	8-9-01/0849	SO	1	X	X		X				H670SB023 - S	004
H670SB07101	H670SB071	0	1	8-9-01/0851	SO	1	X	X		X				H670SB023 - W	005
H014SB01201	H014SB012	0	1	8-8-01/1030	SO	1				X				H014SB005 - N	47308 020
H014SB01301	H014SB013	0	1	8-8-01/1032	SO	1				X				H014SB005 - E	47308 001
H014SB01301MS	H014SB013	0	1	8-8-01/1032	SO	1				X				H014SB005 - E	MS
H014SB01301SD	H014SB013	0	1	8-8-01/1032	SO	1				X				H014SB005 - E	MSD
H014SB01401	H014SB014	0	1	8-8-01/1034	SO	1				X				H014SB005 - S	002
H014SB01501	H014SB015	0	1	8-8-01/1036	SO	1				X				H014SB005 - W	003
H014SB01601	H014SB016	0	1	8-8-01/1050	SO	1				X				H014SB006 - N	004
H014SB01701	H014SB017	0	1	8-8-01/1052	SO	1				X				H014SB006 - E	005
H014SB01801	H014SB018	0	1	8-8-01/1054	SO	1				X				H014SB006 - S	006
H014SB01901	H014SB019	0	1	8-8-01/1056	SO	1				X				H014SB006 - W	007

Sampled By: Darryl Gates

Date/Time

Relinquished by: [signature]

Date/Time 8-9-01/1220

Additional Samplers: Chris Blurry, Mark Yarbrough

Received By Lab: Mike Gambar

Date/Time 8/10/01 1000

Relinquished by:

Date/Time

Received By:

Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Receipt Exceptions:

CH2M...ILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 8 of

Laboratory:	GEL, Charleston, SC
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	
TAT:	
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30348-1278
Send Report To:	see 3rd page of COC
EDD:	CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar		Nuri		1 - 4 oz jar				
H014SB02001	H014SB020	0	1	8-8-01/1345	SO	1				X				H014SB010 - N	47308 013
H014SB02101	H014SB021	0	1	8-8-01/1347	SO	1				X				H014SB010 - E	014
H014SB02201	H014SB022	0	1	8-8-01/1348	SO	1				X				H014SB010 - S	015
H014SB02301	H014SB023	0	1	8-8-01/1350	SO	1				X				H014SB010 - W	016
H014SB02401	H014SB024	0	1	8-8-01/1130	SO	1				X				014SD21 - N	017
H014SB02501	H014SB025	0	1	8-8-01/1132	SO	1				X				014SD21 - E	018
H014CB02501	H014SB025	0	1	8-8-01/1132	SO	1				X				014SD21 - E	019
H014SB02601	H014SB026	0	1	8-8-01/1134	SO	1				X				014SD21 - S	47313 010
H014SB02701	H014SB027	0	1	8-8-01/1136	SO	1				X				014SD21 - W	011
H014SB02801	H014SB028	0	1	8-9-01/0810	SO	1				X				014SD29 - N	012
H014SB02901	H014SB029	0	1	8-9-01/0812	SO	1				X				014SD29 - E	013
H014SB03001	H014SB030	0	1	8-9-01/0814	SO	1				X				014SD29 - S	014
H014SB03101	H014SB031	0	1	8-9-01/0816	SO	1				X				014SD29 - W	015
H014SB03201	H014SB032	0	1	8-8-01/1146	SO	1				X				014SD16 - N	016
H014SB03301	H014SB033	0	1	8-8-01/1148	SO	1				X				014SD16 - E	017
H014SB03401	H014SB034	0	1	8-8-01/1150	SO	1				X				014SD16 - S	018
H014SB03501	H014SB035	0	1	8-8-01/1152	SO	1				X				014SD16 - W	019
H014CB03501	H014SB035	0	1	8-8-01/1152	SO	1				X				014SD16 - W	020
H015EB009L1	H015EB009	0	1	8-8-01/1015	SO	3	X	X	X	X	X			Water	47317 001
H015EB010L1	H015EB010	0	1	8-9-01/1550	SO	3	X	X		X	X			Water	002

Sampled By: [signature] Date/Time:

Relinquished by: [signature] Date/Time: 8-9-01/1720

Additional Samplers: Chris Blundy, Mark Gardenough

Received By Lab: [signature] Date/Time: 8/10/01 1000

Relinquished by: Date/Time:

Received By: Date/Time:

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: 2H014-080501-01 page 9 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) (1 - 4 oz jar)	Antimony (SW6010B) (1 - 4 oz jar)	Thallium (SW6010B) (1 - 4 oz jar)	Lead (SW6010B) (1 - 4 oz jar)	PAHs (SW8270C) (1 - 4 oz jar)			alias	Comments
H015EB011L1	H015EB011				SQ		X	X		X	X				EB ~~47317003~~

Sampled By

Date/Time

Relinquished by:

Date/Time 8-9-01/1720

Additional Samplers:

Received By Lab: [signature]

Date/Time 8/10/01 1000

Relinquished by:

Date/Time

Received By:

Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Receipt Exceptions:

47297

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 1 of 10

Laboratory:	GEL, Charleston, SC
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	
TAT:	7-10 day package
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see 3rd page of COC
EDD:	CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
015SB00901	H015SB009	0	1	8-9-01/1400	SO	2	X				X			H015SB004 - N	47296 001
015SB01001	H015SB010	0	1	8-9-01/1402	SO	2	X				X			H015SB004 - E	002
015SB01101	H015SB011	0	1	8-9-01/1404	SO	2	X				X			H015SB004 - S	003
015SB01201	H015SB012	0	1	8-9-01/1406	SO	2	X				X			H015SB004 - W	004
684SB04501	H684SB045	0	1		SO						X			H684SB003 - N	
684SB04501MS	H684SB045	0	1		SO						X			H684SB003 - N	MS
684SB04501MSD	H684SB045	0	1		SO						X			H684SB003 - N	MSD
684SB04601	H684SB046	0	1		SO						X			H684SB003 - E	
684SB04701	H684SB047	0	1		SO						X			H684SB003 - S	
684SB04801	H684SB048	0	1		SO						X			H684SB003 - W	
684SB04901	H684SB049	0	1		SO						X			H684SB004 - N	
684SB05001	H684SB050	0	1		SO						X			H684SB004 - E	
684SB05101	H684SB051	0	1		SO						X			H684SB004 - S	
684SB05201	H684SB052	0	1		SO						X			H684SB004 - W	
684CB05201	H684SB052	0	1		SO						X			H684SB004 - W	
684SB05301	H684SB053	0	1	8-8-01/1515	SO	1		X	X					H684SB009 - N	47296 005
684CB05301	H684SB053	0	1	8-8-01/1515	SO	1		X	X					H684SB009 - N	006
684SB05401	H684SB054	0	1	8-8-01/1519	SO	1		X	X					H684SB009 - E	007
684SB05501	H684SB055	0	1	8-8-01/1520	SO	1		X	X					H684SB009 - S	008
684SB05601	H684SB056	0	1	8-8-01/1522	SO	1		X	X					H684SB009 - W	009

Sampled By: Darryl Gates Date/Time: / Relinquished by: [signature] Date/Time: 8-9-01/1720

Additional Samplers: Chris Bluvey / Mark Yarbourgh

Received By Lab: [signature] Date/Time: 8/10/01 1000 Relinquished by: Date/Time:

Received By: Date/Time: Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks: Temperature:

Receipt Exceptions:

8

CH2M HILL Chain of Custody/ Laboratory Analysis Form

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605
ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H684SB05701	H684SB057	0	1	8-9-01/1520	SO	1		X						H684SB014 - N	47297 001
H684SB05801	H684SB058	0	1	8-9-01/1522	SO	1		X						H684SB014 - E	002
H684SB05901	H684SB059	0	1	8-9-01/1524	SO	1		X						H684SB014 - S	003
H684SB06001	H684SB060	0	1	8-9-01/1526	SO	1		X						H684SB014 - W	004
H684SB06101	H684SB061	0	1		SO			X						H684SB013 - N	
H684SB06201	H684SB062	0	1		SO			X						H684SB013 - E	
H684SB06301	H684SB063	0	1		SO			X						H684SB013 - S	
H684SB06401	H684SB064	0	1		SO			X						H684SB013 - W	
H684SB06501	H684SB065	0	1		SO			X						H684SB012 - N	
H684SB06601	H684SB066	0	1		SO			X						H684SB012 - E	
H684SB06701	H684SB067	0	1		SO			X						H684SB012 - S	
H684SB06801	H684SB068	0	1		SO			X						H684SB012 - W	
H684SB06901	H684SB069	0	1		SO			X						H684SB018 - N	
H684SB07001	H684SB070	0	1		SO			X						H684SB018 - E	
H684SB07101	H684SB071	0	1		SO			X						H684SB018 - S	
H684SB07201	H684SB072	0	1		SO			X						H684SB018 - W	
H684SB07301	H684SB073	0	1		SO			X						H684SB017 - N	
H684SB07401	H684SB074	0	1		SO			X						H684SB017 - E	
H684CB07401	H684SB074	0	1		SO			X						H684SB017 - E	
H684SB07501	H684SB075	0	1		SO			X						H684SB017 - S	

Sampled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

Additional Samplers: Chris Blunay, Mark Kuebrugh

Received By Lab: Mike Kendor Date/Time 8/10/01 1000

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 3 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
H684SB07601	H684SB076	0	1		SO			X						H684SB017 - W	
H684SB07701	H684SB077	0	1		SO						X			H684SB020 - N	
H684SB07801	H684SB078	0	1		SO						X			H684SB020 - E	
H684SB07901	H684SB079	0	1		SO						X			H684SB020 - S	
H684SB08001	H684SB080	0	1		SO						X			H684SB020 - W	
H684SB08101	H684SB081	0	1		SO						X			H684SB021 - N	
H684SB08201	H684SB082	0	1		SO						X			H684SB021 - E	
H684SB08301	H684SB083	0	1		SO						X			H684SB021 - S	
H684SB08401	H684SB084	0	1		SO						X			H684SB021 - W	
H684SB08501	H684SB085	0	1		SO						X			H684SB023 - N	
H684SB08601	H684SB086	0	1		SO						X			H684SB023 - E	
H684CB08601	H684SB086	0	1		SO						X			H684SB023 - E	
H684SB08701	H684SB087	0	1		SO						X			H684SB023 - S	
H684SB08801	H684SB088	0	1		SO						X			H684SB023 - W	
H684SB08901	H684SB089	0	1		SO						X			H684SB024 - N	
H684SB09001	H684SB090	0	1		SO						X			H684SB024 - E	
H684SB09101	H684SB091	0	1		SO						X			H684SB024 - S	
H684SB09201	H684SB092	0	1		SO						X			H684SB024 - W	47306 006
H684SB09301	H684SB093	0	1	8-9-01/1055	SO	1					X			H684SB044 - N	~~47297 007~~
H684SB09401	H684SB094	0	1	8-9-01/1057	SO	1					X			H684SB044 - E	002 ~~[illegible]~~

Sampled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

Additional Samplers: Chris, Blundy, Mark Yarbough

Received By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Receipt Exceptions:

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
H684SB09501	H684SB095	0	1	8-9-01/1059	SO	1					X			H684SB044 - S	~~47297 007~~ 006
H684SB09601	H684SB096	0	1	8-9-01/1101	SO	1					X			H684SB044 - W	47306 ~~008~~ 007
H684SB09701	H684SB097	0	1	8-9-01/1120	SO	1					X			H684SB043 - N	~~009~~ 008
H684SB09801	H684SB098	0	1	8-9-01/1122	SO	1					X			H684SB043 - E	~~010~~ 009
H684SB09901	H684SB099	0	1	8-9-01/1124	SO	1					X			H684SB043 - S	~~011~~ 010
H684CB09901	H684SB099	0	1	8-9-01/1124	SO	1					X			H684SB043 - S	~~012~~ 011
H684SB10001	H684SB100	0	1	8-9-01/1126	SO	1					X			H684SB043 - W	~~013~~ 012
H684SB10101	H684SB101	0	1	8-9-01/1140	SO	1					X			H684SB035 - N	~~014~~ 013
H684SB10201	H684SB102	0	1	8-9-01/1142	SO	1					X			H684SB035 - E	~~015~~ 014
H684SB10301	H684SB103	0	1	8-9-01/1144	SO	1					X			H684SB035 - S	~~016~~ 015
H684SB10401	H684SB104	0	1	8-9-01/1146	SO	1					X			H684SB035 - W	~~017~~ 016
H684SB10501	H684SB105	0	1	8-9-01/1340	SO	1					X			H684SB036 - N	~~018~~ 017
H684SB10601	H684SB106	0	1	8-9-01/1342	SO	1					X			H684SB036 - E	~~019~~ 018
H684SB10701	H684SB107	0	1	8-9-01/1344	SO	1					X			H684SB036 - S	019
H684SB10801	H684SB108	0	1	8-9-01/1346	SO	1					X			H684SB036 - W	020
H684SB10901	H684SB109	0	1	8-9-01/1442	SO	2		X			X			H684SB015 - N	47297 013 ~~007~~
H684CB10901	H684SB109	0	1	8-9-01/1442	SO	2		X			X			H684SB015 - N	014 ~~008~~
H684SB11001	H684SB110	0	1	8-9-01/1444	SO	2		X			X			H684SB015 - E	015 ~~009~~
H684SB11101	H684SB111	0	1	8-9-01/1446	SO	2		X			X			H684SB015 - S	016 ~~010~~
H684SB11201 56	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	017 ~~011~~

Sampled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1220

Additional Samplers: Chris Blundy, Mark Yarborough

Received By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 5 of 10

oratory: GEL, Charleston, SC

ject Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
684SB11201MS	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	MS
684SB11201SD	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	MSD / 005
684SB11301	H684SB113	0	1	8-9-01/1305	SO	1		X						H684SB016 - N	47297
684SB11401	H684SB114	0	1	8-9-01/1307	SO	1		X						H684SB016 - E	006
684SB11501	H684SB115	0	1	8-9-01/1309	SO	1		X						H684SB016 - S	007
684SB11601	H684SB116	0	1	8-9-01/1311	SO	1		X						H684SB016 - W	008
670SB03601	H670SB036	0	1	8-9-01/0905	SO	1	1			X				H670SB026 - N	47308 008
670SB03701	H670SB037	0	1	8-9-01/0907	SO	1				X				H670SB026 - B	009
670CB03701	H670SB037	0	1	8-9-01/0907	SO	1				X				H670SB026 - E	010
670SB03801	H670SB038	0	1	8-9-01/0909	SO	1				X				H670SB026 - S	011
670SB03901	H670SB039	0	1	8-9-01/0911	SO	1				X				H670SB026 - W	012
670SB04001	H670SB040	0	1	8-9-01/1025	SO	1					X			H670SB031 - N	~~47297~~ 47308
670SB04101	H670SB041	0	1	8-9-01/1027	SO	1					X			H670SB031 - E	001
670SB04201	H670SB042	0	1	8-9-01/1029	SO	1					X			H670SB031 - S	002
670SB04301	H670SB043	0	1	8-9-01/1031	SO	1					X			H670SB031 - W	47309 002
670SB04401	H670SB044	0	1	8-9-01/1005	SO	1					X			H670SB034 - N	003
670CB04401	H670SB044	0	1	8-9-01/1005	SO	1					X			H670SB034 - N	004
670SB04501	H670SB045	0	1	8-9-01/1007	SO	1					X			H670SB034 - E	005
670SB04601	H670SB046	0	1	8-9-01/1009	SO	1					X			H670SB034 - S	006
670SB04701	H670SB047	0	1	8-9-01/1011	SO	1					X			H670SB034 - W	007

mpled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1722

dditional Samplers: Chris Blanton, Mark Yarborough

eceived By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

eceived By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

emarks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 6 of 10

oratory: GEL, Charleston, SC

ject Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B) 1 - 4 oz jar	Lead (SW6010B) 1 - 4 oz jar	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
70SB04801	H670SB048	0	1	8-9-01/0935	SO	1					X			H670SB003 - N	47309 008
70SB04901	H670SB049	0	1	8-9-01/0937	SO	1					X			H670SB003 - E	009
70SB05001	H670SB050	0	1	8-9-01/0939	SO	1					X			H670SB003 - S	010
70SB05101	H670SB051	0	1	8-9-01/0941	SO	1					X			H670SB003 - W	011
70SB05201	H670SB052	0	1	8-8-01/1450	SO	1					X			H670SB029 - N	012
70SB05301	H670SB053	0	1	8-8-01/1452	SO	1					X			H670SB029 - E	013
70SB05301MS	H670SB053	0	1	8-8-01/1452	SO	1					X			H670SB029 - E	MS
70SB05301SD	H670SB053	0	1	8-8-01/1452	SO	1					X			H670SB029 - E	MSD
70SB05401	H670SB054	0	1	8-8-01/1454	SO	1					X			H670SB029 - S	47309 014
70SB05501	H670SB055	0	1	8-8-01/1456	SO	1					X			H670SB029 - W	015
70SB05601	H670SB056	0	1	8-9-01/0745	SO	1	X	X		X				H670SB012 - N	47313 006
70SB05701	H670SB057	0	1	8-9-01/0747	SO	1	X	X		X				H670SB012 - E	007
70SB05801 A5/56	H670SB058	0	1	8-9-01/0749	SO	1	X	X		X				H670SB012 - S	008
70SB05801MS	H670SB058	0	1	8-9-01/0749	SO	1	X	X		X				H670SB012 - S	MS
670SB05801SD	H670SB058	0	1	8-9-01/0749	SO	1	X	X		X				H670SB012 - S	MSD
670SB05901	H670SB059	0	1	8-9-01/0751	SO	1	X	X		X				H670SB012 - W	009
670SB06001	H670SB060	0	1	8-8-01/1410	SO	1					X			H670SB005 - N	47309 016
670SB06101	H670SB061	0	1	8-8-01/1412	SO	1					X			H670SB005 - E	017
670SB06201	H670SB062	0	1	8-8-01/1414	SO	1					X			H670SB005 - S	018
670CB06201	H670SB062	0	1	8-8-01/1414	SO	1					X			H670SB005 - S	019

mpled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

dditional Samplers: Chris Blundy, Mark Yarbrough

eceived By Lab: Mike Kirby Date/Time 8/10/01 1000

Relinquished by: Date/Time

eceived By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

emarks:

Temperature:

R ·ipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 7 of 10

oratory: GEL, Charleston, SC

ject Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
70SB06301	H670SB063	0	1	8-8-01/1416	SO	1					X			H670SB005 - W	47309 001
70SB06401	H670SB064	0	1	8-8-01/1430	SO	1		X						H670SB009 - N	47297 009
70SB06501	H670SB065	0	1	8-8-01/1432	SO	1		X						H670SB009 - E	010
70SB06601	H670SB066	0	1	8-8-01/1434	SO	1		X						H670SB009 - S	011
70SB06701	H670SB067	0	1	8-8-01/1436	SO	1		X						H670SB009 - W	012
70SB06801	H670SB068	0	1	8-9-01/0845	SO	1	X	X		X				H670SB023 - N	47313 001
70SB06901	H670SB069	0	1	8-9-01/0847	SO	1	X	X		X				H670SB023 - E	002
70CB06901	H670SB069	0	1	8-9-01/0847	SO	1	X	X		X				H670SB023 - E	003
70SB07001	H670SB070	0	1	8-9-01/0849	SO	1	X	X		X				H670SB023 - S	004
70SB07101	H670SB071	0	1	8-9-01/0851	SO	1	X	X		X				H670SB023 - W	005
014SB01201	H014SB012	0	1	8-8-01/1030	SO	1				X				H014SB005 - N	47308 020
014SB01301	H014SB013	0	1	8-8-01/1032	SO	1				X				H014SB005 - E	47308 001
014SB01301MS	H014SB013	0	1	8-8-01/1032	SO	1				X				H014SB005 - E	MS for [illegible]
014SB01301SD	H014SB013	0	1	8-8-01/1032	SO	1				X				H014SB005 - E	MSD
014SB01401	H014SB014	0	1	8-8-01/1034	SO	1				X				H014SB005 - S	002
014SB01501	H014SB015	0	1	8-8-01/1036	SO	1				X				H014SB005 - W	003
014SB01601	H014SB016	0	1	8-8-01/1050	SO	1				X				H014SB006 - N	004
014SB01701	H014SB017	0	1	8-8-01/1052	SO	1				X				H014SB006 - E	005
014SB01801	H014SB018	0	1	8-8-01/1054	SO	1				X				H014SB006 - S	006
014SB01901	H014SB019	0	1	8-8-01/1056	SO	1				X				H014SB006 - W	007

mpled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

ditional Samplers: Chris Blundy, Mark Yarborough

eceived By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

eceived By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

emarks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 8 of 10

oratory: GEL, Charleston, SC

ject Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
014SB02001	H014SB020	0	1	8-8-01/1345	SO	1				X				H014SB010 - N	47308 013
014SB02101	H014SB021	0	1	8-8-01/1347	SO	1				X				H014SB010 - E	014
014SB02201	H014SB022	0	1	8-8-01/1348	SO	1				X				H014SB010 - S	015
014SB02301	H014SB023	0	1	8-8-01/1350	SO	1				X				H014SB010 - W	016
014SB02401	H014SB024	0	1	8-8-01/1130	SO	1				X				014SD21 - N	017
014SB02501	H014SB025	0	1	8-8-01/1132	SO	1				X				014SD21 - E	018
014CB02501	H014SB025	0	1	8-8-01/1132	SO	1				X				014SD21 - E	019
014SB02601	H014SB026	0	1	8-8-01/1134	SO	1				X				014SD21 - S	47313 010
014SB02701	H014SB027	0	1	8-8-01/1136	SO	1				X				014SD21 - W	011
014SB02801	H014SB028	0	1	8-9-01/0810	SO	1				X				014SD29 - N	012
014SB02901	H014SB029	0	1	8-9-01/0812	SO	1				X				014SD29 - E	013
014SB03001	H014SB030	0	1	8-9-01/0814	SO	1				X				014SD29 - S	014
014SB03101	H014SB031	0	1	8-9-01/0816	SO	1				X				014SD29 - W	015
014SB03201	H014SB032	0	1	8-8-01/1146	SO	1				X				014SD16 - N	016
014SB03301	H014SB033	0	1	8-8-01/1148	SO	1				X				014SD16 - E	017
014SB03401	H014SB034	0	1	8-8-01/1150	SO	1				X				014SD16 - S	018
014SB03501	H014SB035	0	1	8-8-01/1152	SO	1				X				014SD16 - W	019
014CB03501	H014SB035	0	1	8-8-01/1152	SO	1				X				014SD16 - W	020
015EB009L1	H015EB009	0	1	8-8-01/1015	SO	3	X	X	X	X	X			Water	47317 001
015EB010L1	H015EB010	0	1	8-9-01/1550	SO	3	X	X		X	X			Water	002

mpled By: [signature] Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

ditional Samplers: Chris Blundy, Mark Gaubrough

eceived By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

eceived By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

emarks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 5 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) (1 - 4 oz jar)	Antimony (SW6010B) (1 - 4 oz jar)	Thallium (SW6010B) (1 - 4 oz jar)	Lead (SW6010B) (1 - 4 oz jar)	PAHs (SW8270C) (1 - 4 oz jar)			alias	Comments
H015EB011L1	H015EB011				SQ		X	X		X	X				EB ~~4721703~~

Sampled By

Date/Time

Relinquished by:

Date/Time 8-9-01/1720

Additional Samplers:

Received By Lab: [signature]

Date/Time 8/10/01 1000

Relinquished by:

Date/Time

Received By:

Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Receipt Exceptions:

47306

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 1 of 10

Laboratory:	GEL, Charleston, SC
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	
TAT:	7-10 day package
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see 3rd page of COC
EDD:	CNC format
Lab Batch/SDG:	

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) (1 - 4 oz jar)	Antimony (SW6010B) (1 - 4 oz jar)	Thallium (SW6010B) (1 - 4 oz jar)	Lead (SW6010B) (1 - 4 oz jar)	PAHs (SW8270C) (1 - 4 oz jar)			alias	Comments
H015SB00901	H015SB009	0	1	8-9-01/1400	SO	2	X				X			H015SB004 - N	47296 001
H015SB01001	H015SB010	0	1	8-9-01/1402	SO	2	X				X			H015SB004 - E	002
H015SB01101	H015SB011	0	1	8-9-01/1404	SO	2	X				X			H015SB004 - S	003
H015SB01201	H015SB012	0	1	8-9-01/1406	SO	2	X				X			H015SB004 - W	004
H684SB04501	H684SB045	0	1		SO						X			H684SB003 - N	
H684SB04501MS	H684SB045	0	1		SO						X			H684SB003 - N	MS
H684SB04501MSD	H684SB045	0	1		SO						X			H684SB003 - N	MSD
H684SB04601	H684SB046	0	1		SO						X			H684SB003 - E	
H684SB04701	H684SB047	0	1		SO						X			H684SB003 - S	
H684SB04801	H684SB048	0	1		SO						X			H684SB003 - W	
H684SB04901	H684SB049	0	1		SO						X			H684SB004 - N	
H684SB05001	H684SB050	0	1		SO						X			H684SB004 - E	
H684SB05101	H684SB051	0	1		SO						X			H684SB004 - S	
H684SB05201	H684SB052	0	1		SO						X			H684SB004 - W	
H684CB05201	H684SB052	0	1		SO						X			H684SB004 - W	
H684SB05301	H684SB053	0	1	8-8-01/1515	SO	1		X	X					H684SB009 - N	47296 005
H684CB05301	H684SB053	0	1	8-8-01/1515	SO	1		X	X					H684SB009 - N	006
H684SB05401	H684SB054	0	1	8-8-01/1519	SO	1		X	X					H684SB009 - E	007
H684SB05501	H684SB055	0	1	8-8-01/1520	SO	1		X	X					H684SB009 - S	008
H684SB05601	H684SB056	0	1	8-8-01/1522	SO	1		X	X					H684SB009 - W	009

Sampled By: Darryl Gates Date/Time:

Relinquished by: [signature] Date/Time: 8-9-01/1720

Additional Samplers: Chris Bluyou / Marie Yarbourgh

Received By Lab: [signature] Date/Time: 8/10/01 1000

Relinquished by: Date/Time:

Received By: Date/Time:

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks: Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 2 of 10

ratory: GEL, Charleston, SC

ct Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
SB05701	H684SB057	0	1	8-9-01/1520	SO	1		X						H684SB014 - N	47297 001
SB05801	H684SB058	0	1	8-9-01/1522	SO	1		X						H684SB014 - E	002
SB05901	H684SB059	0	1	8-9-01/1524	SO	1		X						H684SB014 - S	003
SB06001	H684SB060	0	1	8-9-01/1526	SO	1		X						H684SB014 - W	004
SB06101	H684SB061	0	1		SO			X						H684SB013 - N	
SB06201	H684SB062	0	1		SO			X						H684SB013 - E	
SB06301	H684SB063	0	1		SO			X						H684SB013 - S	
SB06401	H684SB064	0	1		SO			X						H684SB013 - W	
SB06501	H684SB065	0	1		SO			X						H684SB012 - N	
SB06601	H684SB066	0	1		SO			X						H684SB012 - E	
SB06701	H684SB067	0	1		SO			X						H684SB012 - S	
SB06801	H684SB068	0	1		SO			X						H684SB012 - W	
SB06901	H684SB069	0	1		SO			X						H684SB018 - N	
SB07001	H684SB070	0	1		SO			X						H684SB018 - E	
SB07101	H684SB071	0	1		SO			X						H684SB018 - S	
SB07201	H684SB072	0	1		SO			X						H684SB018 - W	
SB07301	H684SB073	0	1		SO			X						H684SB017 - N	
SB07401	H684SB074	0	1		SO			X						H684SB017 - E	
CB07401	H684SB074	0	1		SO			X						H684SB017 - E	
SB07501	H684SB075	0	1		SO			X						H684SB017 - S	

ed By Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

nal Samplers: Chris Blundy, Mark Yarbrough

ed By Lab: Mike Kandor Date/Time 8/10/01 1000

Relinquished by: Date/Time

ed By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

rks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 3 of 10

Laboratory:	GEL, Charleston, SC
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	
TAT:	
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see 3rd page of COC
EDD:	CNC format
Lab Batch/SDG:	

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B) 1 - 4 oz jar	Lead (SW6010B) 1 - 4 oz jar	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H684SB07601	H684SB076	0	1		SO			X						H684SB017 - W	
H684SB07701	H684SB077	0	1		SO						X			H684SB020 - N	
H684SB07801	H684SB078	0	1		SO						X			H684SB020 - E	
H684SB07901	H684SB079	0	1		SO						X			H684SB020 - S	
H684SB08001	H684SB080	0	1		SO						X			H684SB020 - W	
H684SB08101	H684SB081	0	1		SO						X			H684SB021 - N	
H684SB08201	H684SB082	0	1		SO						X			H684SB021 - E	
H684SB08301	H684SB083	0	1		SO						X			H684SB021 - S	
H684SB08401	H684SB084	0	1		SO						X			H684SB021 - W	
H684SB08501	H684SB085	0	1		SO						X			H684SB023 - N	
H684SB08601	H684SB086	0	1		SO						X			H684SB023 - E	
H684CB08601	H684SB086	0	1		SO						X			H684SB023 - E	
H684SB08701	H684SB087	0	1		SO						X			H684SB023 - S	
H684SB08801	H684SB088	0	1		SO						X			H684SB023 - W	
H684SB08901	H684SB089	0	1		SO						X			H684SB024 - N	
H684SB09001	H684SB090	0	1		SO						X			H684SB024 - E	
H684SB09101	H684SB091	0	1		SO						X			H684SB024 - S	
H684SB09201	H684SB092	0	1		SO						X			H684SB024 - W	47326 [illegible]
H684SB09301	H684SB093	0	1	8-9-01/1055	SO	1					X			H684SB044 - N	47[illegible]
H684SB09401	H684SB094	0	1	8-9-01/1057	SO	1					X			H684SB044 - E	[illegible]

Sampled By: Darryl Gates Date/Time:

Relinquished by: [signature] Date/Time: 8-9-01/1720

Additional Samplers: Chris Blunt, Mark Yarbrough

Received By Lab: [signature] Date/Time: 8/10/01 1000

Relinquished by: Date/Time:

Received By: Date/Time:

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 4 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
H684SB09501	H684SB095	0	1	8-9-01/1059	SO	1					X			H684SB044 - S	~~47297~~ ~~007~~ 006
H684SB09601	H684SB096	0	1	8-9-01/1101	SO	1					X			H684SB044 - W	47306 ~~008~~ 007
H684SB09701	H684SB097	0	1	8-9-01/1120	SO	1					X			H684SB043 - N	~~009~~ 008
H684SB09801	H684SB098	0	1	8-9-01/1122	SO	1					X			H684SB043 - E	~~010~~ 009
H684SB09901	H684SB099	0	1	8-9-01/1124	SO	1					X			H684SB043 - S	~~011~~ 010
H684CB09901	H684SB099	0	1	8-9-01/1124	SO	1					X			H684SB043 - S	~~012~~ 011
H684SB10001	H684SB100	0	1	8-9-01/1126	SO	1					X			H684SB043 - W	~~013~~ 012
H684SB10101	H684SB101	0	1	8-9-01/1140	SO	1					X			H684SB035 - N	~~014~~ 013
H684SB10201	H684SB102	0	1	8-9-01/1142	SO	1					X			H684SB035 - E	~~015~~ 014
H684SB10301	H684SB103	0	1	8-9-01/1144	SO	1					X			H684SB035 - S	~~016~~ 015
H684SB10401	H684SB104	0	1	8-9-01/1146	SO	1					X			H684SB035 - W	~~017~~ 016
H684SB10501	H684SB105	0	1	8-9-01/1340	SO	1					X			H684SB036 - N	~~018~~ 017
H684SB10601	H684SB106	0	1	8-9-01/1342	SO	1					X			H684SB036 - E	~~019~~ 018
H684SB10701	H684SB107	0	1	8-9-01/1344	SO	1					X			H684SB036 - S	019
H684SB10801	H684SB108	0	1	8-9-01/1346	SO	1					X			H684SB036 - W	020
H684SB10901	H684SB109	0	1	8-9-01/1442	SO	2		X			X			H684SB015 - N	47297 013 ~~007~~
H684CB10901	H684SB109	0	1	8-9-01/1442	SO	2		X			X			H684SB015 - N	014 ~~008~~
H684SB11001	H684SB110	0	1	8-9-01/1444	SO	2		X			X			H684SB015 - E	015 ~~009~~
H684SB11101	H684SB111	0	1	8-9-01/1446	SO	2		X			X			H684SB015 - S	016 ~~010~~
H684SB11201	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	1st 0 L 017 ~~011~~

Sampled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1220

Additional Samplers: Chris Blundy, Mark Yarborough

Received By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 5 of 10

Laboratory:	GEL, Charleston, SC
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	
TAT:	
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see 3rd page of COC
EDD:	CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
H684SB11201MS	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	MS
H684SB11201SD	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	MSD 005
H684SB11301	H684SB113	0	1	8-9-01/1305	SO	1		X						H684SB016 - N	47297 ~~007~~ .3
H684SB11401	H684SB114	0	1	8-9-01/1307	SO	1		X						H684SB016 - E	006 ~~008~~
H684SB11501	H684SB115	0	1	8-9-01/1309	SO	1		X						H684SB016 - S	007 ~~009~~
H684SB11601	H684SB116	0	1	8-9-01/1311	SO	1		X						H684SB016 - W	008 ~~010~~
H670SB03601	H670SB036	0	1	8-9-01/0905	SO	1	1			X				H670SB026 - N	47308 008 .6
H670SB03701	H670SB037	0	1	8-9-01/0907	SO	1				X				H670SB026 - E	009
H670CB03701	H670SB037	0	1	8-9-01/0907	SO	1				X				H670SB026 - E	010
H670SB03801	H670SB038	0	1	8-9-01/0909	SO	1				X				H670SB026 - S	011
H670SB03901	H670SB039	0	1	8-9-01/0911	SO	1				X				H670SB026 - W	012
H670SB04001	H670SB040	0	1	8-9-01/1025	SO	1					X			H670SB031 - N	~~47297~~ 47309 003 .4
H670SB04101	H670SB041	0	1	8-9-01/1027	SO	1					X			H670SB031 - E	004
H670SB04201	H670SB042	0	1	8-9-01/1029	SO	1					X			H670SB031 - S	005 .6
H670SB04301	H670SB043	0	1	8-9-01/1031	SO	1					X			H670SB031 - W	47304 002 .7
H670SB04401	H670SB044	0	1	8-9-01/1005	SO	1					X			H670SB034 - N	003
H670CB04401	H670SB044	0	1	8-9-01/1005	SO	1					X			H670SB034 - N	004
H670SB04501	H670SB045	0	1	8-9-01/1007	SO	1					X			H670SB034 - E	005
H670SB04601	H670SB046	0	1	8-9-01/1009	SO	1					X			H670SB034 - S	006
H670SB04701	H670SB047	0	1	8-9-01/1011	SO	1					X			H670SB034 - W	007

Sampled By: Darryl Gates Date/Time:

Relinquished by: [signature] Date/Time: 8-9-01/1720

Additional Samplers: Chris Blanpy, Mark Yarbrough

Received By Lab: [signature] Date/Time: 8/10/01 1000

Relinquished by: Date/Time:

Received By: Date/Time:

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Recei... /ceptions:

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H670SB04801	H670SB048	0	1	8-9-01/0935	SO	1					X			H670SB003 - N	47309 008
H670SB04901	H670SB049	0	1	8-9-01/0937	SO	1					X			H670SB003 - E	009
H670SB05001	H670SB050	0	1	8-9-01/0939	SO	1					X			H670SB003 - S	010
H670SB05101	H670SB051	0	1	8-9-01/0941	SO	1					X			H670SB003 - W	011
H670SB05201	H670SB052	0	1	8-8-01/1450	SO	1					X			H670SB029 - N	012
H670SB05301	H670SB053	0	1	8-8-01/1452	SO	1					X			H670SB029 - E	013
H670SB05301MS	H670SB053	0	1	8-8-01/1452	SO	1					X			H670SB029 - E	MS
H670SB05301SD	H670SB053	0	1	8-8-01/1452	SO	1					X			H670SB029 - E	MSD
H670SB05401	H670SB054	0	1	8-8-01/1454	SO	1					X			H670SB029 - S	47309 014
H670SB05501	H670SB055	0	1	8-8-01/1456	SO	1					X			H670SB029 - W	015
H670SB05601	H670SB056	0	1	8-9-01/0745	SO	1	X	X		X				H670SB012 - N	47313 006
H670SB05701	H670SB057	0	1	8-9-01/0747	SO	1	X	X		X				H670SB012 - E	007
H670SB05801	H670SB058	0	1	8-9-01/0749	SO	1	X	X		X				H670SB012 - S	008
H670SB05801MS	H670SB058	0	1	8-9-01/0749	SO	1	X	X		X				H670SB012 - S	MS
H670SB05801SD	H670SB058	0	1	8-9-01/0749	SO	1	X	X		X				H670SB012 - S	MSD
H670SB05901	H670SB059	0	1	8-9-01/0751	SO	1	X	X		X				H670SB012 - W	009
H670SB06001	H670SB060	0	1	8-8-01/1410	SO	1					X			H670SB005 - N	47309 016
H670SB06101	H670SB061	0	1	8-8-01/1412	SO	1					X			H670SB005 - E	017
H670SB06201	H670SB062	0	1	8-8-01/1414	SO	1					X			H670SB005 - S	018
H670CB06201	H670SB062	0	1	8-8-01/1414	SO	1					X			H670SB005 - S	019

Sampled By: Darryl Gates Date/Time:

Relinquished by: [signature] Date/Time: 8-9-01/1720

Additional Samplers: Chris Blunos, Mark Jackowski

Received By Lab: Mike Kuber Date/Time: 8/10/01 1000

Relinquished by: Date/Time:

Received By: Date/Time:

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 7 of 10

ratory: GEL, Charleston, SC

ct Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
0SB06301	H670SB063	0	1	8-8-01/1416	SO	1					X			H670SB005 - W	47309 001
0SB06401	H670SB064	0	1	8-8-01/1430	SO	1		X						H670SB009 - N	47297 009
0SB06501	H670SB065	0	1	8-8-01/1432	SO	1		X						H670SB009 - E	010
0SB06601	H670SB066	0	1	8-8-01/1434	SO	1		X						H670SB009 - S	011
0SB06701	H670SB067	0	1	8-8-01/1436	SO	1		X						H670SB009 - W	012
0SB06801	H670SB068	0	1	8-9-01/0845	SO	1	X	X		X				H670SB023 - N	47313 001
0SB06901	H670SB069	0	1	8-9-01/0847	SO	1	X	X		X				H670SB023 - E	002
0CB06901	H670SB069	0	1	8-9-01/0847	SO	1	X	X		X				H670SB023 - E	003
0SB07001	H670SB070	0	1	8-9-01/0849	SO	1	X	X		X				H670SB023 - S	004
0SB07101	H670SB071	0	1	8-9-01/0851	SO	1	X	X		X				H670SB023 - W	005
4SB01201	H014SB012	0	1	8-8-01/1030	SO	1				X				H014SB005 - N	47308 020
4SB01301	H014SB013	0	1	8-8-01/1032	SO	1				X				H014SB005 - E	47308 001
4SB01301MS	H014SB013	0	1	8-8-01/1032	SO	1				X				H014SB005 - E	MS
4SB01301SD	H014SB013	0	1	8-8-01/1032	SO	1				X				H014SB005 - E	MSD
4SB01401	H014SB014	0	1	8-8-01/1034	SO	1				X				H014SB005 - S	002
4SB01501	H014SB015	0	1	8-8-01/1036	SO	1				X				H014SB005 - W	003
4SB01601	H014SB016	0	1	8-8-01/1050	SO	1				X				H014SB006 - N	004
4SB01701	H014SB017	0	1	8-8-01/1052	SO	1				X				H014SB006 - E	005
4SB01801	H014SB018	0	1	8-8-01/1054	SO	1				X				H014SB006 - S	006
4SB01901	H014SB019	0	1	8-8-01/1056	SO	1				X				H014SB006 - W	007

ed By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

onal Samplers: Chris Blundy, Mark Yarborough

ved By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

ved By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

rks:

Temperature:

Receip. aptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 8 of 10

Laboratory:	GEL, Charleston, SC
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	
TAT:	
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see 3rd page of COC
EDD:	CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar		Near		1 - 4 oz jar				
H014SB02001	H014SB020	0	1	8-8-01/1345	SO	1				X				H014SB010 - N	47308 013
H014SB02101	H014SB021	0	1	8-8-01/1347	SO	1				X				H014SB010 - E	014
H014SB02201	H014SB022	0	1	8-8-01/1348	SO	1				X				H014SB010 - S	015
H014SB02301	H014SB023	0	1	8-8-01/1350	SO	1				X				H014SB010 - W	016
H014SB02401	H014SB024	0	1	8-8-01/1130	SO	1				X				014SD21 - N	017
H014SB02501	H014SB025	0	1	8-8-01/1132	SO	1				X				014SD21 - E	018
H014CB02501	H014SB025	0	1	8-8-01/1132	SO	1				X				014SD21 - E	019
H014SB02601	H014SB026	0	1	8-8-01/1134	SO	1				X				014SD21 - S	47313 010
H014SB02701	H014SB027	0	1	8-8-01/1136	SO	1				X				014SD21 - W	011
H014SB02801	H014SB028	0	1	8-9-01/0810	SO	1				X				014SD29 - N	012
H014SB02901	H014SB029	0	1	8-9-01/0812	SO	1				X				014SD29 - E	013
H014SB03001	H014SB030	0	1	8-9-01/0814	SO	1				X				014SD29 - S	014
H014SB03101	H014SB031	0	1	8-9-01/0816	SO	1				X				014SD29 - W	015
H014SB03201	H014SB032	0	1	8-8-01/1146	SO	1				X				014SD16 - N	016
H014SB03301	H014SB033	0	1	8-8-01/1148	SO	1				X				014SD16 - E	017
H014SB03401	H014SB034	0	1	8-8-01/1150	SO	1				X				014SD16 - S	018
H014SB03501	H014SB035	0	1	8-8-01/1152	SO	1				X				014SD16 - W	019
H014CB03501	H014SB035	0	1	8-8-01/1152	SO	1				X				014SD16 - W	020
H015EB009L1	H015EB009	0	1	8-8-01/1015	SO	3	X	X	X	X	X			Water	47317 001
H015EB010L1	H015EB010	0	1	8-9-01/1550	SO	3	X	X		X	X			Water	002

.6

.9

Sampled By: Chris Darnell Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

Additional Samplers: Chris Blundy, Mark Gaubarough

Received By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 9 of 10

Laboratory:	GEL, Charleston, SC
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	
TAT:	
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see 3rd page of COC
EDD:	CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B) 1 - 4 oz jar	Lead (SW6010B) 1 - 4 oz jar	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H015EB011L1	H015EB011				SQ		X	X		X	X				EB ~~47317003~~

Sampled By Date/Time

Relinquished by: Date/Time 8-9-01/1720

Additional Samplers:

Received By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

47309

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 1 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT: 7-10 day package

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B) 1 - 4 oz jar	Lead (SW6010B) 1 - 4 oz jar	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H015SB00901	H015SB009	0	1	8-9-01/1400	SO	2	X				X			H015SB004 - N	47296 001
H015SB01001	H015SB010	0	1	8-9-01/1402	SO	2	X				X			H015SB004 - E	002
H015SB01101	H015SB011	0	1	8-9-01/1404	SO	2	X				X			H015SB004 - S	003
H015SB01201	H015SB012	0	1	8-9-01/1406	SO	2	X				X			H015SB004 - W	004
H684SB04501	H684SB045	0	1		SO						X			H684SB003 - N	
H684SB04501MS	H684SB045	0	1		SO						X			H684SB003 - N	~~MS~~ NA
H684SB04501MSD	H684SB045	0	1		SO						X			H684SB003 - N	MSD
H684SB04601	H684SB046	0	1		SO						X			H684SB003 - E	
H684SB04701	H684SB047	0	1		SO						X			H684SB003 - S	
H684SB04801	H684SB048	0	1		SO						X			H684SB003 - W	
H684SB04901	H684SB049	0	1		SO						X			H684SB004 - N	
H684SB05001	H684SB050	0	1		SO						X			H684SB004 - E	
H684SB05101	H684SB051	0	1		SO						X			H684SB004 - S	
H684SB05201	H684SB052	0	1		SO						X			H684SB004 - W	
H684CB05201	H684SB052	0	1		SO						X			H684SB004 - W	
H684SB05301	H684SB053	0	1	8-8-01/1515	SO	1		X	X					H684SB009 - N	47296 005
H684CB05301	H684SB053	0	1	8-8-01/1515	SO	1		X	X					H684SB009 - N	006
H684SB05401	H684SB054	0	1	8-8-01/1519	SO	1		X	X					H684SB009 - E	007
H684SB05501	H684SB055	0	1	8-8-01/1520	SO	1		X	X					H684SB009 - S	008
H684SB05601	H684SB056	0	1	8-8-01/1522	SO	1		X	X					H684SB009 - W	009

Sampled By: Darryl Gates Date/Time: Relinquished by: [signature] Date/Time: 8-9-01/1720

Additional Samplers: Chris Blundy / Mark Yarbourgh

Received By Lab: [signature] Date/Time: 8/10/01 1000 Relinquished by: Date/Time:

Received By: Date/Time: Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks: Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 2 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
H684SB05701	H684SB057	0	1	8-9-01/1520	SO	1		X						H684SB014 - N	47297 001
H684SB05801	H684SB058	0	1	8-9-01/1522	SO	1		X						H684SB014 - E	002
H684SB05901	H684SB059	0	1	8-9-01/1524	SO	1		X						H684SB014 - S	003
H684SB06001	H684SB060	0	1	8-9-01/1526	SO	1		X						H684SB014 - W	004
H684SB06101	H684SB061	0	1		SO			X						H684SB013 - N	
H684SB06201	H684SB062	0	1		SO			X						H684SB013 - E	
H684SB06301	H684SB063	0	1		SO			X						H684SB013 - S	
H684SB06401	H684SB064	0	1		SO			X						H684SB013 - W	
H684SB06501	H684SB065	0	1		SO			X						H684SB012 - N	
H684SB06601	H684SB066	0	1		SO			X						H684SB012 - E	
H684SB06701	H684SB067	0	1		SO			X						H684SB012 - S	
H684SB06801	H684SB068	0	1		SO			X						H684SB012 - W	
H684SB06901	H684SB069	0	1		SO			X						H684SB018 - N	
H684SB07001	H684SB070	0	1		SO			X						H684SB018 - E	
H684SB07101	H684SB071	0	1		SO			X						H684SB018 - S	
H684SB07201	H684SB072	0	1		SO			X						H684SB018 - W	
H684SB07301	H684SB073	0	1		SO			X						H684SB017 - N	
H684SB07401	H684SB074	0	1		SO			X						H684SB017 - E	
H684CB07401	H684SB074	0	1		SO			X						H684SB017 - E	
H684SB07501	H684SB075	0	1		SO			X						H684SB017 - S	

Sampled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

Additional Samplers: Chris Blunden, Mark Hurlburgh

Received By Lab: Mike Kenber Date/Time 8/10/01 1000

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Rec... exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 3 of 10

Laboratory:	GEL, Charleston, SC
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	
TAT:	
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see 3rd page of COC
EDD:	CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
H684SB07601	H684SB076	0	1		SO			X						H684SB017 - W	
H684SB07701	H684SB077	0	1		SO						X			H684SB020 - N	
H684SB07801	H684SB078	0	1		SO						X			H684SB020 - E	
H684SB07901	H684SB079	0	1		SO						X			H684SB020 - S	
H684SB08001	H684SB080	0	1		SO						X			H684SB020 - W	
H684SB08101	H684SB081	0	1		SO						X			H684SB021 - N	
H684SB08201	H684SB082	0	1		SO						X			H684SB021 - E	
H684SB08301	H684SB083	0	1		SO						X			H684SB021 - S	
H684SB08401	H684SB084	0	1		SO						X			H684SB021 - W	
H684SB08501	H684SB085	0	1		SO						X			H684SB023 - N	
H684SB08601	H684SB086	0	1		SO						X			H684SB023 - E	
H684CB08601	H684SB086	0	1		SO						X			H684SB023 - E	
H684SB08701	H684SB087	0	1		SO						X			H684SB023 - S	
H684SB08801	H684SB088	0	1		SO						X			H684SB023 - W	
H684SB08901	H684SB089	0	1		SO						X			H684SB024 - N	
H684SB09001	H684SB090	0	1		SO						X			H684SB024 - E	
H684SB09101	H684SB091	0	1		SO						X			H684SB024 - S	
H684SB09201	H684SB092	0	1		SO						X			H684SB024 - W	47306 006
H684SB09301	H684SB093	0	1	8-9-01/1055	SO	1					X			H684SB044 - N	[illegible]
H684SB09401	H684SB094	0	1	8-9-01/1057	SO	1					X			H684SB044 - E	[illegible]

Sampled By: Darryl Gates Date/Time:

Relinquished by: [signature] Date/Time: 8-9-01/1720

Additional Samplers: Chris, Blundy, Mark Yarbough

Received By Lab: [signature] Date/Time: 8/10/01 1000

Relinquished by: Date/Time:

Received By: Date/Time:

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1 - 4 oz jar				1 - 4 oz jar				
H684SB09501	H684SB095	0	1	8-9-01/1059	SO	1					X			H684SB044 - S	47299 ~~008~~
H684SB09601	H684SB096	0	1	8-9-01/1101	SO	1					X			H684SB044 - W	47306 ~~009~~ 007
H684SB09701	H684SB097	0	1	8-9-01/1120	SO	1					X			H684SB043 - N	~~009~~ 008
H684SB09801	H684SB098	0	1	8-9-01/1122	SO	1					X			H684SB043 - E	~~010~~ 009
H684SB09901	H684SB099	0	1	8-9-01/1124	SO	1					X			H684SB043 - S	~~011~~ 010
H684CB09901	H684SB099	0	1	8-9-01/1124	SO	1					X			H684SB043 - S	~~012~~ 011
H684SB10001	H684SB100	0	1	8-9-01/1126	SO	1					X			H684SB043 - W	~~013~~ 012
H684SB10101	H684SB101	0	1	8-9-01/1140	SO	1					X			H684SB035 - N	~~014~~ 013
H684SB10201	H684SB102	0	1	8-9-01/1142	SO	1					X			H684SB035 - E	~~015~~ 014
H684SB10301	H684SB103	0	1	8-9-01/1144	SO	1					X			H684SB035 - S	~~016~~ 015
H684SB10401	H684SB104	0	1	8-9-01/1146	SO	1					X			H684SB035 - W	~~017~~ 016
H684SB10501	H684SB105	0	1	8-9-01/1340	SO	1					X			H684SB036 - N	~~018~~ 017
H684SB10601	H684SB106	0	1	8-9-01/1342	SO	1					X			H684SB036 - E	~~019~~ 018
H684SB10701	H684SB107	0	1	8-9-01/1344	SO	1					X			H684SB036 - S	019
H684SB10801	H684SB108	0	1	8-9-01/1346	SO	1					X			H684SB036 - W	020
H684SB10901	H684SB109	0	1	8-9-01/1442	SO	2		X			X			H684SB015 - N	47297 013 ~~007~~
H684CB10901	H684SB109	0	1	8-9-01/1442	SO	2		X			X			H684SB015 - N	014 ~~008~~
H684SB11001	H684SB110	0	1	8-9-01/1444	SO	2		X			X			H684SB015 - E	015 ~~009~~
H684SB11101	H684SB111	0	1	8-9-01/1446	SO	2		X			X			H684SB015 - S	016 ~~010~~
H684SB11201	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	017 ~~011~~

Sampled By: Darrel Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1220

Additional Samplers: Chris Blandy, Mark Yarbrough

Received By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Re Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H684SB11201MS	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	MS
H684SB11201SD	H684SB112	0	1	8-9-01/1448	SO	2		X			X			H684SB015 - W	MSD / 005
H684SB11301	H684SB113	0	1	8-9-01/1305	SO	1		X						H684SB016 - N	47297 007
H684SB11401	H684SB114	0	1	8-9-01/1307	SO	1		X						H684SB016 - E	008
H684SB11501	H684SB115	0	1	8-9-01/1309	SO	1		X						H684SB016 - S	009
H684SB11601	H684SB116	0	1	8-9-01/1311	SO	1		X						H684SB016 - W	008 010
H670SB03601	H670SB036	0	1	8-9-01/0905	SO	1	1			X				H670SB026 - N	47308 008
H670SB03701	H670SB037	0	1	8-9-01/0907	SO	1				X				H670SB026 - E	009
H670CB03701	H670SB037	0	1	8-9-01/0907	SO	1				X				H670SB026 - E	010
H670SB03801	H670SB038	0	1	8-9-01/0909	SO	1				X				H670SB026 - S	011
H670SB03901	H670SB039	0	1	8-9-01/0911	SO	1				X				H670SB026 - W	012
H670SB04001	H670SB040	0	1	8-9-01/1025	SO	1					X			H670SB031 - N	~~47297 007~~
H670SB04101	H670SB041	0	1	8-9-01/1027	SO	1					X			H670SB031 - E	004
H670SB04201	H670SB042	0	1	8-9-01/1029	SO	1					X			H670SB031 - S	005
H670SB04301	H670SB043	0	1	8-9-01/1031	SO	1					X			H670SB031 - W	47309 002
H670SB04401	H670SB044	0	1	8-9-01/1005	SO	1					X			H670SB034 - N	003
H670CB04401	H670SB044	0	1	8-9-01/1005	SO	1					X			H670SB034 - N	004
H670SB04501	H670SB045	0	1	8-9-01/1007	SO	1					X			H670SB034 - E	005
H670SB04601	H670SB046	0	1	8-9-01/1009	SO	1					X			H670SB034 - S	006
H670SB04701	H670SB047	0	1	8-9-01/1011	SO	1					X			H670SB034 - W	007

Sampled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

Additional Samplers: Chris Blanding, Mark Yarborough

Received By Lab: [signature] Date/Time 8/10/01 1000

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

oratory: GEL, Charleston, SC

ject Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) (1 - 4 oz jar)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) (1 - 4 oz jar)			alias	Comments
70SB04801	H670SB048	0	1	8-9-01/ 0935	SO	1					X			H670SB003 - N	47309 008
70SB04901	H670SB049	0	1	8-9-01/ 0937	SO	1					X			H670SB003 - E	009
70SB05001	H670SB050	0	1	8-9-01/ 0939	SO	1					X			H670SB003 - S	010
70SB05101	H670SB051	0	1	8-9-01/ 0941	SO	1					X			H670SB003 - W	011
70SB05201	H670SB052	0	1	8-8-01/ 1450	SO	1					X			H670SB029 - N	012
70SB05301	H670SB053	0	1	8-8-01 /1452	SO	1					X			H670SB029 - E	013
70SB05301MS	H670SB053	0	1	8-8-01/1452	SO	1					X			H670SB029 - E	MS
70SB05301SD	H670SB053	0	1	8-8-01/1452	SO	1					X			H670SB029 - E	MSD
70SB05401	H670SB054	0	1	8-8-01/1454	SO	1					X			H670SB029 - S	47309 014
70SB05501	H670SB055	0	1	8-8-01/1456	SO	1					X			H670SB029 - W	015
70SB05601	H670SB056	0	1	8-9-01/0745	SO	1	X	X		X				H670SB012 - N	47313 006
70SB05701	H670SB057	0	1	8-9-01/0747	SO	1	X	X		X				H670SB012 - E	007
70SB05801	H670SB058	0	1	8-9-01/0749	SO	1	X	X		X				H670SB012 - S	008
70SB05801MS	H670SB058	0	1	8-9-01/0749	SO	1	X	X		X				H670SB012 - S	MS
70SB05801SD	H670SB058	0	1	8-9-01/0749	SO	1	X	X		X				H670SB012 - S	MSD
70SB05901	H670SB059	0	1	8-9-01/0751	SO	1	X	X		X				H670SB012 - W	009
70SB06001	H670SB060	0	1	8-8-01/ 1410	SO	1					X			H670SB005 - N	47309 016
70SB06101	H670SB061	0	1	8-8-01/1412	SO	1					X			H670SB005 - E	017
70SB06201	H670SB062	0	1	8-8-01/1414	SO	1					X			H670SB005 - S	018
70CB06201	H670SB062	0	1	8-8-01/ 1414	SO	1					X			H670SB005 - S	019

mpled By: Darryl Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

ditional Samplers: Chris Blunda, Mark Yarbrough

ceived By Lab: Mike Kuiper Date/Time 8/10/01 1000

Relinquished by: Date/Time

ceived By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

marks:

Temperature:

Rece xceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

oratory: GEL, Charleston, SC

ject Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
670SB06301	H670SB063	0	1	8-8-01/1416	SO	1					X			H670SB005 - W	47309 001
670SB06401	H670SB064	0	1	8-8-01/1430	SO	1		X						H670SB009 - N	47297 009
670SB06501	H670SB065	0	1	8-8-01/1432	SO	1		X						H670SB009 - E	010
670SB06601	H670SB066	0	1	8-8-01/1434	SO	1		X						H670SB009 - S	011
670SB06701	H670SB067	0	1	8-8-01/1436	SO	1		X						H670SB009 - W	012
670SB06801	H670SB068	0	1	8-9-01/0845	SO	1	X	X		X				H670SB023 - N	47313 001
670SB06901	H670SB069	0	1	8-9-01/0847	SO	1	X	X		X				H670SB023 - E	002
670CB06901	H670SB069	0	1	8-9-01/0847	SO	1	X	X		X				H670SB023 - E	003
670SB07001	H670SB070	0	1	8-9-01/0849	SO	1	X	X		X				H670SB023 - S	004
670SB07101	H670SB071	0	1	8-9-01/0851	SO	1	X	X		X				H670SB023 - W	005
014SB01201	H014SB012	0	1	8-8-01/1030	SO	4				X				H014SB005 - N	47308 020
014SB01301	H014SB013	0	1	8-8-01/1032	SO	4				X				H014SB005 - E	47308 001
014SB01301MS	H014SB013	0	1	8-8-01/1032	SO	4				X				H014SB005 - E	MS
014SB01301SD	H014SB013	0	1	8-8-01/1032	SO	4				X				H014SB005 - E	MSD
014SB01401	H014SB014	0	1	8-8-01/1034	SO	4				X				H014SB005 - S	002
014SB01501	H014SB015	0	1	8-8-01/1036	SO	4				X				H014SB005 - W	003
014SB01601	H014SB016	0	1	8-8-01/1050	SO	4				X				H014SB006 - N	004
014SB01701	H014SB017	0	1	8-8-01/1052	SO	4				X				H014SB006 - E	005
014SB01801	H014SB018	0	1	8-8-01/1054	SO	4				X				H014SB006 - S	006
014SB01901	H014SB019	0	1	8-8-01/1056	SO	4				X				H014SB006 - W	007

mpled By: Darryl Gates

Date/Time

Relinquished by: [signature]

Date/Time 8-9-01/1220

ditional Samplers: Chris Glover, Mark Yarbrough

ceived By Lab: [signature]

Date/Time 8/10/01 1000

Relinquished by:

Date/Time

ceived By:

Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

marks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 8 of 10

Laboratory:	GEL, Charleston, SC
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	
TAT:	
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see 3rd page of COC
EDD:	CNC format
Lab Batch/SDG:	

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
								1 - 4 oz jar			1 - 4 oz jar				
H014SB02001	H014SB020	0	1	8-8-01/1345	SO	1				X				H014SB010 - N	47308 013
H014SB02101	H014SB021	0	1	8-8-01/1347	SO	1				X				H014SB010 - E	014
H014SB02201	H014SB022	0	1	8-8-01/1348	SO	1				X				H014SB010 - S	015
H014SB02301	H014SB023	0	1	8-8-01/1350	SO	1				X				H014SB010 - W	016
H014SB02401	H014SB024	0	1	8-8-01/1130	SO	1				X				014SD21 - N	017
H014SB02501	H014SB025	0	1	8-8-01/1132	SO	1				X				014SD21 - B	018
H014CB02501	H014SB025	0	1	8-8-01/1132	SO	1				X				014SD21 - E	019
H014SB02601	H014SB026	0	1	8-8-01/1134	SO	1				X				014SD21 - S	47313 010
H014SB02701	H014SB027	0	1	8-8-01/1136	SO	1				X				014SD21 - W	011
H014SB02801	H014SB028	0	1	8-9-01/0810	SO	1				X				014SD29 - N	012
H014SB02901	H014SB029	0	1	8-9-01/0812	SO	1				X				014SD29 - E	013
H014SB03001	H014SB030	0	1	8-9-01/0814	SO	1				X				014SD29 - S	014
H014SB03101	H014SB031	0	1	8-9-01/0816	SO	1				X				014SD29 - W	015
H014SB03201	H014SB032	0	1	8-8-01/1146	SO	1				X				014SD16 - N	016
H014SB03301	H014SB033	0	1	8-8-01/1148	SO	1				X				014SD16 - E	017
H014SB03401	H014SB034	0	1	8-8-01/1150	SO	1				X				014SD16 - S	018
H014SB03501	H014SB035	0	1	8-8-01/1152	SO	1				X				014SD16 - W	019
H014CB03501	H014SB035	0	1	8-8-01/1152	SO	1				X				014SD16 - W	020
H015EB009L1	H015EB009	0	1	8-8-01/1015	SO	3	X	X	X	X	X			Water	47317 001
H015EB010L1	H015EB010	0	1	8-9-01/1550	SO	3	X	X		X	X			Water	002

Sampled By: Eric Darnell Gates Date/Time

Relinquished by: [signature] Date/Time 8-9-01/1720

Additional Samplers: Chris Blindy, Mark Gantroughy

Received By Lab: Mike Kirsten Date/Time 8/10/01 0000

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Report Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 9 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B) 1 - 4 oz jar	Lead (SW6010B) 1 - 4 oz jar	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H015EB011L1	H015EB011				SQ		X	X		X	X				EB ~~4731703~~

Sampled By

Date/Time

Relinquished by:

Date/Time 8-9-01/1720

Additional Samplers:

Received By Lab: [signature]

Date/Time 8/10/01 1000

Relinquished by:

Date/Time

Received By:

Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

47354

CH2M HILL Chain of Custody/ Laboratory Analysis Form 47555 % 47356 %

COC Tracking #: **ZH014-080501-01** page 1 of 10

Laboratory:	GEL, Charleston, SC
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	
TAT:	7-10 day package
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see 3rd page of COC
EDD:	CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H015SB00901	H015SB009	0	1		SO		X				X			H015SB004 - N	
H015SB01001	H015SB010	0	1		SO		X				X			H015SB004 - E	
H015SB01101	H015SB011	0	1		SO		X				X			H015SB004 - S	
H015SB01201	H015SB012	0	1		SO		X				X			H015SB004 - W	
H684SB04501	H684SB045	0	1	8-10-01/0805	SO	1					X			H684SB003 - N	
H684SB04501MS	H684SB045	0	1	8-10-01/0805	SO	1					X			H684SB003 - N	MS
H684SB04501MSD	H684SB045	0	1	8-10-01/0805	SO	1					X			H684SB003 - N	MSD
H684SB04601	H684SB046	0	1	8-10-01/0807	SO	1					X			H684SB003 - B	
H684SB04701	H684SB047	0	1	8-10-01/0809	SO	1					X			H684SB003 - S	also
H684SB04801	H684SB048	0	1	8-10-01/0811	SO	1					X			H684SB003 - W	
H684SB04901	H684SB049	0	1	8-10-01/0745	SO	1					X			H684SB004 - N	
H684SB05001	H684SB050	0	1	8-10-01/0747	SO	1					X			H684SB004 - E	
H684SB05101	H684SB051	0	1	8-10-01/0749	SO	1					X			H684SB004 - S	
H684SB05201	H684SB052	0	1	8-10-01/0751	SO	1					X			H684SB004 - W	
H684CB05201	H684SB052	0	1	8-10-01/0751	SO	1					X			H684SB004 - W	
H684SB05301	H684SB053	0	1		SO			X	X					H684SB009 - N	
H684CB05301	H684SB053	0	1		SO			X	X					H684SB009 - N	
H684SB05401	H684SB054	0	1		SO			X	X					H684SB009 - E	
H684SB05501	H684SB055	0	1		SO			X	X					H684SB009 - S	
H684SB05601	H684SB056	0	1		SO			X	X					H684SB009 - W	

Sampled By: Darryl Gates Date/Time: 8-10-01

Relinquished by: [signature] Date/Time: 8-10-01

Additional Samplers: Chris Blundy / Frank Yarborough

Received By Lab: Patricia Dover Date/Time: 8/10/01 13:45

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temparature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 2 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H684SB05701	H684SB057	0	1		SO			X						H684SB014 - N	
H684SB05801	H684SB058	0	1		SO			X						H684SB014 - E	
H684SB05901	H684SB059	0	1		SO			X						H684SB014 - S	
H684SB06001	H684SB060	0	1		SO			X						H684SB014 - W	
001 H684SB06101 ✓	H684SB061	0	1	8-10-01/0835	SO	1		X						H684SB013 - N	
H684SB06201 ✓	H684SB062	0	1	8-10-01/0837	SO	1		X						H684SB013 - E	
H684SB06301 ✓	H684SB063	0	1	8-10-01/0839	SO	1		X						H684SB013 - S	
H684SB06401 ✓	H684SB064	0	1	8-10-01/0841	SO	1		X						H684SB013 - W	
H684SB06501 ✓	H684SB065	0	1	8-10-01/0905	SO	1		X						H684SB012 - N	
H684SB06601 ✓	H684SB066	0	1	8-10-01/0907	SO	1		X						H684SB012 - E	
H684SB06701 ✓	H684SB067	0	1	8-10-01/0909	SO	1		X						H684SB012 - S	
H684SB06801 ✓	H684SB068	0	1	8-10-01/0911	SO	1		X						H684SB012 - W	
H684SB06901 ✓	H684SB069	0	1	8-10-01/0920	SO	1		X						H684SB018 - N	
H684SB07001 ✓	H684SB070	0	1	8-10-01/0922	SO	1		X						H684SB018 - E	
H684SB07101 ✓	H684SB071	0	1	8-10-01/0924	SO	1		X						H684SB018 - S	
H684SB07201 ✓	H684SB072	0	1	8-10-01/0926	SO	1		X						H684SB018 - W	
H684SB07301 ✓	H684SB073	0	1	8-10-01/0940	SO	1		X						H684SB017 - N	
H684SB07401 ✓	H684SB074	0	1	8-10-01/0942	SO	1		X						H684SB017 - E	
H684CB07401 ✓	H684SB074	0	1	8-10-01/0942	SO	1		X						H684SB017 - E	
H684SB07501 ✓	H684SB075	0	1	8-10-01/0944	SO	1		X						H684SB017 - S	

Sampled By: Darryl Gates Date/Time: 8-10-01

Relinquished by: Chris Bluey Date/Time: 8-10-01/13

Additional Samplers: Chris Blundy / Mark Yarborough

Received By Lab: Patricia Dover Date/Time: 8/10/01 13:45

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form COC Tracking #: ZH014-080501-01 page 3 of 10

Laboratory: GEL, Charleston, SC
Project Name: Charleston Navy Complex
Site Name: Zone H, SWMU 14
Project Number:
TAT:
Project Manager:
Level: Level 3
Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605
ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To: see 3rd page of COC
EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B) 1 - 4 oz jar	Lead (SW6010B) 1 - 4 oz jar	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H684SB07601 ✓	H684SB076	0	1	8-10-01/0996	SO	1		X						H684SB017 - W	
H684SB07701	H684SB077	0	1	8-10-01/1026	SO	1					X			H684SB020 - N	
H684SB07801	H684SB078	0	1	8-10-01/1028	SO	1					X			H684SB020 - E	
H684SB07901	H684SB079	0	1	8-10-01/1030	SO	1					X			H684SB020 - S	
H684SB08001	H684SB080	0	1	8-10-01/1032	SO	1					X			H684SB020 - W	
H684SB08101	H684SB081	0	1	8-10-01/1006	SO	1					X			H684SB021 - N	
H684SB08201	H684SB082	0	1	8-10-01/1008	SO	1					X			H684SB021 - E	
H684SB08301	H684SB083	0	1	8-10-01/1010	SO	1					X			H684SB021 - S	
H684SB08401	H684SB084	0	1	8-10-01/1012	SO	1					X			H684SB021 - W	
H684SB08501	H684SB085	0	1	8-10-01/1045	SO	1					X			H684SB023 - N	
H684SB08601	H684SB086	0	1	8-10-01/1047	SO	1					X			H684SB023 - E	
H684CB08601	H684SB086	0	1	8-10-01/1047	SO	1					X			H684SB023 - E	
H684SB08701	H684SB087	0	1	8-10-01/1049	SO	1					X			H684SB023 - S	
H684SB08801	H684SB088	0	1	8-10-01/1051	SO	1					X			H684SB023 - W	
H684SB08901	H684SB089	0	1	8-10-01/1100	SO	1					X			H684SB024 - N	
H684SB09001	H684SB090	0	1	8-10-01/1102	SO	1					X			H684SB024 - E	
H684SB09101	H684SB091	0	1	8-10-01/1104	SO	1					X			H684SB024 - S	
H684SB09201	H684SB092	0	1	8-10-01/1106	SO	1					X			H684SB024 - W	
H684SB09301	H684SB093	0	1		SO						X			H684SB044 - N	
H684SB09401	H684SB094	0	1		SO						X			H684SB044 - E	

Sampled By: Darryl Gates Date/Time: 8-10-01
Relinquished by: [signature] Date/Time: 8-10-01/1345
Additional Samplers: Chris Blondy / Mark Yarborough
Received By Lab: Patricia Dover Date/Time: 8/10/01 13:45
Relinquished by: Date/Time:
Received By: / Date/Time:
Shipped Via: UPS FedEx Hand Other Tracking#:
Remarks:
Temperature: 5°
Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 9 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW3270C)			alias	Comments
							~~1-4 oz jar~~ 500-ml Poly				~~1-4 oz jar~~ 2-1 liter				
H015EB011L1	H015EB011			8-10-01 / 1115	SQ	3	X	X		X	X				EB

Sampled By: Darryl Gates Date/Time: 8-10-01

Relinquished by: [signature] Date/Time: 8-10-01/1[illegible]

Additional Samplers: Chris Blundy / Mack Yarborough.

Received By Lab: Patricia Davis Date/Time: 8/10/01 12:45

Relinquished by: Date/Time:

Received By: Date/Time:

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Receipt Exceptions:

47355

47354 %
47355 %
47356 %

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-080501-01 page 1 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT: 7-10 day package

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H015SB00901	H015SB009	0	1		SO		X				X			H015SB004 - N	
H015SB01001	H015SB010	0	1		SO		X				X			H015SB004 - E	
H015SB01101	H015SB011	0	1		SO		X				X			H015SB004 - S	
H015SB01201	H015SB012	0	1		SO		X				X			H015SB004 - W	
H684SB04501	H684SB045	0	1	8-10-01/0805	SO	1					X			H684SB003 - N	
H684SB04501MS	H684SB045	0	1	8-10-01/0805	SO	1					X			H684SB003 - N	MS
H684SB04501MSD	H684SB045	0	1	8-10-01/0805	SO	1					X			H684SB003 - N	MSD
H684SB04601	H684SB046	0	1	8-10-01/0807	SO	1					X			H684SB003 - E	
H684SB04701	H684SB047	0	1	8-10-01/0809	SO	1					X			H684SB003 - S	05ne
H684SB04801	H684SB048	0	1	8-10-01/0811	SO	1					X			H684SB003 - W	
H684SB04901	H684SB049	0	1	8-10-01/0745	SO	1					X			H684SB004 - N	
H684SB05001	H684SB050	0	1	8-10-01/0747	SO	1					X			H684SB004 - E	
H684SB05101	H684SB051	0	1	8-10-01/0749	SO	1					X			H684SB004 - S	
H684SB05201	H684SB052	0	1	8-10-01/0751	SO	1					X			H684SB004 - W	
H684CB05201	H684SB052	0	1	8-10-01/0751	SO	1					X			H684SB004 - W	
H684SB05301	H684SB053	0	1		SO			X	X					H684SB009 - N	
H684CB05301	H684SB053	0	1		SO			X	X					H684SB009 - N	
H684SB05401	H684SB054	0	1		SO			X	X					H684SB009 - E	
H684SB05501	H684SB055	0	1		SO			X	X					H684SB009 - S	
H684SB05601	H684SB056	0	1		SO			X	X					H684SB009 - W	

Sampled By: Darryl Gates Date/Time: 8-10-01

Relinquished by: [illegible] Date/Time: 8-10-01

Additional Samplers: Chris Blundy / Lonnie Yarborough

Received By Lab: Patricia Deer Date/Time: 8/10/01 13:45

Relinquished by: Date/Time:

Received By: Date/Time:

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Report Exceptions:

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H684SB05701	H684SB057	0	1		SO			X						H684SB014 - N	
H684SB05801	H684SB058	0	1		SO			X						H684SB014 - E	
H684SB05901	H684SB059	0	1		SO			X						H684SB014 - S	
H684SB06001	H684SB060	0	1		SO			X						H684SB014 - W	
H684SB06101	H684SB061	0	1	8-10-01/0835	SO	1		X						H684SB013 - N	
H684SB06201	H684SB062	0	1	8-10-01/0837	SO	1		X						H684SB013 - E	
H684SB06301	H684SB063	0	1	8-10-01/0839	SO	1		X						H684SB013 - S	
H684SB06401	H684SB064	0	1	8-10-01/0841	SO	1		X						H684SB013 - W	
H684SB06501	H684SB065	0	1	8-10-01/0905	SO	1		X						H684SB012 - N	
H684SB06601	H684SB066	0	1	8-10-01/0907	SO	1		X						H684SB012 - E	
H684SB06701	H684SB067	0	1	8-10-01/0909	SO	1		X						H684SB012 - S	
H684SB06801	H684SB068	0	1	8-10-01/0911	SO	1		X						H684SB012 - W	
H684SB06901	H684SB069	0	1	8-10-01/0920	SO	1		X						H684SB018 - N	
H684SB07001	H684SB070	0	1	8-10-01/0922	SO	1		X						H684SB018 - E	
H684SB07101	H684SB071	0	1	8-10-01/0924	SO	1		X						H684SB018 - S	
H684SB07201	H684SB072	0	1	8-10-01/0926	SO	1		X						H684SB018 - W	
H684SB07301	H684SB073	0	1	8-10-01/0940	SO	1		X						H684SB017 - N	
H684SB07401	H684SB074	0	1	8-10-01/0942	SO	1		X						H684SB017 - E	
H684CB07401	H684SB074	0	1	8-10-01/0942	SO	1		X						H684SB017 - E	
H684SB07501	H684SB075	0	1	8-10-01/0944	SO	1		X						H684SB017 - S	

Sampled By Darryl Gates Date/Time 8-10-01

Relinquished by: Chris Bley Date/Time 8-10-01/134

Additional Samplers: Chris Blundy / Mark Harborough

Received By Lab: Patricia Dean Date/Time 8/10/01 13:45

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZH014-080501-01** page 3 of 10

Laboratory: GEL, Charleston, SC

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number:

TAT:

Project Manager:

Level: Level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see 3rd page of COC

EDD: CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B) 1 - 4 oz jar	Antimony (SW6010B) 1 - 4 oz jar	Thallium (SW6010B) 1 - 4 oz jar	Lead (SW6010B) 1 - 4 oz jar	PAHs (SW8270C) 1 - 4 oz jar			alias	Comments
H684SB07601	H684SB076	0	1	8-10-01/0946	SO	1		X						H684SB017 - W	
H684SB07701	H684SB077	0	1	8-10-01/1026	SO	1					X			H684SB020 - N	
H684SB07801	H684SB078	0	1	8-10-01/1028	SO	1					X			H684SB020 - E	
H684SB07901	H684SB079	0	1	8-10-01/1030	SO	1					X			H684SB020 - S	
H684SB08001	H684SB080	0	1	8-10-01/1032	SO	1					X			H684SB020 - W	
H684SB08101	H684SB081	0	1	8-10-01/1006	SO	1					X			H684SB021 - N	
H684SB08201	H684SB082	0	1	8-10-01/1008	SO	1					X			H684SB021 - E	
H684SB08301	H684SB083	0	1	8-10-01/1010	SO	1					X			H684SB021 - S	
H684SB08401	H684SB084	0	1	8-10-01/1012	SO	1					X			H684SB021 - W	
H684SB08501	H684SB085	0	1	8-10-01/1045	SO	1					X			H684SB023 - N	
H684SB08601	H684SB086	0	1	8-10-01/1047	SO	1					X			H684SB023 - E	
H684CB08601	H684SB086	0	1	8-10-01/1047	SO	1					X			H684SB023 - E	
H684SB08701	H684SB087	0	1	8-10-01/1049	SO	1					X			H684SB023 - S	
H684SB08801	H684SB088	0	1	8-10-01/1051	SO	1					X			H684SB023 - W	
H684SB08901	H684SB089	0	1	8-10-01/1100	SO	1					X			H684SB024 - N	
H684SB09001	H684SB090	0	1	8-10-01/1102	SO	1					X			H684SB024 - E	
H684SB09101	H684SB091	0	1	8-10-01/1104	SO	1					X			H684SB024 - S	
H684SB09201	H684SB092	0	1	8-10-01/1106	SO	1					X			H684SB024 - W	
H684SB09301	H684SB093	0	1		SO						X			H684SB044 - N	
H684SB09401	H684SB094	0	1		SO						X			H684SB044 - E	

Sampled By: Darrel Gates

Date/Time: 8-10-01

Relinquished by: [signature]

Date/Time: 8-10-01/13

Additional Samplers: Chris Blomay / Mark Lynbrough

Received By Lab: Patricia S. Dover

Date/Time: 8/10/01 13.45

Relinquished by:

Date/Time

Received By: /

Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature: 5°

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZR014-080301-01 page 9 of 10

Laboratory:	GEL, Charleston, SC
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	
TAT:	
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see 3rd page of COC
EDD:	CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	Arsenic (SW6010B)	Antimony (SW6010B)	Thallium (SW6010B)	Lead (SW6010B)	PAHs (SW8270C)			alias	Comments
							1-4 oz jar	500 ml Poly			1-4 oz jar 2-1 liter				
H015EB011L1	H015EB011			8-10-01 / 1115	SQ	3	X	X		X	X				EB

Sampled By Darryl Gates Date/Time 8-10-01

Additional Samplers: Chris Blindy / Mack Yarborough.

Received By Lab: Patricia Davis Date/Time 8/10/01 12:45

Received By: Date/Time

Remarks:

Relinquished by: Date/Time 8-10-01/1345

Relinquished by: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Temperature:

Receipt Exceptions:

CH2M HILL Chain of Custody/ Laboratory Analysis Form S0683

COC Tracking #: **ZH014-100501-01** page 1 of 2

Laboratory:	GEL, Charleston, SC
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	158814.PM.04
TAT:	1-QTAT-7
Project Manager:	
evel:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see 4th page of COC
EDD:	CNC format

Lab Batch/SDG:

Sample ID	Station ID	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	PAHs (SW8270C) 2 - 1L amber	Pb, As, Sb, Tl (SW6010B) 1 - 0.5L HDPE, HNO3									Comments
014ZW001L1	H014ZW001			10-19-01/1000		3	X	X									
014ZW002L1	H014ZW002			10-19-01/1005		3	X	X									
014ZW003L1	H014ZW003			10-19-01/1010		3	X	X									
																	End of Job RCRA Site

Sampled By Chris Blundy Date/Time 10-19-01 Relinquished by: Chris Blundy Date/Time 10-19-01/12:15

Additional Samplers:

Received By Lab: Patricia Dover Date/Time 10/19/01 12:15 Relinquished by: Date/Time

Rece... Exceptions:

CH2M H Chain of Custody/ Laboratory Analysis Form CN-38 COC Tracking #: **ZH014-092801-01** page 2

Laboratory:	STL (Savannah, GA)
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	158814.PM.04
TAT:	7 day results, 14 day package
Project Manager:	Tom Beisel/ATL
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see last page of COC
EDD:	CNC format

Lab Batch/SDG:

Sample ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	PAHs (SW8270C) 1 - 4 ounce jars	PAHs (SW8270C) 2 - 1L amber	Arsenic (SW6010B) 1 - 4 ounce jar	Lead (SW6010B) 1 - 4 ounce jar	Arsenic & Lead (SW6010B) 1 - 0.5L HDPE, HNO3						Comments
684SB11703	H684SB117	0	0.5	10-8-01 / 1430	SO		X						H684SB015NN - Vert. 0-0.5				
684SB11704	H684SB117	0.5	1	10-8-01 / 1435	SO		X						H684SB015NN - Vert. 0.5-1				
684SB11803	H684SB118	0	0.5	10-8-01 / 1410	SO		X						H684SB035W - Vert. 0-0.5				
684SB11804	H684SB118	0.5	1	10-8-01 / 1415	SO		X						H684SB035W - Vert. 0.5-1				
684SB11903	H684SB119	0	0.5	10-8-01 / 1400	SO		X						H684SB043S - Vert. 0-0.5				
684CB11903	H684SB119	0	0.5	10-8-01 / 1400	SO		X						H684SB043S - Vert. 0-0.5				
684SB11904	H684SB119	0.5	1	10-8-01 / 1405	SO		X						H684SB043S - Vert. 0.5-1				
670SB07203	H670SB072	0	0.5	10-8-01 / 1350	SO		X						H670SB034NN - Vert. 0-0.5				
670SB07204	H670SB072	0.5	1	10-8-01 / 1355	SO		X						H670SB034NN - Vert. 0.5-1				
684SB12003	H684SB120	0	0.5	10-8-01 / 1330	SO		X						H684SB044W - Vert. 0-0.5				
684SB12004	H684SB120	0.5	1	10-8-01 / 1335	SO		X						H684SB044W - Vert. 0.5-1				
670SB07303	H670SB073	0	0.5	10-8-01 / 1340	SO		X						H670SB031W - Vert. 0-0.5				
670SB07304	H670SB073	0.5	1	10-8-01 / 1345	SO		X						H670SB031W - Vert. 0.5-1				
670SB07403	H670SB074	0	0.5	10-8-01 / 1420	SO		X						H670SB003N - Vert. 0-0.5				
670SB07404	H670SB074	0.5	1	10-8-01 / 1425	SO		X						H670SB003N - Vert. 0.5-1				
684SB12101	H684SB121	0	1	10-8-01 / 1240	SO		X						H684SB003NN - North #2				
684SB12201	H684SB122	0	1	10-8-01 / 1445	SO		X						H684SB036SS - South #2				
670SB07501	H670SB075	0	1	10-8-01 / 1450	SO		X						H670SB005EE - East #2				
670SB07601	H670SB076	0	1	10-8-01 / 1455	SO		X						H670SB005WW - West #2				
670SB07701	H670SB077	0	1	10-8-01 / 1500	SO				X	X			H670SB023SS - South #2				
014SB03601	H014SB036	0	1	10-8-01 / 1505	SO					X			H014SB010NN - North #2				
684EB117LA	H684EB117			10-8-01 / 1510	SO			X			X						

Sampled By: [signature] Date/Time: 10-8-01

Additional Samplers: Chris Blindy

Received By Lab: Date/Time

Received By: [signature] 10/9/01 Date/Time

Remarks:

Relinquished by: [signature] Date/Time: 10-8-01 / 1700

Relinquished by: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Temperature:

Receipt Exceptions: S1-16612

M HILL Chain of Custody/ Laboratory Analysis Form CNC58

COC Tracking #: ZH014-121801-01 pag f2

Laboratory: STL ~~GEL~~

Project Name: Charleston Navy Complex

Site Name: Zone H, SWMU 14

Project Number: 158814.PM.04

TAT: results 7 days, standard pkg.

Project Manager: SAMNAIK

QA Level: level 3

Address: GNV: 3011 SW Williston Rd., Gainesville, FL 32605

ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278

Send Report To: see last page of COC

EDD: CNC format

Lab Batch/SDG: CNC58

1/4/02 AK 1/10

Sample ID	Station ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	PAHs (SW8270C) 1 - 4ounce jar	PAHs (SW8270C) 2 - 1L amber					alias	Comments
670SB07801	H670SB078	Composite	0	1	12-19-01 0842	SO		X							
670SB07901	H670SB079	Composite	0	1	12-19-01 0849	SO		X							
670SB08001	H670SB080	Composite	0	1	12-19-01 0900	SO		X							
670SB08101	H670SB081	GRAB	0	1	12-19-01 0905	SO		X							
670SB08201	H670SB082	GRAB	0	1	12-19-01 095	SO		X							
670EB078L1	H670EB078	EB			12/19/01 0900	SQ			X						EB

RCRA SWMU 14 finished Sampling

Sampled By: Brian Crawford Date/Time: 12-19-01 1600 Relinquished by: Date/Time

Additional Samplers:

Received By Lab: Date/Time Relinquished by: Date/Time

eipt Exceptions:

CNC61

CH2' 'LL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: ZH014-010702-01 of 2

Laboratory:	STL
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	158814.PM.04
TAT:	1-QTAT-7
Project Manager:	Tom Beisel
QA Level:	level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see last page of COC
EDD:	CNC format

Lab Batch/SDG:

1-6 = 2
7 = 3

Sample ID	Station ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	TCLP VOCs (SW8260B) 1 - 250mL glass jar	TCLP SVOCs (SW8270C) 1 - 500mL glass jar	TCLP Metals* (SW6010B)	Flashpoint 1 - 250mL jar								Comments
014VA001M1 (1)	H014VA001	dumpsters 1,2,3	–	–	1/9/02 1320	SO	2	X	X	X									
014VA002M1 (5)	H014VA002	dumpsters 4,5,11	–	–	1/9/02 1325	SO	2	X	X	X									
014VA003M1 (3)	H014VA003	dumpsters 6-10	–	–	1/9/02 1335	SO	2	X	X	X									
014VA004M1 (7)	H014VA004	area 2 stockpile	–	–	1/9/02 1315	SO	3	X	X	X	X								
014VA005M1 (2)	H014VA005	area 1, 6" pile 1&2	–	–	1/9/02 1245	SO	2	X	X	X									
014VA006M1 (4)	H014VA006	area 1, 1' pile 1&2	–	–	1/9/02 1350	SO	2	X	X	X									
014VA007M1 (6)	H014VA007	area 1, 1' pile 3&4	–	–	1/9/02 1305	SO	2	X	X	X									

RUSH!

RCRA site
Sampling Complete

7 day TAT Faxes
10 day hard copy.

Sampled By: BRIAN CRAWFORD Date/Time: 1-9-01 1600 Relinquished by: Date/Time

Additional Samplers:

Received By Lab: K Conner Date/Time: 1/10/02 @ 946am Relinquished by: Date/Time

Received By: Date/Time Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks: Fax results to Sam Naik 770-604-9183 & Herb Kelly 952-271-4811 Temperature:

Receipt Exceptions:

P / E

OAKRIDGE LANDFILL INC

SPECIAL WASTE DISPOSAL APPLICATION

RENEWAL OF OR #

SALES PERSON: WRAY MATTICE - MOBILE PHONE: (843) 830-1473

APPLICATION ID #: OR0201027

DISPOSAL FACILITY: OAKRIDGE PHONE: (843) 563-9607 FAX: (843) 563-4156

APPLICATION DATE:

A. GENERAL INFORMATION

Generator Name: US NAVY
Address: 1849 AVE. F.
Phone: 843 820 5325 Fax:
Contact: RICK NOTSON ETONY HUNT
USEPA ID#: SC 0 17 0 0 225 6 0
Waste Type: SOILS NON-HAZARDOUS
Quantity: ~ 880 yds Per:
Delivery Method: TRUCK
Contractor: CH2M-JONES Phone: 740-2280
Hauler: Butler Ware Phone: 729 8428
State of Origin: SC State of Disposal: SC

B. WASTE DESCRIPTION

Physical State: Solid(✓) Liquid( ) Gas( ) Semi-Solid( )
% Solids: ~ 100 pH:
% Free Liquids: Color:
% Radioactive Waste: NONE Odor:
% Asbestos: NONE Flash Point:
Reactive Sulfides(ppm): NOT SAMPLED
Reactive Cyanides(ppm): NOT SAMPLED

PROCESS OF WASTE GENERATION:
EXCAVATED SOILS FROM FORMER TRAP & SKEET RANGE & OUTDOOR PISTOL RANGE.

CONTENTS OF WASTE BY VOLUME IN %:
100% Soil

C. HAZARDOUS CONSTITUENTS

	Total(ppm)	TCLP(ppm)	Regulatory Level(s)
PCB's	NOT SAMPLED		<50,000
TPH	NOT SAMPLED		
BTEX	NOT SAMPLED		
TOX	NOT SAMPLED		
TCLP METALS			
Arsenic		ND	<5,000
Barium		0.57 J	<100,000
Cadmium		ND	<1,000
Chromium		ND	<5,000
Lead		0.87 J	<5,000
Mercury		ND	<0.200
Selenium		ND	<1,000
Silver		ND	<5,000
TCLP VOLATILES/SEMI-VOLATILES			
Benzene		ND	<0.500
Carbon Tetrachloride		ND	<0.500
Chlorobenzene		ND	<100,000
Chloroform		ND	<6,000
m-Cresol		ND	<200,000
o-Cresol		ND	<200,000
p-Cresol		ND	<200,000
1,4-Dichlorobenzene		ND	<7,500
1,2-Dichloroethane		ND	<0.500
1,1-Dichloroethane		ND	<0.700
2,4-Dinitrotoluene		ND	<0.130
Hexachlorobenzene		ND	<0.130
Hexachlorobutadiene		ND	<0.500
Hexachloroethane		ND	<3,000
Methyl Ethyl Ketone		ND	<200,000
Nitrobenzene		ND	<2,000
Pentachlorophenol		ND	<100,000
Pyridine		ND	<5,000
Tetrachloroethene		ND	<0.700
Trichloroethene		ND	<0.500
2,4,5-Trichlorophenol		ND	<400,000
2,4,6-Trichlorophenol		ND	<2,000
Vinyl Chloride		ND	<0.200
TCLP HERBICIDES/PESTICIDES			
Chlordane			<0.030
Endrin			<0.020
Heptachlor			<0.008
Lindane(Gamma-BHC)			<0.400
Methoxychlor			<10,000
Silvex (2,4,5-TP)			<1,000
Toxaphene			<0.500
2,4-D			<10,000

NOT SAMPLED

CERTIFICATIONS

I certify that the laboratory results indentified below are attached as support to the data certified on this application form:

lab name(s): SEVERN TRENT SERVICES, SAVANNAH, GA.
report date(s): 17 JAN 2002; 23 JAN 2002
sample ID#(s): PLEASE SEE ATTACHED LAB RESULTS

By signing this form I certify that:
1. I am the legal generator of the waste described on this form.
2. The waste described on this form is not a regulated Hazardous Waste as defined by the USEPA, the State of Origin or the State of Disposal.
3. This form and its attachments contain true and accurate descriptions of the waste.
4. Any laboratory data used to support the information presented on this form has been obtained from the analysis of a volumetrically representative sample, obtained and analyzed according to 40 CFR 261, EPA Document SW-846, or other applicable regulations or guidelines, of EXACTLY THE SAME WASTE that I will deliver to Chambers/USA Waste Services, Inc. for either hauling or disposal.

*J - estimated value
*ND - no detections above laboratory detection limits.

Certified Signature X Ved Heames [signature] Date 1-24-02

Printed/Typed Name, Title & Employer Ved Heames / SHE Sup CH2M-Jones

WASTE MANAGEMENT

OAKRIDGE LANDFILL
A WASTE MANAGEMENT COMPANY

SPECIAL WASTE APPROVAL NOTIFICATION

DATE: 28 JANUARY 2002

GENERATOR: CH2MHILL

CONTACT: JED HEAMES

CUSTOMER: CH2MHILL

CONTACT: JED HEAMES

DESCRIPTION: SOIL

The Special Waste Disposal Application you submitted for the Generator referenced above has been approved for a period of 12 months beginning 28 JANUARY 2002for a volume of 800 YARDS.

Your approval number is OR 0201027 . Please ensure this approval number is on all waste manifests and correspondence regarding this waste stream in order to facilitate proper disposal and documentation. **Please sign the manifest and provide a copy to your transporter** to accompany each load sent to the landfill for disposal. A **Generator signed** copy of the manifest must be presented at the landfill with each load in order for the load to be accepted for disposal at our facility. Your cooperation is appreciated.

If you have any questions regarding your approval, please call me at 843-563-2607 or call Wray Mattice at 843-830-1473. We appreciate your business and welcome the opportunity to serve you.

Sincerely,

Oakridge Landfill, Inc./WMI

N Carter

Nicole Carter
Deputy Scalemaster

2183 HIGHWAY 78, POB 145 DORCHESTER SC 29437
TEL: 843-563-2607 - FAX: 843-563-4158

SWMU 14
LOAD # 1
TIME 1010
DATE 1-29-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature: [signature]

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

Transporter of Waste: BUTLERWARE **Truck #** 21

Date: 1-29-02 **Driver Signature:** Vion Craven

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: ~~974037~~ 11923 **Tonnage:** 1227

Received by: R Arnold **Date:** 1/29/02

LOAD # 2
TIME 1025
DATE 1-29-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 19

Date: 1-29-02 **Driver Signature:** Perry #19

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 119124 **Tonnage:** 15.35

Received by: R Arnold **Date:** 1/29/02

DWMU 14
LOAD # 3
TIME 1036
DATE 1-29-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 12

Date: 1-29-02 **Driver Signature:**

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 11926 **Tonnage:** 15.68

Received by: Karnold **Date:** 1/29/02

LOAD # 4
TIME 1050
DATE 1-29-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature: [signature]

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

Transporter of Waste: BUTLERWARE **Truck #** 15

Date: 1-29-02 **Driver Signature:** [signature]

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 11924 **Tonnage:** 13.99

Received by: [signature] **Date:** 1/29/02

LOAD # 5
TIME 1100
DATE 1-29-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature: [signature]

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

Transporter of Waste: BUTLERWARE **Truck #** 17

Date: 1-29-02 **Driver Signature:** Frederick E Bryant

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 97 4071 **Tonnage** 15.66

Received by: K Arnold **Date:** 1/29/02

LOAD # 6
TIME 1112
DATE 1-29-01

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 48

Date: 1-29-01 **Driver Signature:** Stacy Weatherly

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 119256 **Tonnage:** 1483

Received by: R Arnold **Date:** 1/29/02

DWMU 14
LOAD # 7
TIME 1315
DATE 1-29-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 21

Date: 1-29-02 **Driver Signature:** Vion Craven

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 97410 **Tonnage:** 15 20

Received by: K Arnold **Date:** 1/29/02

JWMU 14
LOAD # 8
TIME 1335
DATE 1-29-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 12

Date: 1-29-02 **Driver Signature:**

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974111 **Tonnage:** 16.66

Received by: K Arnold **Date:** 1/29/02

DUMP 14
LOAD # 9
TIME 1345
DATE 1-29-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature: _____

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

Transporter of Waste: BUTLERWARE **Truck #** 19

Date: 1-29-02 **Driver Signature:** _____

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974112 **Tonnage:** 16.02

Received by: R Arnold **Date:** 1/29/02

LOAD # 10
TIME 1400
DATE 1-29-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 15

Date: 1-29-02 **Driver Signature:**

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 97H116 **Tonnage:** 17.39

Received by: Karnell **Date:** 1/29/02

LOAD # 11
TIME 1410
DATE 1-29-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2687 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 17

Date: 1-29-02 **Driver Signature:**

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974120 **Tonnage:** 18.01

Received by: K Arnold **Date:** 1/29/02

OWNER 17
LOAD # 12
TIME 1430
DATE 1-29-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** [redacted] 48

Date: 1-29-02 **Driver Signature:** Stacy Weatherford

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974121 **Tonnage:** 17.95

Received by: R Arnold **Date:** 1/29/02

LOAD # 13
TIME 0735
DATE 1-30-02

WASTE MANAGEMENT

OAKRIDGE LANDFILL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 12

Date: 1-30-02 **Driver Signature:**

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 0174167 **Tonnage:** 17.86

Received by: **Date:** 1/30/02

LOAD # 14
TIME 0745
DATE 1-30

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2687 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 17

Date: 1-30-02 **Driver Signature:**

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 97179 **Tonnage:** 19.13

Received by: K Arnold **Date:** 1/30/02

LOAD # 15
TIME 0750
DATE 1-30

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature: [signature]

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

Transporter of Waste: BUTLERWARE **Truck #** 15

Date: 1-30 **Driver Signature:** [signature]

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974181 **Tonnage:** 19.14

Received by: Kamield **Date:** 1/30/02

DWMU 14
LOAD # 16
TIME 0815
DATE 1-30-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 48

Date: 1-30-01 **Driver Signature:** Stacey Weatherford

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974187 **Tonnage:** 18.43

Received by: Karnold **Date:** 1/30/02

JOBNO 17
LOAD # 17
TIME 0835
DATE 1-30-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature: [signature]

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

Transporter of Waste: BUTLERWARE **Truck #** 21

Date: 1-30-02 **Driver Signature:** Vion Craven

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974 92 **Tonnage:** 16.27

Received by: KArnold **Date:** 1/30/02

LOAD # 18
TIME 0850
DATE 1-30-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2185 Highway 78, Dorchester, SC 29437
Tel 843-563-2687 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY CH2M-JONES

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 19

Date: 1-30-02 **Driver Signature:**

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOIL/SOIL

Ticket Number: 9124198 **Tonnage:** 18.12

Received by: N Carter **Date:** 1/30/02

LOAD # 19
TIME 0955
DATE 1-30

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 12

Date: 1-30-02 **Driver Signature:**

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 914215 **Tonnage:** 18.94

Received by: Carter **Date:** 1/30/02

JOURNAL 14
LOAD # 20
TIME 1035
DATE 1-30-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 48

Date: 1-30-02 **Driver Signature:** Stacey Weatherford

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 97824 **Tonnage:** 18.70

Received by: **Date:** 1/30/02

LOAD # 21
TIME 1040
DATE 1-30-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 17

Date: 1-30-02 **Driver Signature:** Frederick B

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 074223 **Tonnage:** 20.09

Received by: K Arnold **Date:** 1/28/02

LOAD # 22
TIME 1055
DATE 1-30-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 21

Date: 1-30-02 **Driver Signature:** Vion Craven

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974232 **Tonnage:** 16.48

Received by: N Carter **Date:** 1/30/02

LOAD # 23
TIME 1120
DATE 1-30-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 19

Date: 1-30-02 **Driver Signature:**

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 91248 **Tonnage:** 19.47

Received by: N Carter **Date:** 1/30/02

LOAD # 24
TIME 1220
DATE 1-30-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 12

Date: 1-30-02 **Driver Signature:**

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 671858 **Tonnage:** 18.09

Received by: RArnold **Date:** 1/30/02

LOAD # 25
TIME ~~1300~~ 1300
DATE 1-30-01

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 17

Date: 1-30-02 **Driver Signature:**

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 0148108 **Tonnage:** 18.75

Received by: N Carter **Date:** 1/30/02

JWMU 14
LOAD # 26
TIME 1305
DATE 1-30-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature: [signature]

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

Transporter of Waste: BUTLERWARE **Truck #** 48

Date: 1-30-02 **Driver Signature:** Steey Weatherford

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 97[illegible]65 **Tonnage:** 18.83

Received by: RArnold **Date:** 1/30/02

SWMU 14
LOAD # 27
TIME 1330
DATE 1-30-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature: [signature]

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

Transporter of Waste: BUTLERWARE **Truck #** 15

Date: 1-30-02 **Driver Signature:** [signature]

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 0N4024 **Tonnage:** 17.49

Received by: [signature] **Date:** 1/30/02

LOAD # 28
TIME 1320
DATE 1-30-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature: [signature]

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

Transporter of Waste: BUTLERWARE **Truck #** 21

Date: 1-30-02 **Driver Signature:** Vion Craven

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974277 **Tonnage:** 13.35

Received by: K Arnold **Date:** 1/30/02

DWMU 14
LOAD # 29
TIME 1340
DATE 1-30-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 19

Date: _____ **Driver Signature:**

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 074281 **Tonnage:** 17.49

Received by: KArnold **Date:** 1/30/02

LOAD # 30
TIME 1438
DATE 1-30-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 12

Date: 1-30-02 **Driver Signature:**

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974290 **Tonnage:** 19.109

Received by: RArnold **Date:** 1/30/02

LOAD # 31
TIME 1525
DATE 1-30-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 17

Date: 1-30-02 **Driver Signature:** Frederick Bryant

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974246 **Tonnage:** 21.50

Received by: Randall **Date:** 1/30/02

LOAD # 32
TIME 1535
DATE 1-30

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 48

Date: 1-30-02 **Driver Signature:** Stacey Weatherford

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974299 **Tonnage:** 19.53

Received by: RArnold **Date:** 1/30/02

SWMU 14
LOAD # 33
TIME 1550
DATE 1-30-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature: [signature]

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

Transporter of Waste: BUTLERWARE **Truck #** 15

Date: 1-30-02 **Driver Signature:** _____

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974300 **Tonnage:** 18.32

Received by: K Arnold **Date:** 1/30/02

LOAD # 34
TIME 0730
DATE 1-31-01

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 21

Date: 1-31-02 **Driver Signature:** Vion Craven

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974324 **Tonnage:** 17.20

Received by: R Arnold **Date:** 1/31/02

SWMU 14
LOAD # 35
TIME 0730
DATE 1-31-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 48

Date: 1-31-02 **Driver Signature:** Stacey Weatherford

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 014223 **Tonnage:** 18.37

Received by: M Carter **Date:** 1/31/02

LOAD # 36
TIME 0759
DATE 1-31

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE **Truck #** 12

Date: 1-31-02 **Driver Signature:**

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 914341 **Tonnage:** 20.15

Received by: N Carter **Date:** 1/31/02

TIME 0800

DATE 1-31-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 Contact: JED HEAMES

Generator Signature: _____

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

Transporter of Waste: BUTLERWARE Truck # 17

Date: 1-31 Driver Signature: Frederick E. Bryant

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974340 Tonnage: 19.40

Received by: R Ausfeld Date: 1/31/02

LOAD # 40
TIME 0840
DATE 1-31

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 Contact: JED HEAMES

Generator Signature: _____

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

Transporter of Waste: BUTLERWARE Truck # 15

Date: 1-31-02 Driver Signature: [signature]

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 9N4348 Tonnage: 20.12

Received by: N Carter Date: 1/31/02

TIME 0945 ↖41

DATE 1-31-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature: [signature]

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

Transporter of Waste: BUTLERWARE **Truck #** 21

Date: 1-31-02 **Driver Signature:** Vion Craven

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

Disposal Site; Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974363 **Tonnage:** 15.66

Received by: [signature] **Date:** 1/31/02

LOAD # 43
TIME 1040 LOAD # 43
DATE 1-31-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 Contact: JED HEAMES

Generator Signature: _____

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

Transporter of Waste: BUTLERWARE Truck # 17

Date: 1-31-02 Driver Signature: _____

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

Disposal Site; Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Numbers: 94380 Tonnage: 19.71

Received by: G Carter Date: 1/31/02

TIME 1050 Lum 44

DATE 1-31-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 Contact: JED HEAMES

Generator Signature:

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

Transporter of Waste: BUTLERWARE Truck # 12

Date: 1-31-02 Driver Signature:

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 014384 Tonnage: 20.37

Received by: G. Carter Date: 1/31/02

LOAD # 45
TIME 1030
DATE 1-31-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 Contact: JED HEAMES

Generator Signature: BW

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

Transporter of Waste: BUTLERWARE Truck # 15

Date: 1-31-02 Driver Signature: Adam Frazier

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974403 Tonnage: 7845

Received by: Ramold Date: 1/31/03

LOAD # 46
TIME 1210
DATE 1-31-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 Contact: JED HEAMES

Generator Signature: BN

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

Transporter of Waste: BUTLERWARE Truck # 27

Date: 1-31-02 Driver Signature: Vick Craven

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974411 Tonnage: 16.57

Received by: Karnder Date: 1/31/02

LOAD # 47
TIME 1250
DATE 1-31-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 **Contact:** JED HEAMES

Generator Signature: BM

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

Transporter of Waste: BUTLERWARE **Truck #** 17

Date: 1-31-02 **Driver Signature:** Frederick E. Bryant

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: C774416 **Tonnage:** 18.93

Received by: [signature] **Date:** 1/31/02

LOAD # 48
TIME 1320
DATE 1-31-02

WASTE MANAGEMENT

OAKRIDGE LANDFIL
2183 Highway 78, Dorchester, SC 29437
Tel 843-563-2607 Fax 843-563-3375

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201027
EXPIRATION 01/28/2003

Generator: U S NAVY

Account Number: 490-439

Location / Address: 1849 AVE F CHARLESTON SC (10)

Tele Number: 843-740-2780 Contact: JED HEAMES

Generator Signature: BN

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

Transporter of Waste: BUTLERWARE Truck # 12

Date: 1-31-02 Driver Signature: [signature]

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOL/SOIL

Ticket Number: 974431 Tonnage: 19.22

Received by: [signature] Date: 1/31/02

WM

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201026
EXPIRATION 1/29/2003

Generator: SOUTHERN DIVISION NAVAL FACILITY

Account Number: 490-148

Location / Address: POB 190010 N CHARLESTON SC(10)

Tele Number: 843.740.2780 Contact: JED HEAMES

Generator Signature: X [signature]

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

Transporter of Waste: PENN-VAC

Date: 1-28-02 Driver Signature: [signature] Truck # 382

Date: _____ Driver Signature: _____ Truck # _____

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOIL/SOIL CUTTINGS/IDW

Ticket Number: 9 [illegible] Tonnage: 11.03

Received by: [signature] Date: 1/28/02

(Summer 14 sails)
Roll-off # FV-124

WM
WASTE MANAGEMENT

OAKRIDGE LANDFILL
[illegible]

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201026
EXPIRATION 1/25/2003

Generator: SOUTHERN DIVISION NAVAL FACILITY
Account Number: 490-148
Location / Address: POB 190010 N CHARLESTON SC(18)
Tele Number: 843.740.2780 Contact: JED HEAMKS
Generator Signature: X [signature]

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

Transporter of Waste: FENN-VAC
Date: 1-29-02 Driver Signature: [signature] Truck # 382
Date: _____ Driver Signature: _____ Truck # _____

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

Disposal Site: Oakridge Landfill DWP 130
Description of Waste: SOIL / SOIL CUTTINGS/IDW
Ticket Number: 9774064 Tonnage: 992
Received by: K Arnold Date: 1/29/02

02/18/02 17:32 FAX

01/28/02 12:38 FAX

004

(SWMU 14 soils)
Roll-off # FV-172

WM
WASTE MANAGEMENT

OAKRIDGE LANDFILL
[illegible]

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201026
EXPIRATION 1/25/2003

Generator: SOUTHERN DIVISION NAVAL FACILITY

Account Number: 450-148

Location / Address: POB 190010 N CHARLESTON SC(10)

Tele Number: 843.740.2780 Contact: JED HEAMES

Generator Signature: X [signature]

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

Transporter of Waste: FENN-VAC

Date: 1-29-02 Driver Signature: [signature] Truck # 382

Date: _____ Driver Signature: _____ Truck # _____

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOIL / SOIL CUTTINGS/IDW

Ticket Number: 974018 Tonnage: 11.66

Received by: [signature] Date: 1/29/02

(SWMU 14 soils)
Roll-off # FV-130

OAKRIDGE LANDFILL

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201026
EXPIRATION 1/25/2003

Generator: SOUTHERN DIVISION NAVAL FACILITY

Account Number: 496-148

Location / Address: POB 190010 N CHARLESTON SC(10)

Tele Number: 843.740.2780 Contact: JED HEAMES

Generator Signature: X [signature]

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

Transporter of Waste: FENN-VAC

Date: 1-31-02 Driver Signature: [signature] Truck # 702

Date: _____ Driver Signature: _____ Truck # _____

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOIL / SOIL CUTTINGS/IDW

Ticket Number: 9 14345 Tonnage: 1131

Received by: K Arnold Date: 1/31/02

(SWMU 14 sars)
Roll-off # FV-114

WM
WASTE MANAGEMENT

OAKRIDGE LANDFILL
2180 Highway 90, Ravenhaven, SC 29407
Tel 843-[illegible], Fax 843-[illegible]

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201026
EXPIRATION 1/28/2003

Generator: SOUTHERN DIVISION NAVAL FACILITY

Account Number: 490-148

Location / Address: POB 190010 N CHARLESTON SC(19)

Tele Number: 843.740.2780 Contact: JED HEAMES

Generator Signature: X [signature]

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

Transporter of Waste: FENN-VAC

Date: 2-1-02 Driver Signature: Jesse E Williams Truck # 384

Date: _____ Driver Signature: _____ Truck # _____

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOIL / SOIL CUTTINGS/IDW

Ticket Number: 004558 Tonnage: 9.57

Received by: N Carter Date: 2/1/02

:39 FAX

(Summer 14 Sails)
Roll-off # FV-118

OAKRIDGE LANDFILL

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201026
EXPIRATION 1/25/2003

Generator: SOUTHERN DIVISION NAVAL FACILITY

Account Number: 450-148

Location / Address: POB 190010 N CHARLESTON SC(10)

Tele Number: 843.740.2780 Contact: JED HEAMES

Generator Signature: X [signature]

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

Transporter of Waste: FENN-VAC

Date: 2-5-02 Driver Signature: Jesse E Williams Truck # 383

Date: _____ Driver Signature: _____ Truck # _____

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOIL/SOIL CUTTINGS/IDW

Ticket Number: 9748107 Tonnage: 7.13

Received by: [signature] Date: 2/5/02

(Sumu 14 soils)
Roll-off # FV-139

WM
WASTE MANAGEMENT

OAKRIDGE LANDFILL
[illegible]

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201026
EXPIRATION 1/25/2003

Generator: SOUTHERN DIVISION NAVAL FACILITY
Account Number: 490-148
Location / Address: POB 190010 N CHARLESTON SC(10)
Tele Number: 843.740.2780 Contact: JED HEAMES
Generator Signature: X [signature]

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

Transporter of Waste: FENN-VAC
Date: 2-4-02 Driver Signature: [signature] Truck # 370
Date: _____ Driver Signature: _____ Truck # _____

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

Disposal Site: Oakridge Landfill DWP 130
Description of Waste: SOL/ SOIL CUTTINGS/IDW
Ticket Number: 974660 Tonnage: 11.15
Received by: N Carter Date: 2/4/02

02/19/02 17:34 FAX

002

(Swmu 14 soils)
Roll-off # FV- FV12

WM
WASTE MANAGEMENT

OAKRIDGE LANDFILL

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201026
EXPIRATION 1/25/2003

Generator: SOUTHERN DIVISION NAVAL FACILITY

Account Number: 490-148

Location / Address: POB 190010 N CHARLESTON SC(18)

Tele Number: 843.740.2780 Contact: JED HEAMES

Generator Signature: X [signature]

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

Transporter of Waste: FENN-VAC

Date: 2-4-02 Driver Signature: [signature] Truck # 370

Date: _____ Driver Signature: _____ Truck # _____

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

Disposal Site: Oakridge Landfill DWP 198

Description of Waste: SOIL / SOIL CUTTINGS/IDW

Ticket Number: 974709 Tonnage: 13.15

Received by: K Arnold Date: 2/4/02

01/28/2002 11:18 8435633375 Oakridge PAGE 02

30 FAX

(SWMU 14 Soils)
Roll-off # FV-110

WM
WASTE MANAGEMENT

OAKRIDGE LANDFILL
[illegible]

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201026
EXPIRATION 1/25/2003

Generator: SOUTHERN DIVISION NAVAL FACILITY

Account Number: 490-148

Location / Address: POB 190010 N CHARLESTON SC(10)

Tele Number: 843.740.2780 Contact: JED HEAMES

Generator Signature: X [signature]

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

Transporter of Waste: PENN-VAC

Date: 2-5-02 Driver Signature: [signature] Truck # 383

Date: _____ Driver Signature: _____ Truck # _____

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOIL/SOIL CUTTINGS/IDW

Ticket Number: 14300 Tonnage: 1094

Received by: [signature] Date: 2/5/02

(SWMU 14 SCRS)
Roll-off # FV-125

WM
WASTE MANAGEMENT

OAKRIDGE LANDFILL
[illegible]

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201026
EXPIRATION 1/25/2003

Generator: SOUTHERN DIVISION NAVAL FACILITY

Account Number: 490-148

Location / Address: POB 190010 N CHARLESTON SC(10)

Tele Number: 843.740.2780 Contact: JED HEAMES

Generator Signature: X [signature]

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

Transporter of Waste: FENN-VAC

Date: 2-4-02 Driver Signature: [signature] Truck # 383

Date: _____ Driver Signature: _____ Truck # _____

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOIL/SOIL CUTTINGS/IDW

Ticket Number: 0174673 Tonnage: 13.80

Received by: K. Arnold Date: 2/4/02

(SWMU 14 Soils)
Roll-off # FV-67

WM
WASTE MANAGEMENT

OAKRIDGE LANDFILL
[illegible]

SPECIAL WASTE MANIFEST
APPROVAL # OR 0201026
EXPIRATION 1/25/2003

Generator: SOUTHERN DIVISION NAVAL FACILITY

Account Number: 490-148

Location / Address: POB 190010 N CHARLESTON SC(18)

Tele Number: 843.740.2780 Contact: JED HEAMES

Generator Signature: X [signature]

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

Transporter of Waste: FENN-VAC

Date: 2-4-02 Driver Signature: [signature] Truck # 384

Date: _____ Driver Signature: _____ Truck # _____

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

Disposal Site: Oakridge Landfill DWP 130

Description of Waste: SOIL/SOIL CUTTINGS/IDW

Ticket Number: 014722 Tonnage: 8.51

Received by: [signature] Date: 2/4/02

Selected Photographs from Soil Removal IM at Combined SWMU 14

Combined SWMU 14 CMSWP/IMCR, Zone H , CNC

Photograph No. 1 Typical Hotspot Excavation

Photograph No. 2 Excavated Material at Hotspot Location
Staged on Plastic Sheeting prior to Transfer into the Rolloffs

Selected Photographs from Soil Removal IM at Combined SWMU 14

Combined SWMU 14 CMSWP/IMCR, Zone H , CNC

Photograph No. 3 Typical Hotspot Excavation Location Backfilled with Clean soil After Excavation

Photograph No. 4 Excavation at Area 2

Selected Photographs from Soil Removal IM at Combined SWMU 14

Combined SWMU 14 CMSWP/IMCR, Zone H , CNC.

Photograph No. 5 - Depth of Excavation at Area 1 (16 inches)

Photograph No. 6 Excavation Near Completion at Area 1

Selected Photographs from Soil Removal IM at Combined SWMU 14

Combined SWMU 14 CMSWP/IMCR, Zone H , CNC

Photograph No. 7 Loading of Waste Material from Area 1 Excavation

Photograph No. 8 Excavation at Area 1 Being Backfilled with Clean Soil

Selected Photographs from Soil Removal IM at Combined SWMU 14

Combined SWMU 14 CMSWP/IMCR, Zone H , CNC

Photograph No. 9 Rolloff with Excavated Waste Material being Loaded for Transport and Offsite Disposal

CH2MHILL TRANSMITTAL

To: Jerry Stamps
South Carolina Department of Health
and Environmental Control
Bureau of Land and Waste
Management
2600 Bull Street
Columbia, SC 29201

From: Sam Naik/CH2M-Jones

Date: October 25, 2002

Re: CH2M-Jones' Responses to Comments by SCDHEC regarding the *Corrective Measures Work Plan/Interim Measure Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex* (Revision 0)

Quantity	Description
4	CH2M-Jones' Responses to Comments by SCDHEC regarding the *Corrective Measures Work Plan/Interim Measure Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex* (Revision 0) – Originally Submitted on April 5, 2002

If material received is not as listed, please notify us at once

Remarks:

Copy To:

Jo Cherie Overcash/SCDHEC, w/att
Susan Byrd/SCDHEC, w/att
Dean Williamson/CH2M-Jones, w/att
Gary Foster/CH2M-Jones, w/att

Engineering Comments Prepared by Jerry Stamps

SCDHEC General Comment

It appears as though the original RFI screened the surface soil data to the EPA Region III RBCs and the subsurface soil data to the SSLs corresponding to a DAF=10. Apparently, the surface soil data was not screened against SSLs at all. It is not clear if, during the COPC refinement conducted by CH2M-Jones, the surface soil data was screened against the SSLs, and if the VOCs detected in the surface and subsurface soil during the original RFI were screened against their associated SSLs corresponding to a DAF=1 rather than a DAF=10. Please clarify if this screening methodology was implemented by CH2M-Jones.

CH2M-Jones Response:

During the RFI, maximum detections of organic and inorganic chemicals in surface and subsurface soil samples from Combined SWMU 14 were compared with SSLs during the Fate and Transport analysis (please see Table 5.5.1, Section 5 of the Zone H RFI Report, Revision 0 [EnSafe, 1999]). The exceedances were further examined as part of the Risk Assessment (please see Section 7 of the Zone H RFI Report, Revision 0).

Surface soil VOC detections were not specifically screened against an SSL based on a DAF=1 during the preparation of the CMSWP/IMCR (CH2M-Jones, April 2002). In response to this comment, a rescreening of the surface and subsurface soil VOC detections against the current generic SSLs based on a DAF=1 was conducted. This rescreening showed that the only VOC detections in surface soil above the SSL (DAF=1) were for dibromochloromethane (no generic SSL published; only risk-based SSL=0.00004 mg/kg) and methylene chloride (SSL=0.001 mg/kg).

The reported detection of dibromochloromethane (at 0.007 mg/kg) at H670SB002 was the only detection for this chemical in 87 surface soil samples. Additionally, there was no detection of this chemical above laboratory detection limits in any of the subsurface soil samples at the site, indicating that this single detection does not pose a concern for groundwater migration.

There were 13 methylene chloride detections in surface soil out of 73 samples, and all exceeded the generic SSL value (DAF=1) of 0.001 mg/kg.

Based on an evaluation of current screening criteria, these chemicals do not appear to be chemicals of concern (COCs). The supporting documentation will be provided in the Revision 1 of this document. Methylene chloride appears to most likely be a laboratory contaminant. If necessary, site- specific SSL calculations and blanks data from the RFI will be provided to assess whether this chemical is a true COC at the site.

SCDHEC Specific Comments

1. <u>Section 3.1, Page 3-2, Line 6</u>
   This section states that the confirmation samples collected from the DANC removal did not show contaminants at concentrations exceeding RBCs or SSLs. However, it is not clear as to what DAF was used in the SSL comparison. Furthermore, it appears from

Figure 4 of the Interim Measure report that TCA remains in the soil well above its corresponding SSL of 0.2 ppb (DAF=1). This reviewer developed figures similar to this for other chlorinated compounds to determine the distribution of the contamination that remains after the excavation was complete. Please see the attached figures. The Navy must demonstrate that the remaining contamination is not a threat to the groundwater quality in this area.

CH2M-Jones Response:

The generic SSL (DAF=1) for 1,1,2,2-TCA of 0.0002 mg/kg is below the typical laboratory quantitation limits prescribed by the EPA Contract Laboratory Program, and is typically not achieved by the laboratories.

According to the DET IM Report, groundwater intrusion into the excavation was noted at a depth of approximately 4.5 feet, and no excavation was conducted beyond this depth. The excavation has been backfilled with clean soil thus eliminating direct exposure to these residual concentrations of 1,1,2,2-TCA in the DANC excavation area.

A nested-pair of shallow and deep groundwater monitoring wells (identified as H014GW006/H104GW06D) was installed within the footprint of the DANC excavation area, and another shallow well H014GW007 was installed in the assumed downgradient direction from the DANC excavation area.

The approximate location of wells H014GW006/H014GW06D were measured from the CNC EGIS and have been marked on the figure provided by the reviewer with the residual concentrations of chlorinated compounds. These figures are provided in the attachment to this document.

Based on the figures presented in the DET IM Completion Report of the DANC excavations, the footprint of the DANC excavations were measured in relation to the Building 1897 footprint, and the locations of wells H014GW006 and H104GW06D were measured using offsets from these landmarks. As indicated in the attachment, these wells have been installed in the area with the highest residual concentrations of the chlorinated VOCs (CVOCs). These are the best possible locations to measure groundwater impacts from the residual soil CVOC concentrations.

Shallow well H014GW006 was sampled during three sampling events in July 1998, July 1999, and July 2000. Deep well H014GW06D was sampled during two sampling events in July 1998 and March 1999. Shallow well H014GW007 was sampled during two sampling events in March 1999 and July 1999. None of the samples in any of these wells in any sampling events showed a detection of 1,1,2,2-TCA above laboratory detection limits, indicating that the residual soil concentrations of 1,1,2,2-TCA in the DANC excavation have not leached into groundwater and do not pose a threat to groundwater at the site. Therefore, further evaluation of the 1,1,2,2-TCA concentrations in soil at the site is not warranted.

None of the other VOCs were detected above screening criteria in the samples from shallow and deep pair of wells installed within the DANC excavation area or in the downgradient shallow well, during consecutive groundwater sampling events. There were intermittent detections of acetone, carbon disulfide, chloroform, TCE, and vinyl chloride, which were preceded and succeeded by detections below laboratory detection limits. This indicates that

these residual site constituents within the DANC excavation area do not pose a leaching concern.

No buried chemical containers were found elsewhere at the site during two geophysical investigations conducted at Combined SWMU 14. Surface soil has been sampled at 182 locations during the RFI, the CMS lead shot investigation, and the recent IM effort. Subsurface soil has been sampled at 63 locations during the RFI. These data as well as the groundwater data provide no indication that there is an impact to groundwater from residual site constituents resulting from past site activities at Combined SWMU 14.

Based on these observations, no additional groundwater investigation is warranted at this site as the groundwater analytical data do not suggest that the groundwater in this potential source area has been impacted by the site constituents.

The appropriate text will be included in Revision 1 to reflect the above information.

2. **Section 5.2, COPC/COC Refinement**

a. Aroclor-1254 was originally retained as a COC because a single detection (160 ppb) exceeded the industrial RBC of 83 ppb. However, the residential RBC as presented in the October 2000 RBC Table is 320 ppb. Also, the SSL identified in this same table for Aroclor 1254 is 540 ppb. Since the single detection does not exceed either of these criteria, the rationale for eliminating this compound as a COC should be that the applicable screening criteria were not exceeded.

CH2M-Jones Response:
Comment noted. The text will be revised appropriately.

b. Aroclor-1260 was originally identified as a COC because a single detection (376 ppb) exceeded its corresponding residential RBC. However, this compound is now eliminated from consideration as a COC because the site-wide average concentration is below the RBC. Please see the general comment in the attached memorandum from Susan Byrd.

CH2M-Jones Response:
Comment noted. The text will be revised appropriately.

3. **Section 5.3.1, Shallow Groundwater**

TEQs in the shallow groundwater were eliminated as COCs because the detected concentrations were below the EPA screening criterion of 1,000 pg/L. However, the proper approach is to screen against the MCL of 30 pg/L. According to the data provided, all TEQ concentrations detected in the shallow groundwater are below this MCL.

CH2M-Jones Response:
Comment noted. The text will be revised appropriately.

4. **Table 5-4**

This table incorrectly identifies the RBC for TEQ as 30 pg/L. This value is actually the MCL. Please revise this table accordingly.

CH2M-Jones Response:
Table 5-4 will be revised accordingly.

5. **Table 7-1**

Sample H684SB009 (H684SB05501) – the thallium exceedance should be highlighted

CH2M-Jones Response:
This sample result was estimated to be below laboratory detection limit (qualifier UJ). Therefore, it will not be highlighted in the table.

- Sample H684SB023 (H684SB08601) – the BEQ exceedance should be highlighted

CH2M-Jones Response:
The table will be revised accordingly.

- Sample H684SB015 (H684SB11201) – the BEQ exceedance should be highlighted

CH2M-Jones Response:
The table will be revised accordingly.

6. **Figure 7-1**

- The north side of H684SB023 should be marked as an exceedance rather than the south side.

CH2M-Jones Response:
Figure 7-1 will be revised accordingly.

- The south side of H684SB035 should not be marked as an exceedance.

CH2M-Jones Response:
Figure 7-1 will be revised accordingly.

7. **Figure 7-4**

This figure indicates that H684SB117 had BEQ concentrations of 80 ppm (0 – 6") and 73 ppm (6" – 1'). However, Table 7-1 indicates that these concentrations are 0.08 and 0.07 ppm, respectively. The summary of the data presented in Appendix E appears to support the conclusion that Figure 7-4 is incorrect and that the concentration is truly 0.08 ppm and 0.07 ppm. Please clarify which concentration is correct and revise accordingly. In addition, please provide all of the analytical data sheets and chain of custody forms.

CH2M-Jones Response:
It appears that the figure referenced in the above comment is actually Figure 7-3. Figure 7-3 will be revised to reflect the corrected values. The validated analytical data report and the chain of custody forms were included in Appendix E of the CMSWP/IMCR (CH2M-Jones,

April 2002). Hard copies of the analytical data reports can also be provided.

8. **Appendix B, IM Completion Report, April 28, 1998**
From the analytical data provided, it appears as though samples were collected of the groundwater intrusion from within the excavation, which indicated chlorinated compounds were detected in the groundwater above the MCLs. If possible, please provide the location at which these samples were collected in order to correlate the groundwater detections with distribution of contamination in the subsurface soils.

CH2M-Jones Response:
No information was found regarding the exact location from where the groundwater intrusion sample was collected. It is important to note that the groundwater intrusion sample was collected directly from the excavation, and does not substitute for a groundwater sample collected from a screened permanent monitoring well which has been purged and developed prior to sampling. Such sampling of intrusion water could allow for entrainment of loose contaminated soil particles from the open excavation, which could result in a higher detection of contaminants in the water sample.

9. **SCDHEC Comment:**
It appears as though Figure 4 presented in this report is supposed to represent contaminant levels that were left in place after the completion of the soil excavation. If so, then contaminants were left in place in the subsurface soils, which substantially exceed their corresponding generic SSLs. The Department is concerned that these concentrations may serve as a source of continuing groundwater contamination. CH2M-Jones must demonstrate that these contaminant levels are not of concern. Please see the attached figures for the distribution of various contaminants.

CH2M-Jones Response:
Please see the response to Comment No. 1 above. Monitoring wells were installed in close proximity (within approximately 10 to 15 feet) to the subsurface soil samples referred to above. However, these wells consistently show that groundwater has not been impacted by VOCs. Thus, the demonstration that the contaminant levels in these soils are not a concern has been made.

10. **SCDHEC Comment:**
The analytical data sheets for several samples were provided in Appendix E of this DET IM Report for which the locations of the samples were not identified in any figures. If possible, please provide the purpose and location of these samples. The following are examples:

439-1 appears to be a miscellaneous matrix sample (white precipitate) which had elevated detections of TCA (480 ppb), DCE (56.1 ppb), Acetone (43,400 ppb), carbon tetrachloride (745 ppb), chloroform (61,400 ppb), PCE (17.9 ppb), and TCE (64.9 ppb)

CH2M-Jones Response:
According to Section 4.1.3 of the DET IM Report, which was included in Appendix B of the CMSWP/IMCR, these are waste characterization samples that would have been collected from the contaminated soil/DANC containers. The samples may have been collected either directly from the in situ waste material prior to excavation, or from the excavated waste material stockpile after excavation. This sample represents waste material that has been disposed of.

The 532, 542, 546, and 574 series of samples appear to be soil samples; however, the locations are not provided on any figures.

CH2M-Jones Response:
According to Section 4.1.3 of the DET IM Completion Report, the 532-series represent two composite samples collected to investigate the presence of lead shots in the AOC 670 and AOC 684 area. Their location was not found in the DET IM Completion Report.
A total of 33 soil samples were collected as part of a lead-shot investigation. Three locations with lead concentrations above the unrestricted land use target cleanup goal of 400 mg/kg were identified for soil excavation as part of the soil removal IM conducted by CH2M-Jones during 2001-2002.

The 546 series of samples represent three samples 546-1, 546-2 and 546-3. No information is available on the location of samples 546-1 and 546-3. Sample 546-2 is a pulverized concrete core sample collected from the slab underneath Building 1897 which was demolished as part of the DANC excavation. Based on the sample collection timeframe (October 1997) indicated in the chain of custody, samples 546-1 and 546-3 appear to be related to samples collected prior to the demolition of Building 1897 and subsequent excavations. Confirmation samples collected after Building 1897 demolition (578 series) are dated December 1997 in the chain of custody forms included as part of the DET IM Completion Report.

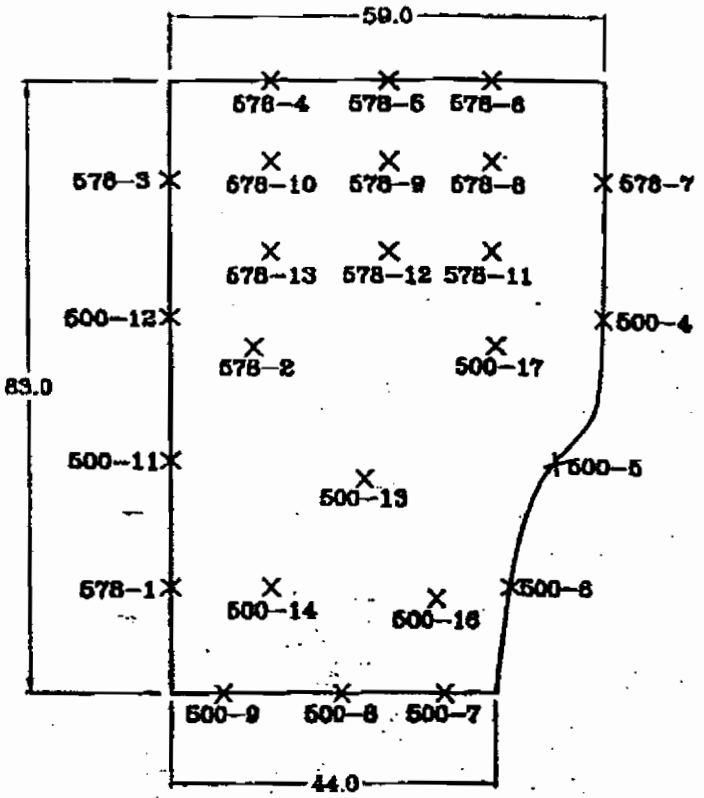
11. **SCDHEC Comment:**
According to Section 4.1.3 of the DET IM Completion Report, the 574 series represent two soil samples collected from the top 1.5 ft of soil beneath the slab of Building 1897.

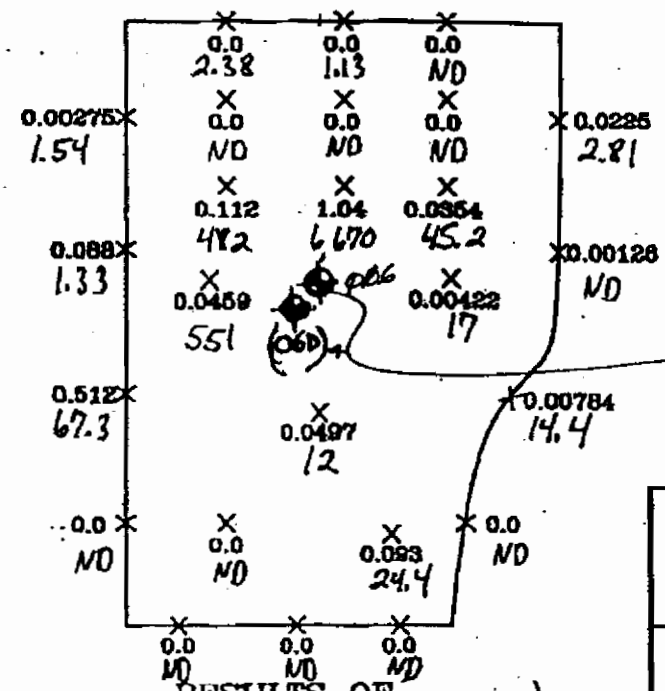
449-1 was a soil sample with elevated detections of chloroform (1090ppb), PCE (25.3 ppb), and
TCE (1030 ppb).

CH2M-Jones Response:
This sample is also a waste characterization sample and represents waste material that has been disposed of.

TCE

SSL = 3 ppb (DAF = 1)





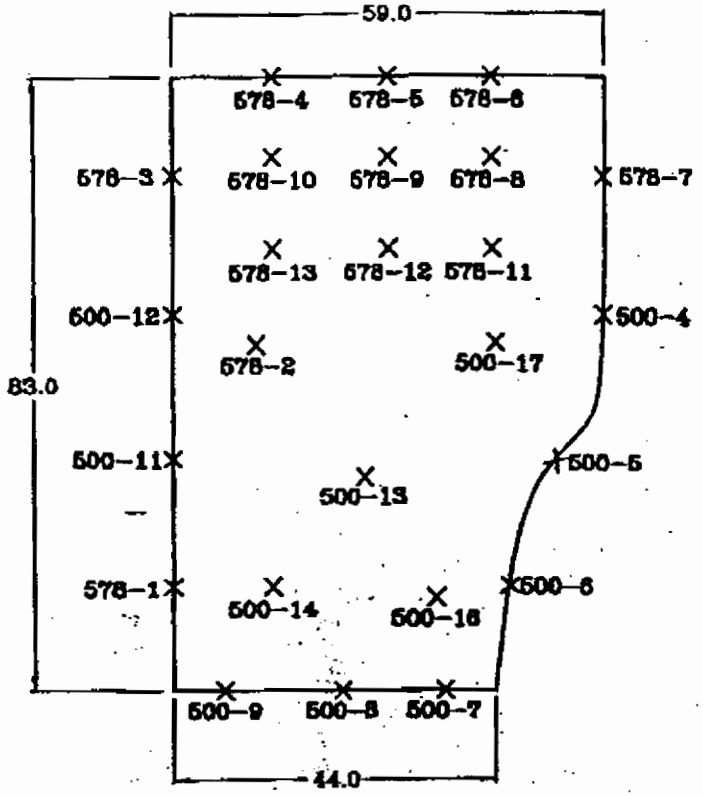
SPORTENVDETCHASN
1899 North Hobson Ave.
North Charleston, SC 29405-2106
Ph. (803) 743-6777

Figure 4
SWMU 14
Confirmation Sample Location/Results
Charleston Naval Base
Charleston, SC

DWG DATE: 4/13/98 | DWG NAME: 14FIG4

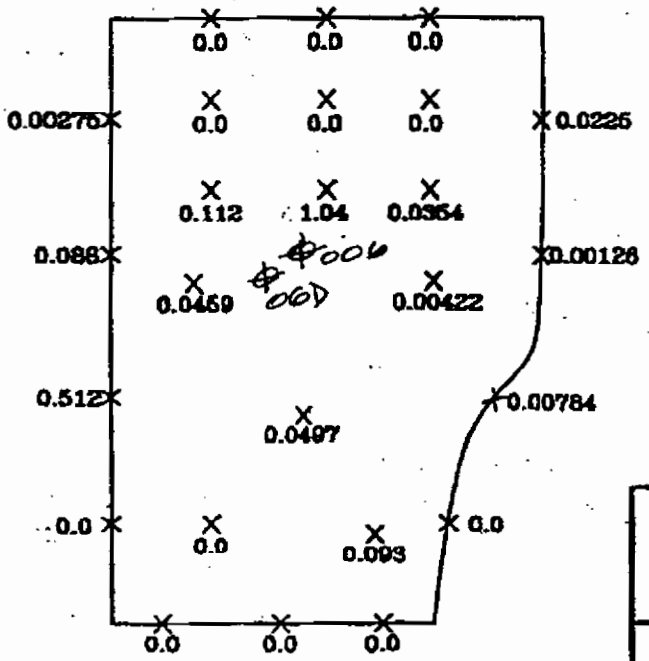
1,1,2,2- TCA

SSL = 0.2 ppb (DAF=1)
= 0.0002 ppm



SAMPLE ID SPORTO____-__

N



RESULTS OF
1,1,2,2-TETRACHLOROETHANE (ppm)

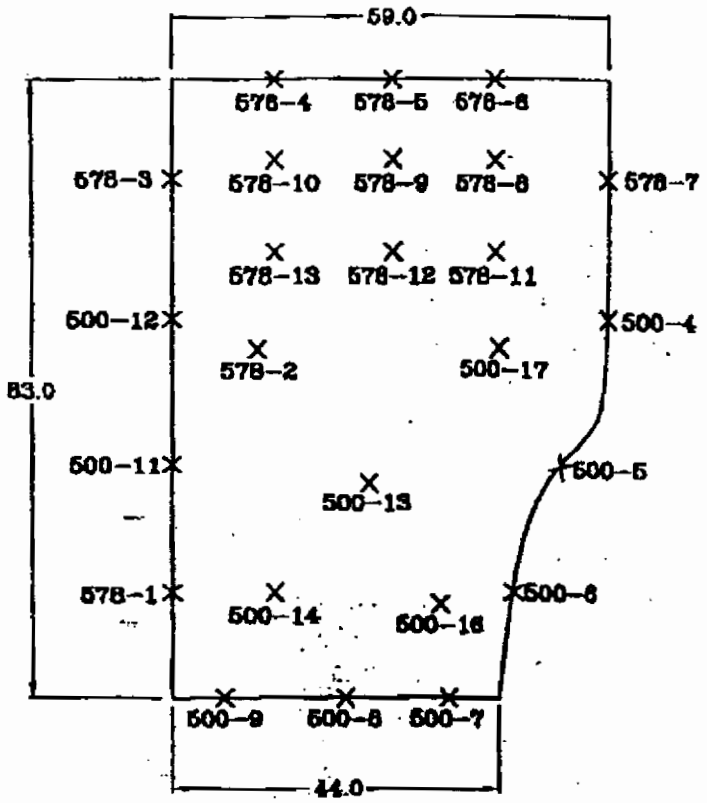
SPORTENVDETCHASN
1899 North Hobson Ave.
North Charleston, SC 29405-2106
Ph. (803) 743-6777

Figure 4
SWMU 14
Confirmation Sample Location/Results
Charleston Naval Base
Charleston, SC

DWG DATE: 4/13/98 | DWG NAME: 14FIG4

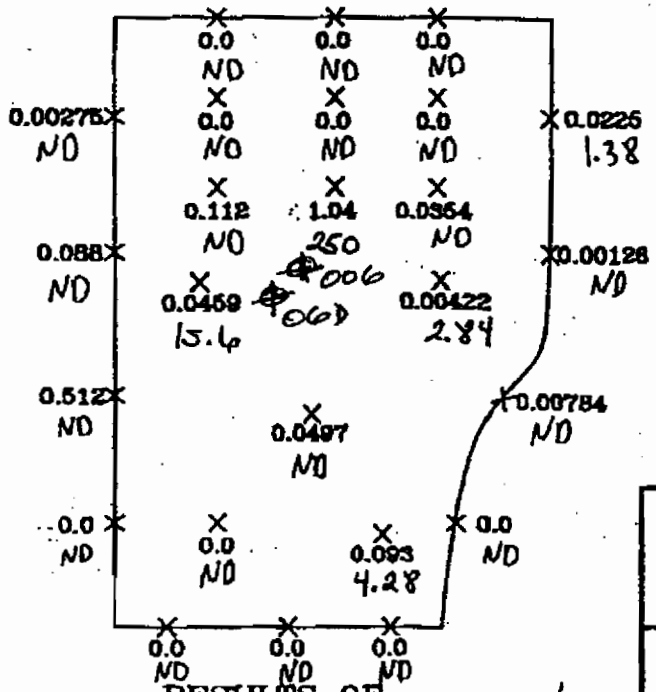
PCE

SSL= 3 ppb (DAF=1)



SAMPLE ID SPORTO____-_

N



RESULTS OF

~~1,1,2,2-TETRACHLOROETHANE~~ (~~ppm~~) ppb

PCE

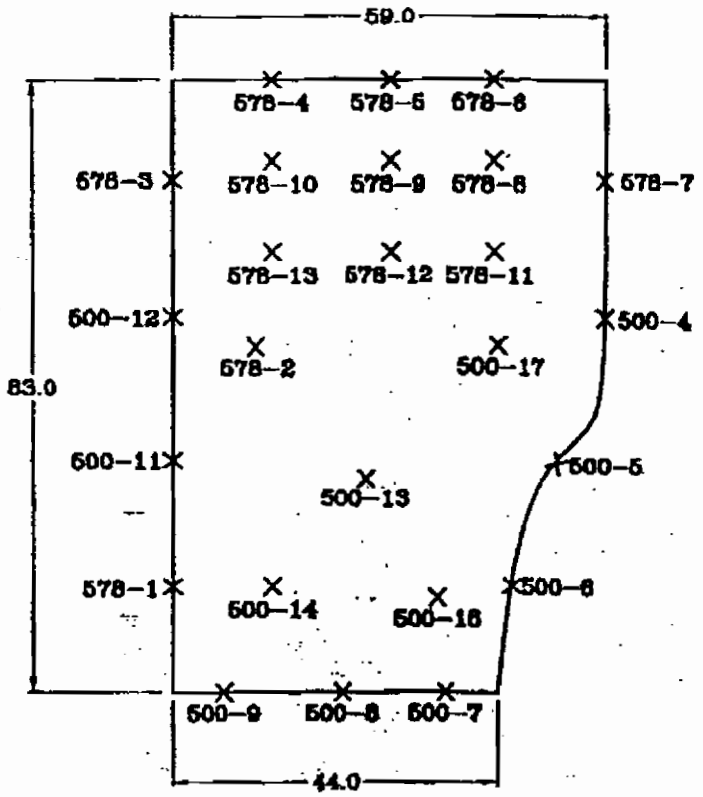
SPORTENVDETCHASN
1899 North Hobson Ave.
North Charleston, SC 29405-2106
Ph. (803) 743-6777

Figure 4
SWMU 14
Confirmation Sample Location/Results
Charleston Naval Base
Charleston, SC

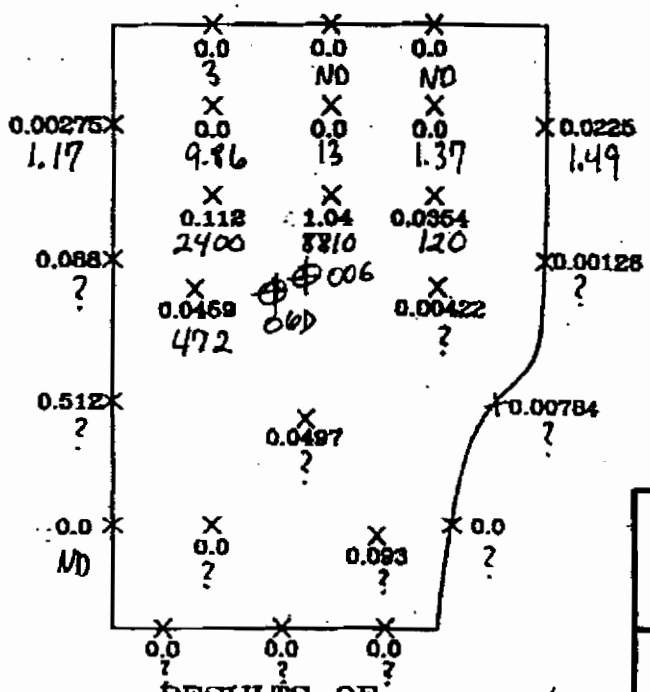
DWG DATE: 4/13/98 | DWG NAME: 14FIG4

CIS-1,2-DCE

SSL = 20 ppb (DAF=1)



SAMPLE ID SPORTO____-__



? = analysis appears to have been for trans-1,2-DCE only

RESULTS OF

~~1,1,2,2-TETRACHLOROETHANE~~ (~~ppm~~ ppb)

CIS-1,2-DCE

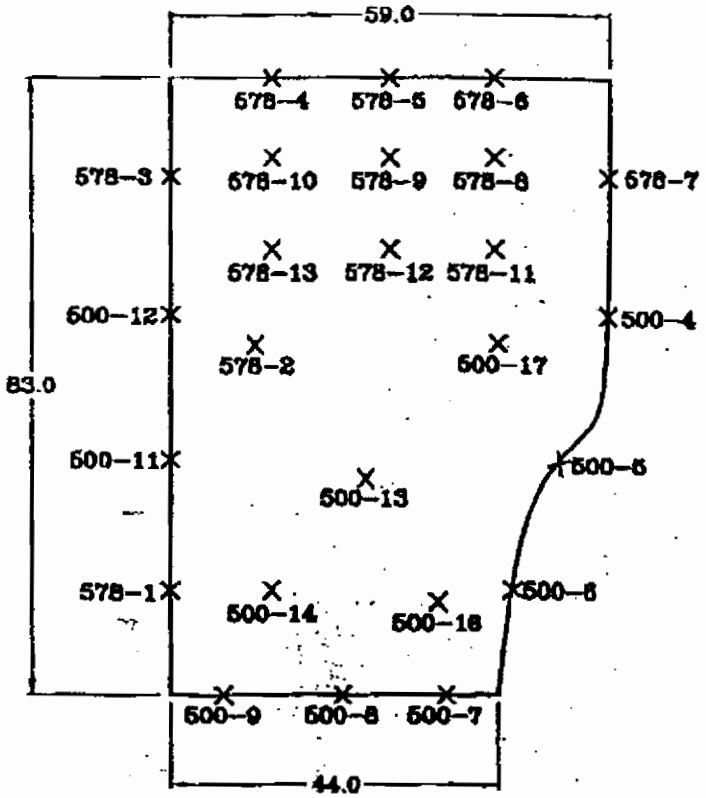
SPORTENVDETCHASN
1899 North Hobson Ave.
North Charleston, SC 29405-2106
Ph. (803) 743-6777

Figure 4
SWMU 14
Confirmation Sample Location/Results
Charleston Naval Base
Charleston, SC

DWG DATE: 4/13/98 | DWG NAME: 14FIG4

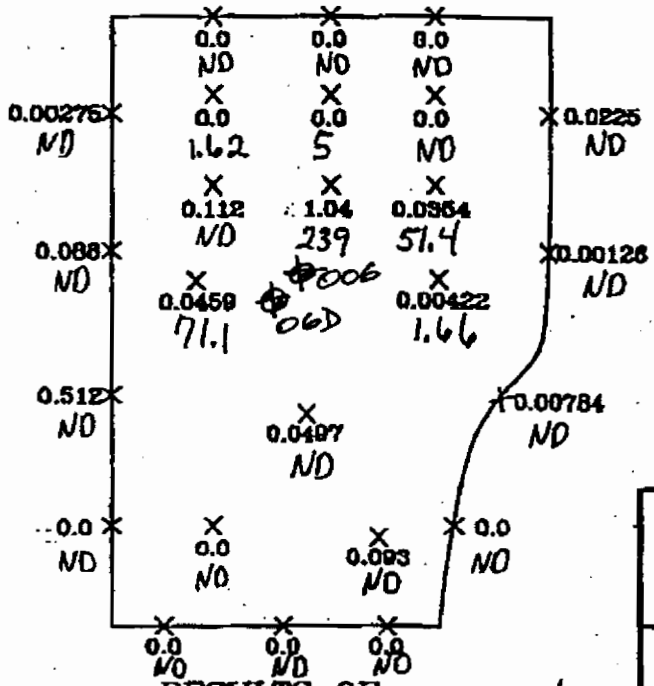
Vinyl Chloride

SSL = 0.7 ppb (DAF=1)



SAMPLE ID SPORTO____-_

N



RESULTS OF

~~1,1,2,2-TETRACHLOROETHANE~~ (~~ppm~~) ppb

Vinyl Chloride

SPORTENVDETCHASN 1899 North Hobson Ave. North Charleston, SC 29405-2106 Ph. (803) 743-6777	
Figure 4 SWMU 14 Confirmation Sample Location/Results Charleston Naval Base Charleston, SC	
DWG DATE: 4/13/98	DWG NAME: 14FIG4

Telephone Conference on June 17, 2002, with Dean Williamson and Gary Foster of CH2M-Jones and Jerry Stamps and Jo Cherie Overcash of SCDHEC

SCDHEC Specific Comments

1. Direction of Groundwater Flow

   On Figure C-1, which is referenced above, the Navy indicates groundwater flow by an arrow pointing to the northeast. However, according to groundwater contours depicted on this same Figure, there is a shallow groundwater divide trending northwest to southeast that has largely been ignored. This groundwater divide would make it possible for groundwater to also flow to the southwest toward Shipyard Creek. The direction of groundwater flow in the shallow and in the deeper portions of the uppermost aquifer in the vicinity of SWMU 14 and AOC 670 are of specific concern. This CMSWP/IM Report for Combined SWMU 14 does not include a potentiometric map for the deeper portion of the uppermost aquifer nor does it include a Top of Ashley Formation contoured figure.

   Monitoring well pair H014GW002 is the only groundwater monitoring point at SWMU 14. According to the Navy's Geographic Information System (GIS) database this well pair is located approximately 300 feet south of the nearest Combined SWMU 14 monitoring well pair H014GW001 and nearly 900 feet northeast of grid well pair HGDHGW009/09D. In Section 5 of this CMS/Completion Report, the Navy states that this well pair H014GW02 and H014GW02D are downgradient, which contradicts the groundwater flow direction depicted on Figure C-1.

   Moreover, according to the Navy's GIS database, the Ashley Formation begins to dip in the southwesterly direction toward Shipyard Creek between AOC 670 and AOC 684. As we discussed during the June 17, 2002, teleconference referenced above, there are insufficient monitoring locations to conclusively determine the direction of groundwater flow in the shallow and deeper portions of the uppermost aquifer in the immediate vicinity of Combined SWMU 14 and especially at SWMU 14 and the southern portion of AOC 670.

   Actions to be taken:

   The Navy must install a minimum of four piezometer pairs to the south, southwest and southeast of the Combined SWMU 14 area to verify the direction of groundwater flow in the shallow and deeper portions of the uppermost aquifer. See the attached figure for suggested piezometer locations. Groundwater elevation should be measured and recorded weekly for a minimum of four weeks to ascertain the direction of groundwater flow. This new data should be coupled with current groundwater elevation data from existing wells to create two potentiometric maps: one of the shallow and one of the deeper portions of the aquifer. The Navy should provide these potentiometric maps along with a Top of Ashley Formation contoured figure. Also, this CMS/IM Report should either provide or specifically reference a geologic cross section of this area of the Base.

Provide groundwater elevation data in table format using all data collected during groundwater sampling events and data collected independent of a sampling event. Groundwater elevation data from all wells and piezometers at the Combined SWMU 14 vicinity should be included. Groundwater elevation data from other wells may be included as appropriate.

The location of additional permanent groundwater monitoring wells in the vicinity of Combined SWMU 14, if necessary except as detailed below, should be based on the direction of groundwater flow in both the shallow and lower portions of the uppermost aquifer.

CH2M-Jones Response:

The need to measure groundwater elevations weekly in the new wells has not been demonstrated. If groundwater contamination is present in the vicinity of the DANC container excavation, it would have been detected in the wells that have been installed in this area and sampled during four sampling events. A shallow and deep monitoring well pair (H014GW006 and H014GW06D) were installed within the DANC excavation area and sampled, and are shown in the attachment to the responses to comments by Jerry Stamps, SCDHEC, on this CMSWP/IMCR. These wells are located within the area of the highest residual concentrations of VOCs in soil as reported in the DET's IM Completion Report. No groundwater COCs have been identified in these wells, indicating that there has been no impact to groundwater from residual VOC concentrations in soil in this area.

There is no evidence of buried chemical containers elsewhere within Combined SWMU 14 from the various sampling events of the RFI, CMS and IMs conducted at this site. Since no contamination is present in the groundwater above screening criteria, further groundwater monitoring is not necessary at this site. Please also responses to comments made by Jerry Stamps, SCDHEC.

2. **Volatile Organic Compounds**

In Appendix B of the above referenced Report, the Navy has provided a copy of the Completion Report Interim Measure for SWMU 14, Supervisor of Shipbuilding, Conversion and Repair, USN (SUPSHIP) Environmental Detachment Charleston (DET), dated April 28, 1998. This Completion Report IM for SWMU 14 states that groundwater was observed at approximately 4 1/2 feet below land surface during the soil excavation activities. This Completion Report IM for SWMU 14 also includes laboratory analytical data for two groundwater samples collected on September 30, 1997. Each of these groundwater samples was analyzed for volatile organic compounds (VOCs). According to the Chain of Custody Record these groundwater samples were collected as "grab" samples. No location of the collection point or field procedure was recorded. According to the laboratory analysis of the sample identified as SPORT0532-3, the following VOCs were detected: 1,1,2,2-tetrachloroethane, 1.2-cis-dichlorothene, 1,2-trans-dichloroethene, and trichloroethene.

In Section 3 of the referenced CMS/IM Report, the Navy states that 1,1,2,2-tetrachloroethane and trichloroethene are primary components of the decontaminating agent non-corrosive (DANC) material, which was buried in chemical containers found

in AOC 670. Moreover, according to the DET's IM Completion Report, dated April 28, 1998, elevated concentrations of these and other VOC parameters remain in subsurface soil at the DANC excavation area at Building 1897, besides being detected in the grab groundwater sample from the excavation area.

According to Table 5-4 entitled Summary of Detected Concentrations of Selected COPCs in Groundwater, vinyl chloride was detected in shallow monitoring well H014GW006 at 17.0 micrograms per liter (µg/L) during the July 1998 sampling event. This monitoring well is installed within the area from which the DANC containers were excavated. It should be noted that vinyl chloride could be a degradation product of trichloroethene. The Drinking Water Standards and Health Advisories maximum contaminant level (MCL) for vinyl chloride is 2.0 µg/L. Although vinyl chloride was not detected in the downgradient well H014GW007, that well is a shallow well. The parent product, trichloroethene, has a specific gravity greater than water, and is expected to sink as it migrates from the source area. Also, consideration must be given to the elevated concentration of VOCs in subsurface soil in this vicinity.

Actions to be taken:

Assuming that groundwater flow in the deep portion of the uppermost aquifer is to the northeast as the GIS depicts, the Navy must install a deep monitoring well directly above the Ashley Formation in the vicinity of H014GW007 to determine groundwater quality at this depth downgradient of the VOC source area. The Navy may choose to confirm the direction of groundwater flow in that area of the Base prior to submitting a monitoring well proposal.

CH2M-Jones Response:

The need to install an additional deep well at the location of well H014GW007 has not been demonstrated. A VOC plume has not been shown to be present in the samples collected from shallow monitoring wells nor has a VOC plume been shown to be present in the deep aquifer. In particular, the deep well present at the excavation area where the DANC containers were removed (H014GW06D) was located to assess whether any deep aquifer contamination occurred near the original source area. This well has not shown to be contaminated with VOCs. Wells H014GW003D, H014GW04D, and H014GW05D provide an adequate downgradient perimeter for detection of any dissolved phase contamination that may have migrated from this area.

Although pure phase (DNAPL) TCE has a density greater than that of water, a dissolved phase plume containing TCE does not migrate based on density driven flow but migrates with the direction of groundwater flow. There are no data suggesting the presence of a DNAPL at SWMU 14. If a dissolved VOC plume was present in the shallow aquifer and migrating towards well H014GW007, it would be detected in this shallow well, and it has not been detected. Therefore, there is no need for a deep well at H014GW007 based on current data.

It should be noted that the single detection of vinyl chloride in well H014GW006 was preceded by a non-detect value and followed by three non-detect values, including the sample collected in July 2000. Thus, the data do not indicate that a VOC plume is present at this location. The potential for the single detection of vinyl chloride at this well to be due to laboratory contamination cannot be dismissed and is consistent with the non-reproducibility of the single reported detection. Neither TCE nor DCE, which are possible parent product of vinyl chloride, have not been detected in this or other nearby wells. Out of 49 groundwater samples analyzed for TCE from the 10 wells in the vicinity of the DANC excavation area, none of them had TCE detections. Thus, the presence of TCE contamination in groundwater in this area has not been confirmed by the groundwater monitoring well sampling.

3. Monitoring Well H014GW002/02D

According to the Navy's GIS database, the following volatile organic compounds have been detected in shallow monitoring well H014GW002: 1,2-dichloroethene (total) at 13.0 µg/L, methylene chloride at 10 µg/L, and xylenes (total) at 14.0 µg/L. Carbon disulfide was detected in deep monitoring well H014GW02D at 260.0 µg/L. Although a source of VOCs has not been identified, SWMU 14 was identified as a Chemical Disposal Area South of Building 1897. Note that the monitoring well pair H014GW002 is the only groundwater monitoring point at SWMU 14 and it is located within a potential source area.

Actions to be taken:

The Navy must collect fresh groundwater samples from these wells to be analyzed for VOCs, at a minimum. The Navy must also propose to install an appropriate number of shallow and deep monitoring wells "downgradient" of SWMU 14. Groundwater samples must be analyzed for VOCs and the following constituents: bis(2-ethylhexyl)phthalate, lead, thallium and vanadium, at a minimum.

CH2M-Jones Response:

The location of SWMU 14 shown in the RFA and in the GIS is the originally reported suspected location of a chemical disposal area. However, the geophysical survey data and the analytical data for soil and groundwater samples at this location do not indicate that this area was a location for chemical disposal activities or that there is a source area of chemical contamination there.

The actual location of SWMU 14 as described in the RFA appears to be different than the originally presumed location reported in the RFI. The actual location of SWMU 14 (Chemical Disposal Area) appears to be by Building 1897 where the buried DANC containers were found and subsequently removed.

With regard to analysis for the other parameters suggested above, analysis for these parameters does not appear warranted. Each of these parameters is briefly addressed below:

Lead

Lead was not detected above its TTL of 15 µg/L in any groundwater sample from these wells. Lead is no longer a COC in soil; it has been remediated. There is no reason to continue

sampling and analyzing for lead in groundwater from these or other wells at Combined SWMU 14.

Thallium

Thallium in groundwater is not considered a COC at this site, for reasons as described in Section 5.3.2 of the Combined SWMU 14 CMSWP/IMCR.

Vanadium

Vanadium is not considered a COC in groundwater at this site for reasons described in Section 5.3.1 of the Combined SWMU 14 CMSWP /IMCR.

BEHP

BEHP is widely recognized by EPA as one of the most ubiquitous laboratory contaminants. It has been widely reported in blank and background (grid) samples (both soil and groundwater) during the RFI at concentrations similar to those reported for SWMU 14. The memorandum entitled "A Comprehensive Review of Common Laboratory Artifacts Detected in Environmental Samples from the Charleston Naval Base," dated February 12, 1998, prepared by Charlie Vernoy/EnSafe summarizes the detections of the common laboratory contaminants BEHP, acetone and methylene chloride, through 1997.

As described in this memorandum, BEHP was detected in 28 Zone H grid soil samples at concentrations ranging from 39 to 400 µg/kg and was detected in six groundwater samples (from Zone H grid wells) at concentrations ranging from 3.9 to 230 µg/L.

The Data Validation Report for SWMU 14 samples collected as part of the draft Zone H Combined SMWU 14 Corrective Measures Study Report (dated October 22, 1999, prepared by EnSafe) reported that BEHP was present in several blanks, including a method blank, an equipment rinsate blank, a deionized water blank, and a field blank. A copy of the data validation report is attached to these responses. The variety of blanks in which this chemical was detected as well as the large number of detections in background samples reveals the ubiquitous nature of this laboratory contaminant.

There are no data indicating that BEHP was disposed or released at SWMU 14 or that a source of BEHP is present at SWMU 14 that poses an unacceptable risk to human health or the environment. Therefore, additional groundwater analysis for BEHP is not warranted.

During the March 2003 BCT Meeting, the Navy/CH2M-Jones team agreed to collect groundwater samples from these two wells for VOC analyses. SCDHEC indicated that if the analytical results from these samples show the absence of VOC contamination in groundwater, no further investigation of groundwater at Combined SWMU 14 would be necessary.

Groundwater samples were collected from wells H014GW002 and H014GW02D on March 12, 2003. The analytical results and data validation summaries from this sampling are provided as a new appendix (Appendix H) to the Revision 1 CMSWP/IMCR for SWMU 14. The only chemical detected above laboratory detection limits was acetone, which was detected at 3.0 µg/L and 3.9 µg/L in the samples from H014GW002 and H014GW02D, respectively, below its tap water RBC (with a HI=0.1) of 61 µg/L. These results indicate that the

groundwater in this area is not impacted by VOCs. Therefore, further investigation of groundwater is not warranted at Combined SWMU 14, as agreed to between SCDHEC and the Navy/CH2M-Jones team, during the March 2003 BCT Meeting.

4. **Practical Quantitation Limit versus Maximum Contaminant Level**

In Table 5-4 referenced above, the Navy has included a column identified as "Qualifier". The Footnotes to this Table explain that the "U" qualifier indicates that the concentration was not detected; the "J" qualifier indicates an estimated value; and the "=" qualifier indicates that the reported value is equal to the sample concentration. It is understood that the "U" qualifier is reported at the laboratory's practical quantitation limit (PQL) applied during analysis of that batch of samples. Of concern is the application of a PQL that is consistently above a MCL or the appropriate risk-based concentration (RBC).

For example, on Table 5-4, there are fifteen reported values for bis(2-ethylhexyl)phthalate (BEHP) in the shallow groundwater wells and 12 reported values for the deep wells. The appropriate MCL for this parameter is 6.0 µg/L. BEHP was reported as equal to 11 µg/L in shallow well H014GW002 during November 1994 and at a concentration equal to 740 µg/L in deep well H014GW03D during September 1995. Either a "J" or a "U" qualifier accompanied the remaining samples. The "J" qualifier ranged from as low as 1.8 µg/L to 220.0 µg/L while the "U" qualifier ranged from 10.0 µg/L to 110.0 µg/L. The use of a PQL consistently above the MCL and with such great latitude calls into question the validity of the analytical data. The Navy must strive to achieve a PQL that is at or below each parameter's respective MCL or appropriate RBC. Inclusion of the laboratory data reports would allow the reviewer to discern the actual method detection limit or PQL applied during that sampling event, the dilution factor, date of extraction when applicable, and other pertinent data that may be of specific concern. See Comment 5.

CH2M-Jones Response:

Please see the response to the previous comment for a discussion of the ubiquitous presence of BEHP as a laboratory contaminant and in background soil and groundwater samples at the CNC.

Laboratories follow specified analytical protocols that represent best available practices, such as those described in laboratory standard document SW-846. The analytical methods being used for this project are SW-846 methods. For some chemicals, even when following these best practices, a detection limit greater than a specified MCL or calculated risk-based concentration is the best result that a laboratory can achieve. The Navy strives to collect data with detection limits that are below target risk criteria, however, sample matrix effects that are outside the ability of the Navy to influence may impact the specific analytical results. For BEHP in particular, the most significant issue is its unavoidable widespread occurrence as a lab contaminant, rather than the specific method detection limit.

With regard to inclusion of laboratory data reports, the BCT has previously agreed that submittal of laboratory reports is not required. The project has progressed for many years without the need to submit hard copies of the analytical reports. Our understanding of the

reason for this agreement is to reduce the massive amount of paper handling, reproduction, shipping, and storage requirements that accompanies submittal of hard copies of analytical reports. This approach is consistent with the industry-wide movement away from relying on hard copies of analytical results to the use of electronic data deliverables that allow data summary reports (such as are provided now and were provided by the Navy/Ensafe team) and easier manipulation of the data.

For the great majority of analytical data, there does not appear to be the need for providing hard copies of the analytical reports, since most of the information requested is provided in the data summary tables. We have been providing the collection date and analysis date in the analytical data summaries. We also agreed earlier this year to begin including the extraction date with these data summaries.

We can provide hard copies of analytical reports where such reports are needed to support decision-making or answer specific questions.

5. Documentation

This CMSWP/IM Report should reference a date of submittal of the well installation logs/details, the chain(s) of custody, and laboratory analysis records if these documents have been previously submitted. If these documents have not been previously submitted, then they must be included in this CMSWP/IM Report. For example, in Section 4 of the CMSWP/IM Report, the Navy states that three monitoring wells were installed during the 1999 investigation and groundwater samples were collected during July 1998, February 1999 and March 1999. This CMSWP/IM Report does not include these well logs/details, chain of custody nor laboratory analysis records.

CH2M-Jones Response:

It is our understanding that the material referred to in Section 4.0 of the April 2002 CH2M-Jones submittal CMSWP/IMCR (the Draft Zone H Combined SMWU 14 Corrective Measures Study Report, dated October 22, 1999, prepared by EnSafe) was previously submitted to SCDHEC. However, if this is not the case, additional copies of this report will be provided. This report contains the analytical reports, chain of custodies and data validation reports for the data collected during the work discussed in Section 4. The well logs for the new wells mentioned in this report however are not included in the Draft Combined SMWU 14 Corrective Measures Study Report referred to above, and may have been provided to SCDHEC within 30 days of installation, rather than with the report. An attempt will be made to locate additional copies of these well logs.

The analytical data, chain of custody forms, and data validation summaries for the samples collected by CH2M-Jones during the recent IM are provided in Appendix E.

VALIDATA

Chemical Services, Inc.

P. O. Box 930422, Norcross, GA 30003

(770) 923-3890
(770) 923-8769 (Fax)

DATA VALIDATION SUMMARY REPORT

COMPANY:	Ensafe/Allen & Hoshall
SITE NAME:	Charleston Navel Base, Zone H
SERVICE ORDER NUMBER:	0304
CONTRACTED LAB:	Southwest Laboratory of Oklahoma, Inc.
QA/QC LEVEL:	EPA Level IV
EPA METHOD:	EPA SOW 3-90 / SW846
VALIDATION GUIDELINES:	*USEPA CLP National Functional Guidelines for Organic Data Review*, 1994; *USEPA CLP National Functional Guidelines for Inorganic Data Review*, 1994
SAMPLE MATRIX:	Water
TYPES OF ANALYSES:	Volatile Organics, Semivolatiles, Pesticides, Total Metals, Cyanide
SDG NUMBER:	34991 (Level III)

SAMPLES:

Client Sample #	Lab Sample #	Matrix	Volatile Organics	Semi-volatiles	Pesticides/ PCBs	Total Metals	Cyanide
014GW03D05	35019-10	Water	X				
014GW06D01	35019-12	Water	X				
017GW00405	34991-01	Water	X	X	X		X
017GW00405RE	34991-01RE	Water		+			
017GW00505	34991-02	Water	X				X
017GW00605	34991-03	Water	X	X	X		X
017HW00605	34991-07	Water	X	X	X		
017GW00801	34991-04	Water	X	X	X		X
017GW01001	34991-05	Water	X	X	X		X
178GW00205	35019-07	Water	X	X		X	
178GW00205RE	35019-07RE	Water		+			
178HW00205	35019-08	Water	X	X		X	
178HW00205RE	35019-08RE	Water		+			
014EW03D05	35019-01	Water	X	X	X	X	X
014EW03D05RE	35019-01RE	Water		+			
014FW03D05	35019-02	Water	X	X	X	X	X
014FW03D05RE	35019-02RE	Water		+			
017DW00405	35019-03	Water	X	X	X	X	X
017DW00405RE	35019-03RE	Water		+			

Client Sample #	Lab Sample #	Matrix	Volatile Organics	Semi-volatiles	Pesticides/ PCBs	Total Metals	Cyanide
017EW00405	34991-06	Water	X	X			
014TW03D05	35019-11	Water	X				
017TW00405	3499108	Water	X				
014EW03D05MS	35019-01MS	Water	+			+	+
014EW03D05MSD	35019-01MSD	Water	+			+	
014EW03D05MD	35019-01MD	Water				+	+
014EW03D05REMS	35019-01REMS	Water		+			
014EW03D05REMSD	35019-01REMSD	Water		+			
017GW00801MS	34991-04MS	Water		+			
017GW00801MSD	34991-04MSD	Water		+			
017HW00605MS	34991-07MS	Water			+		
017HW00605MSD	34991-07MSD	Water			+		
017GW00405MS	34991-01MS	Water					+
017GW00405MD	34991-01MD	Water					+

+ = Non-billable analysis

Note: Total metals consisted of analyses for arsenic and beryllium only.

DW = DEIONIZED WATER BLANK, EW = EQUIPMENT RINSATE BLANK, FW = FIELD BLANK, HW = FIELD DUPLICATE, MD = MATRIX DUPLICATE, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE, RE = REANALYSIS, T = TRIP BLANK

DATA REVIEWER(S): Marvin L. Smith, Jean M. Delashmit

RELEASE SIGNATURE: Kevin C. Harmon

Data Qualifier Definitions

J	-	The associated numerical value is an estimated quantity.
R	-	The data are unusable (the compound/analyte may or may not be present). Resampling and reanalysis are necessary for verification.
U	-	The compound/analyte was analyzed for, but not detected. The associated numerical value is the sample quantitation limit.
UJ	-	The compound/analyte was analyzed for, but not detected. The sample quantitation limit is an estimated quantity.

DATA QUALIFICATION SUMMARY

Southwest Laboratory of Oklahoma, Inc - 34991 CLP Organics and Inorganics

SAMPLES: 014GW03D05, 014GW06D01, 017GW00405, 017GW00405RE, 017GW00505, 017GW00605, 017HW00605, 017GW00801, 017GW01001, 178GW00205, 178GW00205RE, 178HW00205, 178HW00205RE, 014EW03D05, 014EW03D05RE, 014FW03D05, 014FW03D05RE, 017DW00405, 017DW00405RE, 017EW00405, 014TW03D05, 017TW00405, 014EW03D05MS, 014EW03D05MSD, 014EW03D05MD, 014EW03D05REMS, 014EW03D05REMSD, 017GW00801MS, 017GW00801MSD, 017HW00605MS, 017HW00605MSD, 017GW00405MS, 017GW00405MD

VOLATILE ORGANICS

I.) Holding Times:

All Holding Time criteria were met. No action was taken.

II.) GC / MS Tuning:

All GC / MS Tuning criteria were met. No action was required.

III.) Calibration:

Initial Calibration:

The average Relative Response Factor (RRF) was 0.014 for 2-chloroethyl vinyl ether for the standards analyzed on 7/14/98 on instrument U, which was below the 0.050 QC limit. All results for this compound in the associated samples and field blanks, which consisted entirely of non-detects, were rejected (R). The associated samples were 017GW00405, 017GW00505, 017GW00605, 017HW00605, 017GW00801, 017GW01001, 017EW00405 and 017TW00405.

Continuing Calibration:

The Percent Differences (%D's) were 29.5% and 25.9%, respectively, for 1,1,1-trichloroethane and carbon tetrachloride for the standard analyzed on 8/10/98 at 08:44 on instrument K, which exceeded the 25% QC limit. The non-detect results for these two compounds in associated samples 014GW03D05 and 178HW00205 were flagged as estimated (UJ).

The Relative Response Factors (RRF's) were 0.034 and 0.003, respectively, for acetone and 2-chloroethyl vinyl ether for the standard analyzed on 8/3/98 at 08:37 on instrument U, which were below the 0.050 QC limit. The non-detect results for acetone in the associated samples and field blanks were rejected (R). The associated samples were 017GW00405, 017GW00505, 017GW00605, 017HW00605, 017GW00801, 017GW01001, 017EW00405 and 017TW00405. All results for 2-chloroethyl vinyl ether were previously rejected because of a low RRF in the initial calibration. No further action was taken.

The Percent Differences (%D's) of the following compounds exceeded the 25% QC limit for the standard analyzed on 8/3/98 at 08:37 on instrument U:

acetone	48.9%
1,2-dichloroethene	109%
2-chloroethyl vinyl ether	80.8%
total xylenes	122%

All results for total xylenes and 1,2-dichloroethene, which consisted entirely of non-detects, were flagged as estimated (UJ). The associated samples were 017GW00405, 017GW00505, 017GW00605, 017HW00605, 017GW00801 and 017GW01001. All results for acetone and 2-chloroethyl vinyl ether were previously rejected (R) in the associated samples because of low RRF's in the initial and continuing calibrations. No further action was necessary.

The Relative Response Factors (RRF's) were 0.032 and 0.002, respectively, for acetone and 2-chloroethyl vinyl ether for the standard analyzed on 8/6/98 at 10:08 on instrument U, which were below the 0.050 QC limit. All results for these two compounds in the associated samples and field blanks, which consisted entirely of non-detects, were rejected (R). The associated samples were 014GW06D01, 178GW00205, 014EW03D05, 014FW03D05 and 017DW00405.

The Percent Differences (%D's) of the following compounds exceeded the 25% QC limit for the standard analyzed on 8/6/98 at 10:08 on instrument U:

acetone	57.2%
1,2-dichloroethene	109%
2-chloroethyl vinyl ether	83.1%
total xylenes	128%
trans-1,3-dichloropropene	27.3%
carbon disulfide	67.2%
2-butanone	26.2%

All results for 1,2-dichloroethene, total xylenes, trans-1,3-dichloropropene, carbon disulfide and 2-butanone in the associated samples, which consisted entirely of non-detects, were flagged as estimated (UJ). The associated samples were 014GW06D01 and 178GW00205. All results for acetone and 2-chloroethyl vinyl ether were previously rejected (R) in the associated samples because of low RRF's in this calibration. No further action was necessary.

IV.) Blanks:

Method Blanks:

There were no detections in the method blanks. No action was required.

Field Blanks:

1,2-Dichloroethene and trans-1,3-dichloropropene were detected at 32 ug/L and 2 ug/L, respectively, in equipment rinsate blank 014EW03D05. Since these two compounds were not detected in the associated samples, no action was taken.

Trip Blanks:

Methylene chloride was detected at 4 ug/L in trip blank 014TW03D05. The detections of this compound in associated samples 014GW03D05 and 178HW00205, which were less than 10X the blank amount, were flagged as undetected (U), with detections less than the CRQL, being raised to the CRQL.

Tentatively Identified Compounds (TIC):

There were no TIC's detected in the method, field or trip blanks. No action was necessary.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No action was required.

VI.) Laboratory Control Samples (LCS):

Six LCS's were analyzed by the laboratory. Eighteen LCS recoveries were outside their respective QC limits. Data validation action based on LCS Recovery criteria was not required. No action was taken.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

The Percent Recoveries (%R's) in spiked samples equipment rinsate blanks 014EW03D05MS and 014EW3D05MSD were outside the QC limits for the following compounds:

Compound	MS, %R	MSD, %R	QC Limits, %R
acetone	55		60-140
carbon disulfide	58	56	60-140
vinyl acetate	257	260	60-140
2-chloroethyl vinyl ether	19	9	60-140

Since the equipment rinsate blank was used for the MS / MSD samples, no action was taken.

VIII.) Field Duplicates:

Two sets of field duplicate samples were analyzed in this SDG. There were no calculable Relative Percent Differences (RPD's) in either set. No action was required.

IX.) Internal Standards Performance (ISTD):

All ISTD criteria were met. No action was required.

X.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No action was taken.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL's):

All CRQL criteria were met. No action was necessary.

XII.) Tentatively Identified Compounds (TIC's):

All TIC Identification criteria were met. No action was required.

XIII.) System Performance:

All System Performance criteria were met. No action was taken.

XIV.) Overall Assessment of Data/General:

Twenty-six non-detect results for acetone and 2-chloroethyl vinyl ether were rejected in the SDG samples and field blanks because of low RRF's in the initial and continuing calibrations. All other laboratory data were acceptable with qualifications.

SEMIVOLATILE ORGANICS

I.) Holding Times:

The ten days between sample date and reextraction date exceeded the 7 day QC limit for all reextractions (6 samples) in this fraction of the SDG. Since the original sample data for the six samples were used instead of the reextraction data, no action was necessary.

II.) GC / MS Tuning:

All GC / MS Tuning criteria were met, so no action was taken.

III.) Calibration:

All Initial and Continuing Calibration criteria were met. No action was required.

IV.) Blanks:

Method Blanks:

Bis(2-ethylhexyl)phthalate was detected at 3 ug/L and 1 ug/L, respectively, in method blanks SBLK1 and SBLK3. Detections of this compound in associated samples 17GW00605, 17HW00605, 17GW00801 and 17GW01001, which were less than 10X the blank amounts, were flagged as undetected (U) with the analytical results below the CRQL being replaced with the CRQL. In addition benzoic acid was detected at 8 ug/L in method blank SBLK2, and 7 ug/L in method blank SBLK3. The detection of this compound in associated sample 17GW00405 less than 5X the blank amount (SBLK2), was flagged as undetected (U) with the analytical result below the CRQL being replaced with the CRQL.

Equipment Rinsate Blanks:

Benzoic acid, di-n-butylphthalate and bis(2-ethylhexyl)phthalate were detected at 6 ug/L, 1 ug/L and 6 ug/L, respectively, in equipment rinsate blank 014EW03D05. The detections of benzoic acid in

associated samples 178GW00205 and 178HW00205, which were less than 5X the blank amount were flagged as undetected (U) with the analytical results below the CRQL being replaced with the CRQL. The detection of di-n-butylphthalate in associated sample 178HW00205, which was less than 10X the blank amount was flagged as undetected (U) with the analytical result below the CRQL being replaced with the CRQL. The detection of bis(2-ethylhexyl) phthalate in associated sample 17GW00405 less than 10X the blank amount, was flagged as undetected (U) with the analytical result below the CRQL being replaced with the CRQL. All other detections of this compound were previously qualified using the method blanks.

Phenol was detected at 7 ug/L in equipment rinsate blank 017EW00405. The detections of phenol in associated samples 017GW00605, 017HW00605 and 017GW01001, which were less than 5X the blank amount were flagged as undetected (U) with the analytical results below the CRQL being replaced with the CRQL.

Field Blank:

There were no detections in the field blank. No action was required.

Deionized Water Blank:

Bis(2-ethylhexyl)phthalate and di-n-butylphthalate were detected at 2 ug/L and 1 ug/L, respectively, in deionized water blank 017DW00405. Since these two compounds were previously qualified using the method and equipment rinsate blanks, no further action was required.

TIC's:

Trimethyl hexene was detected in the method and field blanks at sufficient concentrations to eliminate all detections in the SDG samples by applying the 10X Blank Rule.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No action was necessary.

VI.) Laboratory Control Samples (LCS):

Five LCS samples were analyzed by the laboratory. Three LCS recoveries were below their respective QC limits. Data validation based on LCS recoveries was not required, so no action was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

The Percent Recoveries (%R's) in spiked samples 017GW00801MS and 017GW00801MSD exceeded the QC limits for the following compound:

Compound	MS, %R	MSD, %R	QC Limits, %R
pentachlorophenol	120	112	9-103

Since this compound was not detected in unspiked sample 017GW00801, no action was required.

VIII.) Field Duplicates:

Two sets of field duplicate samples were analyzed in this SDG. There were no calculable Relative Percent Differences (RPD's) in either set. No action was required.

IX.) Internal Standards Performance:

All Internal Standards Performance criteria were met. No action was required.

X.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No action was required.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL's):

The original analyses of samples 017GW00405, 178GW00205, 178HW00205, 014EW03D05, 014FW03D05 and 017DW00405 were considered by the validator to be of preferable data quality as compared to the reextractions because of better holding times.

XII.) Tentatively Identified Compounds (TIC's):

All TIC criteria were met. No action was necessary.

XIII.) System Performance:

All System Performance criteria were met. No action was taken.

XIV.) Overall Assessment of Data/General:

All laboratory data were acceptable with qualifications.

PESTICIDES/PCB's

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) Instrument Performance:

All Pesticide Instrument Performance criteria were met. No action was taken.

III.) Calibration:

All Initial and Continuing Calibration criteria were met. No action was necessary.

IV.) Blanks:

There were no detections in the method or field blanks. No action was required.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No action was taken.

VI.) Laboratory Control Sample (LCS):

Four LCS's were analyzed by the laboratory. Four LCS Percent Recoveries (%R's) of endosulfan II were below the 54-122% QC limits. Data validation based on LCS Recovery criteria was not required. No action was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

The Percent Recoveries (%R's) in spiked samples 017HW00605MS and 017HW00605MSD were below the QC limits for the following compounds:

Compound	MS, %R	MSD, %R	QC Limits, %R
endosulfan I	36	40	46-134
4,4'-DDE	57	63	70-122
4,4'-DDD	60	67	70-133

The non-detect results for these three compounds in unspiked sample 017HW00605 were flagged as estimated (UJ).

VIII.) Field Duplicates:

One set of field duplicate samples was analyzed in this SDG. There were no calculable Relative Percent Differences (RPD's) for the set. No action was required.

IX.) TCL Compound Identification:

Pesticide/PCB Identification Summary (PIS):

All PIS Identification criteria were met. No action was required.

X.) Pesticide Cleanup Check:

Florisil Cartridge Check:

All criteria were met. No action was taken.

Gel Permeation Chromatography (GPC):

GPC cleanup was not required for this SDG. No action was necessary.

XI.) Overall Assessment of Data/General:

All laboratory data were acceptable with qualification.

TOTAL METALS AND CYANIDE

I.) Holding Times:

All Holding Time criteria were met. No action was taken.

II.) Calibration:

All Initial and Continuing Calibration criteria were met. No action was necessary.

III.) Blanks:

The following blank results represent the highest detections associated with the samples and were used for data qualification:

Blank Type/ID#	Analyte	Max. Conc.	Action Level ug/L
FB	arsenic	12.4 ug/L	62.0
CCB3	beryllium	0.30 ug/L	1.50

CCB = Continuing Calibration Blank, FB = Field Blank 014FW03D05

All results greater than the IDL but less than 5X the blank amounts (Action Level, ug/L for water samples) for which the contaminated blank was an associated calibration or field blank were flagged as undetected (U).

IV.) ICP Interference Check Sample Results:

All Percent Recovery criteria were met, so no action was taken.

Arsenic (3 ug/L) was detected in ICS Solution A at a positive concentration greater than the IDL. This analyte should not be present. Since neither aluminum, calcium, iron nor magnesium results were available in the data package, no action was taken.

V.) ICP Serial Dilution Analysis:

All Serial Dilution Analysis criteria were met. No action was required.

VI.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No action was required.

VII.) Duplicate Sample Analysis:

All Duplicate Sample Analysis criteria were met. No action was required.

VIII.) Matrix Spike Recoveries (MS / MSD):

All MS / MSD criteria were met. No action was required.

IX.) Field Duplicates:

One set of field duplicate samples was analyzed in this SDG. There were no calculable Relative Percent Differences (RPD's) for the set. No action was required.

X.) Graphite Furnace Atomic Absorption QC (GFAA):

Graphite Furnace analyses were not used for the samples in this SDG. No action was taken.

XI.) Sample Result, Calculation/Transcription Verification:

All criteria were met for a Level III package. No action was required.

XII.) Quarterly Verification of Instrumental Parameters:

All criteria were met. No action was taken.

XIII.) Overall Assessment of Data/General:

All laboratory data were acceptable with qualifications.

VALIDATA

Chemical Services, Inc.

P. O. Box 930422, Norcross, GA 30003

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DATA VALIDATION SUMMARY REPORT

COMPANY:	Ensafe, Inc.
SITE NAME:	Charleston Navel Base, Zone H
SERVICE ORDER NUMBER:	0311
CONTRACTED LAB:	Southwest Laboratory of Oklahoma, Inc.
QA/QC LEVEL:	EPA Level III
EPA METHOD:	EPA SOW 3-90 / SW846
VALIDATION GUIDELINES:	*USEPA CLP National Functional Guidelines for Organic Data Review*, 1994; *USEPA CLP National Functional Guidelines for Inorganic Data Review*, 1994
SAMPLE MATRIX:	Water
TYPES OF ANALYSES:	Volatile Organics, Semivolatiles, Pesticides/PCB's, Total Metals, Cyanide
SDG NUMBER:	35007 (Level III)

SAMPLES:

Client Sample #	Lab Sample #	Matrix	Volatile Organics	Semi-volatiles	Pesticides/ PCBs	Total Metals	Cyanide
009GW02401	35182-01	Water	X	X	X	X	X
009GW24D01	35182-02	Water	X	X	X	X	X
009HW24D01	35182-03	Water	X	X	X	X	X
014GW00305	35007-03	Water	X				
014GW00405	35007-01	Water	X				
014GW00505	35007-04	Water	X				
014GW00601	35007-05	Water	X				
014GW04D05	35007-02	Water	X				
014GW05D05	35007-10	Water	X				
017GW00501	25067-01	Water		X	X	X*	
GDHGW00305	35007-09	Water	X			X*	
GDHGW00605	35007-08	Water	X			X*	
GDHGW03D05	35007-06	Water	X			X*	
GDHGW06D05	35007-07	Water	X				
009EW24D01	35182-04	Water	X	X	X	X	X
009FW02401	35182-05	Water	X	X	X	X	X
009TW02401	35182-06	Water	X				
GDHTW00305	35007-11	Water	X				
014GW00505MS	35007-04MS	Water	+				

Client Sample #	Lab Sample #	Volatile Matrix	Semi-Organics	Pesticides/ volatiles	Total PCBs	Metals	Cyanide
014GW00505MSD	35007-04MSD	Water	+				
009GW02401MS	35182-01MS	Water		+	+		
009GW02401MSD	35182-01MSD	Water		+	+		

* Total metals consisted of analyses for arsenic and beryllium only.
\+ Non-billable analysis

EW = EQUIPMENT RINSATE BLANK, FW = FIELD BLANK, HW = FIELD DUPLICATE,
MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE, TW = TRIP BLANK

DATA REVIEWER(S): Marvin L. Smith, Jean M. Delashmit

RELEASE SIGNATURE:

Data Qualifier Definitions

J	-	The associated numerical value is an estimated quantity.
R	-	The data are unusable (the compound/analyte may or may not be present). Resampling and reanalysis are necessary for verification.
U	-	The compound/analyte was analyzed for, but not detected. The associated numerical value is the sample quantitation limit.
UJ	-	The compound/analyte was analyzed for, but not detected. The sample quantitation limit is an estimated quantity.

DATA QUALIFICATION SUMMARY

Southwest Laboratory of Oklahoma, Inc - 35007 CLP Organics and Inorganics

SAMPLES: 009GW02401, 009GW24D01, 009HW24D01, 014GW00305, 014GW00405, 014GW00505, 014GW00601, 014GW04D05, 014GW05D05, 017GW00501, GDHGW00305, GDHGW00605, GDHGW03D05, GDHGW06D05, 009EW24D01, 009FW02401, 009TW02401, GDHTW00304, 014GW00505MS, 014GW00505MSD, 009GW02401MS, 009GW02401MSD

VOLATILE ORGANICS

I.) Holding Times:

All Holding Time criteria were met. No action was taken.

II.) GC / MS Tuning:

All GC / MS Tuning criteria were met. No action was required.

III.) Calibration:

Initial Calibration:

The average Relative Response Factor (RRF) was 0.014 for 2-chloroethyl vinyl ether in the standards analyzed on 7/14/98 on instrument U, which was below the 0.050 QC limit. All results for this compound in the associated samples, which consisted entirely of non-detects, were rejected (R). The associated samples were 014GW00305, 014GW00405, 014GW00505, 014GW00601, 014GW04D05, 014GW05D05, GDHGW00305, GDHGW00605, GDHGW03D05, GDHGW06D05, and trip blank GDHTW00305.

Continuing Calibration:

The Relative Response Factors (RRF's) were 0.029 and 0.004, respectively, for acetone and 2-chloroethyl vinyl ether in the standard analyzed on 8/4/98 at 08:55 on instrument U, which were below the 0.050 QC limit. The non-detect results for acetone in the associated samples 014GW00305, 014GW00405 and 014GW04D05 were rejected (R). All results for 2-chloroethyl vinyl ether were previously rejected because of a low RRF in the initial calibration. No further action was taken.

The Percent Differences (%D's) of the following compounds exceeded the 25% QC limit for the standard analyzed on 8/4/98 at 08:55 on instrument C:

acetone	67.0%
carbon disulfide	60.2%
2-chloroethyl vinyl ether	68.3%

The non-detect results for acetone and 2-chloroethyl vinyl ether were previously rejected because of low RRFs in the initial and continuing calibrations. The non-detect results for carbon disulfide in associated samples 014GW00305, 014GW00405 and 014GW04D05 were qualified as estimated (UJ).

The Relative Response Factors (RRFs) were 0.028 and 0.002, respectively, for acetone and 2-chloroethyl vinyl ether in the standard analyzed on 8/5/98 at 10:40 on instrument U, which were below the 0.050 QC limit. The non-detect results for acetone in associated samples 014GW00505, 014GW00601, 014GW05D05, GDHGW00605, GDHGW03D05, GDHGW06D05, and trip blank GDHTW00305 were rejected (R). The detection of acetone in sample GDHGW00305 was flagged as estimated (J). All results for 2-chloroethyl vinyl ether were previously rejected because of a low RRF in the initial calibration. No further action was taken.

The Percent Differences (%D's) of the following compounds exceeded the 25% QC limit for the standard analyzed on 8/4/98 at 08:55 on instrument C:

acetone	70.8%
carbon disulfide	68.7%
1,2-dichloroethene	103%
2-butanone	26.7%
2-chloroethyl vinyl ether	86.8%
total xylenes	29.4%

All results for acetone and 2-chloroethyl vinyl ether in the associated samples were previously qualified because of low RRFs in the initial and continuing calibrations. The non-detect results for the four other compounds in the associated samples were flagged as estimated (UJ). The associated samples were 014GW00505, 014GW00601, 014GW05D05, GDHGW00305, GDHGW00605, GDHGW03D05 and GDHGW06D05.

The Relative Response Factor (RRF) was 0.030 for acetone in the standard analyzed on 8/12/98 at 10:21 on instrument U, which was below the 0.050 QC limit. All results for acetone in the associated samples, which consisted entirely of non-detects, were rejected (R). The associated samples were 009GW02401, 009GW24D01, 009HW24D01, and blanks 009EW24D05, GDHFW02401 and GDHTW00305.

The Percent Differences (%D's) of the following compounds exceeded the 25% QC limit for the standard analyzed on 8/12/98 at 10:21 on instrument U:

carbon disulfide	52.5%
1,2-dichloroethene	80.2%

All results for the two compounds in the associated samples, which consisted entirely of non-detects, were flagged as estimated (UJ). The associated samples were 009GW02401, 009GW24D01 and 009HW24D01.

IV.) Blanks:

Method Blanks:

There were no detections in the method blanks. No action was required.

Field Blanks:

Chloroform was detected at 3 ug/L and 1 ug/L, respectively, in equipment rinsate blank 009EW24D01 and field blank 009FW02401. Since this compound was not detected in the associated samples, no action was taken.

Trip Blanks:

There were no detections in the trip blanks. No action was required.

Tentatively Identified Compounds (TIC):

There were no TIC's detected in the method, field or trip blanks. No action was necessary.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No action was required.

VI.) Laboratory Control Samples (LCS):

Six LCS's were analyzed by the laboratory. Eighteen LCS recoveries were below their respective QC limits. Data validation action based on LCS Recovery criteria was not required. No action was taken.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

The Percent Recoveries (%R's) were below the QC limits in spiked samples 014GW00505MS and 014GW00505MSD for the following compounds:

Compound	MS, %R	MSD, %R	QC Limits, %
1,1-dichloroethene	64	61	76-125
acetone	12	12	60-140
carbon disulfide	22	22	60-140
1,1-dichloroethane	72	70	78-127
2-chloroethyl vinyl ether	12	10	60-140
cis-1,3-dichloropropene		59	60-140
2-butanone		57	60-140

The non-detect results for acetone and 2-chloroethyl vinyl ether in unspiked sample 014GW00505 were previously rejected because of low RRF's in the initial and continuing calibrations. The associated sample results for the other compounds, which consisted entirely of non-detects, were flagged as estimated (UJ).

VIII.) Field Duplicates:

There were no calculable Relative Percent Differences (RPD's) in the set of field duplicate samples analyzed in this SDG. No action was required.

IX.) Internal Standards Performance (ISTD):

All ISTD criteria were met. No action was required.

X.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No action was taken.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL's):

All CRQL criteria were met. No action was necessary.

XII.) Tentatively Identified Compounds (TIC's):

All TIC Identification criteria were met. No action was required.

XIII.) System Performance:

All System Performance criteria were met. No action was taken.

XIV.) Overall Assessment of Data/General:

Twenty-seven non-detect results for acetone and 2-chloroethyl vinyl ether were rejected in the SDG samples, field blanks and trip blanks because of low RRFs in the initial and continuing calibrations. All other laboratory data were acceptable with qualifications.

SEMIVOLATILE ORGANICS

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) GC / MS Tuning:

All GC / MS Tuning criteria were met, so no action was taken.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No action was required.

Continuing Calibration:

The Percent Difference (%D) for 2,4-dinitrotoluene was 32.7% for the standard analyzed on 8/10/98 at 08:25 on instrument O, which exceeded the 25% QC limit. The non-detect result for this compound in associated sample 017GW00501 was flagged as estimated (UJ).

IV.) Blanks:

Method Blanks:

The following compounds were detected in method blank SBLK1:

phenol	5 ug/L
benzoic acid	4 ug/L
di-n-butyl phthalate	3 ug/L
bis(2-ethylhexyl)phthalate	2 ug/L

The detections of di-n-butylphthalate and bis(2-ethylhexyl)phthalate in sample 017GW00501, which were less than 10X the blank amounts, were flagged as undetected (U) with the analytical results below the CRQL being replaced with the CRQL. The detections of phenol and benzoic acid in this sample, which were less than 5X the blank amounts, were flagged as undetected (U) with the analytical results below the CRQL being replaced with the CRQL.

Field Blanks:

Benzoic acid was detected at 6 ug/L in equipment rinsate blank 009EW24D01. The detections of this compound in associated samples 009GW02401, 009GW24D01 and 009HW24D01, which were less than 5X the blank amount, were flagged as undetected (U) with the analytical results below the CRQL being replaced with the CRQL.

Bis(2-ethylhexyl)phthalate was detected at 1 ug/L in blank 009FW02401. The detections of this compound in associated sample 017GW00501 was previously qualified using method blank SBLK1. No further action was necessary.

Tentatively Identified Compounds (TIC's):

Trimethyl heptene and ethylmethyl heptene were detected in the field blanks. Since these two compounds were not detected in the samples, no action was taken.

V.) Surrogate Recoveries:

The Percent Recoveries (%R's) were 34% and 39%, respectively, for nitrobenzene-d5 and 2-fluorobiphenyl in sample 009GW02401, which were below their respective 35-114% and 43-116% QC limits. All positive and non-detect results in the base/neutral fraction of this sample were flagged as estimated (J) and (UJ).

The Percent Recovery (%R) was 15% 2-fluorophenol in sample 009HW24D01, which was below the 21-100% QC limits. Since only one surrogate was outside the QC limits in the acid fraction, no action was necessary.

VI.) Laboratory Control Samples (LCS):

Four LCS samples were analyzed by the laboratory. All LCS Recovery criteria were met. No action was taken.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

The Percent Recoveries (%R's) were below the QC limits in spiked samples 009GW02401MS and 009GW02401MSD for the following compounds:

Compound	MS, %R	MSD, %R	QC Limits, %
n-nitroso-di-n-propylamine		38	41-116
1,4-dichlorobenzene		32	36-97
1,2,4-trichlorobenzene		36	39-98
acenaphthene		41	46-118
2,4-dinitrotoluene	21	20	24-96

The results for these compounds in unspiked sample 009GW02401, which consisted entirely of non-detects, were flagged as estimated (UJ).

VIII.) Field Duplicates:

There were no calculable Relative Percent Differences (RPD's) for the set of field duplicate samples analyzed in this SDG. No action was required.

IX.) Internal Standards Performance:

All Internal Standards Performance criteria were met. No action was taken.

X.) TCL Compound Identification:

All TCL Compound Identification criteria were met. No action was required.

XI.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL's):

All CRQL criteria were met. No action was necessary.

XII.) Tentatively Identified Compounds (TIC's):

All TIC criteria were met. No action was necessary.

XIII.) System Performance:

All System Performance criteria were met. No action was taken.

XIV.) Overall Assessment of Data/General:

All laboratory data were acceptable with qualifications.

PESTICIDES/PCB's

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) Instrument Performance:

The Percent Differences (%D's) were 33.0% and 29.0%, respectively, for beta-BHC and gamma-BHC in the PEM2F standard analyzed on 8/17/98 at 21:16 on the secondary columns, which exceeded the 25% QC limit. The non-detect results for these two compounds in associated samples 009GW24D01 and 009HW24D01 were flagged as estimated (UJ).

III.) Calibration:

Initial Calibration:

The Percent Relative Standard Deviation (%RSD) was 21.8% for methoxychlor in the standards analyzed on 8/9/98 on the secondary column, which exceeded the 20% QC limit. Since only one compound was outside the QC limit with a %RSD of less than 30%, no action was necessary.

Continuing Calibration:

All Continuing Calibration criteria were met. No action was necessary.

IV.) Blanks:

There were no detections in the method or field blanks. No action was required.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No action was taken.

VI.) Laboratory Control Sample (LCS):

Four LCS's were analyzed by the laboratory. Four LCS Percent Recoveries (%R's) were below their respective QC limits. Since data validation action based on LCS Recovery criteria was not required, no action was necessary.

VII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

The Percent Recoveries (%R's) were below the QC limits in spiked samples 009GW02401MS and 009GW02401MSD for the following compounds:

Compound	MS, %R	MSD, %R	QC Limits, %
4,4'-DDE	59	58	70-122
4,4'-DDD		68	70-133
endrin aldehyde	2	2	47-178

The non-detect results for 4,4'-DDE and 4,4'-DDD in unspiked sample 009GW02401 were flagged as estimated (UJ). The non-detect result for endrin aldehyde was rejected (R) because the %R was less than 10%.

VIII.) Field Duplicates:

There were no calculable Relative Percent Differences (RPD's) in the set of field duplicate samples analyzed in this SDG. No action was required.

IX.) TCL Compound Identification:

Pesticide/PCB Identification Summary (PIS):

All PIS criteria were met. No action was taken.

X.) Pesticide Cleanup Check:

Florisil Cartridge Check:

Florisil Cartridge Check data was not included in the SDG package. No action was taken.

Gel Permeation Chromatography (GPC):

GPC cleanup was not required for this SDG. No action was necessary.

XI.) Overall Assessment of Data/General:

The non-detect result for endrin aldehyde in sample 009GW02401 was rejected because of low recoveries (less than 10%) in the MS / MSD samples. All other laboratory data were acceptable with four qualifications.

TOTAL METALS AND CYANIDE

I.) Holding Times:

All Holding Time criteria were met. No action was taken.

II.) Calibration:

All Initial and Continuing Calibration criteria were met. No action was necessary.

III.) Blanks:

The following blank results represent the highest detections associated with the samples and were used for data qualification:

Blank ID	Analyte	Max. Conc.	Action Level
CCB3	arsenic	8.10 ug/L	40.5 ug/L
CCB3	beryllium	0.30 ug/L	1.50 ug/L
ERB	barium	1.60 ug/L	8.00 ug/L
FB	calcium	1020 ug/L	5100 ug/L
ERB	copper	18.8 ug/L	94.0 ug/L
ERB	iron	156 ug/L	780 ug/L
ERB	magnesium	79.0 ug/L	395 ug/L
CCB5	selenium	4.10 ug/L	20.5 ug/L
ERB	sodium	21300 ug/L	107000 ug/L
ERB	tin	28.7 ug/L	144 ug/L
ERB	zinc	20.7 ug/L	104 ug/L

CCB = Continuing Calibration Blank, ERB = Equipment Rinsate Blank (009EW24D01), FB = Field Blank (009FW02401)

All results greater than the IDL but less than 5X the blank amounts (Action Level, ug/L for water samples) for which the contaminated blank was an associated calibration or field blank were flagged as undetected (U).

The following analytes had negative results with absolute values greater than the IDL:

Blank ID	Analyte	Neg. Conc.	5X Conc.
CCB4	copper	-2.10 ug/L	10.5 ug/L
ICB	mercury	-0.10 ug/L	0.50 ug/L
CCB2	tin	-32.6 ug/L	163 ug/L

CCB = Continuing Calibration Blank, ICB = Initial Calibration Blank

All associated sample results, which consisted entirely of non-detects after blank qualification, were flagged as estimated (J) and (UJ).

IV.) ICP Interference Check Sample Results:

The following analytes were detected in ICS Solution A at concentrations greater than the IDL:

antimony	3 ug/L
arsenic	3 ug/L
barium	5 ug/L
copper	2 ug/L
manganese	4 ug/L
vanadium	1 ug/L

These analytes should not be present. The concentrations of calcium and magnesium in samples 009GW24D01 and 009HW24D01 exceeded that of ICS Solution A. All positive results for the above analytes in these two samples were flagged as estimated (J). Since neither aluminum, calcium, iron nor magnesium was detected in the other SDG samples at a concentration comparable to or greater than that of ICS Solution A, no further action was taken.

Negative results were observed for the following analytes in ICS Solution A at absolute concentrations greater than the IDL:

cadmium	-2 ug/L
cobalt	-2 ug/L
manganese	-2 ug/L
potassium	-1060 ug/L
selenium	-5 ug/L
sodium	-140 ug/L
thallium	-15 ug/L
tin	-24 ug/L
vanadium	-19 ug/L

The concentrations of magnesium in samples GDIGW07D06, GDIHW07D06, GDIGW08D06 and GDIGW13D06 exceeded that of ICS Solution A. All non-detect results for these analytes in the four samples were flagged as estimated (UJ). Since neither aluminum, calcium, iron nor magnesium was present in the other SDG samples at a concentration comparable to or greater than the amount in Solution A, no further action was required.

V.) ICP Serial Dilution Analysis:

Serial Dilution Analysis was not performed in this SDG. No action was required.

VI.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No action was required.

VII.) Duplicate Sample Analysis:

Duplicate Sample Analysis was not performed in this SDG. No action was taken.

VIII.) Matrix Spike Recoveries (MS / MSD):

MS / MSD samples were not analyzed in this SDG. No action was required.

IX.) Field Duplicates:

One set of field duplicate samples was analyzed in this SDG. The calculable Relative Percent Differences (RPD's) were:

Analyte	009GW24D01 (ug/L)	009HW24D01 (ug/L)	RPD
arsenic	54.6	48.9	11%
barium	42.0	40.9	2.7%
calcium	526000	513000	2.8%
iron	29200	28400	2.5%
magnesium	585000	580000	0.9%
manganese	2560	2540	0.8%
potassium	94900	94500	0.4%

Analyte	009GW24D01 (ug/L)	009HW24D01 (ug/L)	RPD
sodium	5960000	5750000	3.6%

Since all RPD's were within the 30% QC limit for water samples, no action was taken.

X.) Graphite Furnace Atomic Absorption QC (GFAA):

Graphite Furnace analyses were not used for the samples in this SDG. No action was taken.

XI.) Sample Result, Calculation/Transcription Verification:

All criteria were met. No action was required.

XII.) Quarterly Verification of Instrumental Parameters:

All criteria were met. No action was taken.

XIII.) Overall Assessment of Data/General:

All laboratory data were acceptable with qualifications.

Comments Prepared by Susan Byrd

SCDHEC General Comments

It is unclear why the COPC/COC refinement section uses site-wide average concentrations of compounds detected in soils for comparison to RBCs. Since this approach was not presented in the Team Notebook, please provide this rationale in the text.

CH2M-Jones Response:
Comment noted. The general agreement within the CNC BCT for COPC/COC refinement for all chemicals except lead is to compare target concentrations/criteria with a surface soil UCL_{95} value, where appropriate.

Attached please find a table containing the UCL_{95} estimates for the three chemicals in surface soil where a sitewide average is used for comparison instead of the UCL_{95}. However, also please note that when a large number of samples is available, the "true" average at a site is closer to the numerical average or arithmetic mean, and UCL_{95} estimates will be similar to the average values. Because a large percentage of the sitewide data are non-detects, and the number of samples is greater than 50, a UCL_{95} estimated by non-parametric methods is applicable. In the attached table, there are two methods used to estimate a non-parametric UCL_{95}, and both will be included in the text as the range of UCL_{95} values for these chemicals. Please note that this UCL_{95} estimation does not change the previous recommendations for any of these chemicals. Surface and subsurface soil data comparisons with the leachability-based criteria (SSLs) will be based on average concentrations as presented in the technical memorandum for SSL, which is included in the CNC BCT Project Team Notebook.

SCDHEC Specific Comments

1. **Section 5.0, COPC/COC Refinement; 1,2,3-Trichloropropane; Page 5-2.**
When making quantitative comparisons of detected concentrations of analytes to their respective RBCs, please include the RBC values in the discussion.

CH2M-Jones Response:
Please refer to the first sentence of this paragraph (line 7) on page 5-2, which cites the RBC value as 91 µg/kg (compared to a maximum site concentration of 91.2 µg/kg).

2. **Section 5.0, COPC/COC Refinement; Aroclor 1254; Page 5-2**
It is unclear why the discussion of Aroclor 1254 includes a detailed discussion of Aroclor 1260. Only the average of 1260 was discussed in this section even though the average concentration of 1254 in surface soil, as presented in Table 5-3, was 0.034 mg/kg which is below the residential land-use RBC of 0.32 mg/kg.

CH2M-Jones Response:
Line 33 of Page 5-2 cites Aroclor-1260 instead of Aroclor-1254 due to a typographical error. The discussion in this paragraph pertains to Aroclor-1254.This typographical error will be corrected in the text.

3. **Section 5.0, Chemicals Retained as COCs, Antimony, Page 5-4**
The rationale used to eliminate Aroclor as a COC was the same rationale that was used to retain antimony. For example, the site average concentration of antimony was lower than the RBC; however, surface soil concentrations were elevated above the RBC in selected locations. The average concentrations of Aroclor 1254 and 1260 were used for comparison to RBCs in order to eliminate them as COCs.

CH2M-Jones Response:
Comment Noted. Antimony was retained as a COC because it was detected in slightly elevated concentrations in surface soil, where it was also elevated in subsurface soil above SSL criteria at the same location, indicating potential source related contribution. The text will be edited to clarify the issue further.

4. **Section 5.0, Deep Groundwater, Thallium, Page 5-9**
Since thallium was retained as a COC in soil, the rationale provided to eliminate thallium as a groundwater COC is seems irrelevant. Please provide additional information to support the elimination of thallium in groundwater.

CH2M-Jones Response:
As indicated in Section 5.3,Page 5-6,thallium was retained as a deep groundwater COC during the RFI. The text regarding thallium is intended to provide information to support the exclusion of thallium as a groundwater COC. The retention of thallium as a soil COC due to a limited number of exceedances of its residential RBC (which were subsequently removed during the soil IM) and the elimination of thallium as a groundwater COC is not inconsistent. Sitewide average concentrations of thallium in the soil were within the background range, which indicates that the leaching potential is not above background levels and the few reported detections of thallium in groundwater do not indicate that a thallium plume is present.

5. **Section 7.4, Residual Site Concentrations of COCs, Page 7-7, Paragraph 2**
The text states that the detected concentrations from the final delineation samples at each hotspot area can be averaged to provide a conservative estimate of residual site concentration at the hotspots for the COC targeted at that hotspot. Please clarify how the average concentrations provide a conservative estimate.

CH2M-Jones Response:
Use of the average of the confirmation samples is conservative because this value does not include the low concentrations of the target chemicals present in the clean fill used to backfill the excavated area. If the clean fill values were also used in the calculation, the calculated remaining concentrations would be lower than the values calculated just using the confirmation samples. Thus, the calculated values are conservative.

Site: Combined SWMU-14
Media: Surface Soil - UCL95% estimates for the residual COCs
Units: mg/kg

Chemical	CASRN	Samples	Detects	FOD (%)	Min Detect	Max Detect	Avg Detect	Mean	W-Test	t-Statistic	UCL95-normal	UCL96 lognormal	UCL95 nonparm	UCL95 bootstrap
Aroclor-1254		80	2	2.5	0.05	0.16	0.105	0.033	Unknown	1.66	0.041	0.035	0.020	0.040
Aroclor-1260		80	3	3.75	0.06	0.38	0.17	0.037	Unknown	1.66	0.047	0.037	0.025	0.046
Thallium		75	10	13.3	0.07	2.9	1.03	0.506	Unknown	1.66	0.595	0.596	0.470	0.594

Note: A w-test is not conducted when n=>50, by this method
FOD = frequency of detection
Mean = detects+ non-detects at half detection limit

Results from Additional Groundwater Sampling, Combined SWMU 14, Zone H, CNC.

PREPARED FOR: Jerry Stamps, SCDHEC

PREPARED BY: Sam Naik

COPIES:

DATE: April 2, 2003

In response to comments from the South Carolina Department of Health and Environmental Control (SCDHEC) on the *Combined SWMU 14 Interim Measure Completion Report & CMS Work Plan (IMCR & CMSWP)*, (CH2M-Jones, April 2002), and agreements made between SCDHEC and the Navy/CH2M-Jones Team during the CNC BCT Meeting on March 11, 2003, CH2M-Jones conducted additional groundwater sampling in shallow monitoring well H014GW002 and deep monitoring well H014GW02D, on March 13, 2003. Groundwater samples collected from these wells were sent to an offsite laboratory for volatile organic compounds (VOC) analysis.

Sample collection was performed in accordance with standard procedures followed at other RCRA sites at CNC as approved by the regulatory agencies.

The validated analytical results as well as data validation summary narratives are attached to this memorandum.

The only chemical detected above laboratory detection limits in the two samples was acetone. Acetone was detected at an estimated concentration of 3.0 µg/L in the sample from H014GW002, and at an estimated concentration of 3.9 µg/L in the sample from H014GW02D. No MCL has been published for acetone. Both these detections are below the EPA Region III tap water risk-based concentration (RBC) (with a hazard index of 0.1) of 61 µg /L. The analytical data indicate that the groundwater has not been impacted by VOCs at this location of Combined SWMU 14.

Data Validation Summary - Charleston Naval Complex - Zone H, SWMU 14

TO: Sam Naik/CH2M HILL/ATL

FROM: Amy Juchem/CH2M HILL/GNA
Herb Kelly/CH2M HILL/GNA

DATE: April 4, 2003

The purpose of this memorandum is to present the results of the data validation process for the samples collected SWMU 14 in Zone H. The samples were collected on the dates of March 12 and 13, 2003.

The specific samples and analytical fractions reviewed are summarized below in Table 1.

The Quality Control areas that were reviewed and the resulting findings are documented within each subsection that follows. This data was validated for compliance with the analytical method requirements. This process also included a review of the data to assess the accuracy, precision, and completeness based upon procedures described in the guidance documents such as the Environmental Protection Agency (EPA) *National Functional Guidelines for Inorganic Data Review (EPA 2002) and National Functional Guidelines for Organic Data Review (EPA 1999)*. Quality assurance/quality control (QA/QC) summary forms and data reports were reviewed.

Samples were submitted to General Engineering Laboratories, Inc., in Charleston, South Carolina, for the following analyses: SW-846 8260 Volatile Organic Compounds (VOC).

Sample results that were not within the acceptance limits were appended with a qualifying flag, which consisted of a single- or double-letter code that indicated a possible problem with the data. The qualifying flags originated during the data review and validation processes. These also include the secondary, or the two-digit "sub-qualifier" flags. The secondary qualifiers provide the reasoning behind the assignment of a qualifier flag to the data. The secondary qualifiers are presented and defined below.

Attachment 1 lists the changes in data qualifiers, due to the validation process.

The following primary flags were used to qualify the data:

[=] Detected. The analyte was analyzed for and detected at the concentration shown.

[J] Estimated. The analyte was present but the reported value may not be accurate or precise.

[U] Undetected. The analyte was analyzed for but not detected above the method detection limit.

[UJ] Detection limit estimated. The analyte was analyzed for but qualified as not detected; the result is estimated.

[R] Rejected. The data is not useable.

Secondary Data Validation Qualifiers

Code	Definition
2S	Second Source
2C	Second Column Confirmation
BL	Blank
BD	Blank Spike/Blank Spike Duplicate or (LCS/LCSD) Precision
BS	Blank Spike/LCS
CC	Continuing Calibration Verification
DL	Dilution
FD	Field Duplicate
HT	Holding Time
IB	In-Between (metals - B's → J's)
IC	Initial Calibration
IS	Internal Standard
LD	Lab Duplicate
LR	Concentration exceeded Linear Range
MD	MS/MSD or LCS/LCSD Precision
MS	Matrix Spike/Matrix Spike Duplicate
OT	Other (see DV worksheet)
PD	Pesticide Degradation
PS	Post Spike
RE	Re-extraction/Re-analysis
SD	Serial Dilution
SS	Spiked Surrogate
TD	Total vs Dissolved
TN	Tune

Table 1 - Chemical Analytical Methods – Field and Quality Control Samples

SDG	Station ID	Sample ID	Lab Sample ID	Matrix	Sample Type	Date Collected	VOC SW8260B
76427	H014EW002	014EW002N1	76427001	WQ	EB	03/13/03	X
76427	H014TW002	014TW002N1	76427002	WQ	TB	03/12/03	X
76427	H014GW002	014GW002N1	76427003	WG	N	03/12/03	X
76427	H014GW002D	014GW02DN1	76427004	WG	N	03/13/03	X
76427	LAB QC	1200394060	1200394060	WQ	LB		X
76427	LAB QC	1200394061	1200394061	WQ	BS		X

MATRIX CODE

WG – Ground Water
WQ - Water QC Samples

SAMPLE TYPE CODE

BS - Blank Spike
EB - Equipment Blank
LB - Laboratory Blank
N - Native Sample
TB – Trip Blank

ANALYSIS CODE

VOC - Volatile Organic Compounds

Organic Parameters

Quality Control Review

The following list represents the QA/QC measures that were reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, trip blanks and equipment blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Surrogate Recoveries** – Surrogate Compounds are added to each sample and the recoveries are used to monitor lab performance and possible matrix interference.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **GC/MS Tuning** – The mass spectrum of the tuning compound is evaluated for method compliance. The criteria are established to verify the proper mass assignment and mass resolution.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and its duplicate. This information can only be determined when target compounds are detected.
- **Internal Standards** – The internal standards (retention time and response) are evaluated for method compliance. The internal standards are used in quantitation of the target parameters and monitor the instrument sensitivity and response for stability during each analysis.

Volatile Organic Compounds (VOC) Analyses

The QA/QC parameters for VOC analyses for all of the samples were within acceptable control limits, except as noted below:

Recoveries - Surrogate, MS/MSD and LCS

All Surrogate, Matrix Spike (MS), Matrix Spike Duplicate (MSD) and Laboratory Control Sample (LCS) recoveries were within acceptable quality control limits, except as noted in Table 2 below.

TABLE 2
Surrogate, MS/MSD, and LCS Recoveries Out of QC Limits: VOC
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

SDG	Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
76427	1200394061 LCS	2-Chloroethyl vinyl ether	56.0*	70-130	76427 – All	Detects-J; Non-Detects-UJ
* - out of control limits						

Initial and Continuing Calibration Criteria

All initial calibration criteria and continuing calibration criteria were met, except as listed in Table 3 below.

TABLE 3
Exceptions to Initial Calibration Criteria and Continuing Calibration Criteria: VOC
Charleston Naval Complex, Zone H, SWMU 14, Charleston, SC

Instrument/Calibration Date	Analyte	%Relative Standard Deviation or R (ICAL) / %Difference (CCAL)	Associated Samples
VOA2-CCAL-03/14/03, 0859	2-Chloroethyl vinyl ether	43.8% low	76427 – All

Flags were applied to the compounds in the associated samples in the following manner:

- When the percent difference (%D) was low in the continuing calibration standards, detected compounds were flagged "J" and non-detected compounds were flagged "UJ", as estimated.

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Conclusion

A review of the analytical data submitted regarding the investigation of Zone H, SWMU 14, at the Charleston Naval Complex, Charleston, South Carolina by CH2M HILL has been completed. An overall evaluation of the data indicates that the sample handling, shipment, and analytical procedures have been adequately completed, and that the analytical results should be considered usable as qualified.

The analytical data had minor QC concerns as indicated above, however, it did not affect data usability for those specific results. The validation review demonstrated that the analytical systems were generally in control and the data results can be used in the decision making process.

Attachment 1 - Changed Qualifiers and Results
Zone H, SWMU 14 - Data Validation

Parameter Class	Analytical Method	Parameter	SDG	Sample ID	Lab Sample ID	Matrix	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reasons
VOA	SW8260B	2-Chloroethyl vinyl ether	76427	014GW002N1	76427003	WG	10	U	10	UJ	ug/L	CC,BS
VOA	SW8260B	2-Chloroethyl vinyl ether	76427	014GW02DN1	76427004	WG	10	U	10	UJ	ug/L	CC,BS

	StationID	H014GW002		H014GW02D	
	SampleID	014GW002N1		014GW02DN1	
	DateCollected	03/12/2003		03/13/2003	
	DateExtracted	03/14/2003		03/14/2003	
	DateAnalyzed	03/14/2003		03/14/2003	
	SDGNumber	76427		76427	
Parameter	**Units**				
Chloromethane	ug/L	10	U	10	U
Vinyl chloride	ug/L	10	U	10	U
Bromomethane	ug/L	10	U	10	U
Chloroethane	ug/L	10	U	10	U
1,1-Dichloroethene	ug/L	5	U	5	U
Acetone	ug/L	3	J	3.9	J
Carbon Disulfide	ug/L	5	U	5	U
Methylene Chloride	ug/L	5	U	5	U
trans-1,2-Dichloroethene	ug/L	5	U	5	U
1,1-Dichloroethane	ug/L	5	U	5	U
Vinyl acetate	ug/L	10	U	10	U
Methyl ethyl ketone (2-Butanone)	ug/L	10	U	10	U
cis-1,2-Dichloroethylene	ug/L	5	U	5	U
1,2-Dichloroethene (total)	ug/L	5	U	5	U
Chloroform	ug/L	5	U	5	U
1,1,1-Trichloroethane	ug/L	5	U	5	U
Carbon Tetrachloride	ug/L	5	U	5	U
1,2-Dichloroethane	ug/L	5	U	5	U
Benzene	ug/L	5	U	5	U
Trichloroethylene (TCE)	ug/L	5	U	5	U
1,2-Dichloropropane	ug/L	5	U	5	U
Bromodichloromethane	ug/L	5	U	5	U
2-Chloroethyl vinyl ether	ug/L	10	UJ	10	UJ
cis-1,3-Dichloropropene	ug/L	5	U	5	U
Methyl isobutyl ketone (4-Methyl-2-pentanone)	ug/L	10	U	10	U
Toluene	ug/L	5	U	5	U
trans-1,3-Dichloropropene	ug/L	5	U	5	U
1,1,2-Trichloroethane	ug/L	5	U	5	U
2-Hexanone	ug/L	10	U	10	U
Tetrachloroethylene (PCE)	ug/L	5	U	5	U

	StationID	H014GW002		H014GW02D	
	SampleID	014GW002N1		014GW02DN1	
	DateCollected	03/12/2003		03/13/2003	
	DateExtracted	03/14/2003		03/14/2003	
	DateAnalyzed	03/14/2003		03/14/2003	
	SDGNumber	76427		76427	
Parameter	**Units**				
Dibromochloromethane	ug/L	5	U	5	U
Chlorobenzene	ug/L	5	U	5	U
Ethylbenzene	ug/L	5	U	5	U
m+p Xylene	ug/L	5	U	5	U
o-Xylene	ug/L	5	U	5	U
Xylenes, Total	ug/L	5	U	5	U
Styrene	ug/L	5	U	5	U
Bromoform	ug/L	5	U	5	U
1,1,2,2-Tetrachloroethane	ug/L	5	U	5	U
1,3-Dichlorobenzene	ug/L	5	U	5	U
1,4-Dichlorobenzene	ug/L	5	U	5	U
1,2-Dichlorobenzene	ug/L	5	U	5	U
1,2,4-Trichlorobenzene	ug/L	5	U	5	U
1,2,3-Trichlorobenzene	ug/L	5	U	5	U

C. *A HILL Chain of Custody/ Laboratory Analysis Form*

COC Tracking #: **ZH014-031203-01** page 1 of 2

Laboratory:	GEL, Charleston, SC
Project Name:	Charleston Navy Complex
Site Name:	Zone H, SWMU 14
Project Number:	158814.PM.04
TAT:	ASAP
Project Manager:	
Level:	Level 3
Address:	GNV: 3011 SW Williston Rd., Gainesville, FL 32605
	ATL: 115 Perimeter Center Place NE, Suite 700, Atlanta, GA 30346-1278
Send Report To:	see last page of COC
EDD:	CNC format
Lab Batch/SDG:	

76427

	Sample ID	Station ID	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	VOCs (SW8260B 3 - 40mL vial, HCl	Comments
003	014GW002N1	H014GW002			3-12-03/1535	WG	3	X	
004	014GW02DN1	H014GW02D			3-13-03/1050	WG	3	X	
001	014EW002N1	H014EW002			3-13-03/1100	WQ	3	X	samples complete
002	014TW002N1	H014TW002			3-12-03/1330	WQ	3	X	
									RCRA

Sampled By: Andreen O'Connor Date/Time: 3-12 - 3-13-03 Relinquished by: [signature] Date/Time: 3-13-03/1230

Additional Samplers:

Received By Lab: [signature] Date/Time: 3/13/03 1230 Relinquished by: Date/Time

Received By: Date/Time Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks: Temperature: 4 C

FAX Results to: **Reports**

Receipt Exceptions:

TABLE I-1
Summary of Methylene Chloride Detections in Surface and Subsurface Soils with SDG Numbers
CMS Work Plan/IM Completion Report, Combined SWMU 14, Zone H, Charleston Naval Complex

Sample ID	Station ID	Result (mg/kg)	Qualifier	Date Sampled	SDG No.
670SB01101	670SB011	0.012	J	09/12/1994	CHS11
670SB01201	670SB012	0.017	J	09/12/1994	CHS11
670SB01301	670SB013	0.018	J	09/12/1994	CHS11
670SB01601	670SB016	0.029	J	09/14/1994	CHS14
670SB01701	670SB017	0.026	J	09/14/1994	CHS14
670SB01801	670SB018	0.021	J	09/14/1994	CHS14
670SB02101	670SB021	0.014	J	09/14/1994	CHS14
670SB02201	670SB022	0.019	J	09/14/1994	CHS14
670SB02301	670SB023	0.011	J	09/23/1994	CHS14
670SB02401	670SB024	0.015	=	09/23/1994	CHS14
684SB00601	684SB006	0.0781	J	09/19/1994	APX04
684SB00701	684SB007	0.212	J	09/19/1994	APX04
684SB01001	684SB010	0.0271	=	09/19/1994	APX05
670SB00602	670SB006	**0.02**	J	09/13/1994	CHS11
670SB01102	670SB011	**0.011**	J	09/12/1994	CHS11
670SB01202	670SB012	**0.021**	J	09/12/1994	CHS11
670SB01602	670SB016	**0.034**	J	09/14/1994	CHS14
670SB01702	670SB017	**0.039**	J	09/14/1994	CHS14
670SB01802	670SB018	**0.026**	J	09/14/1994	CHS14
670SB02102	670SB021	**0.027**	J	09/14/1994	CHS14
670SB02202	670SB022	**0.027**	J	09/14/1994	CHS14
670SB02302	670SB023	**0.013**	J	09/23/1994	CHS14
670SB02402	670SB024	**0.051**	J	09/23/1994	CHS14
684SB00302	684SB003	**0.0235**	J	09/19/1994	APX04
684SB00902	684SB009	**0.0448**	=	09/19/1994	APX05

= Indicates that the concentration was not detected.

J Indicates an estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.

	StationID	FIELDQC		FIELDQC		FIELDQC	
	SampleID	009T000401		015TB00101		654TB00301	
	DateCollected	09/08/1994		09/10/1994		09/07/1994	
	DateExtracted						
	DateAnalyzed	09/19/1994		09/20/1994		09/16/1994	
	SDGNumber	CHS11		CHS11		CHS11	
Parameter	**Units**						
1,1,1,2-Tetrachloroethane	ug/L						
1,2,3-Trichloropropane	ug/L						
1,2-Dibromo-3-chloropropane	ug/L						
1,4-Dioxane	ug/L						
3-Chloropropene	ug/L						
Acetonitrile	ug/L						
Acrolein	ug/L						
Acrylonitrile	ug/L						
Chloroprene	ug/L						
Dichlorodifluoromethane	ug/L						
Ethylene Dibromide (1,2-Dibromoethane)	ug/L						
Isobutyl alcohol	ug/L						
Methacrylonitrile	ug/L						
Methyl iodide	ug/L						
Methylene bromide	ug/L						
Propionitrile	ug/L						
Tetrahydrofuran	ug/Kg			25	U		
Tetrahydrofuran	ug/L	25	U			25	U
trans-1,4-Dichloro-2-butene	ug/L						
Trichlorofluoromethane	ug/Kg			5	U		
Trichlorofluoromethane	ug/L	5	U			5	U
Chloromethane	ug/Kg			10	U		
Chloromethane	ug/L	10	U			10	U
Vinyl chloride	ug/Kg			10	U		
Vinyl chloride	ug/L	10	U			10	U
Bromomethane	ug/Kg			10	U		
Bromomethane	ug/L	10	U			10	U
Chloroethane	ug/Kg			5	U		
Chloroethane	ug/L	5	U			5	U
1,1-Dichloroethene	ug/Kg			5	U		

	StationID	FIELDQC		FIELDQC		FIELDQC	
	SampleID	670TB01501		670TB01502		684TB00101	
	DateCollected	09/14/1994		09/14/1994		09/19/1994	
	DateExtracted	09/20/1994		09/20/1994		09/22/1994	
	DateAnalyzed	09/20/1994		09/20/1994		09/22/1994	
	SDGNumber	APX04		APX04		APX04	
Parameter	**Units**						
1,1,1,2-Tetrachloroethane	ug/L	5	U	5	U	5	U
1,2,3-Trichloropropane	ug/L	5	U	5	U	5	U
1,2-Dibromo-3-chloropropane	ug/L	5	U	5	U	5	U
1,4-Dioxane	ug/L	500	U	500	U	500	U
3-Chloropropene	ug/L	5	U	5	U	5	U
Acetonitrile	ug/L	50	U	50	U	50	U
Acrolein	ug/L	10	U	10	U	10	U
Acrylonitrile	ug/L	10	U	10	U	10	U
Chloroprene	ug/L	50	U	50	U	50	U
Dichlorodifluoromethane	ug/L	50	U	50	U	50	U
Ethylene Dibromide (1,2-Dibromoethane)	ug/L	5	U	5	U	5	U
Isobutyl alcohol	ug/L	500	U	500	U	500	U
Methacrylonitrile	ug/L	5	U	5	U	5	U
Methyl iodide	ug/L	5	U	5	U	5	U
Methylene bromide	ug/L	5	U	5	U	5	U
Propionitrile	ug/L	10	U	10	U	10	U
Tetrahydrofuran	ug/Kg						
Tetrahydrofuran	ug/L						
trans-1,4-Dichloro-2-butene	ug/L	5	U	5	U	5	U
Trichlorofluoromethane	ug/Kg						
Trichlorofluoromethane	ug/L	5	U	5	U	5	U
Chloromethane	ug/Kg						
Chloromethane	ug/L	10	U	10	U	10	U
Vinyl chloride	ug/Kg						
Vinyl chloride	ug/L	10	U	10	U	10	U
Bromomethane	ug/Kg						
Bromomethane	ug/L	10	U	10	U	10	U
Chloroethane	ug/Kg						
Chloroethane	ug/L	10	U	10	U	10	U
1,1-Dichloroethene	ug/Kg						

	StationID	FIELDQC		FIELDQC	
	SampleID	BLKTB92020		BLKTB92114	
	DateCollected				
	DateExtracted	09/22/1994		09/29/1994	
	DateAnalyzed	09/22/1994		09/29/1994	
	SDGNumber	APX05		APX05	
Parameter	**Units**				
1,1,1,2-Tetrachloroethane	ug/L	5	U	5	U
1,2,3-Trichloropropane	ug/L	5	U	5	U
1,2-Dibromo-3-chloropropane	ug/L	5	U	5	U
1,4-Dioxane	ug/L	500	U	500	U
3-Chloropropene	ug/L	5	U	5	U
Acetonitrile	ug/L	50	U	50	U
Acrolein	ug/L	10	U	10	U
Acrylonitrile	ug/L	10	U	10	U
Chloroprene	ug/L	50	U	50	U
Dichlorodifluoromethane	ug/L	50	U	50	U
Ethylene Dibromide (1,2-Dibromoethane)	ug/L	5	U	5	U
Isobutyl alcohol	ug/L	500	U	500	U
Methacrylonitrile	ug/L	5	U	5	U
Methyl iodide	ug/L	5	U	5	U
Methylene bromide	ug/L	5	U	5	U
Propionitrile	ug/L	10	U	10	U
Tetrahydrofuran	ug/Kg				
Tetrahydrofuran	ug/L				
trans-1,4-Dichloro-2-butene	ug/L	5	U	5	U
Trichlorofluoromethane	ug/Kg				
Trichlorofluoromethane	ug/L	5	U	5	U
Chloromethane	ug/Kg				
Chloromethane	ug/L	10	U	10	U
Vinyl chloride	ug/Kg				
Vinyl chloride	ug/L	10	U	10	U
Bromomethane	ug/Kg				
Bromomethane	ug/L	10	U	10	U
Chloroethane	ug/Kg				
Chloroethane	ug/L	10	U	10	U
1,1-Dichloroethene	ug/Kg				

	StationID	FIELDQC		FIELDQC		FIELDQC	
	SampleID	009T000401		015TB00101		654TB00301	
	DateCollected	09/08/1994		09/10/1994		09/07/1994	
	DateExtracted						
	DateAnalyzed	09/19/1994		09/20/1994		09/16/1994	
	SDGNumber	CHS11		CHS11		CHS11	
Parameter	**Units**						
1,1-Dichloroethene	ug/L	5	U			5	U
Acetone	ug/Kg			25	U		
Acetone	ug/L	25	U			25	U
Carbon Disulfide	ug/Kg			5	U		
Carbon Disulfide	ug/L	5	U			5	U
Methylene Chloride	ug/Kg			9	J		
Methylene Chloride	ug/L	10	U			10	U
1,1-Dichloroethane	ug/Kg			5	U		
1,1-Dichloroethane	ug/L	5	U			5	U
Vinyl acetate	ug/Kg			10	U		
Vinyl acetate	ug/L	10	U			10	U
Methyl ethyl ketone (2-Butanone)	ug/Kg			25	U		
Methyl ethyl ketone (2-Butanone)	ug/L	25	U			25	U
1,2-Dichloroethene (total)	ug/Kg			5	U		
1,2-Dichloroethene (total)	ug/L	5	U			5	U
Chloroform	ug/Kg			5	U		
Chloroform	ug/L	5	U			5	U
1,1,1-Trichloroethane	ug/Kg			5	U		
1,1,1-Trichloroethane	ug/L	5	U			5	U
Carbon Tetrachloride	ug/Kg			5	U		
Carbon Tetrachloride	ug/L	5	U			5	U
1,2-Dichloroethane	ug/Kg			5	U		
1,2-Dichloroethane	ug/L	5	U			5	U
Benzene	ug/Kg			5	U		
Benzene	ug/L	5	U			5	U
Trichloroethylene (TCE)	ug/Kg			5	U		
Trichloroethylene (TCE)	ug/L	5	U			5	U
1,2-Dichloropropane	ug/Kg			5	U		
1,2-Dichloropropane	ug/L	5	U			5	U
Bromodichloromethane	ug/Kg			5	U		

	StationID	FIELDQC		FIELDQC		FIELDQC	
	SampleID	670TB01501		670TB01502		684TB00101	
	DateCollected	09/14/1994		09/14/1994		09/19/1994	
	DateExtracted	09/20/1994		09/20/1994		09/22/1994	
	DateAnalyzed	09/20/1994		09/20/1994		09/22/1994	
	SDGNumber	APX04		APX04		APX04	
Parameter	**Units**						
1,1-Dichloroethene	ug/L	5	U	5	U	5	U
Acetone	ug/Kg						
Acetone	ug/L	10	U	10	U	10	U
Carbon Disulfide	ug/Kg						
Carbon Disulfide	ug/L	5	U	5	U	5	U
Methylene Chloride	ug/Kg						
Methylene Chloride	ug/L	1.4	J	1.1	J	1.9	J
1,1-Dichloroethane	ug/Kg						
1,1-Dichloroethane	ug/L	5	U	5	U	5	U
Vinyl acetate	ug/Kg						
Vinyl acetate	ug/L	5	U	5	U	5	U
Methyl ethyl ketone (2-Butanone)	ug/Kg						
Methyl ethyl ketone (2-Butanone)	ug/L	10	U	10	U	10	U
1,2-Dichloroethene (total)	ug/Kg						
1,2-Dichloroethene (total)	ug/L	5	U	5	U	5	U
Chloroform	ug/Kg						
Chloroform	ug/L	5	U	5	U	5	U
1,1,1-Trichloroethane	ug/Kg						
1,1,1-Trichloroethane	ug/L	5	U	5	U	5	U
Carbon Tetrachloride	ug/Kg						
Carbon Tetrachloride	ug/L	5	U	5	U	5	U
1,2-Dichloroethane	ug/Kg						
1,2-Dichloroethane	ug/L	5	U	5	U	5	U
Benzene	ug/Kg						
Benzene	ug/L	5	U	5	U	5	U
Trichloroethylene (TCE)	ug/Kg						
Trichloroethylene (TCE)	ug/L	5	U	5	U	5	U
1,2-Dichloropropane	ug/Kg						
1,2-Dichloropropane	ug/L	5	U	5	U	5	U
Bromodichloromethane	ug/Kg						

	StationID	FIELDQC		FIELDQC	
	SampleID	BLKTB92020		BLKTB92114	
	DateCollected				
	DateExtracted	09/22/1994		09/29/1994	
	DateAnalyzed	09/22/1994		09/29/1994	
	SDGNumber	APX05		APX05	
Parameter	**Units**				
1,1-Dichloroethene	ug/L	5	U	5	U
Acetone	ug/Kg				
Acetone	ug/L	10	U	10	U
Carbon Disulfide	ug/Kg				
Carbon Disulfide	ug/L	5	U	5	U
Methylene Chloride	ug/Kg				
Methylene Chloride	ug/L	1.7	J	2.4	J
1,1-Dichloroethane	ug/Kg				
1,1-Dichloroethane	ug/L	5	U	5	U
Vinyl acetate	ug/Kg				
Vinyl acetate	ug/L	5	U	5	U
Methyl ethyl ketone (2-Butanone)	ug/Kg				
Methyl ethyl ketone (2-Butanone)	ug/L	10	U	10	U
1,2-Dichloroethene (total)	ug/Kg				
1,2-Dichloroethene (total)	ug/L	5	U	5	U
Chloroform	ug/Kg				
Chloroform	ug/L	5	U	5	U
1,1,1-Trichloroethane	ug/Kg				
1,1,1-Trichloroethane	ug/L	5	U	5	U
Carbon Tetrachloride	ug/Kg				
Carbon Tetrachloride	ug/L	5	U	5	U
1,2-Dichloroethane	ug/Kg				
1,2-Dichloroethane	ug/L	5	U	5	U
Benzene	ug/Kg				
Benzene	ug/L	5	U	5	U
Trichloroethylene (TCE)	ug/Kg				
Trichloroethylene (TCE)	ug/L	5	U	5	U
1,2-Dichloropropane	ug/Kg				
1,2-Dichloropropane	ug/L	5	U	5	U
Bromodichloromethane	ug/Kg				

	StationID	FIELDQC		FIELDQC		FIELDQC	
	SampleID	009T000401		015TB00101		654TB00301	
	DateCollected	09/08/1994		09/10/1994		09/07/1994	
	DateExtracted						
	DateAnalyzed	09/19/1994		09/20/1994		09/16/1994	
	SDGNumber	CHS11		CHS11		CHS11	
Parameter	**Units**						
Bromodichloromethane	ug/L	5	U			5	U
cis-1,3-Dichloropropene	ug/Kg			5	U		
cis-1,3-Dichloropropene	ug/L	5	U			5	U
Methyl isobutyl ketone (4-Methyl-2-pentanone)	ug/Kg			25	U		
Methyl isobutyl ketone (4-Methyl-2-pentanone)	ug/L	25	U			25	U
Toluene	ug/Kg			5	U		
Toluene	ug/L	5	U			5	U
trans-1,3-Dichloropropene	ug/Kg			5	U		
trans-1,3-Dichloropropene	ug/L	5	U			5	U
1,1,2-Trichloroethane	ug/Kg			5	U		
1,1,2-Trichloroethane	ug/L	5	U			5	U
2-Hexanone	ug/Kg			25	U		
2-Hexanone	ug/L	25	U			25	U
Tetrachloroethylene (PCE)	ug/Kg			5	U		
Tetrachloroethylene (PCE)	ug/L	5	U			5	U
Dibromochloromethane	ug/Kg			5	U		
Dibromochloromethane	ug/L	5	U			5	U
Chlorobenzene	ug/Kg			5	U		
Chlorobenzene	ug/L	5	U			5	U
Ethylbenzene	ug/Kg			5	U		
Ethylbenzene	ug/L	5	U			5	U
Xylenes, Total	ug/Kg			5	U		
Xylenes, Total	ug/L	5	U			5	U
Styrene	ug/Kg			5	U		
Styrene	ug/L	5	U			5	U
Bromoform	ug/Kg			5	U		
Bromoform	ug/L	5	U			5	U
1,1,2,2-Tetrachloroethane	ug/Kg			5	U		
1,1,2,2-Tetrachloroethane	ug/L	5	U			5	U

	StationID	FIELDQC		FIELDQC		FIELDQC	
	SampleID	670TB01501		670TB01502		684TB00101	
	DateCollected	09/14/1994		09/14/1994		09/19/1994	
	DateExtracted	09/20/1994		09/20/1994		09/22/1994	
	DateAnalyzed	09/20/1994		09/20/1994		09/22/1994	
	SDGNumber	APX04		APX04		APX04	
Parameter	**Units**						
Bromodichloromethane	ug/L	5	U	5	U	5	U
cis-1,3-Dichloropropene	ug/Kg						
cis-1,3-Dichloropropene	ug/L	5	U	5	U	5	U
Methyl isobutyl ketone (4-Methyl-2-pentanone)	ug/Kg						
Methyl isobutyl ketone (4-Methyl-2-pentanone)	ug/L	10	U	10	U	10	U
Toluene	ug/Kg						
Toluene	ug/L	5	U	5	U	5	U
trans-1,3-Dichloropropene	ug/Kg						
trans-1,3-Dichloropropene	ug/L	5	U	5	U	5	U
1,1,2-Trichloroethane	ug/Kg						
1,1,2-Trichloroethane	ug/L	5	U	5	U	5	U
2-Hexanone	ug/Kg						
2-Hexanone	ug/L	10	U	10	U	10	U
Tetrachloroethylene (PCE)	ug/Kg						
Tetrachloroethylene (PCE)	ug/L	5	U	5	U	5	U
Dibromochloromethane	ug/Kg						
Dibromochloromethane	ug/L	5	U	5	U	5	U
Chlorobenzene	ug/Kg						
Chlorobenzene	ug/L	5	U	5	U	5	U
Ethylbenzene	ug/Kg						
Ethylbenzene	ug/L	5	U	5	U	5	U
Xylenes, Total	ug/Kg						
Xylenes, Total	ug/L	5	U	5	U	5	U
Styrene	ug/Kg						
Styrene	ug/L	5	U	5	U	5	U
Bromoform	ug/Kg						
Bromoform	ug/L	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane	ug/Kg						
1,1,2,2-Tetrachloroethane	ug/L	5	U	5	U	5	U

	StationID	FIELDQC		FIELDQC	
	SampleID	BLKTB92020		BLKTB92114	
	DateCollected				
	DateExtracted	09/22/1994		09/29/1994	
	DateAnalyzed	09/22/1994		09/29/1994	
	SDGNumber	APX05		APX05	
Parameter	**Units**				
Bromodichloromethane	ug/L	5	U	5	U
cis-1,3-Dichloropropene	ug/Kg				
cis-1,3-Dichloropropene	ug/L	5	U	5	U
Methyl isobutyl ketone (4-Methyl-2-pentanone)	ug/Kg				
Methyl isobutyl ketone (4-Methyl-2-pentanone)	ug/L	10	U	10	U
Toluene	ug/Kg				
Toluene	ug/L	5	U	5	U
trans-1,3-Dichloropropene	ug/Kg				
trans-1,3-Dichloropropene	ug/L	5	U	5	U
1,1,2-Trichloroethane	ug/Kg				
1,1,2-Trichloroethane	ug/L	5	U	5	U
2-Hexanone	ug/Kg				
2-Hexanone	ug/L	10	U	10	U
Tetrachloroethylene (PCE)	ug/Kg				
Tetrachloroethylene (PCE)	ug/L	5	U	5	U
Dibromochloromethane	ug/Kg				
Dibromochloromethane	ug/L	5	U	5	U
Chlorobenzene	ug/Kg				
Chlorobenzene	ug/L	5	U	5	U
Ethylbenzene	ug/Kg				
Ethylbenzene	ug/L	5	U	5	U
Xylenes, Total	ug/Kg				
Xylenes, Total	ug/L	5	U	5	U
Styrene	ug/Kg				
Styrene	ug/L	5	U	5	U
Bromoform	ug/Kg				
Bromoform	ug/L	5	U	5	U
1,1,2,2-Tetrachloroethane	ug/Kg				
1,1,2,2-Tetrachloroethane	ug/L	5	U	5	U