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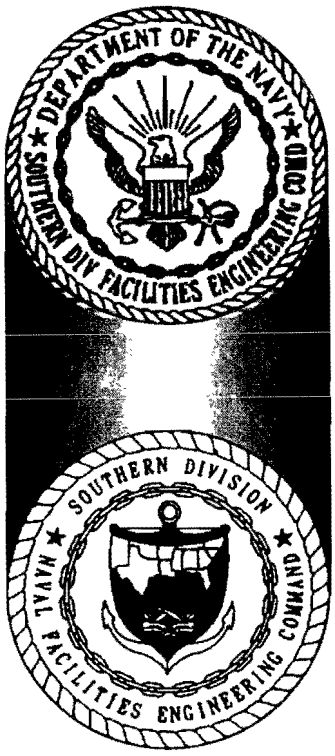
INTERIM MEASURE WORK PLAN DELINEATION SAMPLING AND SOIL REMOVAL GRID AREAS G7 AND G38 AREA OF CONCERN 709H (AOC 709H) ZONE H WITH TRANSMITTAL

CNC CHARLESTON SC
5/3/2001
NAVFAC SOUTHERN

INTERIM MEASURE WORK PLAN

Delineation Sampling & Soil Removal
Grid Areas G7 & G38, AOC 709H, Zone H



Charleston Naval Complex
North Charleston, South Carolina

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

PREPARED BY
CH2M-Jones

April 2001

Revision 0
Contract N62467-99-C-0960
158814.ZH.PR.15

INTERIM MEASURE WORK PLAN

Delineation Sampling & Soil Removal
Grid Areas G7 & G38, AOC 709H, Zone H

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Revision 0
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5090/11
Code 18713
3 May 01

Mr. John Litton, P.E.
Director, Division of Hazardous and Infectious Waste Management
Bureau of Land and Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

Subj: SUBMITTAL OF AREA OF CONCERN 607H INTERIM MEASURE WORK PLAN

Dear Mr. Litton,

The purpose of this letter is to submit an Interim Measure Work Plan, Revision 0, for Area of Concern (AOC) 607H located at the Charleston Naval Complex. The work plan is submitted to fulfill the requirements of condition IV.E.2 of the RCRA Part B permit issued to the Navy by the South Carolina Department of Health and Environmental Control and the U.S. Environmental Protection Agency.

The document is distributed under separate cover letter by CH2M Hill. Appropriate certification is provided under that correspondence. We request that the Department and the EPA review this document and provide comments or approval whichever is appropriate. If you should have any questions, please contact Matthew Humphrey or myself at (843) 743-9985 and (843) 820-5551 respectively.

Sincerely,

Robert A. Harrell Jr., P.E.
Environmental Engineer
BRAC Division

Copy to:
SCDHEC (4),
USEPA (Dann Spariosu)
CSO Naval Base Charleston (Matt Humphrey)
CH2M-Hill (Dean Williamson)

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May 1, 2001

John Litton, P.E., Director
Division of Hazardous and Infectious Wastes
South Carolina Department of Health and
Environmental Control
Bureau of Land and Waste Management
2600 Bull Street
Columbia, SC 29201

Re: Interim Measure Work Plan for Delineation Sampling and Soil Removal
Grid Areas G7 and G38, Area of Concern (AOC) 709H, Zone H

Dear Mr. Litton:

Enclosed please find four copies of the Interim Measure Work Plan for Delineation Sampling and Soil Removal at Grid Areas G7 and G38 at AOC 709H in Zone H of the Charleston Naval Complex (CNC). This report has been prepared pursuant to agreements by the CNC BRAC Cleanup Team for completing the RCRA Corrective Action process.

Please contact me if you have any questions or comments.

Sincerely,

CH2M HILL

Dean Williamson, P.E.

cc: Tony Hunt/Navy, w/att
Rob Harrell/Navy, w/att
Mihir Mehta/SCDHEC
Gary Foster/CH2M HILL, w/att

Certification Page for Interim Measure Work Plan – Grid Areas G7 & G38, AOC 709H, Zone H

Delineation Sampling and Soil Removal

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

Temporary Permit No. T2000342

Dean Williamson, P.E.

4/30/2004

Date

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
CH2M HILL, INC.
No. C00201

Contents

Acronyms and Abbreviations

AOC	area of concern
BCT	BRAC Cleanup Team
BEQ	benzo(a)pyrene equivalent
BRC	background reference concentration
CNC	Charleston Naval Complex
COC	chemical of concern
DAF	dilution attenuation factor
DET	Navy Environmental Detachment
EGIS	Environmental Geographic Information System
EnSafe	EnSafe Inc.
EPA	U.S. Environmental Protection Agency
IM	interim measure
GPS	Global Positioning System
µg/kg	micrograms per kilogram
mg/kg	milligrams per kilogram
OIA	other impacted area
PCB	polychlorinated biphenyl
PPE	personal protective equipment
RBC	risk-based concentration
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SSL	soil screening level
SVOC	semivolatile organic compound
VOC	volatile organic compound

SECTION 1

Introduction

1.0 Introduction

1.1 Purpose of the IM Work Plan

This Interim Measure (IM) Work Plan presents the proposed technical approach to the delineation of the extent of polychlorinated biphenyl (PCB)-impacted soils and their subsequent removal at Area of Concern (AOC) 709 in Zone H at the Charleston Naval Complex (CNC).

Specifically, the proposed IM activities include locating the areas of PCB-impacted soil in the field, and excavating these PCB-impacted soils with concentrations above the industrial risk-based concentration (RBC) of 2.9 milligrams per kilogram (mg/kg).

1.2 Site Background and Setting

AOC 709 is located in the northern portion of Zone H near the intersection of Dyess Avenue and Holland Drive at the CNC. This AOC was formerly identified as Other Impacted Areas (OIAs) G07 and G38 and represents two adjacent areas where the grid location soil samples contained polychlorinated biphenyl (PCB) concentrations above the Region III residential RBCs at levels that warranted further investigation. The two grid sample locations are HGDHSB007 and HGDHSB038 (see Figure 1-1).

1.2.1 RFI Soil Sampling

1.2.1.1 Sampling at Grid Locations HGDHSB007 and HGDHSB038

Surface and subsurface soil samples were collected during the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) from grid locations HGDHSB007 and HGDHSB038 and analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), PCBs, pesticides, cyanide, and metals.

There were no exceedances of VOCs, SVOCs, pesticides, cyanide, or metals above the residential RBCs in surface soils. There were no exceedances of these constituents above the SSL (soil screening level with a dilution attenuation factor of 1 for VOCs and 10 for inorganics, SVOCs, and other parameters) or detections outside the range of background (reference) concentrations in subsurface soils.

There were two detections of Aroclor-1260 in surface soils above the residential RBC of 0.32 mg/kg (HGDHSB007: 2.6 mg/kg and HGDHSB038: 4 mg/kg). Only one detection of Aroclor-1260 at 0.29 mg/kg was in subsurface soils at HGDHSB038, which was well below its $SSL_{DAF=10}$ value.

Based on surface soil exceedances of Aroclor-1260 above the RBC, two supplemental soil samples (HG07SB001 and HG07SB002) were collected around grid location HGDGHSB007, and three supplemental soil samples (HG38SB001, HG38SB002, and HG38SB003) were collected near HGDHSB038 and analyzed for PCBs and SVOCs. These supplemental samples showed minor exceedances of Aroclor-1260 above the RBCs (highest value of 1.1 mg/kg in surface soil sample from G38SB003). Five additional soil samples were collected around HGDGHSB007 (samples HG07SB003 through HG07SB007), and ten additional soil samples were collected around HGDHSB038 (HG38SB004 through HG38SB013) and analyzed for PCBs. These sampling locations are shown in Figure 1-2.

The RFI risk assessment identified benzo(a)pyrene equivalents (BEQs) and Aroclor-1260 as chemicals of concern (COCs). However, the BEQ concentrations in surface and subsurface soils are below the BEQ reference concentrations that have been adopted for the CNC of 1,304 micrograms per kilogram (μg/kg) for surface soils and 1,400 μg/kg for subsurface soils.

PCB-impacted soils at the two original grid sample locations HGDHSB007 and HGDHSB038 were excavated and disposed of by the Navy Environmental Detachment (DET) as part of an IM conducted during 1999 (see Figure 1-2 for DET IM excavation locations). Confirmatory sampling performed at these two grid locations after excavation indicated that all soil samples show PCB concentrations below the residential RBC of 0.32 mg/kg.

Figure 1-3 shows the sample locations and PCB concentrations in surface and subsurface soils around the two grid locations HGDHSB007 and HGDHSB038 at the conclusion of the EnSafe Inc. (EnSafe) RFI and DET IM efforts. PCB concentrations from soil boring locations from Solid Waste Management Unit (SWMU) 13, which are adjacent to this site, are also shown in Figure 1-3, and indicate the absence of PCB concentrations on the eastern side of AOC 709.

Analytical results from groundwater samples collected from nearby SWMU 13 shallow wells H013GW001 and H013GW002, as well as shallow grid monitoring well HGDHGW003, indicate that PCBs were not detected in shallow groundwater in the vicinity of the site.

This IM Work Plan describes the approach for the removal of PCB-impacted soils from two locations, HG38SB005 and HG38SB011, where the soil PCB concentrations exceed the industrial RBC of 2.9 mg/kg.

1.3 Organization of the IM Work Plan

This IM Work Plan consists of the following five sections, including this introductory section:

1.0 Introduction — Presents the purpose of the IM Work Plan and background information regarding the site.

2.0 Technical Approach — Provides a brief description of the technical approach for the IM.

3.0 Waste Management and Disposal — Describes the procedures for waste management and disposal.

4.0 IM Completion Report — Describes the contents of the IM Completion Report.

5.0 References — Lists the references used in this document.

All figures appear at the end of their respective sections.

Figure 1-1
Site Location
AOC 709 Zone H
Charleston Naval Complex

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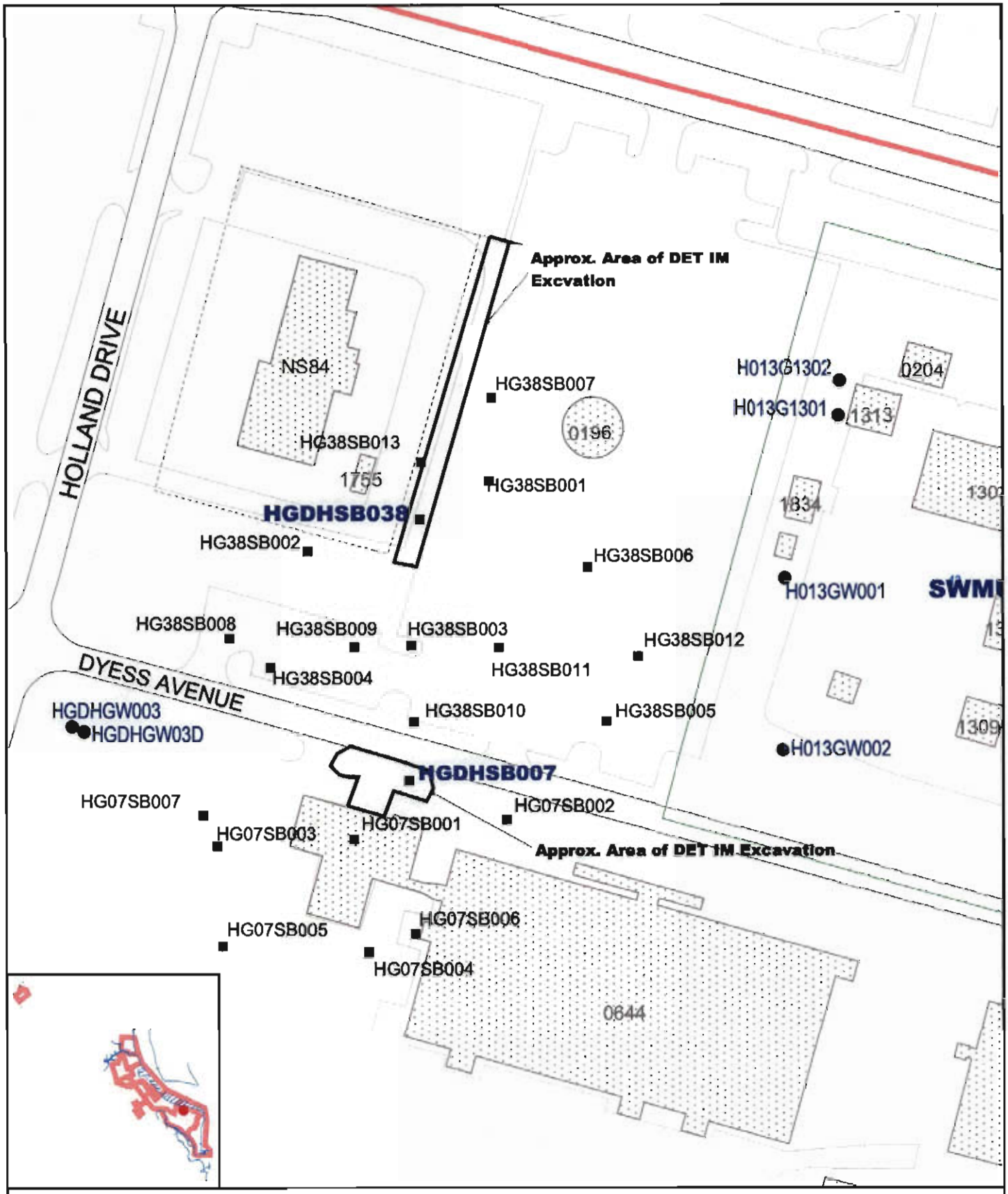

Figure 1-2
Soil Sampling Locations
AOC 709H, Zone H
Charleston Naval Complex

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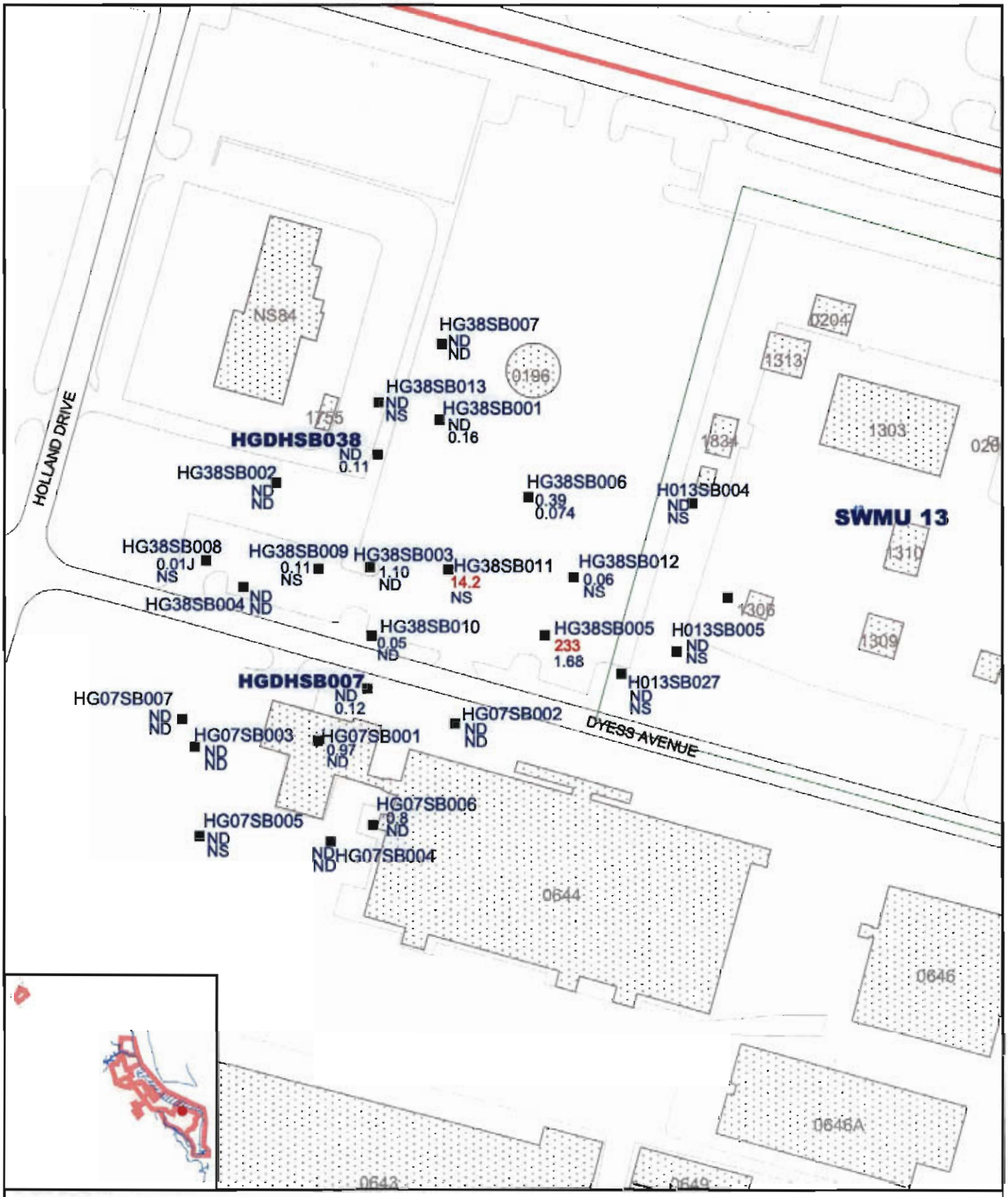

■ Soil Boring Location

0.97 Surface Soil PCB Concentration
ND Subsurface Soil PCB Concentration

N

0 90 180 Feet

Figure 1-3
Soil PCB Concentrations
AOC 709H, Zone H
Charleston Naval Complex

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SECTION 2

Technical Approach

2.0 Technical Approach

This section outlines the technical approach to the delineation and removal of PCB-contaminated soil at two locations, HG38SB005 and HG38SB011, where surface soil PCB concentrations were detected above the industrial RBC of 2.9 mg/kg during the RFI. All other sampling locations from the RFI show PCB concentrations below 1 mg/kg, with the exception of HG38SB003. At HG38SB003, PCB concentration in surface soil was 1.10 mg/kg, which is slightly above the 1 mg/kg goal established by the U.S. Environmental Protection Agency (EPA) for high occupancy areas (EPA, 2001). Most soil boring locations at this site and from neighboring soil boring locations at SWMU 13 show PCB concentrations below detection limits (non-detects), and the average for sitewide PCB concentrations is less than 1 mg/kg.

2.1 Pre-excavation Sampling and Contaminant Delineation

Prior to the commencement of excavation activities, the former soil boring locations will be staked in the field using coordinates derived from the CNC Environmental Geographic Information System (EGIS) tool and utilizing Global Positioning System (GPS) equipment.

Prior to excavation, soil samples will be collected to delineate the extent of PCB contamination around the locations of HG38SB005 and HG38SB011, as shown in Figure 2-1. These samples will be analyzed at an offsite laboratory for PCBs. If any of these delineation samples exceeds the target cleanup level of 2.9 mg/kg, an additional soil sample will be collected farther out to complete the delineation. The final excavation limits will be determined based on these analytical results.

In addition, duplicate soil samples will be collected at the approximate location of borings HG38SB011 and HG38SB005 to confirm the validity of the elevated results previously detected at these locations.

2.2 Excavation of Soils

2.2.1 Excavation

The excavation areas are currently paved with asphalt. At each location, excavation will be performed to the previously delineated lateral extent and to the depths indicated in

Section 2.1, using a backhoe or similar equipment. The asphalt pavement removed from the excavation area will be staged separately for offsite disposal.

Excavated soils will be transferred immediately to a disposal container (e.g., lined roll-off box or similar container) and sampled for waste disposal characterization. A separate sample will also be collected from the asphalt and analyzed for PCBs for waste characterization. The wastes will be transported to an appropriate offsite disposal facility according to appropriate regulations, based on the analytical results of waste characterization.

2.2.2 Site Restoration

Based on previous delineation of contamination limits, the excavations will be backfilled with clean soil soon after removal of asphalt and contaminated soil. Subsequent to the backfilling operations, the excavation areas will be paved with asphalt in order to restore the site to its original condition.

The sampling procedures will be performed in accordance with the Environmental Services Division Standard Operating Procedures and Quality Assurance Manual (ESDSOPQAM) (EPA, 1996).

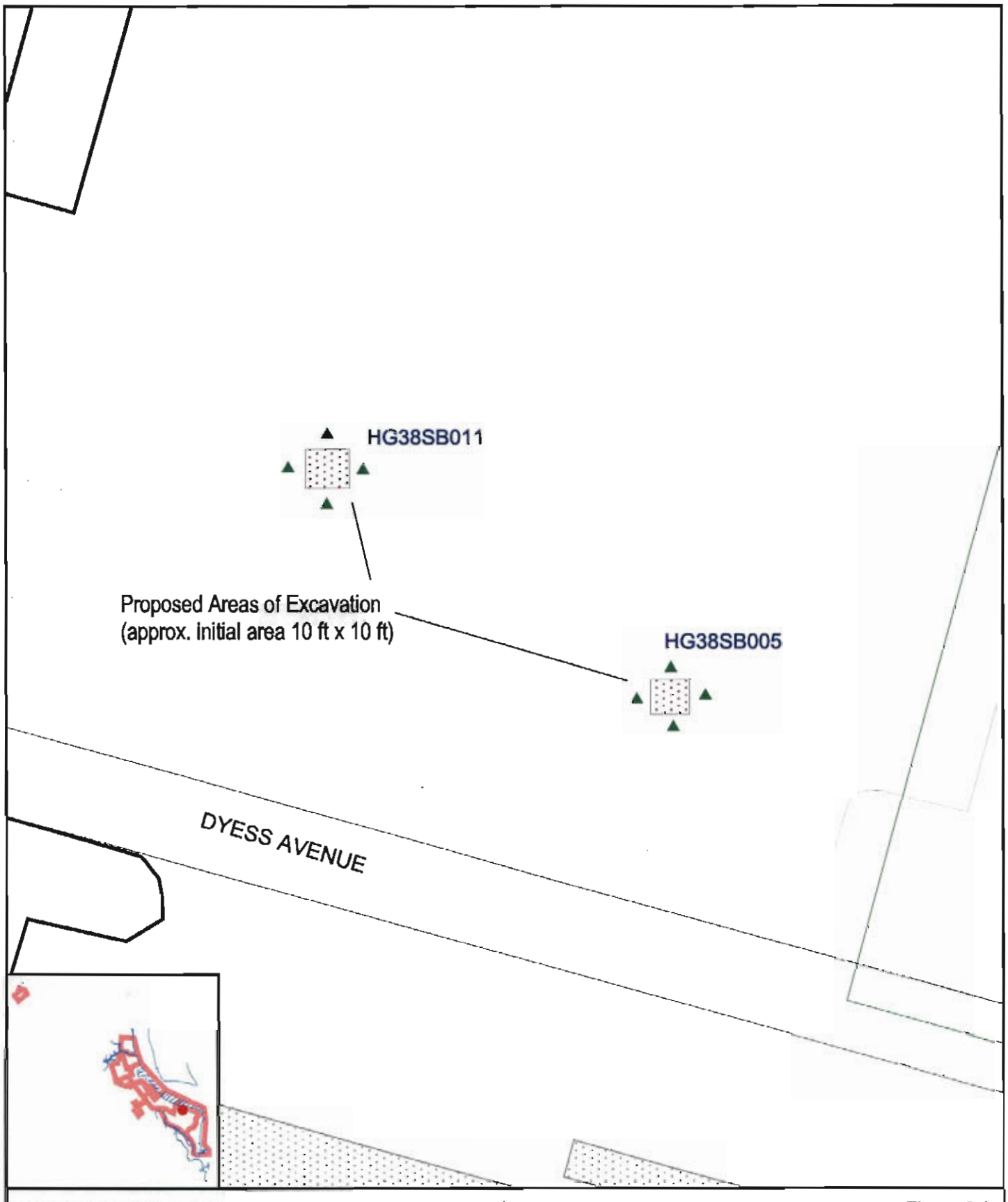

Figure 2-1
Proposed Areas of Excavation
AOC 709H, Zone H
Charleston Naval Complex

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SECTION 3

Waste Management and Disposal

3.0 Waste Management and Disposal

Three waste streams will be generated as part of this IM: excavated soils, decontamination wastes, and personal protective equipment (PPE). Excavated soils will be characterized in accordance with South Carolina Hazardous Waste Management Regulations (Section SCDHEC R.61-79.261) and disposed of in accordance with all applicable regulations and permits. Decontamination wastes and PPE will also be disposed of in accordance with regulations.

Offsite transportation and disposal will be performed by properly permitted and licensed subcontractors. Materials designated for offsite disposal will be documented, tracked, and their disposition verified. This information will be documented in the IM Completion Report.

SECTION 4

IM Completion Report

4.0 IM Completion Report

A final report will be submitted within 60 days of completion of the IM. The report will summarize the actions that were taken and provide the following information:

- Excavated volumes
- Nature and volume of waste generated
- Waste disposal
- Analytical data reports
- Site photographs
- Problems encountered during the IM and corrective measures implemented
- Other information that would be helpful in evaluating the success of the IM

SECTION 5

References

5.0 References

EnSafe Inc. *Zone H RFI Report, NAVBASE Charleston*. July 1996.

Environmental Enterprise Group (formerly Navy Detachment). *Completion Report, Interim Remedial Measure for Zone H Grids G07 & G038, Charleston Naval Complex*. December 1999.

U.S. Environmental Protection Agency. *Code of Federal Regulations*, 40 CFR 761.61.4 Subchapter R – Toxic Substances Control Act, Part 761, PCB Remediation Waste. February 2001.