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RESOURCE CONSERVATION AND RECOVERY ACT FACILITY INVESTIGATION REPORT ADDENDUM SOLID WASTE MANAGEMENT UNIT 188 (SWMU 188) ZONE E CNC CHARLESTON SC

8/30/2002

CH2M HILL

RFI REPORT ADDENDUM

SWMU 188, Zone E

Charleston Naval Complex
North Charleston, South Carolina

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

CH2M Jones

August 2002

Contract N62467-99-C-0960

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August 30, 2002

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

Re: RFI Report Addendum (Revision 1) – SWMU 188, Zone E

Dear Mr. Scaturo:

Enclosed please find four copies of the RFI Report Addendum (Revision 0) for SWMU 188 in Zone E 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 pages are included for replacement in the Revision 0 binder:

- Revision 1 Cover/Spine, Flysheet, and Certification Page
- Revised pages iv and v; 1-3; 5-1; and 6-1
- New Appendix C, *Calculation of Site-Specific SSLs for TCE*
- New Appendix D, CH2M-Jones Responses to SCDHEC Comments on the Revision 0 document

The principal author of this document is Kris Garcia. Please do not hesitate to contact her at 770/604-9182, extension 476, should you have any questions or comments.

Sincerely,

CH2M HILL

Dean Williamson, P.E.

cc: Rob Harrell/Navy, w/att
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July 18, 2002

Mr. David Scaturo
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Re: RFI Report Addendum (Revision 0) – SWMU 188, Zone E

Dear Mr. Scaturo:

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Sincerely,

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

RFI REPORT ADDENDUM

SWMU 188, Zone E

Charleston Naval Complex
North Charleston, South Carolina

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

PREPARED BY
CH2M-Jones

August 2002

Revision 1
Contract N62467-99-C-0960
158814.ZE.PR.01

Certification Page for RFI Report Addendum (Revision 1) – SWMU 188, Zone E

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.

8/29/2002

Date

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C Calculation of Site-Specific SSLs for TCE
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Acronyms and Abbreviations

AST	Aboveground storage tank
BCT	BRAC Cleanup Team
BRAC	Base Realignment and Closure Act
CA	Corrective action
CMS	Corrective measures study
CNC	Charleston Naval Complex
COC	Chemical of concern
COPC	Chemical of potential concern
CSI	Confirmatory sampling investigation
CSNY	Charleston Naval Ship Yard
DAF	Dilution attenuation factor
DMP	Data Management Plan
EnSafe	EnSafe Inc.
EPA	U.S. Environmental Protection Agency
ft bls	Feet below land surface
GIS	Geographic information system
IM	Interim measure
HI	Hazard index
LUC	Land use control
MCL	Maximum contaminant level
MEK	Methyl ethyl ketone
µg/kg	Microgram per kilogram
µg/L	Microgram per liter
mg/kg	Milligram per kilogram
NAVBASE	Naval Base
NFA	No further action

Acronyms and Abbreviations, Continued

OWS	Oil/water separator
PCB	Polychlorinated biphenyl
QAP	Quality Assurance Plan
RBC	Risk-based concentration
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SAA	Satellite accumulation area
SCDHEC	South Carolina Department of Health and Environmental Control
SSL	Soil screening level
SVOC	Semivolatile organic compound
SWMU	Solid waste management unit
TCE	Trichloroethene
UST	Underground storage tank
VOC	Volatile organic compound

Section 1.0

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).

In April 2000, CH2M-Jones was awarded a contract to provide environmental investigation and remediation services at the CNC. This submittal has been prepared by CH2M-Jones to complete the RCRA Facility Investigation (RFI) for Solid Waste Management Unit (SWMU) 188 in Zone E of the CNC. The site is recommended for No Further Action (NFA). The area of the CNC in which SWMU 188 is located is zoned for industrial use (M-2). Figure 1-1 illustrates the location of SWMU 188 within Zone E. Figure 1-2 is an aerial photograph of SWMU 188 taken in 1997.

1.1 Background

1.1.1 Site History

SWMU 188 consists of a satellite accumulation area (SAA) that was located south of Dry Dock 5 (see Figure 1-1). The SAA consisted of an 8 x 6 x 6-foot (ft) metal storage structure that was permitted on September 6, 1994, and removed prior to 1996. The unit was managed as part of the Charleston Naval Ship Yard (CNSY) hazardous waste management system. The waste stored at the SAA consisted of waste paint and solvents. Wastes were stored on a 4 x 2-ft metal drip pan. The hazardous materials were transferred to Building 1640, a permitted facility in which hazardous wastes generated base-wide were stored prior to shipment off site for treatment and/or disposal.

A confirmatory sampling investigation (CSI) was recommended due to staining near the site and the proximity of the unit to the Cooper River (EnSafe Inc. [EnSafe]/Allen & Hoshall, 1995). The CSI sampling event for SWMU 188 was conducted in April 2002. The site area is zoned for industrial use (M-2).

1.1.2 Summary of Interim Measures and UST/AST Removals at SWMU 188

UST/AST Removals

There are no known or suspected underground storage tanks (USTs) or aboveground storage tanks (ASTs) associated with this site.

Interim Measures

No interim measures (IMs) have been conducted at the site.

1.2 Purpose of the RFI Report Addendum

This RFI Report Addendum provides information about SWMU 188, including the results of the sampling performed for the CSI. Based on review of these results, SWMU 188 is recommended for NFA.

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 considered:

- Status of the RFI
- Presence of metals (inorganics) in groundwater
- Potential linkage to SWMU 37, Investigated Sanitary Sewers at the CNC
- Potential linkage to Area of Concern (AOC) 699, Investigated Storm Sewers at the CNC
- Potential linkage of AOC 504, Investigated Railroad Lines at the CNC
- Potential linkage 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 RFI Report Addendum to expedite evaluation of closure of the site.

Provided that the information presented in this report is adequate to address these site closeout items, it is expected that the BCT will concur that NFA is appropriate for SWMU 188. At that time, 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.

1.3 Report Organization

This RFI Report Addendum consists of the following sections, including this introductory section:

1.0 Introduction – Presents the purpose of and background information relating to this RFI Report Addendum.

2.0 Site Setting – Summarizes the geologic and hydrogeologic setting of SWMU 188.

3.0 Field Investigation and Data Validation – Summarizes the conclusions from the CSI field investigation and data validation for SWMU 188.

4.0 COPC Screening – Describes the results from the comparison of analytical results to COPC screening criteria.

5.0 COPC/COC Refinement – Includes the evaluation of COPCs to determine whether they are defined as chemicals of concern (COCs) for SWMU 188.

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

7.0 Conclusions and Recommendations – Summarizes the conclusions and recommendations of the CSI field investigation at SWMU 188.

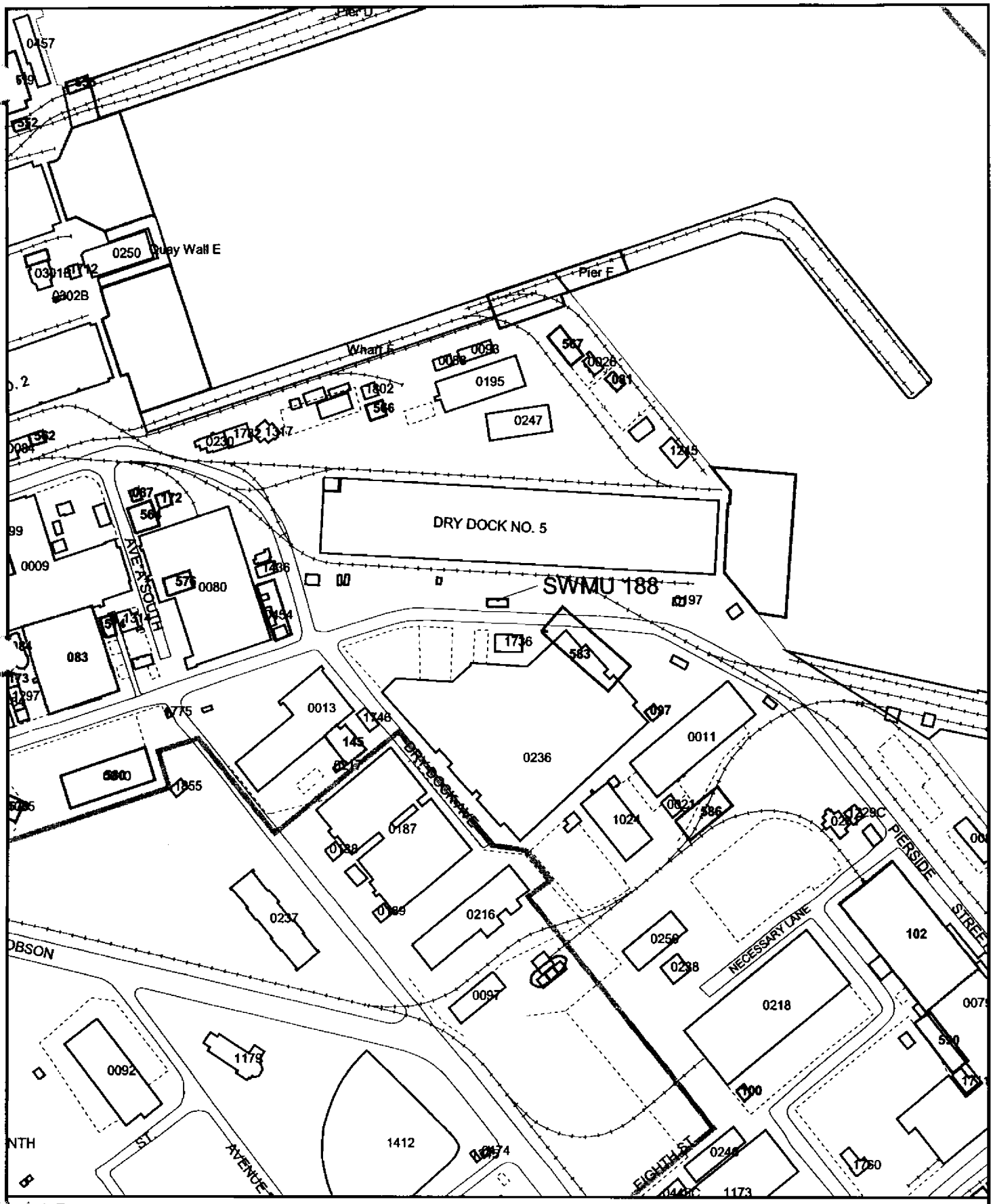
8.0 References – Lists the references used in this document.

Appendix A contains the analytical results for the samples collected at SWMU 188.

Appendix B contains the data validation and summary report for the samples collected at SWMU 188.

Appendix C contains the back-up calculations of site-specific SSLs for TCE, considering both unpaved and paved scenarios.

Appendix D contains CH2M-Jones's response to comments generated by SCDHEC following review of the *SWMU 188 RFI Report Addendum, Revision 0* submittal (dated July 2002).All tables and figures appear at the end of their respective sections.



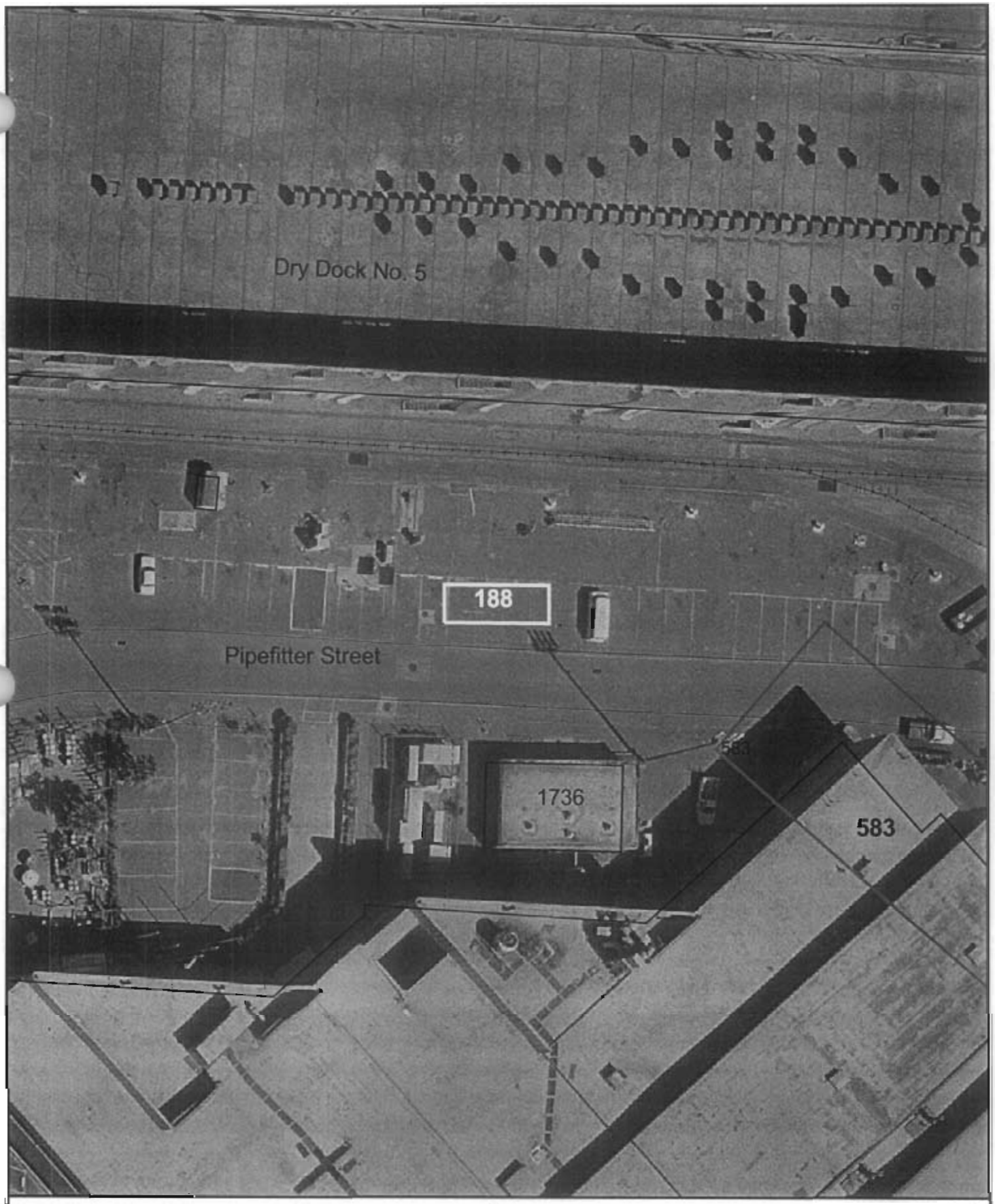
Fence
Railroads
Roads
AOC Boundary
SWMU Boundary
Buildings
Zone Boundary

N

0 300 600 Feet

1 inch = 250 feet

Figure 1-1
Site Location Map
SWMU 188, Zone E
Charleston Naval Complex



Railroads
Roads
SWMU 188
AOC Boundary
Buildings

N

0 50 100 Feet

1 inch = 50 feet

Figure 1-2
Aerial Photo
SWMU 188, Zone E
Charleston Naval Complex

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File Path: C:\18gis\Projects\Zone_E\swmu188\swmu188.apr, Date: 08 Apr 2002 8:25, User: NMOUDRY, Figure 1-2 Site Map

Section 2.0

2.0 Site Setting

The regional physiographic and geologic setting for the CNC area is described in the *Final Zone A RFI Report, Revision 0* (EnSafe/Allen & Hoshall, 1996). The regional hydrology and hydrogeology for the CNC area is also described in the Zone A RFI Report.

2.1 Geologic Setting

Detailed descriptions of the Quaternary- and Tertiary-age sediments encountered during the Zone E RFI, along with a detailed discussion of the various lithologic units encountered in Zone E, are presented in Section 2.2.1 of the *Zone E RFI Report, Revision 0* (EnSafe, 1997).

Due to extensive surface soil disturbance at the CNC during its operational history, approximately the upper 5 ft of the subsurface are typically a mixture of artificial fill and native sediments. However, the extent of fill placement varies within Zone E. Areas where extensive excavations have been performed or where native soils may have been unsuitable for foundation support may have undergone more extensive fill placement. Detailed descriptions of the soil types encountered in Zone E are presented in Section 2.2.3.3 of the Zone E RFI Report.

At SWMU 188, the area is covered with concrete and is situated adjacent to a concrete quay wall. During the field investigation, the concrete was found to be up to 3-ft thick. Immediately underlying the concrete was course gravel overlying dark clay/sand.

A review of the historical maps from 1909 to the present indicates that the entire area has been subjected to a complex series of construction, demolition, and expansion activities over the years. It appears that this area may have been repeatedly graded and leveled before construction of the current quay wall and concrete surfaces.

2.2 Hydrogeologic Setting

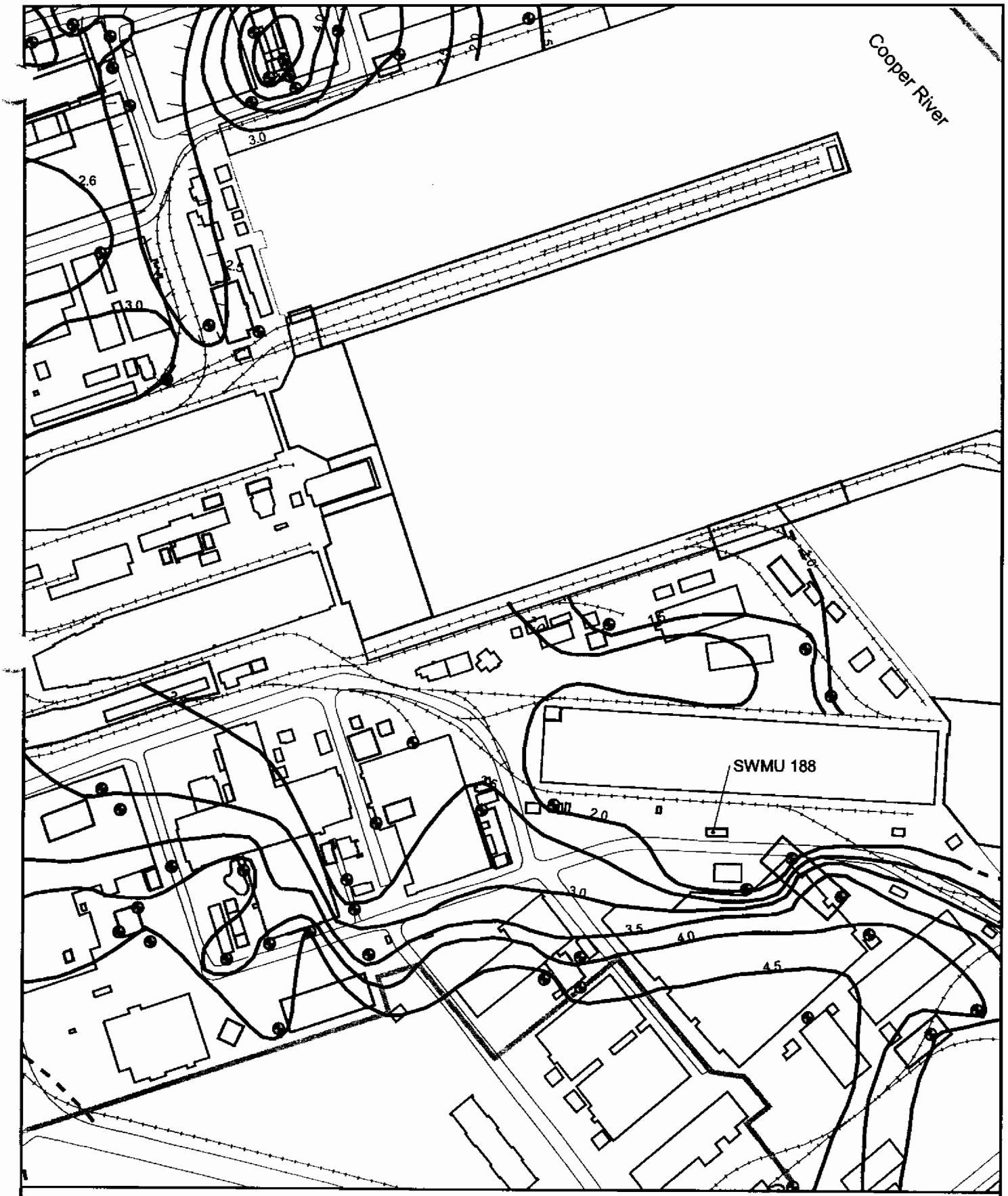
Based on information presented in Section 2.3 of the RFI report and a recent re-evaluation of the groundwater flow patterns in the area, it appears that the groundwater flow environment in Zone E is complex and is influenced by several factors:

- The eastern boundary of Zone E is the Cooper River, a regional groundwater discharge zone.
- The Cooper River is tidally influenced.

- A quay wall of sheet pilings and concrete lies along the waterfront; hydraulic integrity of the quay wall is largely unknown.
- The shallow subsurface has been heavily disturbed by anthropogenic activities related to industrial work within Zone E in the form of utilities, non-native fill material, support pilings, railroad lines, crane rails, etc.
- Geologic heterogeneity predominates the subsurface.
- The nearby dry dock may influence local groundwater gradients.

Detailed descriptions of the surficial aquifer, groundwater flow patterns, horizontal and vertical hydraulic gradients, horizontal hydraulic conductivities, grain-size distribution, and tidal influences are presented in Section 2.3 of the *Zone E RFI Report, Revision 0*. The types of information, documentation, and descriptions of various methodologies used in developing this information are also presented in Section 2.3 of the RFI report.

A recent shallow groundwater contour map has been developed for Zone E (see Figure 2-1), using contemporaneous water level elevation data collected in April 2002. Based on the data, groundwater in the vicinity of SWMU 188 appears to mound locally in a pattern that roughly outlines Dry Dock 5. It is likely that the concrete structure of Dry Dock 5 is creating an impermeable boundary which is causing a slight mounding effect and re-directs groundwater flow around the structure. Generally, groundwater ultimately appears to be flowing toward the Cooper River. Depth to groundwater in the vicinity of SWMU 188 is estimated to be approximately 6 to 7 feet below land surface (ft bls).



Known Shallow Groundwater Contour (5/14/02)
Inferred Shallow Groundwater Contour (5/14/02)
Fence
Railroads
Roads
Groundwater Well
AOC Boundary
SWMU Boundary
Buildings
Zone Boundary

N

0 200 400 Feet

1 inch = 250 feet

Figure 2-1
Shallow Groundwater Contours
SWMU 188, Zone E
Charleston Naval Complex

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Section 3.0

3.0 Field Investigation and Data Validation

3.1 Investigation Objectives

The sampling strategy for SWMU 188, as described in the *RFI Addendum Sampling Plan: Uninvestigated Sites – Zone E, Revision 1* (CH2M-Jones, 2001a), was designed to collect sufficient environmental media data to accomplish the following:

- Characterize site conditions
- Define the nature and extent of contamination, if any
- Assess human health and ecological risk
- Assess the need for additional investigation or corrective measures

3.2 Sampling Procedures, Protocols, and Analyses

The sampling activities were performed in accordance with the Environmental Services Division *Standard Operating Procedures and Quality Assurance Manual* (ESDSOPQAM) (U.S. Environmental Protection Agency [EPA], 1996a); the *Final Comprehensive RFI Work Plan* (EnSafe/Allen & Hoshall, 1994); the *RFI Addendum Sampling Plan – Uninvestigated Sites, Zone E, Revision 1* (CH2M-Jones, 2001a); and the *Charleston Naval Complex Project Team Notebook and Instructions, Revision 1A* (CH2M-Jones, 2001b).

3.2.1 Sample Identification

Media sampled during the CSI field investigation was limited to surface and subsurface soils. All samples collected during the CSI were labeled in accordance with the 10 character protocol established in the *Final Comprehensive RFI Work Plan* (EnSafe/Allen & Hoshall, 1994), and provides a unique sample identification using the following format:

AAAbbCCCdd

- AAA = SWMU/AOC number
- bb = Environmental medium
- CCC = Location
- dd = Sample interval

3.2.2 Concrete/Asphalt Coring

Due to the placement of SWMU 188 at Dry Dock 5 and along an access road near the Cooper River, it was anticipated that the concrete could be several feet thick. However,

during the CSI field investigation, it was found that the thickness of the concrete was up to approximately 3 ft. The soil beneath the concrete was accessible for sampling.

3.2.3 Soil Sampling

Three soil borings, identified as E188SB001, E188SB002, and E188SB003, were advanced by CH2M-Jones at the three locations shown on Figure 3-1. Stainless-steel hand augers were used to collect surface and subsurface soil samples from the 0 to 1-ft interval below the concrete/soil interface for the surface soil interval, and the 3 to 5-ft interval below the concrete/soil interface for the subsurface soil interval. All samples were placed in appropriate containers, labeled, and stored on ice before being shipped to the laboratory for analysis. Proper custody procedures were maintained throughout the sampling and shipping process.

The completed sample auger holes were backfilled with excess cuttings and grouted. A bituminous cold patch was placed flush with the surface.

Each location was surveyed for positioning in the CNC geographic information system (GIS). Coordinate information is presented in Table 3-1.

3.2.4 Decontamination Procedures

All decontamination activities were conducted in accordance with the procedures outlined in the *Final Comprehensive RFI Work Plan* (EnSafe/Allen & Hoshall, 1994) and the *RFI Addendum Sampling Plan – Uninvestigated Sites, Zone E, Revision 1* (CH2M-Jones, 2001a).

3.3 Soil Analytes

All soil samples collected as part of the SWMU 188 CSI were analyzed for the following:

- Volatile organic compounds (VOCs) (EPA Method 8260B)
- Semivolatile organic compounds (SVOCs) (EPA Method 8270C)
- Metals (EPA Method SW 846, as appropriate)
- Polychlorinated biphenyls (PCBs) (EPA Method 8082)
- Pesticides (EPA Method 8081A)
- Cyanide (EPA Method 9010B)

The samples were sent via overnight carrier to an offsite laboratory, where they were analyzed on an expedited (7-day) turnaround time. All analytical results are presented in Appendix A.

3.4 Sample Analysis Protocols

Sample analyses were conducted consistent with the guidance in the EPA's *Test Methods for Evaluating Solid Waste, SW-846, Revision 4*, Office of Solid Waste and Emergency Response (SW846) (EPA, 1996b) and in the EPA Environmental Services Division *Laboratory Operations and Quality Control Manual* (ESDLOQCM) (EPA, 1997).

The analyses also followed the procedures provided in the approved *Final Comprehensive RFI Work Plan* (EnSafe/Allen & Hoshall, 1994).

3.5 Data Verification and Validation

Data verification and validation practices were conducted consistent with Quality Assurance Plan (QAP) and the Data Management Plan (DMP) in the approved *Final Comprehensive RFI Work Plan* (EnSafe/Allen & Hoshall, 1994) portion of the *Final Comprehensive RFI Work Plan* to verify that all information and data were valid and properly documented.

In addition, verification and validation procedures were also conducted consistent with the following guidelines:

- *Contract Laboratory Program National Functional Guidelines for Organic Data Review* (EPA, 1994a)
- *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (EPA, 1994b)

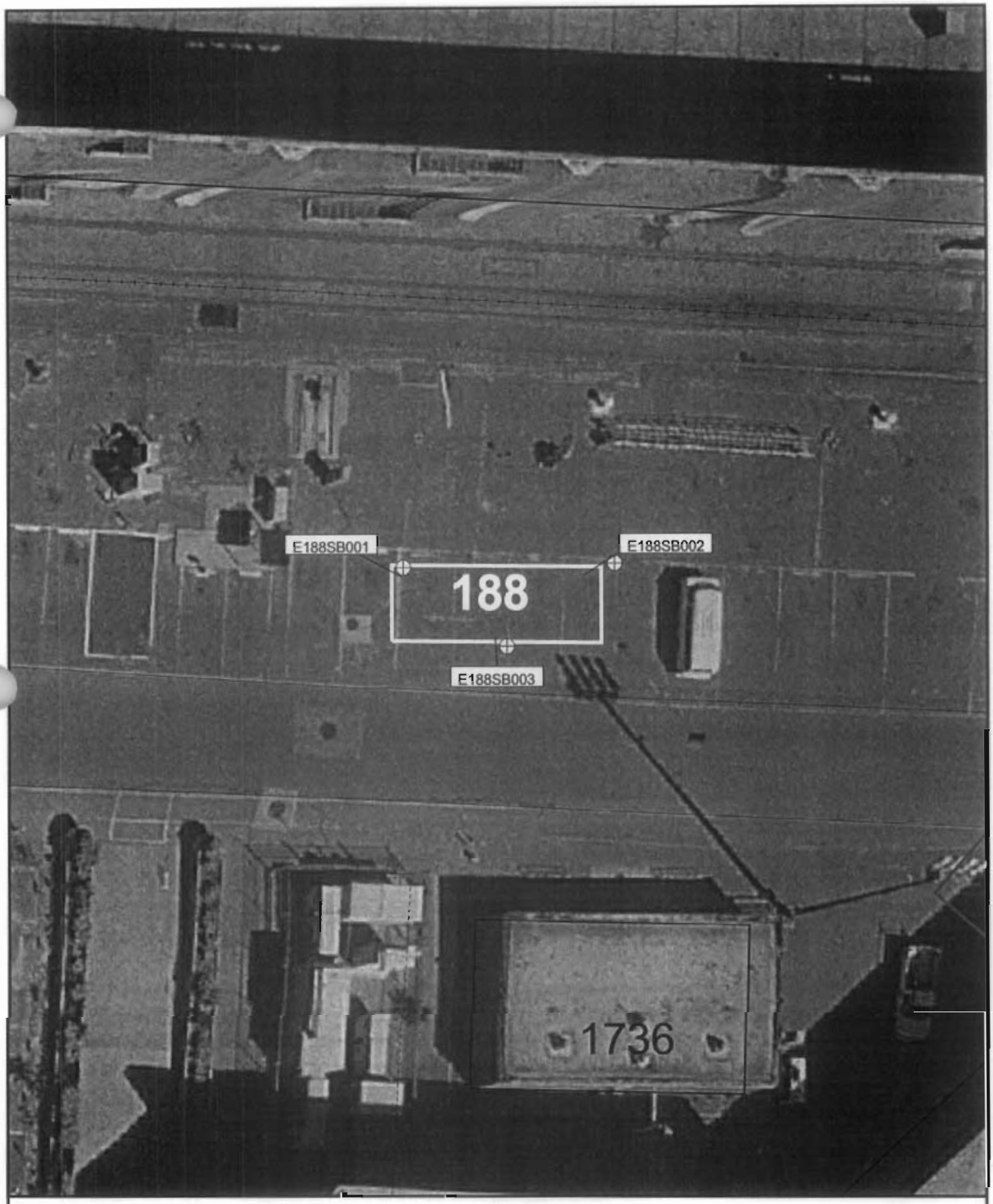
The data validation summary report is presented in Appendix B.

3.6 Data Management

Record-keeping and data management practices for both field data and analytical data were maintained consistent with the DMP in the approved *Final Comprehensive RFI Work Plan* (EnSafe/Allen & Hoshall, 1994) to verify that all information and data were properly recorded and documented. Electronic data will be maintained in a database by CH2M-Jones for long-term data storage and management.

TABLE 3-1
Sampling Location Coordinates
RFI Report Addendum, SWMU 188, Zone E, Charleston Naval Complex

New Sample ID	Northing	Easting
I188SB001	375,668.2	2,318,285.3
I188SB002	375,668.9	2,318,325.5
I188SB003	375,653.1	2,318,305.0



Soil Boring
Fence
Railroads
Roads
AOC Boundary
SWMU Boundary
Buildings
Zone Boundary

N

0 30 60 Feet

1 inch = 25 feet

Figure 3-1
Surface Soil and Subsurface Soil Sampling Locations
SWMU 188, Zone E
Charleston Naval Complex

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File Path: C:\18gis\Projects\Zone_E\swmu188\swmu188.apr, Date: 11 Jul 2002 12:38, User: NMOUDRY, Figure 3-1 SWMU 188

Section 4.0

4.0 COPC Screening

Data evaluation and COPC screening were conducted as agreed to by the BCT and as described in the *Charleston Naval Complex Project Team Notebook and Instructions, Revision 1A* (CH2M-Jones, 2001b).

This section discusses chemicals that were detected in surface and subsurface soils collected during the CSI sampling conducted at SWMU 188 in April 2002.

4.1 Organic Constituents Detected in the Surface and Subsurface Soil Samples

The results of organic analyses on surface soil samples were compared to the EPA Region III residential and industrial risk-based concentrations (RBCs) using a hazard index (HI)=1 for carcinogens and an HI=0.1 for non-carcinogens. In addition, both the surface soil and subsurface soil results were screened against their respective generic soil screening levels (SSLs). If a generic SSL was not available, then the EPA Region III SSL values were used for screening. With both the generic SSLs and the EPA Region III SSLs, screening criteria were specified using a dilution attenuation factor (DAF)=1 for VOCs and a DAF=10 for non-VOCs.

4.1.1 VOCs in Surface and Subsurface Soils

Three VOCs (carbon disulfide, methyl ethyl ketone [MEK], and trichloroethene [TCE]) were detected in surface soil samples (see Table 4-1). Four constituents (acetone, MEK, toluene, and TCE) were detected in the subsurface soil samples (see Table 4-2).

Based on a review of the data, none of the VOCs detected in the soils at SWMU 188 were present at levels exceeding their respective screening criteria, with the single exception of TCE. A detailed discussion of the TCE occurrence is presented below.

Trichloroethene

TCE was detected in two of the three surface soil samples at estimated concentrations of 2.7 J micrograms per kilogram (μg/kg) (E188SB00101) and 2.7 J μg/kg (E188SB00201). TCE was also detected in one of the three subsurface soil samples (5 J μg/kg (E188SB00101). None of the surface soil samples were present at concentrations that exceeded the screening criteria (see Table 4-1). The one detected value in subsurface soil was below the EPA Region III residential and industrial RBCs, but slightly exceeded the SSL of 3 μg/kg (DAF=1) (see

Table 4-2). Therefore, TCE is considered to be a subsurface soil COPC at SWMU 188 and is discussed further in Section 5.0.

4.1.2 SVOCs in Surface and Subsurface Soils

A total of three SVOCs were detected in the surface soil samples and six were detected in subsurface soil samples collected from beneath the concrete paving at SWMU 188 (see Tables 4-3 and 4-4). Only two chemicals (indeno[1,2,3-cd]pyrene and phenanthrene) were found in both surface soil and subsurface soil samples. In screening the data, it was found that none of the SVOCs detected at SWMU 188 were present at levels exceeding the screening criteria (see Tables 4-3 and 4-4).

For this reason, no SVOCs were identified as COPCs for SWMU 188.

4.1.3 Pesticides and PCBs in Surface and Subsurface Soils

Two pesticides were detected in the surface soil samples and four pesticides were detected in the subsurface soil samples collected from beneath the concrete paving at SWMU 188. No PCBs were found at detectable concentrations (see Tables 4-5 and 4-6.) Based on a review of the data, none of the chemicals detected in the soils at SWMU 188 were present at levels exceeding their respective screening criteria.

For this reason, no pesticides or PCBs were identified as COPCs for SWMU 188.

4.2 Inorganic Constituents Detected in the Surface and Subsurface Soil Samples

Nineteen inorganic constituents were detected in surface soil samples and 18 inorganic constituents were detected in subsurface soil samples collected at SWMU 188 (see Tables 4-7 and 4-8). Based on a review of the data, none of the chemicals detected in the soils at SWMU 188 were present at levels exceeding their respective screening criteria.

For this reason, no inorganic constituents were identified as COPCs for SWMU 188.

4.3 Data Evaluation Summary

TCE was the only chemical identified as COPC for the subsurface soil at SWMU 188, but is not considered a COPC for surface soils. No other constituents were considered COPCs for either surface or subsurface soils. TCE is discussed in Section 5.0.

TABLE 4-1
Volatile Organic Compounds Detected in Surface Soil
RFI Report Addendum, SWMU 188, Zone E, Charleston Naval Complex

Parameter	Sample ID	Station ID	Concentration (mg/kg)	Qualifier	Date Sampled	EPA Region III Industrial RBC (mg/kg)	EPA Region III Residential RBC (mg/kg)	SSL (DAF=1) (mg/kg)
Carbon disulfide	188SB00101	E188SB001	0.002	J	04/15/02	20,000	780	2
	188SB00201	E188SB002	0.0048	UJ	04/15/02			
	188SB00301	E188SB003	0.0053	UJ	04/15/02			
Methyl ethyl ketone (2-Butanone)	188SB00101	E188SB001	0.0047	J	04/15/02	120,000	470,000	0.4
	188SB00201	E188SB002	0.0051	J	04/15/02			
	188SB00301	E188SB003	0.008	J	04/15/02			
Trichloroethene (TCE)	188SB00101	E188SB001	0.0027	J	04/15/02	520	58	0.3
	188SB00201	E188SB002	0.0024	J	04/15/02			
	188SB00301	E188SB003	0.0053	UJ	04/15/02			

J Estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.
UJ Chemical was not detected and is estimated.

TABLE 4-2
Volatile Organic Compounds Detected in Subsurface Soil
RFI Report Addendum, SWMU 188, Zone E, Charleston Naval Complex

Parameter	Sample ID	Station ID	Concentration (mg/kg)	Qualifier	Date Sampled	SSL (DAF=1) (mg/kg)
Acetone	188SB00102	E188SB001	0.04	UJ	04/15/02	0.8
	188SB00202	E188SB002	0.02	UJ	04/15/02	
	188SB00302	E188SB003	0.10	J	04/15/02	
Methyl ethyl ketone (2-Butanone)	188SB00102	E188SB001	0.01	UJ	04/15/02	0.4[a]
	188SB00202	E188SB002	0.01	UJ	04/15/02	
	188SB00302	E188SB003	0.01	J	04/15/02	
Toluene	188SB00102	E188SB001	0.005	UJ	04/15/02	0.6
	188SB00202	E188SB002	0.005	J	04/15/02	
	188SB00302	E188SB003	0.006	UJ	04/15/02	
Trichloroethene (TCE)	188SB00102	E188SB001	**0.005**	J	04/15/02	0.003
	188SB00202	E188SB002	0.005	UJ	04/15/02	
	188SB00302	E188SB003	0.006	UJ	04/15/02	

Concentrations in bold and outlined within the table represent exceedances of the respective screening criteria.
[a] EPA Region III generic SSL with a DAF=10, EPA Region III RBC Tables, October 2000.
J Estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.
UJ Chemical was not detected and is estimated.

TABLE 4-3
Semivolatile Organic Compounds Detected in Surface Soil
RFI Report Addendum, SWMU 188, Zone E, Charleston Naval Complex

Parameter	Sample ID	Station ID	Concentration (mg/kg)	Qualifier	Date Sampled	EPA Region III Industrial RBC (mg/kg)	EPA Region III Residential RBC (mg/kg)	SSL (DAF=10) (mg/kg)
Benzo(g,h,i)perylene	188SB00101	E188SB001	0.36000	U	04/15/2002	NA	NA	NA
	188SB00201	E188SB002	0.04400	J	04/15/2002			
	188SB00301	E188SB003	0.36000	U	04/15/2002			
Indeno(1,2,3-cd)pyrene	188SB00201	E188SB002	0.26000	J	04/15/2002	7.8	0.87	7
	188SB00101	E188SB001	0.24000	J	04/15/2002			
	188SB00301	E188SB003	0.24000	J	04/15/2002			
Phenanthrene	188SB00201	E188SB002	0.37000	U	04/15/2002	NA	NA	NA
	188SB00101	E188SB001	0.36000	U	04/15/2002			
	188SB00301	E188SB003	0.02300	J	04/15/2002			

J Estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.
NA Not applicable/not available
U Chemical was not detected.

TABLE 4-4
Semivolatile Organic Compounds Detected in Subsurface Soil
RFI Report Addendum, SWMU 188, Zone E, Charleston Naval Complex

Parameter	Sample ID	Station ID	Concentration (mg/kg)	Qualifier	Date Sampled	SSL (DAF=10) (mg/kg)
Acenaphthene	188SB00102	E188SB001	0.37	U	04/15/2002	285
	188SB00202	E188SB002	0.36	U	04/15/2002	
	188SB00302	E188SB003	0.049	J	04/15/2002	
Benzo(a)Anthracene	188SB00102	E188SB001	0.37	U	04/15/2002	1
	188SB00202	E188SB002	0.36	U	04/15/2002	
	188SB00302	E188SB003	0.028	J	04/15/2002	
Chrysene	188SB00102	E188SB001	0.37	U	04/15/2002	80
	188SB00202	E188SB002	0.36	U	04/15/2002	
	188SB00302	E188SB003	0.028	J	04/15/2002	
Indeno(1,2,3-cd)pyrene	188SB00102	E188SB001	0.24	J	04/15/2002	7
	188SB00202	E188SB002	0.24	J	04/15/2002	
	188SB00302	E188SB003	0.25	J	04/15/2002	
Naphthalene	188SB00202	E188SB002	0.36	U	04/15/2002	42
	188SB00102	E188SB001	0.37	U	04/15/2002	
	188SB00302	E188SB003	0.20	J	04/15/2002	
Phenanthrene	188SB00102	E188SB001	0.37	U	04/15/2002	7
	188SB00202	E188SB002	0.36	U	04/15/2002	
	188SB00302	E188SB003	0.023	J	04/15/2002	

J 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 Chemical was not detected.

TABLE 4-5
Pesticides and PCBs Detected in Surface Soil
RFI Report Addendum, SWMU 188, Zone E, Charleston Naval Complex

Parameter	Sample ID	Station ID	Concentration (mg/kg)	Qualifier	Date Sampled	EPA Region III Industrial RBC (mg/kg)	EPA Region III Residential RBC (mg/kg)	SSL (DAF=10) (mg/kg)
p,p'-DDD	188SB00101	E188SB001	0.00270	U	04/15/2002	24	2.7	80
	188SB00201	E188SB002	0.00045	J	04/15/2002			
	188SB00301	E188SB003	0.00270	U	04/15/2002			
p,p'-DDE	188SB00101	E188SB001	0.00270	U	04/15/2002	17	1.9	8
	188SB00201	E188SB002	0.00280	U	04/15/2002			
	188SB00301	E188SB003	0.00054	J	04/15/2002			

J 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 Chemical was not detected.

TABLE 4-6
Pesticides and PCBs Detected in Subsurface Soil
RFI Report Addendum, SWMU 188, Zone E, Charleston Naval Complex

Parameter	Sample ID	Station ID	Concentration (mg/kg)	Qualifier	Date Sampled	SSL (DAF=10) (mg/kg)
Gamma-chlordane	188SB00202	E188SB002	0.0014	U	04/15/2002	5
	188SB00102	E188SB001	0.00048	J	04/15/2002	
	188SB00302	E188SB003	0.0015	U	04/15/2002	
p,p'-DDD	188SB00202	E188SB002	0.0027	U	04/15/2002	80
	188SB00102	E188SB001	0.0011	J	04/15/2002	
	188SB00302	E188SB003	0.0028	U	04/15/2002	
p,p'-DDE	188SB00102	E188SB001	0.0015	J	04/15/2002	8
	188SB00202	E188SB002	0.0027	U	04/15/2002	
	188SB00302	E188SB003	0.0011	J	04/15/2002	
Heptachlor epoxide	188SB00102	E188SB001	0.00036	J	04/15/2002	0.35
	188SB00202	E188SB002	0.0014	U	04/15/2002	
	188SB00302	E188SB003	0.0015	U	04/15/2002	

J 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 Chemical was not detected.

TABLE 4-7
Inorganic Constituents Detected in Surface Soil
RFI Report Addendum, SWMU 188, Zone E, Charleston Naval Complex

Parameter	Sample ID	Station ID	Concentration (mg/kg)	Qualifier	Date Sampled	EPA Region III Industrial RBC (mg/kg)	EPA Region III Residential RBC (mg/kg)	Zone E Surface Soil Background Concentration Range (mg/kg)	SSL (DAF=10) (mg/kg)
Aluminum	188SB00101	E188SB001	14,000	=	04/15/2002	200,000	1,840	261 - 20,500	NA
	188SB00201	E188SB002	10,000	=	04/15/2002				
	188SB00301	E188SB003	8,100	=	04/15/2002				
Arsenic	188SB00101	E188SB001	1.8	J	04/15/2002	100	3.9	0.95 - 68	14.5
	188SB00201	E188SB002	1.6	J	04/15/2002				
	188SB00301	E188SB003	2.9	=	04/15/2002				
Barium	188SB00101	E188SB001	24	J	04/15/2002	14,000	5,500	1.8 - 1,980	800
	188SB00201	E188SB002	23	J	04/15/2002				
	188SB00301	E188SB003	21	J	04/15/2002				
Beryllium	188SB00101	E188SB001	0.19	J	04/15/2002	4,100	16	0.13 - 1.6	31.5
	188SB00201	E188SB002	0.17	J	04/15/2002				
	188SB00301	E188SB003	0.17	J	04/15/2002				
Cadmium	188SB00101	E188SB001	0.09	U	04/15/2002	100	4	0.06 - 1.5	4
	188SB00201	E188SB002	0.10	U	04/15/2002				
	188SB00301	E188SB003	0.14	J	04/15/2002				
Calcium	188SB00101	E188SB001	2,000	=	04/15/2002	NA	NA	167 - 182,000	NA
	188SB00201	E188SB002	2,900	=	04/15/2002				

TABLE 4-7
Inorganic Constituents Detected in Surface Soil
RFI Report Addendum, SWMU 188, Zone E, Charleston Naval Complex

Parameter	Sample ID	Station ID	Concentration (mg/kg)	Qualifier	Date Sampled	EPA Region III Industrial RBC (mg/kg)	EPA Region III Residential RBC (mg/kg)	Zone E Surface Soil Background Concentration Range (mg/kg)	SSL (DAF=10) (mg/kg)
Calcium	188SB00301	E188SB003	19,000	=	04/15/2002	NA	NA	167 - 182,000	NA
Chromium, Total	188SB00101	E188SB001	16	=	04/15/2002	316,000	12,000	2.3 - 567	19
	188SB00201	E188SB002	12	=	04/15/2002				
	188SB00301	E188SB003	14	=	04/15/2002				
Cobalt	188SB00101	E188SB001	1.4	J	04/15/2002	12,000	470	0.35 - 111	NA
	188SB00201	E188SB002	1.3	J	04/15/2002				
	188SB00301	E188SB003	1.1	J	04/15/2002				
Copper	188SB00101	E188SB001	4.1	J	04/15/2002	8,200	310	0.47 - 866	5,500[a]
	188SB00201	E188SB002	4.1	J	04/15/2002				
	188SB00301	E188SB003	4.0	J	04/15/2002				
Iron	188SB00101	E188SB001	9,200	=	04/15/2002	61,000	2,300	1,050 - 30,600	NA
	188SB00201	E188SB002	7,200	=	04/15/2002				
	188SB00301	E188SB003	5,100	=	04/15/2002				
Lead	188SB00101	E188SB001	5.8	=	04/15/2002	500	500	1 - 400	500
	188SB00201	E188SB002	8.9	=	04/15/2002				
	188SB00301	E188SB003	10	=	04/15/2002				

TABLE 4-7
Inorganic Constituents Detected in Surface Soil
RFI Report Addendum, SWMU 188, Zone E, Charleston Naval Complex

Parameter	Sample ID	Station ID	Concentration (mg/kg)	Qualifier	Date Sampled	EPA Region III Industrial RBC (mg/kg)	EPA Region III Residential RBC (mg/kg)	Zone E Surface Soil Background Concentration Range (mg/kg)	SSL (DAF=10) (mg/kg)
Magnesium	188SB00101	E188SB001	770	J	04/15/2002	NA	NA	31 - 14,800	NA
	188SB00201	E188SB002	660	J	04/15/2002				
	188SB00301	E188SB003	1,300	J	04/15/2002				
Manganese	188SB00101	E188SB001	99	J	04/15/2002	4,100	160	0.93 - 508	475
	188SB00201	E188SB002	69	J	04/15/2002				
	188SB00301	E188SB003	41	J	04/15/2002				
Mercury	188SB00101	E188SB001	0.02	J	04/15/2002	NA	NA	0.03 - 2.7	1
	188SB00201	E188SB002	0.03	J	04/15/2002				
	188SB00301	E188SB003	0.03	J	04/15/2002				
Nickel	188SB00101	E188SB001	4.1	J	04/15/2002	4,100	160	0.6 - 72	65
	188SB00201	E188SB002	3.3	J	04/15/2002				
	188SB00301	E188SB003	4.9	J	04/15/2002				
Potassium	188SB00101	E188SB001	630	J	04/15/2002	NA	NA	46 - 2,620	NA
	188SB00201	E188SB002	390	J	04/15/2002				
	188SB00301	E188SB003	360	J	04/15/2002				
Sodium	188SB00101	E188SB001	120	J	04/15/2002	NA	NA	12 - 28,200	NA
	188SB00201	E188SB002	150	J	04/15/2002				

TABLE 4-7
Inorganic Constituents Detected in Surface Soil
RFI Report Addendum, SWMU 188, Zone E, Charleston Naval Complex

Parameter	Sample ID	Station ID	Concentration (mg/kg)	Qualifier	Date Sampled	EPA Region III Industrial RBC (mg/kg)	EPA Region III Residential RBC (mg/kg)	Zone E Surface Soil Background Concentration Range (mg/kg)	SSL (DAF=10) (mg/kg)
Sodium	188SB00301	E188SB003	210	J	04/15/2002	NA	NA	12 - 28,200	NA
Vanadium	188SB00101	E188SB001	23	=	04/15/2002	1,400	55	1.1 - 60	3,000
	188SB00201	E188SB002	17	=	04/15/2002				
	188SB00301	E188SB003	14	=	04/15/2002				
Zinc	188SB00101	E188SB001	15	=	04/15/2002	61,000	2,300	1.9 - 855	6,000
	188SB00201	E188SB002	16	=	04/15/2002				
	188SB00301	E188SB003	16	=	04/15/2002				

= Analyte was detected at the concentration reported.
J Estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.
NA Not available/not applicable.
U Chemical was not detected.

TABLE 4-8
Inorganic Constituents Detected in Subsurface Soil
RFI Report Addendum, SWMU 188, Zone E, Charleston Naval Complex

Parameter	Sample ID	Station ID	Concentration (mg/kg)	Qualifier	Date Sampled	Zone E Subsurface Soil Background Concentration Range (mg/kg)	SSL (DAF=10) (mg/kg)
Aluminum	188SB00102	E188SB001	6,800	=	04/15/2002	1,220 - 29,900	NA
	188SB00202	E188SB002	5,800	=	04/15/2002		
	188SB00302	E188SB003	6,300	=	04/15/2002		
Arsenic	188SB00102	E188SB001	2.1	=	04/15/2002	0.83 - 26	4.5
	188SB00202	E188SB002	1.1	J	04/15/2002		
	188SB00302	E188SB003	1.7	J	04/15/2002		
Barium	188SB00102	E188SB001	16	J	04/15/2002	6.1 - 91	800
	188SB00202	E188SB002	10	J	04/15/2002		
	188SB00302	E188SB003	14	J	04/15/2002		
Beryllium	188SB00102	E188SB001	0.098	J	04/15/2002	0.15 - 1.6	31.5
	188SB00202	E188SB002	0.069	J	04/15/2002		
	188SB00302	E188SB003	0.092	J	04/15/2002		
Calcium	188SB00102	E188SB001	3,500	=	04/15/2002	323 - 229,000	NA
	188SB00202	E188SB002	1,700	=	04/15/2002		
	188SB00302	E188SB003	5,400	=	04/15/2002		
Chromium, Total	188SB00102	E188SB001	9.5	=	04/15/2002	1.6 - 75	19
	188SB00202	E188SB002	5.4	=	04/15/2002		
	188SB00302	E188SB003	8	=	04/15/2002		
Cobalt	188SB00102	E188SB001	0.78	J	04/15/2002	0.41 - 15	NA
	188SB00202	E188SB002	0.68	J	04/15/2002		
	188SB00302	E188SB003	0.73	J	04/15/2002		
Copper	188SB00102	E188SB001	1.8	J	04/15/2002	1.3 - 192	5,500 a
	188SB00202	E188SB002	0.92	J	04/15/2002		
	188SB00302	E188SB003	1.8	J	04/15/2002		
Iron	188SB00102	E188SB001	5,600	=	04/15/2002	924 - 35,800	NA
	188SB00202	E188SB002	3,200	=	04/15/2002		

TABLE 4-8
Inorganic Constituents Detected in Subsurface Soil
RFI Report Addendum, SWMU 188, Zone E, Charleston Naval Complex

Parameter	Sample ID	Station ID	Concentration (mg/kg)	Qualifier	Date Sampled	Zone E Subsurface Soil Background Concentration Range (mg/kg)	SSL (DAF=10) (mg/kg)
Iron	188SB00302	E188SB003	4,400	=	04/15/2002	924 - 35,800	NA
Lead	188SB00102	E188SB001	5.9	=	04/15/2002	1.8 - 322	500
	188SB00202	E188SB002	3.8	=	04/15/2002		
	188SB00302	E188SB003	5.6	=	04/15/2002		
Magnesium	188SB00102	E188SB001	420	J	04/15/2002	77 - 9,140	NA
	188SB00202	E188SB002	190	J	04/15/2002		
	188SB00302	E188SB003	360	J	04/15/2002		
Manganese	188SB00102	E188SB001	15	J	04/15/2002	4.9 - 625	475[a]
	188SB00202	E188SB002	8.7	J	04/15/2002		
	188SB00302	E188SB003	14	J	04/15/2002		
Mercury	188SB00102	E188SB001	0.027	J	04/15/2002	0.04 - 0.9	1
	188SB00202	E188SB002	0.037	J	04/15/2002		
	188SB00302	E188SB003	0.036	J	04/15/2002		
Nickel	188SB00102	E188SB001	2.3	J	04/15/2002	0.85 - 20	65
	188SB00202	E188SB002	2.1	J	04/15/2002		
	188SB00302	E188SB003	2.5	J	04/15/2002		
Potassium	188SB00102	E188SB001	250	J	04/15/2002	106 - 3,440	NA
	188SB00202	E188SB002	110	J	04/15/2002		
	188SB00302	E188SB003	190	J	04/15/2002		
Sodium	188SB00102	E188SB001	130	J	04/15/2002	21 - 1,430	NA
	188SB00202	E188SB002	110	J	04/15/2002		
	188SB00302	E188SB003	120	J	04/15/2002		
Vanadium	188SB00102	E188SB001	12	=	04/15/2002	1.6 - 71	3,000
	188SB00202	E188SB002	7.7	J	04/15/2002		
	188SB00302	E188SB003	9.9	J	04/15/2002		

TABLE 4-8
Inorganic Constituents Detected in Subsurface Soil
RFI Report Addendum, SWMU 188, Zone E, Charleston Naval Complex

Parameter	Sample ID	Station ID	Concentration (mg/kg)	Qualifier	Date Sampled	Zone E Subsurface Soil Background Concentration Range (mg/kg)	SSL (DAF=10) (mg/kg)
Zinc	188SB00102	E188SB001	7.1	=	04/15/2002	5.8 - 438	6,000
	188SB00202	E188SB002	4.0	U	04/15/2002		
	188SB00302	E188SB003	7.1	=	04/15/2002		

= Analyte was detected at the concentration reported.
J Estimated value. One or more quality control (QC) parameters were outside control limits or the value was detected below the laboratory's quantification limit.
NA Not available/not applicable
U Chemical was not detected.

Section 5.0

5.0 COC/COPC Refinement

Based on an evaluation of the CSI analytical results for SWMU 188, one chemical, TCE, was identified as a COPC in subsurface soil. No COPCs were identified for surface soil. Screening of the detected concentrations against the current screening criteria adopted by the CNC BCT found that TCE in one subsurface soil sample (5 J µg/kg in E188SB00101) exceeded the 3 µg/kg SSL (DAF=1) for TCE. The nature of this exceedance and the relevance of TCE in subsurface soil at this site is further discussed below.

5.1 Trichloroethylene in Subsurface Soil

TCE was detected in two of the three surface soil samples an estimated concentrations of 2.7 J µg/kg (E188SB00101) and 2.4 J µg/kg (E188SB00201); however, neither of these values exceeded any applicable screening criteria. The one detection of TCE in the subsurface soil (5 J µg/kg in E188SB00101) and the average concentration of TCE in the subsurface soil is 3.5 J µg/kg which only slightly exceeds the SSL of 3 µg/kg (DAF=1) (using ½ of the analytical detection limit for samples with no detectable concentrations of TCE).

Because the average concentration of TCE in the subsurface soil slightly exceeded the generic SSL, site-specific SSLs for TCE were calculated (see Appendix C). The resulting site-specific SSLs (DAF=1) are 47 µg/kg and 210 µg/kg for the unpaved and paved scenarios, respectively. These values are well above the maximum detected TCE concentrations in sites soils. Based on the site-specific SSLs, TCE is not a COC at AOC 188.

5.2 Summary

Based on review of the data, no COCs are identified for SWMU 188.

Section 6.0

6.0 Summary of Information Related to Site Closeout Issues

6.1 RFI Status

The CSI investigation findings, as reported herein, satisfy the requirements of the RFI. Based on review of the data obtained from the CSI field investigation conducted in April 2002, the nature and extent of the COPCs has been adequately defined.

SWMU 188 was not included in the *Zone E RFI Report, Revision 0* (EnSafe, 1997), thus there have been no RFI comments issued with respect to this unit. Comments by SCDHEC on the *SWMU 188 RFI Report Addendum, Revision 0* document, and CH2M-Jones' responses to those comments are provided in Appendix D. With submittal of this RFI Report Addendum, the RFI requirements are considered to be complete.

The remaining subsections address the issues that the BCT agreed to evaluate prior to site closeout.

6.2 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 several 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. Groundwater is not a medium of concern at SWMU 188. No additional evaluation of this issue is warranted.

6.3 Potential Linkage to SWMU 37, Investigated Sanitary Sewers at the CNC

The sanitary sewer investigation (SWMU 37) was designed to include segments of the sewer where releases of contamination were known or considered likely to have occurred. No investigations related to SWMU 37 were conducted in the vicinity of SWMU 188. No known or suspected linkage between SWMU 37 and SWMU 188 exists. Further evaluation of this issue is not warranted.

6.4 Potential Linkage to AOC 699, Investigated Storm Sewers at the CNC

Investigated segments of the storm sewer (AOC 699) were identified in the *Zone L RFI Report, Revision 0* (EnSafe, 1998). One storm drain is located approximately 135 feet east of SWMU 188. The sections of the stormwater sewer system in the vicinity of the site were not investigated as part of the AOC 699 investigations. There are no data or information to suggest that SWMU 188 has impacted the storm sewer system and groundwater is not a medium of concern at this site. Further investigation of a linkage between the storm sewer system and SWMU 188 is not warranted.

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

Investigated segments of the CNC railroad lines (AOC 504) were identified in the *Zone L RFI Report, Revision 0* (EnSafe, 1998). No investigations related to AOC 504 were conducted at SWMU 188.

There is an existing railroad line north of SWMU 188 that serves Dry Dock 5, which remains an active railroad line. Based on historical public works maps, there were no railroads in the vicinity as late as 1939. By 1955, a series of railroad lines had been built throughout the area. By 1962, the existing railroads had been removed for construction of Dry Dock 5, and by 1967, the existing railroad lines were in place. There is no known linkage between SWMU 188 and the investigated railroad lines. Further evaluation of this issue is not warranted.

6.6 Potential Migration Pathways to Surface Water Bodies at the CNC

The nearest surface water body to SWMU 188 is the Cooper River, which lies approximately 500 feet to the east. There were no COCs identified for soil. Therefore, there are no migration pathways of concern. Further evaluation of this issue is not warranted.

6.7 Potential Contamination in Oil/Water Separators

There are no OWSs known to be associated with this site. In addition, there is no reference made to an OWS at this facility in the *Oil Water Separator Data* report (Department of the Navy, September 2000). Further evaluation of OWSs is not warranted.

6.8 Land Use Control Management Plan

There were no COCs identified under an unrestricted land use scenario during the risk-based screening of the data from SWMU 188. Therefore, no land use restrictions are needed for SWMU 188. This site is zoned M-2 (marine-industrial) and will likely be used for non-residential future land use.

Regardless, the CNC BCT has agreed that all of Zone E will have at least some LUCs and restrictions. At a minimum, these LUCs are likely to include restrictions against residential land use. Therefore, although the site is recommended for NFA, some LUCs are expected to be implemented at this location.

Section 7.0

7.0 Conclusions and Recommendations

SWMU 188 consists of a satellite accumulation area (SAA) that used to be located south of Dry Dock 5 (see Figure 1-1). The SAA consisted of an 8 x 6 x 6-ft metal storage structure that was permitted on September 6, 1994, and removed prior to 1996. The unit was managed as part of the CNSY hazardous waste management system. Wastes were stored on a 4 x 2-ft metal drip pan. The hazardous materials were transferred to Building 1640, a permitted facility in which hazardous wastes generated base-wide were stored prior to shipment off site for treatment and/or disposal.

The materials of concern at this unit are identified in the *Final Zone E RCRA Facility Assessment* (EnSafe/Allen & Hoshall, 1995) and include waste paint and solvents. The site was recommended for a CSI.

Evaluation of the data collected during the CSI is summarized in Section 4.0 and an evaluation of COPCs is provided in Section 5.0.

The conclusion for soils at SWMU 188 is that there are no COCs identified for surface or subsurface soil. This site is zoned M-2 (marine-industrial) and will likely be designated for commercial/industrial future use. No actions are required to control exposures/risks under current or future unrestricted land use. This site is recommended for NFA.

The BCT has agreed that LUCs will be applied across the entire Zone E of the CNC. These LUCs are expected to include, at a minimum, restrictions limiting the future land use to non-residential activities. Because SWMU 188 is located within Zone E, these LUCs will apply at this SWMU.

Section 8.0

8.0 References

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Appendix A

APPENDIX A

Volatile Organic Compound Analytical Results for Surface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00101	4/15/02	N	SO	1,1,1-Trichloroethane	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	1,1,1-Trichloroethane	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	1,1,1-Trichloroethane	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	1,1,2,2-Tetrachloroethane	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	1,1,2,2-Tetrachloroethane	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	1,1,2,2-Tetrachloroethane	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	1,1,2-Trichloroethane	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	1,1,2-Trichloroethane	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	1,1,2-Trichloroethane	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	1,1-Dichloroethane	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	1,1-Dichloroethane	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	1,1-Dichloroethane	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	1,1-Dichloroethene	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	1,1-Dichloroethene	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	1,1-Dichloroethene	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	1,2,3-Trichlorobenzene	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	1,2,3-Trichlorobenzene	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	1,2,3-Trichlorobenzene	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	1,2,4--Trichlorobenzene	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	1,2,4--Trichlorobenzene	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	1,2,4--Trichlorobenzene	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	1,2-Dichlorobenzene	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	1,2-Dichlorobenzene	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	1,2-Dichlorobenzene	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	1,2-Dichloroethane	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	1,2-Dichloroethane	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	1,2-Dichloroethane	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	1,2-Dichloroethene (total)	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	1,2-Dichloroethene (total)	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	1,2-Dichloroethene (total)	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	1,2-Dichloropropane	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	1,2-Dichloropropane	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	1,2-Dichloropropane	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	1,3-Dichlorobenzene	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	1,3-Dichlorobenzene	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	1,3-Dichlorobenzene	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	1,4-Dichlorobenzene	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	1,4-Dichlorobenzene	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	1,4-Dichlorobenzene	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	2-Chloroethyl vinyl ether	9	R	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	2-Chloroethyl vinyl ether	9.7	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	2-Chloroethyl vinyl ether	10	R	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	2-Hexanone	9	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	2-Hexanone	9.7	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	2-Hexanone	10	UJ	ug/kg	CNC95

APPENDIX A

Volatile Organic Compound Analytical Results for Surface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00101	4/15/02	N	SO	Acetone	27	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Acetone	45	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Acetone	46	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Benzene	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Benzene	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Benzene	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Bromodichloromethane	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Bromodichloromethane	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Bromodichloromethane	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Bromoform	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Bromoform	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Bromoform	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Bromomethane	9	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Bromomethane	9.7	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Bromomethane	10	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Carbon Disulfide	2.1	J	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Carbon Disulfide	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Carbon Disulfide	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Carbon Tetrachloride	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Carbon Tetrachloride	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Carbon Tetrachloride	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Chlorobenzene	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Chlorobenzene	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Chlorobenzene	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Chloroethane	9	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Chloroethane	9.7	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Chloroethane	10	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Chloroform	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Chloroform	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Chloroform	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Chloromethane	9	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Chloromethane	9.7	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Chloromethane	10	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	cis-1,2-Dichloroethylene	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	cis-1,2-Dichloroethylene	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	cis-1,2-Dichloroethylene	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	cis-1,3-Dichloropropene	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	cis-1,3-Dichloropropene	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	cis-1,3-Dichloropropene	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Dibromochloromethane	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Dibromochloromethane	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Dibromochloromethane	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Ethylbenzene	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Ethylbenzene	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Ethylbenzene	5.3	UJ	ug/kg	CNC95

APPENDIX A

Volatile Organic Compound Analytical Results for Surface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00101	4/15/02	N	SO	m+p Xylene	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	m+p Xylene	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	m+p Xylene	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Methyl ethyl ketone (2-Butanone)	4.7	J	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Methyl ethyl ketone (2-Butanone)	5.1	J	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Methyl ethyl ketone (2-Butanone)	8	J	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Methyl isobutyl ketone (4-Methyl-2-pentanone)	9	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Methyl isobutyl ketone (4-Methyl-2-pentanone)	9.7	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Methyl isobutyl ketone (4-Methyl-2-pentanone)	10	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Methylene Chloride	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Methylene Chloride	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Methylene Chloride	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	o-Xylene	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	o-Xylene	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	o-Xylene	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Styrene	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Styrene	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Styrene	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Tetrachloroethylene (PCE)	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Tetrachloroethylene (PCE)	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Tetrachloroethylene (PCE)	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Toluene	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Toluene	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Toluene	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	trans-1,2-Dichloroethene	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	trans-1,2-Dichloroethene	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	trans-1,2-Dichloroethene	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	trans-1,3-Dichloropropene	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	trans-1,3-Dichloropropene	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	trans-1,3-Dichloropropene	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Trichloroethylene (TCE)	2.7	J	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Trichloroethylene (TCE)	2.4	J	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Trichloroethylene (TCE)	5.3	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Vinyl acetate	9	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Vinyl acetate	9.7	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Vinyl acetate	10	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Vinyl chloride	9	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Vinyl chloride	9.7	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Vinyl chloride	10	UJ	ug/kg	CNC95

APPENDIX A

Volatile Organic Compound Analytical Results for Surface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00101	4/15/02	N	SO	Xylenes, Total	4.5	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Xylenes, Total	4.8	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Xylenes, Total	5.3	UJ	ug/kg	CNC95

APPENDIX A

Semi-volatile Compound Analytical Results for Surface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00101	4/15/02	N	SO	1,2,4-Trichlorobenzene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	1,2,4-Trichlorobenzene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	1,2,4-Trichlorobenzene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	1,2-Dichlorobenzene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	1,2-Dichlorobenzene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	1,2-Dichlorobenzene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	1,3-Dichlorobenzene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	1,3-Dichlorobenzene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	1,3-Dichlorobenzene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	1,4-Dichlorobenzene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	1,4-Dichlorobenzene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	1,4-Dichlorobenzene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	2,4,5-Trichlorophenol	1700	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	2,4,5-Trichlorophenol	1800	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	2,4,5-Trichlorophenol	1800	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	2,4,6-Trichlorophenol	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	2,4,6-Trichlorophenol	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	2,4,6-Trichlorophenol	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	2,4-Dichlorophenol	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	2,4-Dichlorophenol	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	2,4-Dichlorophenol	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	2,4-Dimethylphenol	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	2,4-Dimethylphenol	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	2,4-Dimethylphenol	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	2,4-Dinitrophenol	1700	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	2,4-Dinitrophenol	1800	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	2,4-Dinitrophenol	1800	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	2,4-Dinitrotoluene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	2,4-Dinitrotoluene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	2,4-Dinitrotoluene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	2,6-Dinitrotoluene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	2,6-Dinitrotoluene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	2,6-Dinitrotoluene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	2-Chloronaphthalene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	2-Chloronaphthalene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	2-Chloronaphthalene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	2-Chlorophenol	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	2-Chlorophenol	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	2-Chlorophenol	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	2-Methylnaphthalene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	2-Methylnaphthalene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	2-Methylnaphthalene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	2-Methylphenol (o-Cresol)	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	2-Methylphenol (o-Cresol)	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	2-Methylphenol (o-Cresol)	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	2-Nitroaniline	1700	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	2-Nitroaniline	1800	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	2-Nitroaniline	1800	U	ug/kg	CNC95

APPENDIX A

Semi-volatile Compound Analytical Results for Surface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00101	4/15/02	N	SO	2-Nitrophenol	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	2-Nitrophenol	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	2-Nitrophenol	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	3,3'-Dichlorobenzidine	720	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	3,3'-Dichlorobenzidine	740	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	3,3'-Dichlorobenzidine	720	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	3-Methylphenol/4-Methylphenol (mp-Cresol)	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	3-Methylphenol/4-Methylphenol (mp-Cresol)	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	3-Methylphenol/4-Methylphenol (mp-Cresol)	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	3-Nitroaniline	1700	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	3-Nitroaniline	1800	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	3-Nitroaniline	1800	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	4,6-Dinitro-2-methylphenol	1700	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	4,6-Dinitro-2-methylphenol	1800	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	4,6-Dinitro-2-methylphenol	1800	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	4-Bromophenyl Phenyl Ether	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	4-Bromophenyl Phenyl Ether	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	4-Bromophenyl Phenyl Ether	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	4-Chloro-3-methylphenol	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	4-Chloro-3-methylphenol	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	4-Chloro-3-methylphenol	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	4-Chloroaniline	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	4-Chloroaniline	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	4-Chloroaniline	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	4-Chlorophenyl Phenyl Ether	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	4-Chlorophenyl Phenyl Ether	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	4-Chlorophenyl Phenyl Ether	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	4-Nitroaniline	1700	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	4-Nitroaniline	1800	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	4-Nitroaniline	1800	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	4-Nitrophenol	1700	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	4-Nitrophenol	1800	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	4-Nitrophenol	1800	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Acenaphthene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Acenaphthene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Acenaphthene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Acenaphthylene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Acenaphthylene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Acenaphthylene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Anthracene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Anthracene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Anthracene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Benzo(a)Anthracene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Benzo(a)Anthracene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Benzo(a)Anthracene	360	U	ug/kg	CNC95

APPENDIX A

Semi-volatile Compound Analytical Results for Surface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00101	4/15/02	N	SO	Benzo(a)Pyrene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Benzo(a)Pyrene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Benzo(a)Pyrene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Benzo(b)Fluoranthene	360	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Benzo(b)Fluoranthene	370	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Benzo(b)Fluoranthene	360	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Benzo(g,h,i)Perylene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Benzo(g,h,i)Perylene	44	J	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Benzo(g,h,i)Perylene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Benzo(k)Fluoranthene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Benzo(k)Fluoranthene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Benzo(k)Fluoranthene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Benzoic acid	1700	UJ	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Benzoic acid	1800	UJ	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Benzoic acid	1800	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Benzyl alcohol	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Benzyl alcohol	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Benzyl alcohol	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Benzyl Butyl Phthalate	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Benzyl Butyl Phthalate	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Benzyl Butyl Phthalate	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	bis(2-Chloroethoxy) Methane	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	bis(2-Chloroethoxy) Methane	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	bis(2-Chloroethoxy) Methane	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	bis(2-Chloroethyl) ether (2-Chloroethyl Ether)	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	bis(2-Chloroethyl) ether (2-Chloroethyl Ether)	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	bis(2-Chloroethyl) ether (2-Chloroethyl Ether)	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Bis(2-Chloroisopropyl)Ether	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Bis(2-Chloroisopropyl)Ether	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Bis(2-Chloroisopropyl)Ether	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	bis(2-Ethylhexyl) Phthalate	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	bis(2-Ethylhexyl) Phthalate	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	bis(2-Ethylhexyl) Phthalate	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Carbazole	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Carbazole	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Carbazole	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Chrysene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Chrysene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Chrysene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Dibenz(a,h)anthracene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Dibenz(a,h)anthracene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Dibenz(a,h)anthracene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Dibenzofuran	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Dibenzofuran	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Dibenzofuran	360	U	ug/kg	CNC95

APPENDIX A

Semi-volatile Compound Analytical Results for Surface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00101	4/15/02	N	SO	Diethyl Phthalate	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Diethyl Phthalate	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Diethyl Phthalate	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Dimethyl Phthalate	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Dimethyl Phthalate	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Dimethyl Phthalate	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Di-n-butyl Phthalate	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Di-n-butyl Phthalate	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Di-n-butyl Phthalate	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Di-n-octylphthalate	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Di-n-octylphthalate	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Di-n-octylphthalate	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Flouranthene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Flouranthene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Flouranthene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Fluorene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Fluorene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Fluorene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Hexachlorobenzene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Hexachlorobenzene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Hexachlorobenzene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Hexachlorobutadiene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Hexachlorobutadiene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Hexachlorobutadiene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Hexachlorocyclopentadiene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Hexachlorocyclopentadiene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Hexachlorocyclopentadiene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Hexachloroethane	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Hexachloroethane	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Hexachloroethane	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Indeno(1,2,3-c,d)pyrene	240	J	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Indeno(1,2,3-c,d)pyrene	260	J	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Indeno(1,2,3-c,d)pyrene	240	J	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Isophorone	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Isophorone	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Isophorone	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Naphthalene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Naphthalene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Naphthalene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Nitrobenzene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Nitrobenzene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Nitrobenzene	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	N-Nitrosodi-n-propylamine	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	N-Nitrosodi-n-propylamine	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	N-Nitrosodi-n-propylamine	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	N-Nitrosodiphenylamine	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	N-Nitrosodiphenylamine	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	N-Nitrosodiphenylamine	360	U	ug/kg	CNC95

APPENDIX A

Semi-volatile Compound Analytical Results for Surface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Prd Qual	Units	SDG Number
E188SB001	188SB00101	4/15/02	N	SO	Pentachlorophenol	1700	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Pentachlorophenol	1800	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Pentachlorophenol	1800	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Phenanthrene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Phenanthrene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Phenanthrene	23	J	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Phenol	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Phenol	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Phenol	360	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Pyrene	360	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Pyrene	370	U	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Pyrene	360	U	ug/kg	CNC95

APPENDIX A

Pesticide and PCB Analytical Results for Surface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Prof Qual	Units	SDG Number
E188SB001	188SB00101	4/15/02	N	SO	Aldrin	1.4	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Aldrin	1.5	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Aldrin	1.4	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Alpha BHC (Alpha Hexachlorocyclohexane)	1.4	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Alpha BHC (Alpha Hexachlorocyclohexane)	1.5	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Alpha BHC (Alpha Hexachlorocyclohexane)	1.4	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Alpha-chlordane	1.4	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Alpha-chlordane	1.5	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Alpha-chlordane	1.4	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Beta BHC (Beta Hexachlorocyclohexane)	1.4	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Beta BHC (Beta Hexachlorocyclohexane)	1.5	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Beta BHC (Beta Hexachlorocyclohexane)	1.4	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Chlordane	14	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Chlordane	15	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Chlordane	14	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Delta BHC (Delta Hexachlorocyclohexane)	1.4	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Delta BHC (Delta Hexachlorocyclohexane)	1.5	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Delta BHC (Delta Hexachlorocyclohexane)	1.4	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Dieldrin	2.7	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Dieldrin	2.8	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Dieldrin	2.7	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Endosulfan I	1.4	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Endosulfan I	1.5	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Endosulfan I	1.4	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Endosulfan II	2.7	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Endosulfan II	2.8	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Endosulfan II	2.7	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Endosulfan Sulfate	2.7	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Endosulfan Sulfate	2.8	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Endosulfan Sulfate	2.7	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Endrin	2.7	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Endrin	2.8	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Endrin	2.7	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Endrin Aldehyde	2.7	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Endrin Aldehyde	2.8	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Endrin Aldehyde	2.7	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Endrin Ketone	2.7	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Endrin Ketone	2.8	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Endrin Ketone	2.7	U	ug/kg	CNC95

APPENDIX A

Pesticide and PCB Analytical Results for Surface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00101	4/15/02	N	SO	Gamma BHC (Lindane)	1.4	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Gamma BHC (Lindane)	1.5	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Gamma BHC (Lindane)	1.4	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Gamma-chlordane	1.4	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Gamma-chlordane	1.5	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Gamma-chlordane	1.4	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Heptachlor	1.4	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Heptachlor	1.5	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Heptachlor	1.4	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Heptachlor Epoxide	1.4	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Heptachlor Epoxide	1.5	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Heptachlor Epoxide	1.4	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Methoxychlor	14	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Methoxychlor	15	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Methoxychlor	14	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	p,p'-DDD	2.7	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	p,p'-DDD	2.8	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	p,p'-DDD	2.7	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	p,p'-DDE	2.7	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	p,p'-DDE	2.8	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	p,p'-DDE	0.54	J	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	p,p'-DDT	2.7	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	p,p'-DDT	2.8	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	p,p'-DDT	2.7	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	PCB-1016 (Arochlor 1016)	36	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	PCB-1016 (Arochlor 1016)	37	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	PCB-1016 (Arochlor 1016)	36	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	PCB-1221 (Arochlor 1221)	36	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	PCB-1221 (Arochlor 1221)	37	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	PCB-1221 (Arochlor 1221)	36	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	PCB-1232 (Arochlor 1232)	36	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	PCB-1232 (Arochlor 1232)	37	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	PCB-1232 (Arochlor 1232)	36	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	PCB-1242 (Arochlor 1242)	36	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	PCB-1242 (Arochlor 1242)	37	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	PCB-1242 (Arochlor 1242)	36	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	PCB-1248 (Arochlor 1248)	36	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	PCB-1248 (Arochlor 1248)	37	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	PCB-1248 (Arochlor 1248)	36	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	PCB-1254 (Arochlor 1254)	73	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	PCB-1254 (Arochlor 1254)	75	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	PCB-1254 (Arochlor 1254)	74	U	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	PCB-1260 (Arochlor 1260)	73	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	PCB-1260 (Arochlor 1260)	75	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	PCB-1260 (Arochlor 1260)	74	UJ	ug/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Toxaphene	90	U	ug/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Toxaphene	93	R	ug/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Toxaphene	91	U	ug/kg	CNC95

APPENDIX A

Inorganic Compound Analytical Results for Surface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDGNumber
E188SB001	188SB00101	4/15/02	N	SO	Aluminum	14000	=	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Antimony	0.51	UJ	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Arsenic	1.8	J	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Barium	24	J	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Beryllium	0.19	J	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Cadmium	0.086	U	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Calcium	2000	=	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Chromium, Total	16	=	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Cobalt	1.4	J	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Copper	4.1	J	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Cyanide	1.1	U	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Iron	9200	=	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Lead	5.8	=	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Magnesium	770	J	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Manganese	99	J	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Mercury	0.021	J	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Nickel	4.1	J	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Potassium	630	J	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Selenium	0.42	U	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Silver	0.19	U	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Sodium	120	J	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Thallium	0.56	U	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Vanadium	23	=	mg/kg	CNC95
E188SB001	188SB00101	4/15/02	N	SO	Zinc	15	=	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Aluminum	10000	=	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Antimony	0.56	UJ	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Arsenic	1.6	J	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Barium	23	J	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Beryllium	0.17	J	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Cadmium	0.098	U	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Calcium	2900	=	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Chromium, Total	12	=	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Cobalt	1.3	J	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Copper	4.1	J	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Cyanide	1.1	U	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Iron	7200	=	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Lead	8.9	=	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Magnesium	660	J	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Manganese	69	J	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Mercury	0.028	J	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Nickel	3.3	J	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Potassium	390	J	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Selenium	0.48	U	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Silver	0.21	U	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Sodium	150	J	mg/kg	CNC95

APPENDIX A

Inorganic Compound Analytical Results for Surface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDGNumber
E188SB002	188SB00201	4/15/02	N	SO	Thallium	0.64	U	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Vanadium	17	=	mg/kg	CNC95
E188SB002	188SB00201	4/15/02	N	SO	Zinc	16	=	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Aluminum	8100	=	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Antimony	0.55	UJ	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Arsenic	2.9	=	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Barium	21	J	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Beryllium	0.17	J	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Cadmium	0.14	J	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Calcium	19000	=	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Chromium, Total	14	=	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Cobalt	1.1	J	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Copper	4	J	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Cyanide	1.1	U	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Iron	5100	=	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Lead	10	=	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Magnesium	1300	J	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Manganese	41	J	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Mercury	0.029	J	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Nickel	4.9	J	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Potassium	360	J	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Selenium	0.47	U	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Silver	0.21	U	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Sodium	210	J	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Thallium	0.63	U	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Vanadium	14	=	mg/kg	CNC95
E188SB003	188SB00301	4/15/02	N	SO	Zinc	16	=	mg/kg	CNC95

APPENDIX A

Volatile Compound Analytical Results for Subsurface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00102	4/15/02	N	SO	1,1,1-Trichloroethane	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	1,1,1-Trichloroethane	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	1,1,1-Trichloroethane	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	1,1,2,2-Tetrachloroethane	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	1,1,2,2-Tetrachloroethane	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	1,1,2,2-Tetrachloroethane	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	1,1,2-Trichloroethane	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	1,1,2-Trichloroethane	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	1,1,2-Trichloroethane	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	1,1-Dichloroethane	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	1,1-Dichloroethane	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	1,1-Dichloroethane	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	1,1-Dichloroethene	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	1,1-Dichloroethene	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	1,1-Dichloroethene	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	1,2,3-Trichlorobenzene	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	1,2,3-Trichlorobenzene	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	1,2,3-Trichlorobenzene	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	1,2,4--Trichlorobenzene	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	1,2,4--Trichlorobenzene	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	1,2,4--Trichlorobenzene	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	1,2-Dichlorobenzene	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	1,2-Dichlorobenzene	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	1,2-Dichlorobenzene	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	1,2-Dichloroethane	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	1,2-Dichloroethane	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	1,2-Dichloroethane	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	1,2-Dichloroethene (total)	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	1,2-Dichloroethene (total)	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	1,2-Dichloroethene (total)	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	1,2-Dichloropropane	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	1,2-Dichloropropane	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	1,2-Dichloropropane	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	1,3-Dichlorobenzene	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	1,3-Dichlorobenzene	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	1,3-Dichlorobenzene	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	1,4-Dichlorobenzene	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	1,4-Dichlorobenzene	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	1,4-Dichlorobenzene	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	2-Chloroethyl vinyl ether	10	R	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	2-Chloroethyl vinyl ether	10	R	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	2-Chloroethyl vinyl ether	12	R	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	2-Hexanone	10	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	2-Hexanone	10	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	2-Hexanone	12	UJ	ug/kg	CNC95

APPENDIX A

Volatile Compound Analytical Results for Subsurface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00102	4/15/02	N	SO	Acetone	43	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Acetone	15	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Acetone	100	J	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Benzene	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Benzene	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Benzene	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Bromodichloromethane	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Bromodichloromethane	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Bromodichloromethane	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Bromoform	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Bromoform	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Bromoform	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Bromomethane	10	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Bromomethane	10	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Bromomethane	12	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Carbon Disulfide	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Carbon Disulfide	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Carbon Disulfide	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Carbon Tetrachloride	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Carbon Tetrachloride	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Carbon Tetrachloride	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Chlorobenzene	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Chlorobenzene	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Chlorobenzene	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Chloroethane	10	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Chloroethane	10	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Chloroethane	12	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Chloroform	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Chloroform	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Chloroform	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Chloromethane	10	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Chloromethane	10	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Chloromethane	12	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	cis-1,2-Dichloroethylene	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	cis-1,2-Dichloroethylene	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	cis-1,2-Dichloroethylene	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	cis-1,3-Dichloropropene	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	cis-1,3-Dichloropropene	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	cis-1,3-Dichloropropene	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Dibromochloromethane	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Dibromochloromethane	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Dibromochloromethane	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Ethylbenzene	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Ethylbenzene	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Ethylbenzene	5.8	UJ	ug/kg	CNC95

APPENDIX A

Volatile Compound Analytical Results for Subsurface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00102	4/15/02	N	SO	m+p Xylene	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	m+p Xylene	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	m+p Xylene	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Methyl ethyl ketone (2-Butanone)	10	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Methyl ethyl ketone (2-Butanone)	10	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Methyl ethyl ketone (2-Butanone)	10	J	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Methyl isobutyl ketone (4-Methyl-2-pentanone)	10	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Methyl isobutyl ketone (4-Methyl-2-pentanone)	10	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Methyl isobutyl ketone (4-Methyl-2-pentanone)	12	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Methylene Chloride	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Methylene Chloride	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Methylene Chloride	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	o-Xylene	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	o-Xylene	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	o-Xylene	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Styrene	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Styrene	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Styrene	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Tetrachloroethylene (PCE)	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Tetrachloroethylene (PCE)	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Tetrachloroethylene (PCE)	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Toluene	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Toluene	4.8	J	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Toluene	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	trans-1,2-Dichloroethene	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	trans-1,2-Dichloroethene	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	trans-1,2-Dichloroethene	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	trans-1,3-Dichloropropene	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	trans-1,3-Dichloropropene	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	trans-1,3-Dichloropropene	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Trichloroethylene (TCE)	4.6	J	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Trichloroethylene (TCE)	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Trichloroethylene (TCE)	5.8	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Vinyl acetate	10	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Vinyl acetate	10	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Vinyl acetate	12	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Vinyl chloride	10	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Vinyl chloride	10	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Vinyl chloride	12	UJ	ug/kg	CNC95

APPENDIX A

Volatile Compound Analytical Results for Subsurface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00102	4/15/02	N	SO	Xylenes, Total	5.1	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Xylenes, Total	5.2	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Xylenes, Total	5.8	UJ	ug/kg	CNC95

APPENDIX A

Semi-volatile Compound Analytical Results for Subsurface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00102	4/15/02	N	SO	1,2,4-Trichlorobenzene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	1,2,4-Trichlorobenzene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	1,2,4-Trichlorobenzene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	1,2-Dichlorobenzene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	1,2-Dichlorobenzene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	1,2-Dichlorobenzene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	1,3-Dichlorobenzene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	1,3-Dichlorobenzene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	1,3-Dichlorobenzene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	1,4-Dichlorobenzene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	1,4-Dichlorobenzene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	1,4-Dichlorobenzene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	2,4,5-Trichlorophenol	1800	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	2,4,5-Trichlorophenol	1700	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	2,4,5-Trichlorophenol	1800	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	2,4,6-Trichlorophenol	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	2,4,6-Trichlorophenol	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	2,4,6-Trichlorophenol	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	2,4-Dichlorophenol	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	2,4-Dichlorophenol	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	2,4-Dichlorophenol	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	2,4-Dimethylphenol	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	2,4-Dimethylphenol	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	2,4-Dimethylphenol	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	2,4-Dinitrophenol	1800	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	2,4-Dinitrophenol	1700	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	2,4-Dinitrophenol	1800	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	2,4-Dinitrotoluene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	2,4-Dinitrotoluene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	2,4-Dinitrotoluene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	2,6-Dinitrotoluene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	2,6-Dinitrotoluene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	2,6-Dinitrotoluene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	2-Chloronaphthalene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	2-Chloronaphthalene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	2-Chloronaphthalene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	2-Chlorophenol	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	2-Chlorophenol	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	2-Chlorophenol	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	2-Methylnaphthalene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	2-Methylnaphthalene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	2-Methylnaphthalene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	2-Methylphenol (o-Cresol)	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	2-Methylphenol (o-Cresol)	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	2-Methylphenol (o-Cresol)	370	U	ug/kg	CNC95

APPENDIX A

Semi-volatile Compound Analytical Results for Subsurface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00102	4/15/02	N	SO	2-Nitroaniline	1800	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	2-Nitroaniline	1700	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	2-Nitroaniline	1800	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	2-Nitrophenol	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	2-Nitrophenol	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	2-Nitrophenol	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	3,3'-Dichlorobenzidine	740	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	3,3'-Dichlorobenzidine	720	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	3,3'-Dichlorobenzidine	740	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	3-Methylphenol/4-Methylphenol (mp-Cresol)	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	3-Methylphenol/4-Methylphenol (mp-Cresol)	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	3-Methylphenol/4-Methylphenol (mp-Cresol)	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	3-Nitroaniline	1800	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	3-Nitroaniline	1700	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	3-Nitroaniline	1800	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	4,6-Dinitro-2-methylphenol	1800	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	4,6-Dinitro-2-methylphenol	1700	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	4,6-Dinitro-2-methylphenol	1800	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	4-Bromophenyl Phenyl Ether	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	4-Bromophenyl Phenyl Ether	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	4-Bromophenyl Phenyl Ether	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	4-Chloro-3-methylphenol	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	4-Chloro-3-methylphenol	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	4-Chloro-3-methylphenol	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	4-Chloroaniline	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	4-Chloroaniline	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	4-Chloroaniline	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	4-Chlorophenyl Phenyl Ether	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	4-Chlorophenyl Phenyl Ether	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	4-Chlorophenyl Phenyl Ether	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	4-Nitroaniline	1800	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	4-Nitroaniline	1700	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	4-Nitroaniline	1800	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	4-Nitrophenol	1800	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	4-Nitrophenol	1700	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	4-Nitrophenol	1800	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Acenaphthene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Acenaphthene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Acenaphthene	49	J	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Acenaphthylene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Acenaphthylene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Acenaphthylene	370	U	ug/kg	CNC95

APPENDIX A

Semi-volatile Compound Analytical Results for Subsurface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00102	4/15/02	N	SO	Anthracene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Anthracene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Anthracene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Benzo(a)Anthracene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Benzo(a)Anthracene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Benzo(a)Anthracene	28	J	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Benzo(a)Pyrene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Benzo(a)Pyrene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Benzo(a)Pyrene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Benzo(b)Fluoranthene	370	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Benzo(b)Fluoranthene	360	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Benzo(b)Fluoranthene	370	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Benzo(g,h,i)Perylene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Benzo(g,h,i)Perylene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Benzo(g,h,i)Perylene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Benzo(k)Fluoranthene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Benzo(k)Fluoranthene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Benzo(k)Fluoranthene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Benzoic acid	1800	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Benzoic acid	1700	UJ	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Benzoic acid	1800	UJ	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Benzyl alcohol	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Benzyl alcohol	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Benzyl alcohol	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Benzyl Butyl Phthalate	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Benzyl Butyl Phthalate	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Benzyl Butyl Phthalate	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	bis(2-Chloroethoxy) Methane	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	bis(2-Chloroethoxy) Methane	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	bis(2-Chloroethoxy) Methane	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	bis(2-Chloroethyl) ether (2-Chloroethyl Ether)	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	bis(2-Chloroethyl) ether (2-Chloroethyl Ether)	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	bis(2-Chloroethyl) ether (2-Chloroethyl Ether)	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Bis(2-Chloroisopropyl)Ether	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Bis(2-Chloroisopropyl)Ether	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Bis(2-Chloroisopropyl)Ether	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	bis(2-Ethylhexyl) Phthalate	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	bis(2-Ethylhexyl) Phthalate	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	bis(2-Ethylhexyl) Phthalate	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Carbazole	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Carbazole	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Carbazole	370	U	ug/kg	CNC95

APPENDIX A

Semi-volatile Compound Analytical Results for Subsurface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00102	4/15/02	N	SO	Chrysene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Chrysene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Chrysene	28	J	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Dibenz(a,h)anthracene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Dibenz(a,h)anthracene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Dibenz(a,h)anthracene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Dibenzofuran	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Dibenzofuran	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Dibenzofuran	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Diethyl Phthalate	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Diethyl Phthalate	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Diethyl Phthalate	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Dimethyl Phthalate	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Dimethyl Phthalate	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Dimethyl Phthalate	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Di-n-butyl Phthalate	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Di-n-butyl Phthalate	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Di-n-butyl Phthalate	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Di-n-octylphthalate	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Di-n-octylphthalate	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Di-n-octylphthalate	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Flouranthene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Flouranthene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Flouranthene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Fluorene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Fluorene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Fluorene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Hexachlorobenzene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Hexachlorobenzene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Hexachlorobenzene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Hexachlorobutadiene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Hexachlorobutadiene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Hexachlorobutadiene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Hexachlorocyclopentadiene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Hexachlorocyclopentadiene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Hexachlorocyclopentadiene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Hexachloroethane	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Hexachloroethane	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Hexachloroethane	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Indeno(1,2,3-c,d)pyrene	240	J	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Indeno(1,2,3-c,d)pyrene	240	J	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Indeno(1,2,3-c,d)pyrene	250	J	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Isophorone	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Isophorone	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Isophorone	370	U	ug/kg	CNC95

APPENDIX A

Semi-volatile Compound Analytical Results for Subsurface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00102	4/15/02	N	SO	Naphthalene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Naphthalene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Naphthalene	200	J	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Nitrobenzene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Nitrobenzene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Nitrobenzene	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	N-Nitrosodi-n-propylamine	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	N-Nitrosodi-n-propylamine	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	N-Nitrosodi-n-propylamine	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	N-Nitrosodiphenylamine	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	N-Nitrosodiphenylamine	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	N-Nitrosodiphenylamine	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Pentachlorophenol	1800	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Pentachlorophenol	1700	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Pentachlorophenol	1800	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Phenanthrene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Phenanthrene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Phenanthrene	23	J	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Phenol	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Phenol	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Phenol	370	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Pyrene	370	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Pyrene	360	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Pyrene	370	U	ug/kg	CNC95

APPENDIX A

Pesticide and PCB Analytical Results for Subsurface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00102	4/15/02	N	SO	Aldrin	1.5	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Aldrin	1.4	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Aldrin	1.5	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Alpha BHC (Alpha Hexachlorocyclohexane)	1.5	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Alpha BHC (Alpha Hexachlorocyclohexane)	1.4	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Alpha BHC (Alpha Hexachlorocyclohexane)	1.5	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Alpha-chlordane	1.5	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Alpha-chlordane	1.4	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Alpha-chlordane	1.5	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Beta BHC (Beta Hexachlorocyclohexane)	1.5	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Beta BHC (Beta Hexachlorocyclohexane)	1.4	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Beta BHC (Beta Hexachlorocyclohexane)	1.5	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Chlordane	15	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Chlordane	14	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Chlordane	15	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Delta BHC (Delta Hexachlorocyclohexane)	1.5	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Delta BHC (Delta Hexachlorocyclohexane)	1.4	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Delta BHC (Delta Hexachlorocyclohexane)	1.5	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Dieldrin	2.8	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Dieldrin	2.7	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Dieldrin	2.8	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Endosulfan I	1.5	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Endosulfan I	1.4	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Endosulfan I	1.5	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Endosulfan II	2.8	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Endosulfan II	2.7	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Endosulfan II	2.8	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Endosulfan Sulfate	2.8	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Endosulfan Sulfate	2.7	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Endosulfan Sulfate	2.8	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Endrin	2.8	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Endrin	2.7	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Endrin	2.8	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Endrin Aldehyde	2.8	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Endrin Aldehyde	2.7	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Endrin Aldehyde	2.8	U	ug/kg	CNC95

APPENDIX A

Pesticide and PCB Analytical Results for Subsurface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00102	4/15/02	N	SO	Endrin Ketone	2.8	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Endrin Ketone	2.7	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Endrin Ketone	2.8	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Gamma BHC (Lindane)	1.5	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Gamma BHC (Lindane)	1.4	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Gamma BHC (Lindane)	1.5	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Gamma-chlordane	0.48	J	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Gamma-chlordane	1.4	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Gamma-chlordane	1.5	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Heptachlor	1.5	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Heptachlor	1.4	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Heptachlor	1.5	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Heptachlor Epoxide	0.36	J	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Heptachlor Epoxide	1.4	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Heptachlor Epoxide	1.5	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Methoxychlor	15	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Methoxychlor	14	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Methoxychlor	15	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	p,p'-DDD	1.1	J	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	p,p'-DDD	2.7	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	p,p'-DDD	2.8	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	p,p'-DDE	1.5	J	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	p,p'-DDE	2.7	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	p,p'-DDE	1.1	J	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	p,p'-DDT	2.8	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	p,p'-DDT	2.7	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	p,p'-DDT	2.8	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	PCB-1016 (Arochlor 1016)	37	UJ	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	PCB-1016 (Arochlor 1016)	36	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	PCB-1016 (Arochlor 1016)	37	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	PCB-1221 (Arochlor 1221)	37	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	PCB-1221 (Arochlor 1221)	36	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	PCB-1221 (Arochlor 1221)	37	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	PCB-1232 (Arochlor 1232)	37	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	PCB-1232 (Arochlor 1232)	36	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	PCB-1232 (Arochlor 1232)	37	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	PCB-1242 (Arochlor 1242)	37	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	PCB-1242 (Arochlor 1242)	36	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	PCB-1242 (Arochlor 1242)	37	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	PCB-1248 (Arochlor 1248)	37	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	PCB-1248 (Arochlor 1248)	36	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	PCB-1248 (Arochlor 1248)	37	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	PCB-1254 (Arochlor 1254)	75	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	PCB-1254 (Arochlor 1254)	73	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	PCB-1254 (Arochlor 1254)	75	U	ug/kg	CNC95

APPENDIX A

Pesticide and PCB Analytical Results for Subsurface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00102	4/15/02	N	SO	PCB-1260 (Arochlor 1260)	75	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	PCB-1260 (Arochlor 1260)	73	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	PCB-1260 (Arochlor 1260)	75	U	ug/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Toxaphene	93	U	ug/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Toxaphene	90	U	ug/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Toxaphene	93	U	ug/kg	CNC95

APPENDIX A

Inorganic Constituent Analytical Results for Subsurface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00102	4/15/02	N	SO	Aluminum	6800	=	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Aluminum	5800	=	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Aluminum	6300	=	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Antimony	0.58	UJ	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Antimony	0.49	UJ	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Antimony	0.51	UJ	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Arsenic	2.1	=	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Arsenic	1.1	J	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Arsenic	1.7	J	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Barium	16	J	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Barium	10	J	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Barium	14	J	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Beryllium	0.098	J	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Beryllium	0.069	J	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Beryllium	0.092	J	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Cadmium	0.089	U	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Cadmium	0.086	U	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Cadmium	0.089	U	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Calcium	3500	=	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Calcium	1700	=	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Calcium	5400	=	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Chromium, Total	9.5	=	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Chromium, Total	5.4	=	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Chromium, Total	8	=	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Cobalt	0.78	J	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Cobalt	0.68	J	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Cobalt	0.73	J	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Copper	1.8	J	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Copper	0.92	J	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Copper	1.8	J	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Cyanide	1.1	U	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Cyanide	1.1	U	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Cyanide	1.1	U	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Iron	5600	=	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Iron	3200	=	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Iron	4400	=	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Lead	5.9	=	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Lead	3.8	=	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Lead	5.6	=	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Magnesium	420	J	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Magnesium	190	J	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Magnesium	360	J	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Manganese	15	J	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Manganese	8.7	J	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Manganese	14	J	mg/kg	CNC95

APPENDIX A

Inorganic Constituent Analytical Results for Subsurface Soil Samples

SWMU 188, Zone E RFI, Charleston Naval Complex

Station ID	Sample ID	Date Collected	Sample Type	Media	Paramname	Ana Value	Proj Qual	Units	SDG Number
E188SB001	188SB00102	4/15/02	N	SO	Mercury	0.027	J	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Mercury	0.037	J	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Mercury	0.036	J	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Nickel	2.3	J	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Nickel	2.1	J	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Nickel	2.5	J	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Potassium	250	J	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Potassium	110	J	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Potassium	190	J	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Selenium	0.44	U	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Selenium	0.42	U	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Selenium	0.44	U	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Silver	0.19	U	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Silver	0.19	U	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Silver	0.19	U	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Sodium	130	J	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Sodium	110	J	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Sodium	120	J	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Thallium	0.58	U	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Thallium	0.56	U	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Thallium	0.77	U	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Vanadium	12	=	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Vanadium	7.7	J	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Vanadium	9.9	J	mg/kg	CNC95
E188SB001	188SB00102	4/15/02	N	SO	Zinc	7.1	=	mg/kg	CNC95
E188SB002	188SB00202	4/15/02	N	SO	Zinc	4	U	mg/kg	CNC95
E188SB003	188SB00302	4/15/02	N	SO	Zinc	7.1	=	mg/kg	CNC95

Appendix B

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

SDG	Station ID	Sample ID	Lab Sample ID	Date Collected	Matrix	Sample Type	Upper Depth	Lower Depth	VOC SW8260B	SVOC SW8270C	Pest SW8081A	PCBs SW8081	Metals SW6010B	Mercury SW7471A	Cyanide SW9012A
NC95	E188SB001	188SB00101	S242647*1	04/15/02	SO	N	0	1	X	X	X	X	X	X	X
NC95	E188SB001	188SB00102	S242647*2	04/15/02	SO	N	3	5	X	X	X	X	X	X	X
NC95	E188SB002	188SB00201	S242647*3	04/15/02	SO	N	0	1	X	X	X	X	X	X	X
NC95	E188SB002	188SB00201RE	S242647*3*RE	04/15/02	SO	LR					X	X			
NC95	E188SB002	188SB00202	S242647*4	04/15/02	SO	N	3	5	X	X	X	X	X	X	X
NC95	E188SB002	188SB00202RE	S242647*4*RE	04/15/02	SO	LR					X	X			
NC95	E188SB003	188SB00301	S242647*5	04/15/02	SO	N	0	1	X	X	X	X	X	X	X
NC95	E188SB003	188SB00301MS	S242647*30	04/15/02	SO	MS			X	X	X	X	X	X	X
NC95	E188SB003	188SB00301SD	S242647*32	04/15/02	SO	SD			X	X	X	X	X	X	X
NC95	E188SB003	188SB00302	S242647*6	04/15/02	SO	N	3	5	X	X	X	X	X	X	X
NC95	E188SB003	188SB00302RE	S242647*6*RE	04/15/02	SO	LR					X	X			
NC95	FIELDQC	188EB001M1	S242647*18	04/15/02	WG	EB			X	X	X	X	X	X	X
NC95	FIELDQC	188TB001M1	S242647*21	04/15/02	WG	TB			X						
NC95	LABQC	4264723LB	S242647*23		SQ	LB			X	X	X	X	X	X	X
NC95	LABQC	4264724BS	S242647*24		SQ	BS			X	X	X	X	X	X	X
NC95	LABQC	4264737LB	S242647*37		WQ	LB			X	X	X	X	X	X	X
NC95	LABQC	4264738BS	S242647*38		WQ	BS			X	X	X	X	X	X	X
NC95	LABQC	4264744LB	S242647*44		SQ	LB			X						
NC95	LABQC	4264745BS	S242647*45		SQ	BS			X						

SDG	Station ID	Sample ID	Lab Sample ID	Date Collected	Matrix	Sample Type	Upper Depth	Lower Depth	VOC SW8260B	SVOC SW8270C	Pest SW8081A	PCBs SW8081	Metals SW6010B	Mercury SW7471A	Cyanide SW9012A
CNC95	LABQC	4264747LB	S242647*47		SQ	LB					X	X			
CNC95	LABQC	4264748BS	S242647*48		SQ	BS					X	X			

MATRIX CODE

SO – Soil
SQ – Soil QC Samples
WQ - Water QC Samples

SAMPLE TYPE CODE

BS - Blank Spike
EB - Equipment Blank
TB – Trip Blank
FD - Field Duplicate
N - Native Sample
MS – Matrix Spike
MSD – Matrix Spike Duplicate
LR – Lab Replicate
LB - Laboratory Blank

ANALYSIS CODE

VOC - Volatile Organic Compounds
SVOC - Semivolatile Organic Compounds
Pest - Pesticides
PCBs - Polychlorinated Biphenyls

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.

- **Confirmation** – If GCMS methodology is not initially used for analysis, SW-846 method 8000 requires confirmation when the composition of samples is not well characterized. Therefore, even when the identification has been confirmed on a dissimilar column or detector, the agreement of the quantitative results on both columns is evaluated. For Pesticide and PCB analyses covered in this report, confirmation was performed using a dissimilar analytical column. The laboratory analyzed samples with a gas chromatograph (GC) utilizing simultaneous primary and confirmation data acquisition. Per SW-86 method 8000, a criteria of 40% Relative Percent Difference (RPD) was used as the acceptance limit.

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:

Holding Times

Samples S242647*1 through S242647*6 were prepped outside of the 48 hour encore holding time due to the holding of samples in the field for 24 hours. Detect compounds were qualified "J", and non-detected compounds qualified "UJ".

Blanks

The VOC target parameters detected in blank samples are listed in Table 2.

TABLE 2
Blank Contamination: VOCs
Charleston Naval Complex, Zone E, SWMU 188, Charleston, SC

SDG	Lab Sample ID	Sample ID	Sample Type	Parameter	Lab Result	Units	Flag Concentrations
CNC95	Method BLK	1L0419MB	MB	Acetone	6.3	µg/Kg	<63.0 µg/Kg
CNC95	S242647*18	188EB001M1	EB	Acetone	8.0	µg/L	<80.0 µg/Kg

If a target parameter determined to be a common contaminant was reported in a field sample, and the concentration was below the level determined to be due to blank contamination, the following actions were taken:

- If the concentration was above the reporting limit, the numeric result was unchanged, but it was flagged "U", as undetected.
- If the concentration was below the reporting limit, the numeric result was changed to the value of the reporting limit, and it was flagged "U", as undetected.

The results qualified due to blank contamination are listed in Attachment 1.

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 3 below.

TABLE 3
Surrogate, MS/MSD and LCS/LCSD Recoveries Out of QC Limits: VOCs
Charleston Naval Complex, Zone E, SWMU 188, Charleston, SC

SDG	Sample	Parameter	Recovery	Recovery Limits	RPD	RPD Limits	Associated Samples	Flag
CNC95	188SB00301	Toluene-d8	81*	84-138			S242647*5	No Flags Applied
CNC95	188SB00301MS/ SD	Bromomethane	208* / 138*	23-173			S242647*5	Detects-J
		Acetone			70*	28	S242647*5	Detects-J, non-detects UJ
		1,1-Dichloroethene			26*	22	S242647*5	Detects-J non-detects UJ
		2-Chloroethylvinylether	0* / 0*	0-208	0*	28	S242647*5	Detects and non-detects R
		1,2-Dichlorobenzene			31*	28	S242647*5	Detects-J non-detects UJ
		1,2,4-Trichlorobenzene			87*	35	S242647*5	Detects-J non-detects UJ
		1,2,3-Trichlorobenzene			90*	26	S242647*5	Detects-J non-detects UJ
CNC95	1L0419MBLCS	Bromomethane	146*	70-130			S242647*2, 4-6	Detects-J non-detects UJ
		Acetone	69*	70-130				
		Carbon Disulfide	54*	70-130				
CNC95	1L0419MBLCS	2-Chloroethylvinylether	0*	70-130			S242647*2, 4-6	Detects and non-detects R
CNC95	1L0421MBLCS	Acetone	67*	70-130			S242647*1, 3, 18, 21	Detects-J non-detects UJ
		1,2,4-Trichlorobenzene	132*	70-130				
		1,2,3-Trichlorobenzene	138*	70-130				
CNC95	1L0421MBLCS	2-Chloroethylvinlyether	0*	70-130			S242647*1, 3, 18, 21	Detects and non-detects R

* - out of control limits

Initial and Continuing Calibration Criteria

All initial calibration criteria and continuing calibration criteria were met, except as listed in Table 4.

TABLE 4
Exceptions to Initial Calibration Criteria and Continuing Calibration Criteria: VOC
Charleston Naval Complex, Zone E, SWMU 188, Charleston, SC

Instrument/Calibration Date	Analyte	%Relative Standard Deviation or R^2 (CAL) %Difference (CCAL)	Associated Samples
MSL5972-ICAL-04/10/02, 15:16	Bromomethane	R^2=0.986	CNC95 - All
	2-Chloroethylvinylether	41.2%	
	1,2,4-Trichlorobenzene	43.4%	
	1,2,3-Trichlorobenzene	49.4%	
MSL5972-CCAL-04/19/02, 08:05	Bromomethane	60.8% high	S242647*2, 4-6
	Carbon Disulfide	44.8% low	
	1,4-Dichlorobenzene	22.4% low	
	1,2,4-Trichlorobenzene	38.0% low	
	1,2,3-Trichlorobenzene	34.1% low	
MSL5972-CCAL-04/21/02, 14:33	Chloromethane	20.3% low	S242647*1, 3, 18, 21
	Bromomethane	25.0% low	
	Acetone	21.3% low	
	1,2,4-Trichlorobenzene	49.8% high	
	1,2,3-Trichlorobenzene	49.5% high	

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 (%D) was high in the continuing calibration standards, detected compounds were flagged "J", as estimated. Non-detected compounds were not flagged.

Semivolatile Organic Compounds (SVOC) Analyses

The QA/QC parameters for the SVOC 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 5 below.

TABLE 5
LCS Recoveries Out of QC Limits. SVOC
Charleston Naval Complex, Zone E, SWMU 188, Charleston, SC

SDG	Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
CNC95	0418C-DMBLCS	4-Nitrophenol	82*	10-80	S242647*18	No Flags (EB)

* - out of control limits

Initial and Continuing Calibration Criteria

All initial calibration criteria and continuing calibration criteria were met, except as noted in Table 6 below.

TABLE 6
Exceptions to Initial Calibration Criteria and Continuing Calibration Criteria: SVOC
Charleston Naval Complex, Zone E, SWMU 188, Charleston, SC

Instrument/Calibration Date	Analyte	%Relative Standard Deviation or R^2 (ICAL)/ %Difference (CCAL)	Associated Samples
MSD5973-ICAL-04/09/02 22:27	Benzoic Acid	R^2=0.988	CNC95 - All
	Benzo (b) Fluoranthene	15.1%	
MSD5973-CCAL-04/18/02 17:27	Benzoic Acid	55.8% high	S242647*1, 2, 6
	2,4-Dinitrophenol	33.6% high	
	Benzo (b) fluoranthene	23.0% high	
MSD5973-CCAL-04/22/02 07:15	Benzoic Acid	47.3% high	S242647*3, 4, 5, 18
	2,4-Dinitrophenol	28.7% high	

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 high in the continuing calibration standards, detected compounds were flagged "J", as estimated. Non-detected compounds were not flagged.

Organochlorine Pesticide / Polychlorinated Biphenyls (PCBs) Analyses

The QA/QC parameters for the Organochlorine Pesticide/PCB analyses by method SW-846 8081 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 7 below.

TABLE 7
Surrogate, MS/MSD and LCS/LCSD Recoveries Out of QC Limits: Organochlorine Pesticides/PCBs
Charleston Naval Complex, Zone E, SWMU 188, Charleston, SC

SDG	Sample	Parameter	Recovery	Recovery Limits	RPD	RPD Limits	Associated Samples	Flag
CNC95	188SB00102	Tetrachloro-m-xylene	52* / 49*	60-150			S242647*2	No Flags Applied
CNC95	188SB00201	Tetrachloro-m-xylene	50* / 48*	60-150			S242647*3	Flagged R-RE
		Decachlorobiphenyl	58* / 52*	60-150				
CNC95	188SB00201RE	Tetrachloro-m-xylene	50* / 44*	60-150			S242647*3*RE	No Flags Applied
		Decachlorobiphenyl	79 / 47*	60-150				
CNC95	188SB00202	Tetrachloro-m-xylene	40* / 37*	60-150			S242647*4	No Flags Applied
		Decachlorobiphenyl	54* / 49*	60-150				
CNC95	188SB00202RE	Tetrachloro-m-xylene	36* / 33*	60-150			S242647*4*RE	Flagged R-RE
		Decachlorobiphenyl	56* / 50*	60-150				
CNC95	188SB00301	Tetrachloro-m-xylene	52* / 49*	60-150			S242647*5	No Flags Applied
		Decachlorobiphenyl	61 / 53*	60-150				
CNC95	188SB00302	Tetrachloro-m-xylene	46* / 47*	60-150			S242647*6	No Flags Applied
		Decachlorobiphenyl	53* / 52*	60-150				

ABLE 7
Surrogate, MS/MSD and LCS/LCSD Recoveries Out of QC Limits: Organochlorine Pesticides/PCBs
Charleston Naval Complex, Zone E, SWMU 188, Charleston, SC

SDG	Sample	Parameter	Recovery	Recovery Limits	RPD	RPD Limits	Associated Samples	Flag
CNC95	188SB00302RE	Tetrachloro-m-xylene	46* / 46*	60-150			S242647*6*RE	Flagged R-RE
		Decachlorobiphenyl	58* / 47*	60-150				
CNC95	188SB00301MS/SD	Alpha BHC			67*	40	S242647*5	Detects-J, non-detects UJ
		Hetpachlor			62*	31		
CNC95	188SB00301MS/SD	Gamma-Chlordane			67*	40	S242647*5	Detects-J, non-detects UJ
		4,4-DDE			35*	25		
		Aroclor 1016	46* / 59*	60-150				
		Aroclor 1260	51* / 54*	60-150				
CNC95	04180-IMB LCS	Alpha-BHC	121*	22-101			S242647*1, 3	Detects-J
		Endrin Ketone	128*	29-112				
CNC95	0418P-IMB LCS	Endrin Ketone	125*	42-122			S242647*18	No Flags Applied (EB)
CNC95	04230-IMB LCS	Endrin Ketone	121*	29-112			S242647*2, 3*RE, 4*RE, 6*RE	Detects-J

* - out of control limits

Initial and Continuing Calibration Criteria

All initial calibration criteria and continuing calibration criteria were met, except as noted in Table 8 below.

TABLE 8
Initial and Continuing Calibration Criteria Exceptions: Organochlorine Pesticides/PCBs
Charleston Naval Complex, Zone E, SWMU 188, Charleston, SC

Instrument/ Calibration Date	Analyte	% Difference Col#1 / Col#2	Associated Samples
SGIECD1-CCAL-04/19/02, 12:17	Endrin Aldehyde	17.3 / 11.2 high	S242647*1, 3-6, 18
	Methoxychlor	23.1 / 5.2 high	
	Endrin Ketone	19.6 / 6.7 high	
	Heptachlor	3.9 / 20.1 high	
SGIECD1 – CCAI 04/20/02, 00:20	Endrin Aldehyde	22.6 / 11.7 high	S242647*1, 3-6, 18
	Methoxychlor	18.6 / 0.3 high	

TABLE 8
Initial and Continuing Calibration Criteria Exceptions: Organochlorine Pesticides/PCBs
Charleston Naval Complex, Zone E, SWMU 188, Charleston, SC

Instrument/ Calibration Date	Analyte	% Difference Col#1 / Col#2	Associated Samples
	Endrin Ketone	21.7 / 8.6 high	
	Heptachlor	0.9 / 22.6 high	
SGIECD1 – CCAL – 04/24/02, 11:05	Endrin Aldehyde	26.9 / 14.7 high	S242647*2, 3*RE, 4*RE, 6*RE
	Methoxychlor	15.7 high / 3.9 low	
SGIECD1 – CCAL – 04/24/02, 11:05	Endrin Ketone	21.2 / 10.4 high	S242647*2, 3*RE, 4*RE, 6*RE
SGIECD1 – CCAL – 04/24/02, 17:59	4,4'-DDD	21.3 / 19.0 high	S242647*2, 3*RE, 4*RE, 6*RE
	Endrin Aldehyde	16.1 / 17.8 high	
	Endosulfan Sulfate	15.6 / 8.6 high	
	Endrin Ketone	26.7 / 17.7 high	
	Delta-BHC	14.8 / 16.1 high	
	Endosulfan II	14.8 / 18.8 high	

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.
- When the percent difference was high, detected compounds were flagged "J", as estimated. Non-detected compounds were not flagged.

Second Column Confirmation

The second column confirmation percent difference (%D) for some detected parameters, exceeded the 40 %D criteria. Those results were flagged "J", as estimated. The laboratory reported the lower of the two concentrations. The individual samples and specific compounds that were flagged are listed in Table 9 below.

TABLE 9
Second Column Confirmation out of Criteria: Organochlorine Pesticides/PCBs
Charleston Naval Complex, Zone E, SWMU 188, Charleston, SC

SDG	Sample ID	Lab Sample ID	Parameter
CNC95	188SB00102	S242647*2	Heptachlor Epoxide
CNC95	188SB00302RE	S242647*6*RE	Heptachlor Epoxide
CNC95	188SB00102	S242647*2	4,4'-DDE
CNC95	188SB00302RE	S242647*6*RE	4,4'-DDE
CNC95	188SB00102	S242647*2	Gamma-Chlordane

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 10.

TABLE 10
Blank Contamination: Metals
Charleston Naval Complex, Zone E, SWMU 188, Charleston, SC

SDG	Lab Sample ID	Sample ID	Sample Type	Parameter	Lab Result	Units	Flag Concentrations
CNC95	CCB		CCB	Antimony	5.19	ug/L	2.595 mg/Kg
				Barium	2.8	ug/L	1.4 mg/Kg
				Chromium	2.81	ug/L	1.405 mg/Kg
				Manganese	3.16	ug/L	1.58 mg/Kg
				Thallium	10.0	ug/L	5.0 mg/Kg
				Vanadium	2.63	ug/L	1.90 mg/Kg
CNC95	S242647*18	188EB001M1	FB	Calcium	0.052	mg/L	26.0 mg/Kg
				Iron	0.020	mg/L	10.0 mg/Kg
				Copper	0.0011	mg/L	0.55 mg/Kg
				Zinc	0.014	mg/L	7.0 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. Initial and continuing calibration blanks were also evaluated for possible contamination.

The results qualified due to blank contamination are listed in Attachment 1.

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 11 below.

TABLE 11
MS/MSD Recoveries Out of QC Limits: Metals
Charleston Naval Complex, Zone E, SWMU 188, Charleston, SC

SDG	Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
CNC95	188SB00301MS/MSD	Antimony	52* / 53*	80-120	CNC95 - All	Detects-J, non-detects-UJ
		Magnesium	30* / -19*	80-120	CNC95 - All	Detects-J, non-detects-UJ
		Manganese	123* / 84	80-120	CNC95 - All	Detects-J
		Copper	100 / 122*	80-120	CNC95 - All	Detects-J
		Sodium	81 / 77*	80-120	CNC95 - All	Detects-J, non-detects-UJ
		Mercury	78* / 89	80-120	CNC95 - All	Detects-J, non-detects-UJ

* - out of control limits

General Chemistry Analyses

The QA/QC parameters for the General Chemistry analyses for all of the samples were within acceptable 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 parameter per sample). However, there were selected results for was 2-Chloroethyl vinyl ether qualified as "R", rejected, due to associated QC parameters out of criteria. This compound is very reactive and is not detected under acidic conditions, such as those used in preservation of field samples. The rejected data are summarized in Table 12 below.

TABLE 12
Data Qualification Summary: Rejected Data
Charleston Naval Complex, Zone E, SWMU 188, Charleston, SC

SDG	Lab Sample ID	Sample ID	Sample Type	Parameter Class	LR Type	Parameter	Lab Result	Units	Lab Qual	Final Result	Final Qual	Reason
CNC95	S242647*1	188SB00101	N	VOA		2-Chloroethyl vinyl ether	9	ug/kg	UJ	9	R	BS
CNC95	S242647*2	188SB00102	N	VOA		2-Chloroethyl vinyl ether	10	ug/kg	UJ	10	R	BS
CNC95	S242647*3	188SB00201	N	VOA		2-Chloroethyl vinyl ether	9.7	ug/kg	UJ	9.7	R	BS
CNC95	S242647*4	188SB00202	N	VOA		2-Chloroethyl vinyl ether	10	ug/kg	UJ	10	R	BS
[illegible]	S242647*5	188SB00301	N	VOA		2-Chloroethyl vinyl ether	10	ug/kg	UJ	10	R	BS MS
CNC95	S242647*6	188SB00302	N	VOA		2-Chloroethyl vinyl ether	12	ug/kg	UJ	12	R	BS
CNC95	S242647*3	188SB00201	N	PEST		ALDRIN	1.5	ug/kg	U	1.5	R	RE
CNC95	S242647*3	188SB00201	N	PEST		ALPHA BHC	1.5	ug/kg	U	1.5	R	RE
CNC95	S242647*3	188SB00201	N	PEST		ALPHA-CHLORDANE	1.5	ug/kg	U	1.5	R	RE
CNC95	S242647*3	188SB00201	N	PEST		BETA BHC	1.5	ug/kg	U	1.5	R	RE
CNC95	S242647*3	188SB00201	N	PEST		Chlordane	15	ug/kg	U	15	R	RE
CNC95	S242647*3	188SB00201	N	PEST		DELTA BHC	1.5	ug/kg	U	1.5	R	RE
CNC95	S242647*3	188SB00201	N	PEST		DIELDRIN	2.8	ug/kg	U	2.8	R	RE
CNC95	S242647*3	188SB00201	N	PEST		ENDOSULFAN I	1.5	ug/kg	U	1.5	R	RE
CNC95	S242647*3	188SB00201	N	PEST		ENDOSULFAN II	2.8	ug/kg	U	2.8	R	RE
CNC95	S242647*3	188SB00201	N	PEST		ENDOSULFAN SULFATE	2.8	ug/kg	U	2.8	R	RE
CNC95	S242647*3	188SB00201	N	PEST		ENDRIN	2.8	ug/kg	U	2.8	R	RE
CNC95	S242647*3	188SB00201	N	PEST		ENDRIN ALDEHYDE	2.8	ug/kg	U	2.8	R	RE
CNC95	S242647*3	188SB00201	N	PEST		ENDRIN KETONE	2.8	ug/kg	U	2.8	R	RE
CNC95	S242647*3	188SB00201	N	PEST		GAMMA BHC (LINDANE)	1.5	ug/kg	U	1.5	R	RE
CNC95	S242647*3	188SB00201	N	PEST		GAMMA-CHLORDANE	1.5	ug/kg	U	1.5	R	RE
[illegible]	S242647*3	188SB00201	N	PEST		HEPTACHLOR	1.5	ug/kg	U	1.5	R	RE

TABLE 12
Data Qualification Summary: Rejected Data
Charleston Naval Complex, Zone E. SWMU 188, Charleston, SC

SDG	Lab Sample ID	Sample ID	Sample Type	Parameter Class	LR Type	Parameter	Lab Result	Units	Lab Qual	Final Result	Final Qual	Reason
CNC95	S242647*3	188SB00201	N	PEST		HEPTACHLOR EPOXIDE	1.5	ug/kg	U	1.5	R	RE
CNC95	S242647*3	188SB00201	N	PEST		METHOXYCHLOR	15	ug/kg	U	15	R	RE
CNC95	S242647*3	188SB00201	N	PEST		p,p'-DDD	2.8	ug/kg	U	2.8	R	RE
CNC95	S242647*3	188SB00201	N	PEST		p,p'-DDE	2.8	ug/kg	U	2.8	R	RE
CNC95	S242647*3	188SB00201	N	PEST		p,p'-DDT	2.8	ug/kg	U	2.8	R	RE
CNC95	S242647*3	188SB00201	N	PEST		TOXAPHENE	93	ug/kg	U	93	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	ALDRIN	1.4	ug/kg	U	1.4	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	ALPHA BHC	1.4	ug/kg	U	1.4	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	ALPHA-CHLORDANE	1.4	ug/kg	U	1.4	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	BETA BHC	1.4	ug/kg	U	1.4	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	Chlordane	14	ug/kg	U	14	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	DELTA BHC	1.4	ug/kg	U	1.4	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	DIELDRIN	2.7	ug/kg	U	2.7	R	PT
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	ENDOSULFAN I	1.4	ug/kg	U	1.4	R	[illegible]
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	ENDOSULFAN II	2.7	ug/kg	U	2.7	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	ENDOSULFAN SULFATE	2.7	ug/kg	U	2.7	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	ENDRIN	2.7	ug/kg	U	2.7	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	ENDRIN ALDEHYDE	2.7	ug/kg	U	2.7	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	ENDRIN KETONE	2.7	ug/kg	U	2.7	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	GAMMA BHC (LINDANE)	1.4	ug/kg	U	1.4	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	GAMMA-CHLORDANE	1.4	ug/kg	U	1.4	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	HEPTACHLOR	1.4	ug/kg	U	1.4	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	HEPTACHLOR EPOXIDE	1.4	ug/kg	U	1.4	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	METHOXYCHLOR	14	ug/kg	U	14	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	p,p'-DDD	2.7	ug/kg	U	2.7	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	p,p'-DDE	2.7	ug/kg	U	2.7	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	p,p'-DDT	2.7	ug/kg	U	2.7	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PEST	RE	TOXAPHENE	90	ug/kg	U	90	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	ALDRIN	1.5	ug/kg	U	1.5	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	ALPHA BHC	1.5	ug/kg	U	1.5	R	PT

. 12

Data Qualification Summary: Rejected Data

Charleston Naval Complex, Zone E, SWMU 188, Charleston, SC

SDG	Lab Sample ID	Sample ID	Sample Type	Parameter Class	LR Type	Parameter	Lab Result	Units	Lab Qual	Final Result	Final Qual	Reason
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	ALPHA-CHLORDANE	1.5	ug/kg	U	1.5	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	BETA BHC	1.5	ug/kg	U	1.5	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	Chlordane	15	ug/kg	U	15	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	DELTA BHC	1.5	ug/kg	U	1.5	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	DIELDRIN	2.8	ug/kg	U	2.8	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	ENDOSULFAN I	1.5	ug/kg	U	1.5	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	ENDOSULFAN II	2.8	ug/kg	U	2.8	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	ENDOSULFAN SULFATE	2.8	ug/kg	U	2.8	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	ENDRIN	2.8	ug/kg	U	2.8	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	ENDRIN ALDEHYDE	2.8	ug/kg	U	2.8	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	ENDRIN KETONE	2.8	ug/kg	U	2.8	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	GAMMA BHC (LINDANE)	1.5	ug/kg	U	1.5	R	RE
[illegible]	S242647*6*RE	188SB00302RE	LR	PEST	RE	GAMMA-CHLORDANE	1.5	ug/kg	U	1.5	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	HEPTACHLOR	1.5	ug/kg	U	1.5	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	HEPTACHLOR EPOXIDE	0.14	ug/kg	JP	0.14	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	METHOXYCHLOR	15	ug/kg	U	15	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	p,p'-DDD	0.48	ug/kg	J	0.48	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	p,p'-DDE	0.67	ug/kg	JP	0.67	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	p,p'-DDT	2.8	ug/kg	U	2.8	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PEST	RE	TOXAPHENE	93	ug/kg	U	93	R	RE
CNC95	S242647*3	188SB00201	N	PCB		AROCHLOR 1016	37	ug/kg	U	37	R	RE
CNC95	S242647*3	188SB00201	N	PCB		AROCHLOR 1221	37	ug/kg	U	37	R	RE
CNC95	S242647*3	188SB00201	N	PCB		AROCHLOR 1232	37	ug/kg	U	37	R	RE
CNC95	S242647*3	188SB00201	N	PCB		AROCHLOR 1242	37	ug/kg	U	37	R	RE
CNC95	S242647*3	188SB00201	N	PCB		AROCHLOR 1248	37	ug/kg	U	37	R	RE
CNC95	S242647*3	188SB00201	N	PCB		AROCHLOR 1254	75	ug/kg	U	75	R	RE
CNC95	S242647*3	188SB00201	N	PCB		AROCHLOR 1260	75	ug/kg	U	75	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PCB	RE	AROCHLOR 1016	36	ug/kg	U	36	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PCB	RE	AROCHLOR 1221	36	ug/kg	U	36	R	RE
[illegible]	S242647*4*RE	188SB00202RE	LR	PCB	RE	AROCHLOR 1232	36	ug/kg	U	36	R	RE

TABLE 12
Data Qualification Summary: Rejected Data
Charleston Naval Complex, Zone E, SWMU 188, Charleston, SC

SDG	Lab Sample ID	Sample ID	Sample Type	Parameter Class	LR Type	Parameter	Lab Result	Units	Lab Qual	Final Result	Final Qual	Reason
CNC95	S242647*4*RE	188SB00202RE	LR	PCB	RE	AROCHLOR 1242	36	ug/kg	U	36	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PCB	RE	AROCHLOR 1248	36	ug/kg	U	36	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PCB	RE	AROCHLOR 1254	73	ug/kg	U	73	R	RE
CNC95	S242647*4*RE	188SB00202RE	LR	PCB	RE	AROCHLOR 1260	73	ug/kg	U	73	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PCB	RE	AROCHLOR 1016	37	ug/kg	U	37	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PCB	RE	AROCHLOR 1221	37	ug/kg	U	37	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PCB	RE	AROCHLOR 1232	37	ug/kg	U	37	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PCB	RE	AROCHLOR 1242	37	ug/kg	U	37	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PCB	RE	AROCHLOR 1248	37	ug/kg	U	37	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PCB	RE	AROCHLOR 1254	75	ug/kg	U	75	R	RE
CNC95	S242647*6*RE	188SB00302RE	LR	PCB	RE	AROCHLOR 1260	75	ug/kg	U	75	R	RE

Conclusion

A review of the analytical data submitted regarding the investigation of Zone E, SWMU 188, 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, with the exception of the rejected data for 2-Chloroethyl vinyl ether, 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 - Ch d Qualifiers and Results
Zone . SWMU 188

SDG	Parameter Class	Sample ID	Lab Sample ID	Matrix	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reason
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	1,1,1-TRICHLOROETHANE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	1,1,2,2-TETRACHLOROETHANE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	1,1,2-TRICHLOROETHANE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	1,1-DICHLOROETHANE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	1,1-DICHLOROETHENE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	1,2,3-Trichlorobenzene	4.5	U	4.5	UJ	ug/kg	IC, HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	1,2,4-TRICHLOROBENZENE	4.5	U	4.5	UJ	ug/kg	IC, HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	1,2-DICHLOROBENZENE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	1,2-DICHLOROETHANE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	1,2-Dichloroethene (total)	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	1,2-DICHLOROPROPANE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	1,3-DICHLOROBENZENE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	1,4-DICHLOROBENZENE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	2-BUTANONE (MEK)	4.7	J	4.7	J	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	2-Chloroethyl vinyl ether	9	U	9	R	ug/kg	BS
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	2-HEXANONE	9	U	9	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	4-METHYL-2-PENTANONE (MIBK)	9	U	9	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	ACETONE	27	=	27	UJ	ug/kg	BL, HT, CC, BS
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	BENZENE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	BROMODICHLOROMETHANE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	BROMOFORM	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	BROMOMETHANE	9	U	9	UJ	ug/kg	IC, CC, HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	CARBON DISULFIDE	2.1	J	2.1	J	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	CARBON TETRACHLORIDE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	CHLOROBENZENE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	CHLOROETHANE	9	U	9	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	CHLOROFORM	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	CHLOROMETHANE	9	U	9	UJ	ug/kg	CC, HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	cis-1,2-DICHLOROETHYLENE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	cis-1,3-DICHLOROPROPENE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	DIBROMOCHLOROMETHANE	4.5	U	4.5	UJ	ug/kg	HT

Attachment 1 - Changed Qualifiers and Results
Zone E - SWMU 188

SDG	Parameter Class	Sample ID	Lab Sample ID	Matrix	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reason
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	ETHYLBENZENE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	m+p Xylene	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	METHYLENE CHLORIDE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	o-Xylene	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	STYRENE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	TETRACHLOROETHYLENE(PCE)	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	TOLUENE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	trans-1,2-DICHLOROETHENE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	trans-1,3-DICHLOROPROPENE	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	TRICHLOROETHYLENE (TCE)	2.7	J	2.7	J	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	Vinyl acetate	9	U	9	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	VINYL CHLORIDE	9	U	9	UJ	ug/kg	HT
CNC95	VOA	188SB00101	S242647*1	SO	SW8260B	XYLENES, TOTAL	4.5	U	4.5	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	1,1,1-TRICHLOROETHANE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	1,1,2,2-TETRACHLOROETHANE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	1,1,2-TRICHLOROETHANE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	1,1-DICHLOROETHANE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	1,1-DICHLOROETHENE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	1,2,3-Trichlorobenzene	5.1	U	5.1	UJ	ug/kg	HT, IC, CC
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	1,2,4-TRICHLOROBENZENE	5.1	U	5.1	UJ	ug/kg	HT, IC, CC
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	1,2-DICHLOROBENZENE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	1,2-DICHLOROETHANE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	1,2-Dichloroethene (total)	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	1,2-DICHLOROPROPANE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	1,3-DICHLOROBENZENE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	1,4-DICHLOROBENZENE	5.1	U	5.1	UJ	ug/kg	HT, CC
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	2-BUTANONE (MEK)	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	2-Chloroethyl vinyl ether	10	U	10	R	ug/kg	BS
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	2-HEXANONE	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	4-METHYL-2-PENTANONE (MIBK)	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	ACETONE	43	=	43	UJ	ug/kg	BL, HT, BS

Attachment 1 - Ch[illegible]d Qualifiers and Results
Zone [illegible] SWMU 188

SDG	Parameter Class	Sample ID	Lab Sample ID	Matrix	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reason
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	BENZENE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	BROMODICHLOROMETHANE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	BROMOFORM	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	BROMOMETHANE	10	U	10	UJ	ug/kg	HT, IC
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	CARBON DISULFIDE	5.1	U	5.1	UJ	ug/kg	HT, CC, BS
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	CARBON TETRACHLORIDE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	CHLOROBENZENE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	CHLOROETHANE	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	CHLOROFORM	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	CHLOROMETHANE	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	cis-1,2-DICHLOROETHYLENE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	cis-1,3-DICHLOROPROPENE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	DIBROMOCHLOROMETHANE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	ETHYLBENZENE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	m+p Xylene	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	METHYLENE CHLORIDE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	o-Xylene	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	STYRENE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	TETRACHLOROETHYLENE(PCE)	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	TOLUENE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	trans-1,2-DICHLOROETHENE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	trans-1,3-DICHLOROPROPENE	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	TRICHLOROETHYLENE (TCE)	4.6	J	4.6	J	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	Vinyl acetate	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	VINYL CHLORIDE	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00102	S242647*2	SO	SW8260B	XYLENES, TOTAL	5.1	U	5.1	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	1,1,1-TRICHLOROETHANE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	1,1,2,2-TETRACHLOROETHANE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	1,1,2-TRICHLOROETHANE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	1,1-DICHLOROETHANE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	1,1-DICHLOROETHENE	4.8	U	4.8	UJ	ug/kg	HT

SDG	Parameter Class	Sample ID	Lab Sample ID	Matrix	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reason
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	1,2,3-Trichlorobenzene	4.8	U	4.8	UJ	ug/kg	HT, IC
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	1,2,4-TRICHLOROBENZENE	4.8	U	4.8	UJ	ug/kg	HT, IC
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	1,2-DICHLOROBENZENE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	1,2-DICHLOROETHANE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	1,2-Dichloroethene (total)	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	1,2-DICHLOROPROPANE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	1,3-DICHLOROBENZENE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	1,4-DICHLOROBENZENE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	2-BUTANONE (MEK)	5.1	J	5.1	J	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	2-Chloroethyl vinyl ether	9.7	U	9.7	R	ug/kg	BS
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	2-HEXANONE	9.7	U	9.7	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	4-METHYL-2-PENTANONE (MIBK)	9.7	U	9.7	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	ACETONE	45	=	45	UJ	ug/kg	BL, HT, CC, BS
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	BENZENE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	BROMODICHLOROMETHANE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	BROMOFORM	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	BROMOMETHANE	9.7	U	9.7	UJ	ug/kg	HT, IC, CC
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	CARBON DISULFIDE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	CARBON TETRACHLORIDE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	CHLOROBENZENE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	CHLOROETHANE	9.7	U	9.7	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	CHLOROFORM	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	CHLOROMETHANE	9.7	U	9.7	UJ	ug/kg	HT, CC
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	cis-1,2-DICHLOROETHYLENE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	cis-1,3-DICHLOROPROPENE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	DIBROMOCHLOROMETHANE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	ETHYLBENZENE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	m+p Xylene	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	METHYLENE CHLORIDE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	o-Xylene	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	STYRENE	4.8	U	4.8	UJ	ug/kg	HT

SDG	Parameter Class	Sample ID	Lab Sample ID	Matrix	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reason
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	TETRACHLOROETHYLENE(PCE)	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	TOLUENE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	trans-1,2-DICHLOROETHENE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	trans-1,3-DICHLOROPROPENE	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	TRICHLOROETHYLENE (TCE)	2.4	J	2.4	J	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	Vinyl acetate	9.7	U	9.7	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	VINYL CHLORIDE	9.7	U	9.7	UJ	ug/kg	HT
CNC95	VOA	188SB00201	S242647*3	SO	SW8260B	XYLENES, TOTAL	4.8	U	4.8	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	1,1,1-TRICHLOROETHANE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	1,1,2,2-TETRACHLOROETHANE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	1,1,2-TRICHLOROETHANE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	1,1-DICHLOROETHANE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	1,1-DICHLOROETHENE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	1,2,3-Trichlorobenzene	5.2	U	5.2	UJ	ug/kg	HT, IC, CC
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	1,2,4-TRICHLOROBENZENE	5.2	U	5.2	UJ	ug/kg	HT, IC, CC
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	1,2-DICHLOROBENZENE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	1,2-DICHLOROETHANE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	1,2-Dichloroethene (total)	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	1,2-DICHLOROPROPANE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	1,3-DICHLOROBENZENE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	1,4-DICHLOROBENZENE	5.2	U	5.2	UJ	ug/kg	HT, CC
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	2-BUTANONE (MEK)	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	2-Chloroethyl vinyl ether	10	U	10	R	ug/kg	BS
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	2-HEXANONE	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	4-METHYL-2-PENTANONE (MIBK)	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	ACETONE	15	=	15	UJ	ug/kg	BL, HT, BS
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	BENZENE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	BROMODICHLOROMETHANE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	BROMOFORM	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	BROMOMETHANE	10	U	10	UJ	ug/kg	HT, IC
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	CARBON DISULFIDE	5.2	U	5.2	UJ	ug/kg	HT, CC, BS

Attachment 1 - Changed Qualifiers and Results
Zone E - SWMU 188

SDG	Parameter Class	Sample ID	Lab Sample ID	Matrix	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reason
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	CARBON TETRACHLORIDE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	CHLOROBENZENE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	CHLOROETHANE	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	CHLOROFORM	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	CHLOROMETHANE	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	cis-1,2-DICHLOROETHYLENE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	cis-1,3-DICHLOROPROPENE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	DIBROMOCHLOROMETHANE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	ETHYLBENZENE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	m+p Xylene	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	METHYLENE CHLORIDE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	o-Xylene	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	STYRENE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	TETRACHLOROETHYLENE(PCE)	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	TOLUENE	4.8	J	4.8	J	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	trans-1,2-DICHLOROETHENE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	trans-1,3-DICHLOROPROPENE	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	TRICHLOROETHYLENE (TCE)	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	Vinyl acetate	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	VINYL CHLORIDE	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00202	S242647*4	SO	SW8260B	XYLENES, TOTAL	5.2	U	5.2	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	1,1,1-TRICHLOROETHANE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	1,1,2,2-TETRACHLOROETHANE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	1,1,2-TRICHLOROETHANE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	1,1-DICHLOROETHANE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	1,1-DICHLOROETHENE	5.3	U	5.3	UJ	ug/kg	HT, MD
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	1,2,3-Trichlorobenzene	5.3	U	5.3	UJ	ug/kg	HT, IC, CC, MD
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	1,2,4-TRICHLOROBENZENE	5.3	U	5.3	UJ	ug/kg	HT, IC, CC, MD
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	1,2-DICHLOROBENZENE	5.3	U	5.3	UJ	ug/kg	HT, MD
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	1,2-DICHLOROETHANE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	1,2-Dichloroethene (total)	5.3	U	5.3	UJ	ug/kg	HT

Attachment 1 - Ch[illegible]d Qualifiers and Results
Zone [illegible] SWMU 188

SDG	Parameter Class	Sample ID	Lab Sample ID	Matrix	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reason
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	1,2-DICHLOROPROPANE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	1,3-DICHLOROBENZENE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	1,4-DICHLOROBENZENE	5.3	U	5.3	UJ	ug/kg	HT, CC
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	2-BUTANONE (MEK)	8	J	8	J	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	2-Chloroethyl vinyl ether	10	U	10	R	ug/kg	BS, MS
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	2-HEXANONE	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	4-METHYL-2-PENTANONE (MIBK)	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	ACETONE	46	=	46	UJ	ug/kg	BL, HT, BS, MD
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	BENZENE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	BROMODICHLOROMETHANE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	BROMOFORM	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	BROMOMETHANE	10	U	10	UJ	ug/kg	HT, IC
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	CARBON DISULFIDE	5.3	=	5.3	UJ	ug/kg	HT, CC, BS
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	CARBON TETRACHLORIDE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	CHLOROBENZENE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	CHLOROETHANE	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	CHLOROFORM	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	CHLOROMETHANE	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	cis-1,2-DICHLOROETHYLENE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	cis-1,3-DICHLOROPROPENE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	DIBROMOCHLOROMETHANE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	ETHYLBENZENE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	m+p Xylene	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	METHYLENE CHLORIDE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	o-Xylene	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	STYRENE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	TETRACHLOROETHYLENE(PCE)	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	TOLUENE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	trans-1,2-DICHLOROETHENE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	trans-1,3-DICHLOROPROPENE	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	TRICHLOROETHYLENE (TCE)	5.3	U	5.3	UJ	ug/kg	HT

SDG	Parameter Class	Sample ID	Lab Sample ID	Matrix	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reason
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	Vinyl acetate	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	VINYL CHLORIDE	10	U	10	UJ	ug/kg	HT
CNC95	VOA	188SB00301	S242647*5	SO	SW8260B	XYLENES, TOTAL	5.3	U	5.3	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	1,1,1-TRICHLOROETHANE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	1,1,2,2-TETRACHLOROETHANE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	1,1,2-TRICHLOROETHANE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	1,1-DICHLOROETHANE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	1,1-DICHLOROETHENE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	1,2,3-Trichlorobenzene	5.8	U	5.8	UJ	ug/kg	HT, IC, CC
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	1,2,4-TRICHLOROBENZENE	5.8	U	5.8	UJ	ug/kg	HT, IC, CC
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	1,2-DICHLOROBENZENE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	1,2-DICHLOROETHANE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	1,2-Dichloroethene (total)	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	1,2-DICHLOROPROPANE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	1,3-DICHLOROBENZENE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	1,4-DICHLOROBENZENE	5.8	U	5.8	UJ	ug/kg	HT, CC
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	2-BUTANONE (MEK)	10	J	10	J	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	2-Chloroethyl vinyl ether	12	U	12	R	ug/kg	BS
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	2-HEXANONE	12	U	12	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	4-METHYL-2-PENTANONE (MIBK)	12	U	12	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	ACETONE	100	=	100	J	ug/kg	HT, BS
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	BENZENE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	BROMODICHLOROMETHANE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	BROMOFORM	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	BROMOMETHANE	12	U	12	UJ	ug/kg	HT, IC
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	CARBON DISULFIDE	5.8	U	5.8	UJ	ug/kg	HT, CC, BS
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	CARBON TETRACHLORIDE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	CHLOROBENZENE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	CHLOROETHANE	12	U	12	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	CHLOROFORM	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	CHLOROMETHANE	12	U	12	UJ	ug/kg	HT

SDG	Parameter Class	Sample ID	Lab Sample ID	Matrix	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reason
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	cis-1,2-DICHLOROETHYLENE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	cis-1,3-DICHLOROPROPENE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	DIBROMOCHLOROMETHANE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	ETHYLBENZENE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	m+p Xylene	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	METHYLENE CHLORIDE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	o-Xylene	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	STYRENE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	TETRACHLOROETHYLENE(PCE)	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	TOLUENE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	trans-1,2-DICHLOROETHENE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	trans-1,3-DICHLOROPROPENE	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	TRICHLOROETHYLENE (TCE)	5.8	U	5.8	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	Vinyl acetate	12	U	12	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	VINYL CHLORIDE	12	U	12	UJ	ug/kg	HT
CNC95	VOA	188SB00302	S242647*6	SO	SW8260B	XYLENES, TOTAL	5.8	U	5.8	UJ	ug/kg	HT
CNC95	SVOA	188SB00101	S242647*1	SO	SW8270C	BENZO(b)FLUORANTHENE	360	U	360	UJ	ug/kg	IC
CNC95	SVOA	188SB00101	S242647*1	SO	SW8270C	Benzoic acid	1700	U	1700	UJ	ug/kg	IC
CNC95	SVOA	188SB00102	S242647*2	SO	SW8270C	BENZO(b)FLUORANTHENE	370	U	370	UJ	ug/kg	IC
CNC95	SVOA	188SB00102	S242647*2	SO	SW8270C	Benzoic acid	1800	U	1800	UJ	ug/kg	IC
CNC95	SVOA	188SB00201	S242647*3	SO	SW8270C	BENZO(b)FLUORANTHENE	370	U	370	UJ	ug/kg	IC
CNC95	SVOA	188SB00201	S242647*3	SO	SW8270C	Benzoic acid	1800	U	1800	UJ	ug/kg	IC
CNC95	SVOA	188SB00202	S242647*4	SO	SW8270C	BENZO(b)FLUORANTHENE	360	U	360	UJ	ug/kg	IC
CNC95	SVOA	188SB00202	S242647*4	SO	SW8270C	Benzoic acid	1700	U	1700	UJ	ug/kg	IC
CNC95	SVOA	188SB00301	S242647*5	SO	SW8270C	BENZO(b)FLUORANTHENE	360	U	360	UJ	ug/kg	IC
CNC95	SVOA	188SB00301	S242647*5	SO	SW8270C	Benzoic acid	1800	U	1800	UJ	ug/kg	IC
CNC95	SVOA	188SB00302	S242647*6	SO	SW8270C	BENZO(b)FLUORANTHENE	370	U	370	UJ	ug/kg	IC
CNC95	SVOA	188SB00302	S242647*6	SO	SW8270C	Benzoic acid	1800	U	1800	UJ	ug/kg	IC
CNC95	PEST	188SB00102	S242647*2	SO	SW8081A	GAMMA-CHLORDANE	0.48	J	0.48	J	ug/kg	2C
CNC95	PEST	188SB00102	S242647*2	SO	SW8081A	HEPTACHLOR EPOXIDE	0.36	J	0.36	J	ug/kg	2C
CNC95	PEST	188SB00102	S242647*2	SO	SW8081A	p,p'-DDD	1.1	J	1.1	J	ug/kg	CC

SDG	Parameter Class	Sample ID	Lab Sample ID	Matrix	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reason
CNC95	PEST	188SB00102	S242647*2	SO	SW8081A	p,p'-DDE	1.5	J	1.5	J	ug/kg	2C
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	ALDRIN	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	ALPHA BHC	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	ALPHA-CHLORDANE	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	BETA BHC	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	Chlordane	15	U	15	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	DELTA BHC	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	DIELDRIN	2.8	U	2.8	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	ENDOSULFAN I	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	ENDOSULFAN II	2.8	U	2.8	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	ENDOSULFAN SULFATE	2.8	U	2.8	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	ENDRIN	2.8	U	2.8	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	ENDRIN ALDEHYDE	2.8	U	2.8	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	ENDRIN KETONE	2.8	U	2.8	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	GAMMA BHC (LINDANE)	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	GAMMA-CHLORDANE	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	HEPTACHLOR	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	HEPTACHLOR EPOXIDE	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	METHOXYCHLOR	15	U	15	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	p,p'-DDD	2.8	U	2.8	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	p,p'-DDE	2.8	U	2.8	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	p,p'-DDT	2.8	U	2.8	R	ug/kg	RE
CNC95	PEST	188SB00201	S242647*3	SO	SW8081A	TOXAPHENE	93	U	93	R	ug/kg	RE
CNC95	PEST	188SB00201RE	S242647*3*RE	SO	SW8081A	p,p'-DDD	0.45	J	0.45	J	ug/kg	CC
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	ALDRIN	1.4	U	1.4	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	ALPHA BHC	1.4	U	1.4	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	ALPHA-CHLORDANE	1.4	U	1.4	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	BETA BHC	1.4	U	1.4	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	Chlordane	14	U	14	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	DELTA BHC	1.4	U	1.4	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	DIELDRIN	2.7	U	2.7	R	ug/kg	RE

SDG	Parameter Class	Sample ID	Lab Sample ID	Matrix	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reason
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	ENDOSULFAN I	1.4	U	1.4	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	ENDOSULFAN II	2.7	U	2.7	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	ENDOSULFAN SULFATE	2.7	U	2.7	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	ENDRIN	2.7	U	2.7	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	ENDRIN ALDEHYDE	2.7	U	2.7	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	ENDRIN KETONE	2.7	U	2.7	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	GAMMA BHC (LINDANE)	1.4	U	1.4	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	GAMMA-CHLORDANE	1.4	U	1.4	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	HEPTACHLOR	1.4	U	1.4	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	HEPTACHLOR EPOXIDE	1.4	U	1.4	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	METHOXYCHLOR	14	U	14	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	p,p'-DDD	2.7	U	2.7	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	p,p'-DDE	2.7	U	2.7	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	p,p'-DDT	2.7	U	2.7	R	ug/kg	RE
CNC95	PEST	188SB00202RE	S242647*4*RE	SO	SW8081A	TOXAPHENE	90	U	90	R	ug/kg	RE
CNC95	PEST	188SB00301	S242647*5	SO	SW8081A	ALPHA BHC	1.4	U	1.4	UJ	ug/kg	MD
CNC95	PEST	188SB00301	S242647*5	SO	SW8081A	GAMMA-CHLORDANE	1.4	U	1.4	UJ	ug/kg	MD
CNC95	PEST	188SB00301	S242647*5	SO	SW8081A	HEPTACHLOR	1.4	U	1.4	UJ	ug/kg	MD
CNC95	PEST	188SB00301	S242647*5	SO	SW8081A	p,p'-DDE	0.54	J	0.54	J	ug/kg	MD
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	ALDRIN	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	ALPHA BHC	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	ALPHA-CHLORDANE	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	BETA BHC	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	Chlordane	15	U	15	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	DELTA BHC	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	DIELDRIN	2.8	U	2.8	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	ENDOSULFAN I	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	ENDOSULFAN II	2.8	U	2.8	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	ENDOSULFAN SULFATE	2.8	U	2.8	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	ENDRIN	2.8	U	2.8	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	ENDRIN ALDEHYDE	2.8	U	2.8	R	ug/kg	RE

SDG	Parameter Class	Sample ID	Lab Sample ID	Matrix	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reason
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	ENDRIN KETONE	2.8	U	2.8	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	GAMMA BHC (LINDANE)	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	GAMMA-CHLORDANE	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	HEPTACHLOR	1.5	U	1.5	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	HEPTACHLOR EPOXIDE	0.14	J	0.14	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	METHOXYCHLOR	15	U	15	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	p,p'-DDD	0.48	J	0.48	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	p,p'-DDE	0.67	J	0.67	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	p,p'-DDT	2.8	U	2.8	R	ug/kg	RE
CNC95	PEST	188SB00302RE	S242647*6*RE	SO	SW8081A	TOXAPHENE	93	U	93	R	ug/kg	RE
CNC95	PCB	188SB00102	S242647*2	SO	SW8082	AROCHLOR 1016	37	U	37	UJ	ug/kg	CC
CNC95	PCB	188SB00201	S242647*3	SO	SW8082	AROCHLOR 1016	37	U	37	R	ug/kg	RE
CNC95	PCB	188SB00201	S242647*3	SO	SW8082	AROCHLOR 1221	37	U	37	R	ug/kg	RE
CNC95	PCB	188SB00201	S242647*3	SO	SW8082	AROCHLOR 1232	37	U	37	R	ug/kg	RE
CNC95	PCB	188SB00201	S242647*3	SO	SW8082	AROCHLOR 1242	37	U	37	R	ug/kg	RE
CNC95	PCB	188SB00201	S242647*3	SO	SW8082	AROCHLOR 1248	37	U	37	R	ug/kg	RE
CNC95	PCB	188SB00201	S242647*3	SO	SW8082	AROCHLOR 1254	75	U	75	R	ug/kg	RE
CNC95	PCB	188SB00201	S242647*3	SO	SW8082	AROCHLOR 1260	75	U	75	R	ug/kg	RE
CNC95	PCB	188SB00201RE	S242647*3*RE	SO	SW8082	AROCHLOR 1016	37	U	37	UJ	ug/kg	CC
CNC95	PCB	188SB00202RE	S242647*4*RE	SO	SW8082	AROCHLOR 1016	36	U	36	R	ug/kg	RE
CNC95	PCB	188SB00202RE	S242647*4*RE	SO	SW8082	AROCHLOR 1221	36	U	36	R	ug/kg	RE
CNC95	PCB	188SB00202RE	S242647*4*RE	SO	SW8082	AROCHLOR 1232	36	U	36	R	ug/kg	RE
CNC95	PCB	188SB00202RE	S242647*4*RE	SO	SW8082	AROCHLOR 1242	36	U	36	R	ug/kg	RE
CNC95	PCB	188SB00202RE	S242647*4*RE	SO	SW8082	AROCHLOR 1248	36	U	36	R	ug/kg	RE
CNC95	PCB	188SB00202RE	S242647*4*RE	SO	SW8082	AROCHLOR 1254	73	U	73	R	ug/kg	RE
CNC95	PCB	188SB00202RE	S242647*4*RE	SO	SW8082	AROCHLOR 1260	73	U	73	R	ug/kg	RE
CNC95	PCB	188SB00301	S242647*5	SO	SW8082	AROCHLOR 1016	36	U	36	UJ	ug/kg	MS
CNC95	PCB	188SB00301	S242647*5	SO	SW8082	AROCHLOR 1260	74	U	74	UJ	ug/kg	MS
CNC95	PCB	188SB00302RE	S242647*6*RE	SO	SW8082	AROCHLOR 1016	37	U	37	R	ug/kg	RE
CNC95	PCB	188SB00302RE	S242647*6*RE	SO	SW8082	AROCHLOR 1221	37	U	37	R	ug/kg	RE
CNC95	PCB	188SB00302RE	S242647*6*RE	SO	SW8082	AROCHLOR 1232	37	U	37	R	ug/kg	RE

SDG	Parameter Class	Sample ID	Lab Sample ID	Matrix	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reason
CNC95	PCB	188SB00302RE	S242647*6*RE	SO	SW8082	AROCHLOR 1242	37	U	37	R	ug/kg	RE
CNC95	PCB	188SB00302RE	S242647*6*RE	SO	SW8082	AROCHLOR 1248	37	U	37	R	ug/kg	RE
CNC95	PCB	188SB00302RE	S242647*6*RE	SO	SW8082	AROCHLOR 1254	75	U	75	R	ug/kg	RE
CNC95	PCB	188SB00302RE	S242647*6*RE	SO	SW8082	AROCHLOR 1260	75	U	75	R	ug/kg	RE
CNC95	METAL	188SB00101	S242647*1	SO	SW6010B	ANTIMONY	0.51	J	0.51	UJ	mg/kg	BL,MS
CNC95	METAL	188SB00101	S242647*1	SO	SW6010B	ARSENIC	1.8	J	1.8	J	mg/kg	IB
CNC95	METAL	188SB00101	S242647*1	SO	SW6010B	BARIUM	24	J	24	J	mg/kg	IB
CNC95	METAL	188SB00101	S242647*1	SO	SW6010B	BERYLLIUM	0.19	J	0.19	J	mg/kg	IB
CNC95	METAL	188SB00101	S242647*1	SO	SW6010B	COBALT	1.4	J	1.4	J	mg/kg	IB
CNC95	METAL	188SB00101	S242647*1	SO	SW6010B	COPPER	4.1	J	4.1	J	mg/kg	MS
CNC95	METAL	188SB00101	S242647*1	SO	SW6010B	MAGNESIUM	770	J	770	J	mg/kg	MS
CNC95	METAL	188SB00101	S242647*1	SO	SW6010B	MANGANESE	99	=	99	J	mg/kg	MS
CNC95	METAL	188SB00101	S242647*1	SO	SW7471A	MERCURY	0.021	J	0.021	J	mg/kg	MS
CNC95	METAL	188SB00101	S242647*1	SO	SW6010B	NICKEL	4.1	J	4.1	J	mg/kg	IB
CNC95	METAL	188SB00101	S242647*1	SO	SW6010B	POTASSIUM	630	J	630	J	mg/kg	IB
CNC95	METAL	188SB00101	S242647*1	SO	SW6010B	SODIUM	120	J	120	J	mg/kg	MS
CNC95	METAL	188SB00102	S242647*2	SO	SW6010B	ANTIMONY	0.58	J	0.58	UJ	mg/kg	BL,MS
CNC95	METAL	188SB00102	S242647*2	SO	SW6010B	BARIUM	16	J	16	J	mg/kg	IB
CNC95	METAL	188SB00102	S242647*2	SO	SW6010B	BERYLLIUM	0.098	J	0.098	J	mg/kg	IB
CNC95	METAL	188SB00102	S242647*2	SO	SW6010B	COBALT	0.78	J	0.78	J	mg/kg	IB
CNC95	METAL	188SB00102	S242647*2	SO	SW6010B	COPPER	1.8	J	1.8	J	mg/kg	MS
CNC95	METAL	188SB00102	S242647*2	SO	SW6010B	MAGNESIUM	420	J	420	J	mg/kg	MS
CNC95	METAL	188SB00102	S242647*2	SO	SW6010B	MANGANESE	15	=	15	J	mg/kg	MS
CNC95	METAL	188SB00102	S242647*2	SO	SW7471A	MERCURY	0.027	J	0.027	J	mg/kg	MS
CNC95	METAL	188SB00102	S242647*2	SO	SW6010B	NICKEL	2.3	J	2.3	J	mg/kg	IB
CNC95	METAL	188SB00102	S242647*2	SO	SW6010B	POTASSIUM	250	J	250	J	mg/kg	IB
CNC95	METAL	188SB00201	S242647*3	SO	SW6010B	ANTIMONY	0.56	U	0.56	UJ	mg/kg	MS
CNC95	METAL	188SB00201	S242647*3	SO	SW6010B	ARSENIC	1.6	J	1.6	J	mg/kg	IB
CNC95	METAL	188SB00201	S242647*3	SO	SW6010B	BARIUM	23	J	23	J	mg/kg	IB
CNC95	METAL	188SB00201	S242647*3	SO	SW6010B	BERYLLIUM	0.17	J	0.17	J	mg/kg	IB
CNC95	METAL	188SB00201	S242647*3	SO	SW6010B	COBALT	1.3	J	1.3	J	mg/kg	IB

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CNC95	METAL	188SB00201	S242647*3	SO	SW6010B	COPPER	4.1	J	4.1	J	mg/kg	MS
CNC95	METAL	188SB00201	S242647*3	SO	SW6010B	MAGNESIUM	660	J	660	J	mg/kg	MS
CNC95	METAL	188SB00201	S242647*3	SO	SW6010B	MANGANESE	69	=	69	J	mg/kg	MS
CNC95	METAL	188SB00201	S242647*3	SO	SW7471A	MERCURY	0.028	J	0.028	J	mg/kg	MS
CNC95	METAL	188SB00201	S242647*3	SO	SW6010B	NICKEL	3.3	J	3.3	J	mg/kg	IB
CNC95	METAL	188SB00201	S242647*3	SO	SW6010B	POTASSIUM	390	J	390	J	mg/kg	IB
CNC95	METAL	188SB00201	S242647*3	SO	SW6010B	SODIUM	150	J	150	J	mg/kg	MS
CNC95	METAL	188SB00202	S242647*4	SO	SW6010B	ANTIMONY	0.49	U	0.49	UJ	mg/kg	MS
CNC95	METAL	188SB00202	S242647*4	SO	SW6010B	ARSENIC	1.1	J	1.1	J	mg/kg	IB
CNC95	METAL	188SB00202	S242647*4	SO	SW6010B	BARIUM	10	J	10	J	mg/kg	IB
CNC95	METAL	188SB00202	S242647*4	SO	SW6010B	BERYLLIUM	0.069	J	0.069	J	mg/kg	IB
CNC95	METAL	188SB00202	S242647*4	SO	SW6010B	COBALT	0.68	J	0.68	J	mg/kg	IB
CNC95	METAL	188SB00202	S242647*4	SO	SW6010B	COPPER	0.92	J	0.92	J	mg/kg	MS
CNC95	METAL	188SB00202	S242647*4	SO	SW6010B	MAGNESIUM	190	J	190	J	mg/kg	MS
CNC95	METAL	188SB00202	S242647*4	SO	SW6010B	MANGANESE	8.7	=	8.7	J	mg/kg	MS
CNC95	METAL	188SB00202	S242647*4	SO	SW7471A	MERCURY	0.037	J	0.037	J	mg/kg	MS
CNC95	METAL	188SB00202	S242647*4	SO	SW6010B	NICKEL	2.1	J	2.1	J	mg/kg	IB
CNC95	METAL	188SB00202	S242647*4	SO	SW6010B	POTASSIUM	110	J	110	J	mg/kg	IB
CNC95	METAL	188SB00202	S242647*4	SO	SW6010B	SODIUM	110	J	110	J	mg/kg	MS
CNC95	METAL	188SB00202	S242647*4	SO	SW6010B	VANADIUM	7.7	J	7.7	J	mg/kg	IB
CNC95	METAL	188SB00202	S242647*4	SO	SW6010B	ZINC	4	=	4	U	mg/kg	BL
CNC95	METAL	188SB00301	S242647*5	SO	SW6010B	ANTIMONY	0.55	U	0.55	UJ	mg/kg	MS
CNC95	METAL	188SB00301	S242647*5	SO	SW6010B	BARIUM	21	J	21	J	mg/kg	IB
CNC95	METAL	188SB00301	S242647*5	SO	SW6010B	BERYLLIUM	0.17	J	0.17	J	mg/kg	IB
CNC95	METAL	188SB00301	S242647*5	SO	SW6010B	CADMIUM	0.14	J	0.14	J	mg/kg	IB
CNC95	METAL	188SB00301	S242647*5	SO	SW6010B	COBALT	1.1	J	1.1	J	mg/kg	IB
CNC95	METAL	188SB00301	S242647*5	SO	SW6010B	COPPER	4	J	4	J	mg/kg	MS
CNC95	METAL	188SB00301	S242647*5	SO	SW6010B	MAGNESIUM	1300	=	1300	J	mg/kg	MS
CNC95	METAL	188SB00301	S242647*5	SO	SW6010B	MANGANESE	41	=	41	J	mg/kg	MS
CNC95	METAL	188SB00301	S242647*5	SO	SW7471A	MERCURY	0.029	J	0.029	J	mg/kg	MS
CNC95	METAL	188SB00301	S242647*5	SO	SW6010B	NICKEL	4.9	J	4.9	J	mg/kg	IB

SDG	Parameter Class	Sample ID	Lab Sample ID	Matrix	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Final Qual	Units	Reason
CNC95	METAL	188SB00301	S242647*5	SO	SW6010B	POTASSIUM	360	J	360	J	mg/kg	IB
CNC95	METAL	188SB00301	S242647*5	SO	SW6010B	SODIUM	210	J	210	J	mg/kg	MS
CNC95	METAL	188SB00302	S242647*6	SO	SW6010B	ANTIMONY	0.51	U	0.51	UJ	mg/kg	MS
CNC95	METAL	188SB00302	S242647*6	SO	SW6010B	ARSENIC	1.7	J	1.7	J	mg/kg	IB
CNC95	METAL	188SB00302	S242647*6	SO	SW6010B	BARIUM	14	J	14	J	mg/kg	IB
CNC95	METAL	188SB00302	S242647*6	SO	SW6010B	BERYLLIUM	0.092	J	0.092	J	mg/kg	IB
CNC95	METAL	188SB00302	S242647*6	SO	SW6010B	COBALT	0.73	J	0.73	J	mg/kg	IB
CNC95	METAL	188SB00302	S242647*6	SO	SW6010B	COPPER	1.8	J	1.8	J	mg/kg	MS
CNC95	METAL	188SB00302	S242647*6	SO	SW6010B	MAGNESIUM	360	J	360	[illegible]	mg/kg	MS
CNC95	METAL	188SB00302	S242647*6	SO	SW6010B	MANGANESE	14	=	14	J	mg/kg	MS
CNC95	METAL	188SB00302	S242647*6	SO	SW7471A	MERCURY	0.036	J	0.036	J	mg/kg	MS
CNC95	METAL	188SB00302	S242647*6	SO	SW6010B	NICKEL	2.5	J	2.5	J	mg/kg	IB
CNC95	METAL	188SB00302	S242647*6	SO	SW6010B	POTASSIUM	190	J	190	J	mg/kg	IB
CNC95	METAL	188SB00302	S242647*6	SO	SW6010B	SODIUM	120	J	120	J	mg/kg	MS
CNC95	METAL	188SB00302	S242647*6	SO	SW6010B	THALLIUM	0.77	J	0.77	U	mg/kg	BL
CNC95	METAL	188SB00302	S242647*6	SO	SW6010B	VANADIUM	9.9	J	9.9	J	mg/kg	IB

CH2M HILL Chain of Custody/ Laboratory Analysis Form

COC Tracking #: **ZE188-040402-01** page 1 of 2

Laboratory: STL

Project Name: Charleston Navy Complex

Site Name: Zone E, SWMU 188

Project Number: 158814.PM.04

TAT: 7 day

Project Manager:

QA 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	Station ID	Sample Description	Depth Begin	Depth End	Date & Time Collected	Matrix	# of containers	VOCs (SW8260B) (3 - 5g Encore & 1 2 ounce jar)	SVOCs (SW8270C) (1 - 8 ounce jar)	Pesticides/PCBs (SW8081A/8082) (1 - 8 ounce jar)	Metals (SW6010B/7000) (1 - 4 ounce jar)	Cyanide (SW9012) (1 - 4 ounce jar)	VOCs (SW8260B) (3 - 40mL vial, HCl)	SVOCs (SW8270C) (2 - 1L amber)	Pesticides/PCBs (SW8081A/8082) (2 - 1L amber)	Metals (SW6010B/7000) (1 - 250mL HDPE, HNO3)	Cyanide (SW9012) (1 - 250mL HDPE, NaOH)	Comments
188SB00101	E188SB001	1000	0	1	4-15-02/1000	SO	6	X	X	X	X	X						
188SB00102	E188SB001	1045	3	5	4-15-02/1045	SO	6	X	X	X	X	X						SAMPLES
188SB00201	E188SB002	1130	0	1	4-15-02/1130	SO	6	X	X	X	X	X						complete
188SB00202	E188SB002	1140	3	5	4-15-02/1140	SO	6	X	X	X	X	X						
188SB00301	E188SB003	1050	0	1	4-15-02/1050	SO	6	X	X	X	X	X						RCRA
188SB00301MS	E188SB003	1055	0	1	4-15-02/1055	SO	6	X	X	X	X	X						MS
188SB00301SD	E188SB003	1160	0	1	4-15-02/1100	SO	6	X	X	X	X	X						MSD
188SB00302	E188SB003	1110	3	5	4-15-02/1110	SO	6	X	X	X	X	X						
188EB001M1	E188EB001				4-15-02/1020	SQ	9						X	X	X	X	X	EB
188TB001M1	E188TB001				LAB supplied	SQ	3						X					TB

RUSH!

Sampled By: A. O'CONOR; BRIAN CRAWFORD Date/Time: 4-15-02

Relinquished by: [signature] Date/Time: 4/16/02/160

Additional Samplers: A. STOKES

Received By Lab: [signature] Date/Time: 4/17/02 8:58

Relinquished by: Date/Time

Received By: Date/Time

Shipped Via: UPS FedEx Hand Other Tracking#:

Remarks:

Temperature:

Receipt Exceptions:

5242647

Appendix C

achate Transport /sis Model
arleston Naval Complex
ne E - SWMU 188

						Parameter	TCE
emical Specific Input Parameters							
v =	Target groundwater concentration MCL (mg/L)						5.00E-03
=	Henry's Law Constant, dimensionless						4.22E-01
=	Soil-water sorption coefficient (cm3 water / g soil = L/kg) = Koc x foc where						3.49E+00
	koc = organic carbon-water sorption coefficient, (cm3 (ml) water) / (g soluble organic carbon)						9.43E+01
	foc = Fraction of organic content, dimensionless					0.037	
te Specific Input Parameters							
Sw =	Width of Source Parallel to Groundwater Flow Direction	(impacted soil zone)	4.6	m	[illegible]	ft	
da =	Aquifer Thickness		7.2	m	23.5	ft	
d =	Groundwater Mixing Zone thickness	(paved)	0.54	m	1.8	ft	
		(unpaved)	1.28	m	4.2	ft	
i =	Groundwater Gradient				3.3E-03	(unitless)	
Ks =	Saturated Hydraulic Conductivity		222.5	m/yr	730.0	ft/yr	
θw =	Volumetric Water Content of Soil Pore Space		0.3	cm^3_{vapor}/cm^3_{soil}	0.3	in^3_{vapor}/in^3_{soil}	
θv =	Volumetric Vapor Content of Soil Pore Space		0.15	cm^3_{vapor}/cm^3_{soil}	0.15	in^3_{vapor}/in^3_{soil}	
ρs =	Soil Bulk Density		1.5	g/cm^3	93.64	lb_m/ft^3	
qi =	Water Infiltration Rate	(paved)	0.0086	m/yr	0.0283	ft/yr	
		(unpaved)	0.1372	m/yr	0.4500	ft/yr	
	Partition Term, Cw/Csoil, (L/kg)						3.73E+00
	Dilution Term, dimensionless	(paved)					1.11E+01
		(unpaved)					2.52E+00
	Csoil/Cw =Partition term * Dilution term (mg/kg / mg/L) = L/kg	(paved)					4.14E+01
		(unpaved)					9.39E+00
	Calculated Site Specific Target Level for Soil						
	C_{soil} calculated source soil concentration (SSL, mg/kg) Cw*(partion term)*(dilution term)					(paved)	0.21
						(unpaved)	0.047

$$\frac{C_{soil}}{C_w} = \left(\frac{\theta_w + K_s\rho_s + H\theta_v}{\rho_s}\right)\left(\frac{K_s i d + q_i S_w}{q_i S_w}\right)$$

Cwt is the MCL from EPA National Drinking Water Standards (March 2001).
H from Table 36 of the Soil Screening Guidance.
ks = koc x foc.
oc from Table 39 of the Soil Screening Guidance; Technical Background Document (EPA, 1996)
oc calculated as the mean foc from TOC measurements from Zone E.
Sw Estimated as dimension of SWMU 188 along groundwater flow direction (south to north).
d is calculated as $M = (0.0112\ L^2)^{0.5} + da\{1 - e^{(-L\ qi/Ks\ da)}\}$ or da, whichever is less.
da is based on mean water level (3.5 ft msl) measured in monitor wells 5833GW001 (3.74 ft msl, 10/16/1006) and 583GW002 (3.22 ft msl, 10/16/1006) presented in Table 2.1 of the Zone E RFI - the top of Ashley elevation (-20 ft, GIS).
i Calculated from data in the Groundwater Monitoring Report (2/600 ~ 0.0033, CH2MHill, 2001)
Ks Based on CH2MHill's hydraulic conductivity theme in the GIS (5.5 ft/d).
θw is the default value presented in the Soil Screening Guidance: User's Guide (EPA, 1996)
θv is calculated as total porosity (0.45, assumed) - θw (0.3) = 0.15.
ρs is the default value presented in the Soil Screening Guidance: User's Guide (EPA, 1996)
qi is a derived value (unpaved, 5.4 in/yr and paved, 0.34 in/yr) based on annual precipitation, evapo-transportation, and runoff coefficient values for the Charleston area.

Appendix D

Comment Prepared by Gilbert Rennhack, SCDHEC

Reference Section 5.0:
The average concentration of TCE slightly exceeds the generic SSL (DAF=1). Please calculate the site specific SSL as rationale to eliminate TCE as a COPC.

CH2M-Jones Response:
Site-specific SSLs will be calculated for TCE in soils considering both the unpaved and paved scenarios. Section 5.0 of the RFI Report Addendum will be revised accordingly, based on the results of the site-specific SSL calculations.

Comment Prepared by Monsour Malik, SCDHEC

General Comment:
There are no site or downgradient monitoring wells. The nearest upgradient monitoring wells to SWMU 188 are AOC 583 wells (E583GW001, E583GW002, 2D, and E583GW003). They show no contaminants of concern above MCL.

Trichloroethene (TCE) was detected in surface soil below the SSL. TCE was detected in one subsurface soil above the SSL of 3 :g/Kg at DAF of 1.00. Based upon soil data presented so far, the Division of Hydrogeology agrees that a groundwater investigation is not required. As a Zone E site, SWUM 188 lies within the Land Use Control (LUC) area zoned for future industrial use.

The Division of Hydrogeology concurs that the evaluation of the nature and extent of contaminants at SWMU 188 has been completed.

CH2M-Jones Response:
We concur.