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INTERIM MEASURE WORK PLAN SUBSURFACE SOIL REMOVAL AREA OF CONCERN 633
(AOC 633) ZONE G WITH TRANSMITTAL CNC CHARLESTON SC
9/24/2001
CH2M HILL

INTERIM MEASURE WORK PLAN

Subsurface Soil Removal AOC 633, Zone G



***Charleston Naval Complex
North Charleston, South Carolina***



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

PREPARED BY
CH2M-Jones

September 2001

*Revision 0
Contract N62467-99-C-0960
158814.ZG.PR.03*

INTERIM MEASURE WORK PLAN

Subsurface Soil Removal AOC 633, Zone G



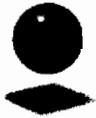
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September 24, 2001

Mr. David Scaturo
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 (Revision 0) – AOC 633, Zone G

Dear Mr. Scaturo:

Enclosed please find four copies of the Interim Measure Work Plan (Revision 0) for AOC 633 in Zone G of the Charleston Naval Complex (CNC). This report has been prepared pursuant to agreements by the CNC BRAC Cleanup Team for completing the RCRA Corrective Action process.

The principal author of this document is Bill Elliott. Please contact him at 352/335-5877, extension 2477, if you have any questions or comments.

Sincerely,

CH2M HILL

Dean Williamson, P.E.

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

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1 **Acronyms and Abbreviations**

2	AOC	area of concern
3	BRAC	Base Realignment and Closure Act
4	CA	corrective action
5	CNC	Charleston Naval Complex
6	COC	chemical of concern
7	COPC	chemical of potential concern
8	CSAP	Comprehensive Sampling and Analysis Plan
9	DET	Environmental Detachment Charleston
10	DMP	Data Management Plan
11	DQO	Data Quality Objective
12	EEG	Environmental Enterprise Group
13	EnSafe	EnSafe Inc.
14	EPA	U.S. Environmental Protection Agency
15	ft ³	cubic feet
16	ft bls	feet below land surface
17	IDW	investigation-derived waste
18	IM	interim measure
19	mg/kg	milligram per kilogram
20	NAVBASE	Naval Base
21	NFA	no further action
22	PCB	polychlorinated biphenyl
23	QAP	Quality Assurance Plan
24	RCRA	Resource Conservation and Recovery Act
25	RFI	RCRA Facility Investigation
26	SCDHEC	South Carolina Department of Health and Environmental Control
27	SSL	soil screening level

Section 1.0

1.0 Introduction

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

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

11 In April 2000, CH2M-Jones was awarded a contract to provide environmental investigation
12 and remediation services at the CNC. This submittal has been prepared by CH2M-Jones to
13 document the basis for an Interim Measure (IM) Work Plan at Area of Concern (AOC) 633
14 in Zone G of the CNC.

15 1.1 Purpose of the IM Work Plan

16 This IM Work Plan presents a technical approach for the removal of soils containing
17 polychlorinated biphenyls (PCBs) from an electrical substation known as AOC 633, located
18 in Zone G of the CNC. The limited removal of the subsurface soils exceeding the site-
19 specific soil screening level (SSL) of 15.4 milligrams per kilogram (mg/kg) will eliminate
20 the potential for migration of contaminants from this site. This excavation work will be
21 performed, documented, and reported in a manner consistent with the investigative and
22 corrective action goals and requirements of the existing RCRA permit for the facility.

23 1.2 Site Background and Setting

24 AOC 633 is located near Building 451C, an electrical substation built in 1943. Figure 1-1
25 provides an aerial view of the site. Building 451C is a block structure with a concrete roof
26 and floor. Several high voltage switches, breakers, and transformers are located in the two-
27 room block structure. The site contains several steel enclosures on concrete slabs and
28 foundations from earlier buildings. In 1989, an electrical transformer at this substation was
29 destroyed by Hurricane Hugo. Several historical PCB releases have been reported for this
30 site, including a large leak of 10C oil in 1981. No remedial activities were known to have

1 occurred at this site prior to commencement of the Zone G RCRA Facility Investigation
2 (RFI) performed in 1997.

3 **1.3 Organization of the IM Work Plan**

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

5 **1.0 Introduction** — Presents the purpose of the IM Work Plan and background information
6 regarding the site.

7 **2.0 Previous Investigations** – Provides a brief description of previous investigations at
8 AOC 633.

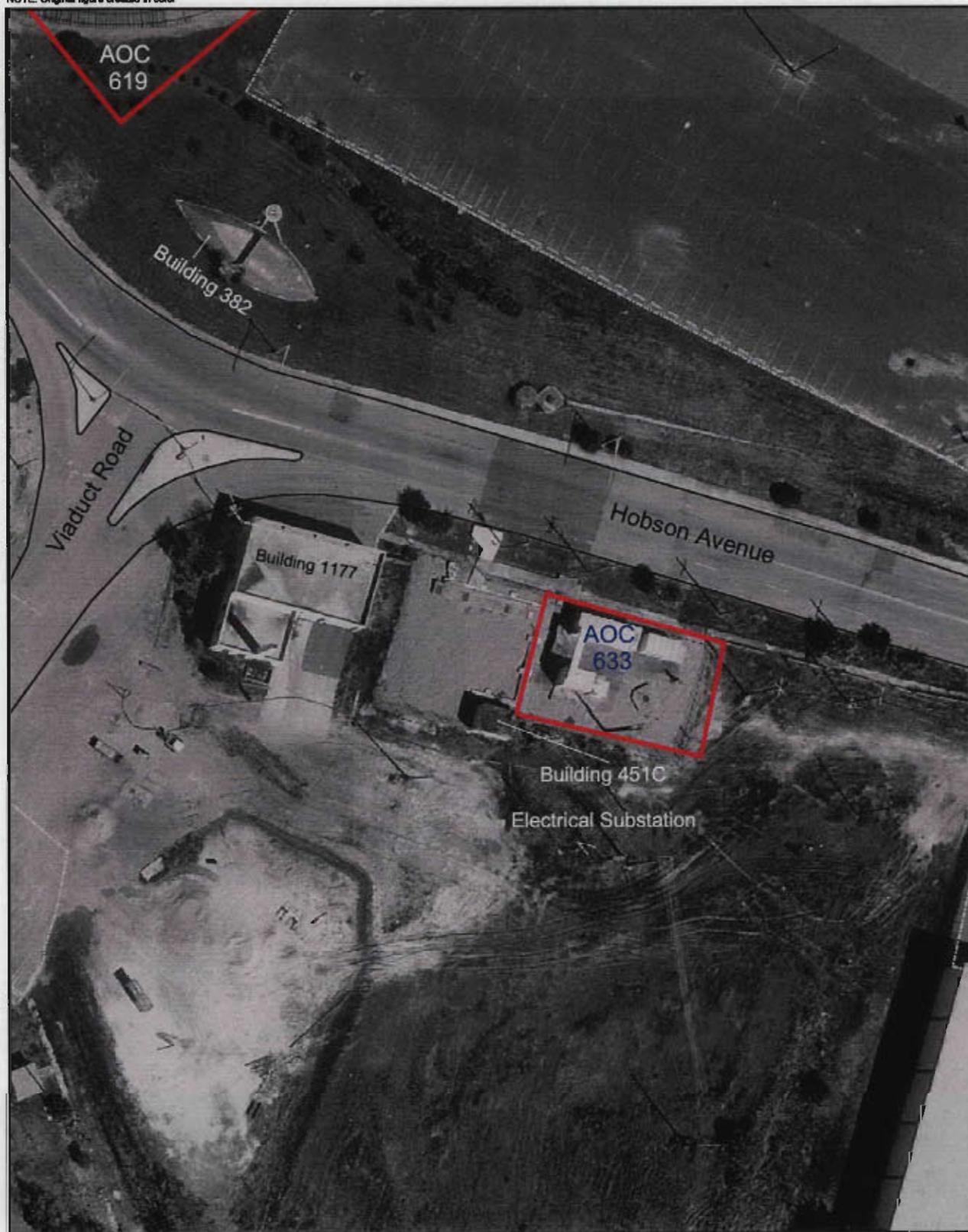
9 **3.0 Technical Approach** — Provides a brief description of the technical approach for
10 completing the soil removal and soil disposal.

11 **4.0 Investigation-Derived Waste** — Describes the procedures to be implemented for
12 management of investigation-derived waste (IDW).

13 **5.0 References** — Lists the references used in this document.

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

NOTE: Aerial Photo Date is 1997
NOTE: Original figure created in color



-  AOC Boundary
-  Buildings
-  Roads
-  Fence
-  Pavement



0 50 100 Feet

Figure 1-1
Aerial Photo
AOC 633, Zone G
Charleston Naval Complex

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Section 2.0

2.0 Previous Investigations

2.1 Description of Previous Investigations

Several soil investigations were conducted at AOC 633. These investigations resulted in numerous soil samples being collected at the site. The locations of the samples collected at AOC 633 are presented in Figure 2-1. Summaries of the surface and subsurface analytical results for PCBs are provided in Tables 2-1 and 2-2, respectively.

An RFI was conducted in 1997 and 1998 to investigate the nature and extent of any environmental contamination at the site, and recommend whether additional site activities such as corrective actions would be required to eliminate or minimize unacceptable risks to human health or the environment. Results of the RFI identified Aroclor-1260 as the only chemical of potential concern (COPC) driving risk, and did not identify any chemicals of concern (COCs), or unacceptable risk. The site was recommended for No Further Action (NFA).

The *Zone G RFI Work Plan Addendum* (EnSafe Inc. [EnSafe], 2000) recommended one additional soil boring (G633SB021) to delineate the extent of Aroclor-1260 in surface and subsurface soil to the south of G633SB001. Aroclor-1260 was not detected in either sample.

Additional delineation samples were collected by Environmental Enterprise Group (EEG) (formerly know as Environmental Detachment Charleston [DET]) in cooperation with EnSafe, and analyzed for PCBs at Data Quality Objective (DQO) Level III. These samples were collected to delineate the extent of Aroclor-1260 found at soil boring G633SB007. The analytical results of EEG's sampling were presented in the *Sampling Report, Site Delineation for PCBs at AOC 633, Charleston Naval Complex, Charleston, SC* (EEG, 2000a). The analytical results indicated that the extent of PCB-impacted soil was greater than previously known.

A soil excavation IM was then planned for AOC 633. The proposed IM involved the removal of PCB-contaminated subsurface (3 to 5 feet below land surface [ft bls]) soil around G633SB007 and was to be conducted by EEG. The initial sampling phase of the IM was conducted by EEG, and a target area of excavation was identified by EEG as a result of two additional sampling events (EEG, 2000a).

EEG then prepared and submitted an IM Work Plan (EEG, 2000b) proposing to excavate all soils containing greater than 1 mg/kg of Aroclor-1260. EEG did not perform the excavation or disposal of site-contaminated soils, as a result of some uncertainties that arose

1 concerning cleanup levels and waste disposal requirements (the Navy has re-assigned the
2 site IM to CH2M-Jones). The 1-mg/kg cleanup level was based on remediation for
3 unrestricted land use. This area is zoned for continued marine industrial use (M-1);
4 therefore, PCB-impacted soil does not need to be excavated to residential cleanup levels.

5 The existing data were evaluated during the preparation of this IM Work Plan. Surface soil
6 analytical results indicate that PCB-impacted surface soil is not present above the
7 residential cleanup standard of 1 mg/kg, as presented in Title 40 *Code of Federal Regulations*
8 (CFR) Part 761.61 (40 CFR 761.61), *PCB Remediation Waste* (2000).

9 **2.2 Development of Media Cleanup Standard for Subsurface** 10 **Soil**

11 The PCB-impacted subsurface soil at AOC 633 does not present a direct exposure pathway,
12 as approximately 2 ft of non-impacted soil is present above the PCB-impacted soil.

13 However, the subsurface soil may present a potential threat to shallow groundwater at
14 AOC 633. To develop a target subsurface soil media cleanup standard (MCS), a site-specific
15 SSL for Aroclor-1260 was calculated; a generic SSL was not available for Aroclor-1260. The
16 SSL calculation is consistent with the U.S. Environmental Protection Agency (EPA)'s *Soil*
17 *Screening Guidance: User's Guide* (EPA, 1996a) and the *Soil Screening Guidance: Technical*
18 *Background Document* (EPA, 1996b). Table 2-3 presents the SSL calculation and input
19 parameters. The SSL for Aroclor-1260 was determined to be 15.4 mg/kg. Subsurface soil
20 remains on site containing PCBs (specifically Aroclor-1260) in excess of the site-specific SSL
21 (15.4 mg/kg), which could represent a threat to site groundwater.

22 **2.3 Summary**

23 Aroclor-1260 was detected in subsurface soil at concentrations that exceed the cleanup
24 standards presented in Title 40 Code of Federal Regulations Part 761.61 (40 CFR 761.61),
25 *PCB Remediation Waste*. Because these soils do not present a direct exposure pathway, a site-
26 specific SSL value was calculated to determine a cleanup criterion for subsurface soil that is
27 protective of human health and the environment. The SSL was calculated to be 15.4 mg/kg.

28 Surface soil samples, collected as part of the AOC 633 investigation, did not indicate that
29 surface soil concentrations of Aroclor-1260 were above 1 mg/kg. Based on this information,
30 surface soil does not require remediation at AOC 633.

31 CH2M-Jones is proposing a focused soil excavation IM to remove the PCB-impacted
32 subsurface soil.

TABLE 2-1
 Surface Soil PCB Detections
 IM Work Plan, AOC 633, Zone G, Charleston Naval Complex

Parameter	Station ID	Sample ID	Date Collected	Results (mg/kg)	Qualifier
Aroclor-1016	G633SB019	633SB01901	07/27/99	0.089	=
Aroclor-1260	G633SB001	633SB00101	10/02/96	0.48	=
	G633SB002	633SB00201	10/02/96	0.041	J
	G633SB008	633SB00801	01/07/97	0.1	J
	G633SB016	633SB01601	07/28/99	0.088	J
	G633SB019	633SB01901	07/27/99	0.27	=

= Analyte was detected, the reported concentration is the actual analytical concentration.

J Analyte was detected, the reported concentration is an estimated concentration.

mg/kg milligram per kilogram

TABLE 2-2
 Subsurface Soil PCB Detections
 IM Work Plan, AOC 633, Zone G, Charleston Naval Complex

Parameter	Station ID	Date Collected	Results (mg/kg)	Qualifier
Aroclor-1016	G633SB020	07/27/1999	0.086	J
Aroclor-1260	G633SB004	10/02/1996	0.310	=
	G633SB007	10/02/1996	25.0	=
	G633SB015	07/28/1999	0.054	=
	G633SB018	07/27/1999	0.240	J
	G633SB020	07/27/1999	0.230	=
	00EEG0009-1	01/12/2000	7.0	=
	00EEG0009-2	01/12/2000	2.9	=
	00EEG0009-3	01/12/2000	3.1	=
	00EEG0009-4	01/12/2000	4.8	=
	00EEG0009-5	01/12/2000	6.8	=
	00EEG00010-1	10/13/1996	0.52	=
	00EEG00010-2	10/13/1996	60.0	=
	00EEG00010-3	10/13/1996	9.9	=
	00EEG00010-4	10/13/1996	0.20	=
	00EEG00017-1	02/01/2000	33.0	=
	00EEG00017-2	02/01/2000	61.0	=
	00EEG00017-3	02/01/2000	1.4	=
	00EEG00017-5	02/01/2000	80.0	=
	00EEG00017-6	02/01/2000	17.0	=
	00EEG00017-7	02/01/2000	0.30	=
00EEG00017-8	02/01/2000	1.3	=	

= Analyte was detected, the reported concentration is the actual analytical concentration.

J Analyte was detected, the reported concentration is an estimated concentration.

mg/kg milligram per kilogram

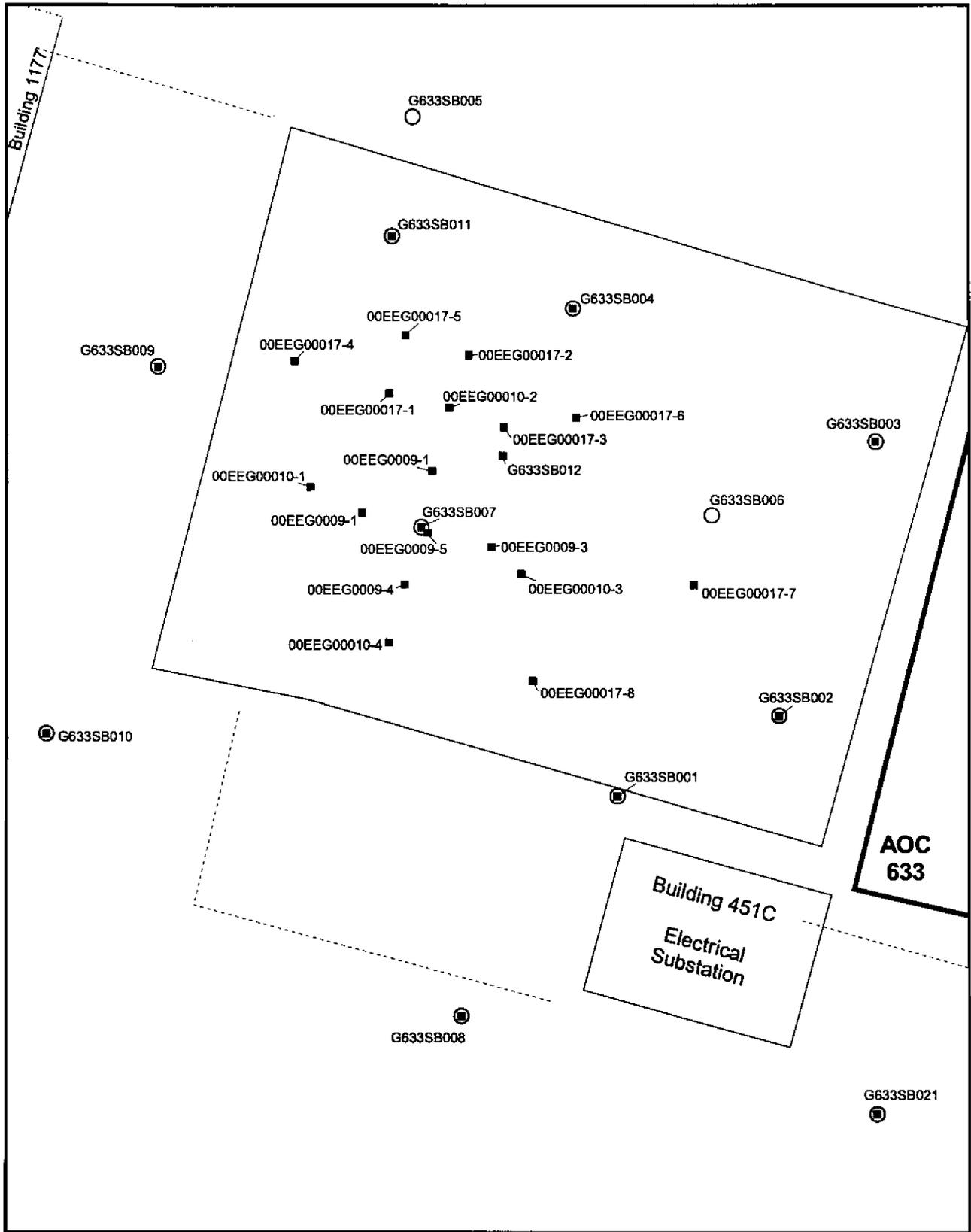
Table 2-3

SSL Calculation

IM Work Plan, AOC 633, Zone G, Charleston Naval Complex

		Parameter Aroclor-1260
Chemical Specific Input Parameters		
Cw = Target groundwater concentration MCL (mg/L)		5.00E-04
H = Henry's Law Constant, dimensionless		1.89E-01
ks = Soil-water sorption coefficient (cm ³ water / g soil = L/kg) = Koc x foc where koc = organic carbon-water sorption coefficient, (cm ³ (ml) water) / (g soluble organic carbon) foc = Fraction of organic content, dimensionless	0.0104	8.84E+03 8.50E+05
Site Specific Input Parameters		
Sw = Width of Source Parallel to Groundwater Flt (impacted soil zone)	3.7 m	12 ft
da = Aquifer Thickness	1.8 m	6 ft
d = Groundwater Mixing Zone thickness	0.62 m	2.0 ft
i = Groundwater Gradient		1.0E-03 (unitless)
Ks = Saturated Hydraulic Conductivity	445.0 m/yr	1460.0 ft/yr
θw = Volumetric Water Content of Soil Pore Space	0.3 cm³_{vapor}/cm³_{soil}	0.3 in³_{vapor}/in³_{soil}
θv = Volumetric Vapor Content of Soil Pore Space	0.11 cm³_{vapor}/cm³_{soil}	0.11 in³_{vapor}/in³_{soil}
ρs = Soil Bulk Density	1.5 g/cm³	93.64 lb_m/ft³
qi = Water Infiltration Rate	0.0305 m/yr	0.1000 ft/yr
Partition Term, Cw/Csoil, (L/kg)	$\frac{C_{soil}}{C_w} \left(\frac{\theta_w + K_d \rho_s + H \theta_v}{\rho_s} \right) \left(\frac{K_d i d + q_i S_w}{q_i S_w} \right)$	8.840E+03
Dilution Term, dimensionless		3.480E+00
Csoil/Cw = Partition term * Dilution term (mg/kg / mg/L) = L/kg		3.076E+04
Calculated Site Specific Target Level for Soil		
Csoil calculated source soil concentration (SSL, mg/kg) = Cw*(partion term)*(dilution term)		15.4

- Cwt is based on the Drinking Water Standards and Health Advisories (EPA, 2000).
- H is from Table 3-2 of the Toxicological Profile for Polychlorinated Biphenyls (U.S. Department of Health & Human Services, 1995) adjusted to the dimensionless form (x 41).
- ks = koc x foc.
- koc is from the Superfund Chemical Data Matrix
- foc is from site data, sample 633SB009P1 analytical results (10,400 mg/kg = 1.04% TOC).
- Sw is the measured length of the source area exceeding the SSL along the groundwater flow direction.
- da is the minimum depth of the published saturated zone thickness for Zone G (USGS, 1999).
- d is the smaller of either the aquifer thickness (da) or the result of the mixing zone equation,
d = (0.0112 Sw²)^{0.5} + da {1 - exp[(-Sw qi)/Ks i da]}
- i is calculated (1/1000) from groundwater contours presented in Figure 1-4 Groundwater Monitoring Report (CH2M-Jones, 2001)
- Ks is from Figure 21 of the USGS Report Hydrology and Simulation of Ground-Water Flow in the Surficial Aquifer System in the Area of Charleston Naval Base, North Charleston, South Carolina, 1995-97 (USGS, 1999).
- θw is the default value presented in the Soil Screening Guidance: User's Guide (EPA, 1996)
- θv is calculates as total porosity (0.41) - θw (0.3) = 0.11
- ρs is the default value presented in the Soil Screening Guidance: User's Guide (EPA, 1996)
- qi is from the USGS Report Hydrology and Simulation of Ground-Water Flow in the Surficial Aquifer System in the Area of Charleston Naval Base, North Charleston, South Carolina, 1995-97 (USGS, 1999).



- Surface Soil Samples
- Subsurface Soil Samples
- ∕ Roads
- ∕ Fence
- ▭ AOC Boundary
- ▭ Buildings

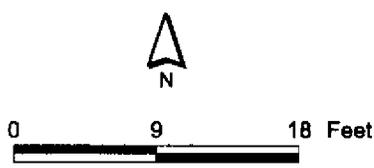


Figure 2-1
Soil Sample Locations
AOC 633, Zone G
Charleston Naval Complex

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Section 3.0

3.0 Technical Approach

This section outlines the technical approach for the removal of PCB-impacted subsurface soil above the site-specific SSL of 15.4 mg/kg. The overall strategy for the work will be to excavate soil to a depth of approximately 2 ft bls, stockpile it on site, and use it for backfill material. PCB-impacted soil will then be excavated from this 2-ft depth down to a depth of approximately 4 ft bls (top of water table) and disposed of off site. The anticipated excavation area is illustrated in Figure 3-1, and it is based on analytical results of samples collected during the RFI and subsequent IM delineation sampling. The boundary of the area shown in Figure 3-1 was estimated via geostatistical kriging. The Aroclor-1260 data for these samples are presented in Table 3-1.

3.1 Delineation/Confirmation Sample Collection

Prior to excavation, six subsurface soil delineation samples will be collected from around the perimeter of the proposed excavation area and analyzed for PCBs to more precisely determine the areal extent of the excavation. Four additional sample locations from within the proposed excavation area will be sampled to determine the vertical extent of the excavation at a depth of 4 ft bls. In the event these samples are reported at concentrations that exceed the MCS of 15.4 mg/kg, the bottom of the excavation will be at the level of the top of the water-bearing zone. Approximate locations of the delineation samples are shown in Figure 3-2.

Within the larger proposed excavation area the vertical delineation samples will be collected at existing EEG sample locations (00EEG00010-2, 00EEG00017-1, and 00EEG00017-5) that previously exhibited PCB concentrations of 50 mg/kg or greater. The fourth vertical delineation sample will be collected near the center of the proposed excavation area at a depth of four ft bls. CH2M-Jones team members at the CNC will choose the final sampling locations in the field, based on site conditions (such as the presence of pavement or other obstructions). Once the limits of excavation have been established, the footprint of the area to be excavated will be clearly marked by staking the site.

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

3.2 Soil Sample Analysis

The delineation/confirmation samples will be delivered or sent via overnight carrier to an offsite laboratory, where they will be analyzed for PCBs using EPA Method SW846-8082. The soil analysis will follow the procedures provided in the approved Comprehensive Sampling and Analysis Plan (CSAP) portion of the *Final Comprehensive RFI Work Plan* (EnSafe/Allen & Hoshall, 1994). The CSAP outlines all monitoring procedures to be performed during the investigation to characterize the environmental setting, source, and releases of hazardous constituents. In addition, the CSAP includes the Quality Assurance Plan (QAP) and Data Management Plan (DMP) to verify that all information and data are valid and properly documented. Sample analysis will be conducted in accordance with the guidance in the EPA's *Test Methods for Evaluating Solid Waste, SW-846, 3rd Ed.*, Office of Solid Waste and Emergency Response (SW846) and in the EPA Environmental Services Division *Laboratory Operations and Quality Control Manual* (ESDLOQCM).

3.3 Soil Removal

Prior to commencement of removal activities, the upper 2 ft of soil and the gravel cover will be removed from the area of the proposed excavation area with a front-end loader (or similar equipment) and stored on site for use as subsurface fill material for the excavation. The upper 2 ft of soil should be suitable for use as fill because analytical results for the surface soil at AOC 633 indicate that PCBs in surface soil are below the cleanup level of 1 mg/kg. It is expected that approximately 250 ft³ of soil will be stockpiled; three confirmatory samples will be collected from the stockpile(s).

Figure 3-1 presents the estimated areal extent of PCB-impacted subsurface soil above the 15.4 mg/kg SSL. Three areas in Figure 3-1 are illustrated as having PCB concentrations above the SSL (15.4 mg/kg). Sample 00EEG00017-6 contained Aroclor-1260 at a concentration of 17 mg/kg, which marginally exceeds the SSL. The location of this sample is illustrated on Figure 3-1 as the smallest area above the SSL. Because of the limited area of PCB-impacted subsurface soil in this area, the area around 00EEG00017-6 is not targeted for removal, as point exceedances close to the SSL do not represent a leaching hazard. In this case, the extremely small area of PCB-impacted subsurface soil is not expected to be a threat to local groundwater. The excavation is expected to encompass the other two areas illustrated on Figure 3-1. The area(s) may vary somewhat based on the results of the confirmation sampling. Removal of subsurface soil will be accomplished with a backhoe or similar equipment to the depth of approximately 4 ft bls.

1 Excavated subsurface soils will be transferred immediately to a disposal container (e.g., a
2 roll-off box or similar container). Waste characterization samples will be collected from each
3 disposal container at a frequency of one sample per each 100 ft³ of soil, with a minimum of
4 one sample per container. The analytical results of the waste characterization samples will
5 determine the type of disposal facility to which the soil will be sent. Soil with PCB
6 concentrations below 50 mg/kg will be transported to a RCRA Subtitle D landfill for
7 disposal. Soil with PCB concentrations equal to, or greater than, 50 mg/kg will be disposed
8 of in a hazardous waste landfill permitted by EPA under section 3004 of RCRA, by a State
9 authorized under section 3006 of RCRA, or a TSCA-approved PCB disposal facility. The
10 transported waste will be covered with a tarp during transport to minimize airborne
11 transfer of soil particulates.

12 **3.4 Site Restoration**

13 Following completion of the excavation, the excavation will be backfilled with appropriate
14 fill material starting with the surface soil that was previously stockpiled (assuming that
15 analytical results for the stockpiled soil were below the cleanup criteria). Additional clean
16 fill material will be brought in and the grade will be restored to match the original grade.

17 **3.5 Reporting**

18 The results of the IM will be summarized in an IM Completion Report that will be part of an
19 RFI Report Addendum. The report addendum will document the field activities and
20 provide the analytical results from the confirmation samples collected at the site.

TABLE 3-1
 Aroclor-1260 Analytical Results for Subsurface Soil Samples
 IM Work Plan, AOC 633, Zone G, Charleston Naval Complex

Chemical	Station ID	Sample ID	Results (mg/kg)	Qualifier	Residential Cleanup Level (mg/kg)	Site-Specific SSL (mg/kg)	
RFI Samples	G633SB001	633SB00102	0.10	U	1	15.4	
	G633SB002	633SB00202	0.13	U			
	G633SB003	633SB00302	0.10	U			
	G633SB004	633SB00402	0.31	=			
	G633SB007	633SB00702	25.0	=			
	G633SB008	633SB00802	0.110	U			
	G633SB009	633SB00902	0.028	U			
	G633SB010	633SB01002	0.080	U			
	G633SB011	633SB01102	0.041	U			
	G633SB012	633SB01202	0.037	U			
	G633SB013	633SB01302	0.050	U			
	G633SB014	633SB01402	0.057	U			
	G633SB015	633SB01502	0.054	=			
	G633SB017	633SB01702	0.039	U			
	G633SB018	633SB01802	0.240	J			
	G633SB019	633SB01902	0.039	U			
	G633SB020	633SB02002	0.230	=			
	G633SB021	633SB02102	0.080	U			
	Delineation Samples	PT-1	00EEG0009-1	7.0			=
		PT-2	00EEG0009-2	2.9			=
		PT-3	00EEG0009-3	3.1			=
PT-4		00EEG0009-4	4.8	=			
PT-5		00EEG0009-5	6.8	=			
PT-6		00EEG00010-1	0.52	=			
PT-7		00EEG00010-2	60.0	=			
PT-8		00EEG00010-3	9.9	=			
PT-9		00EEG00010-4	0.20	=			
PT-10		00EEG00017-1	33.0	=			
PT-11		00EEG00017-2	61.0	=			
PT-12		00EEG00017-3	1.4	=			
PT-13		00EEG00017-4	0.061	U			
PT-14		00EEG00017-5	80.0	=			
PT-15		00EEG00017-6	17.0	=			
PT-16		00EEG00017-7	0.30	=			
PT-17		00EEG00017-8	1.3	=			

Concentrations in bold and outlined in boxes exceeded the SSL.

The Residential Cleanup Level is the preliminary remediation goal presented in *Soil Screening Guidance: Technical Background Document* (EPA, 1996).

TABLE 3-1
Aroclor-1260 Analytical Results for Subsurface Soil Samples
IM Work Plan, AOC 633, Zone G, Charleston Naval Complex

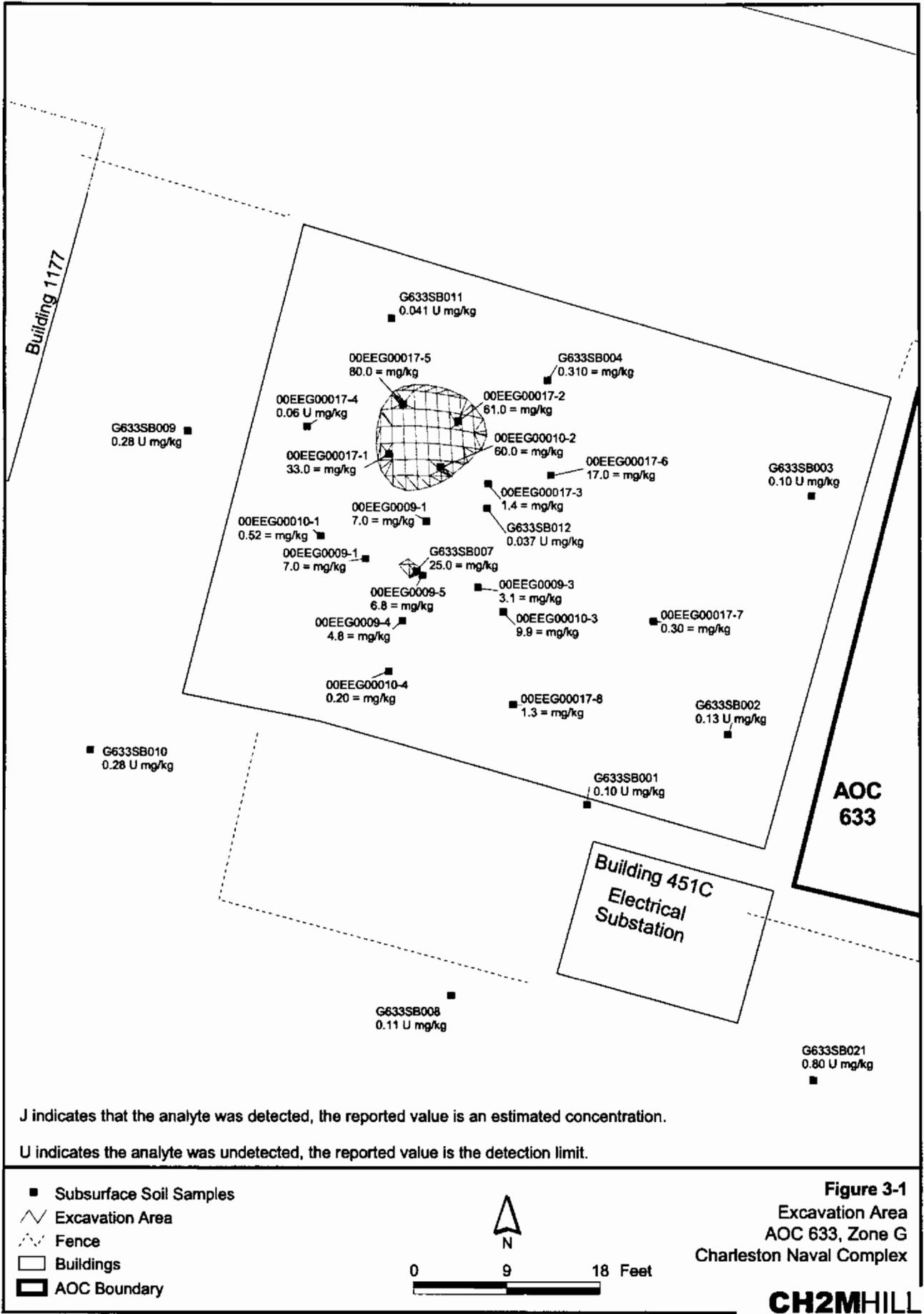
Chemical	Station ID	Sample ID	Results (mg/kg)	Qualifier	Residential Cleanup Level (mg/kg)	Site-Specific SSL (mg/kg)
-----------------	-------------------	------------------	----------------------------	------------------	--	--

= Analyte was detected, the reported concentration is the actual analytical concentration.

U Analyte was not detected, the reported concentration is the detection limit.

mg/kg milligram per kilogram

SSL soil screening level



J indicates that the analyte was detected, the reported value is an estimated concentration.

U indicates the analyte was undetected, the reported value is the detection limit.

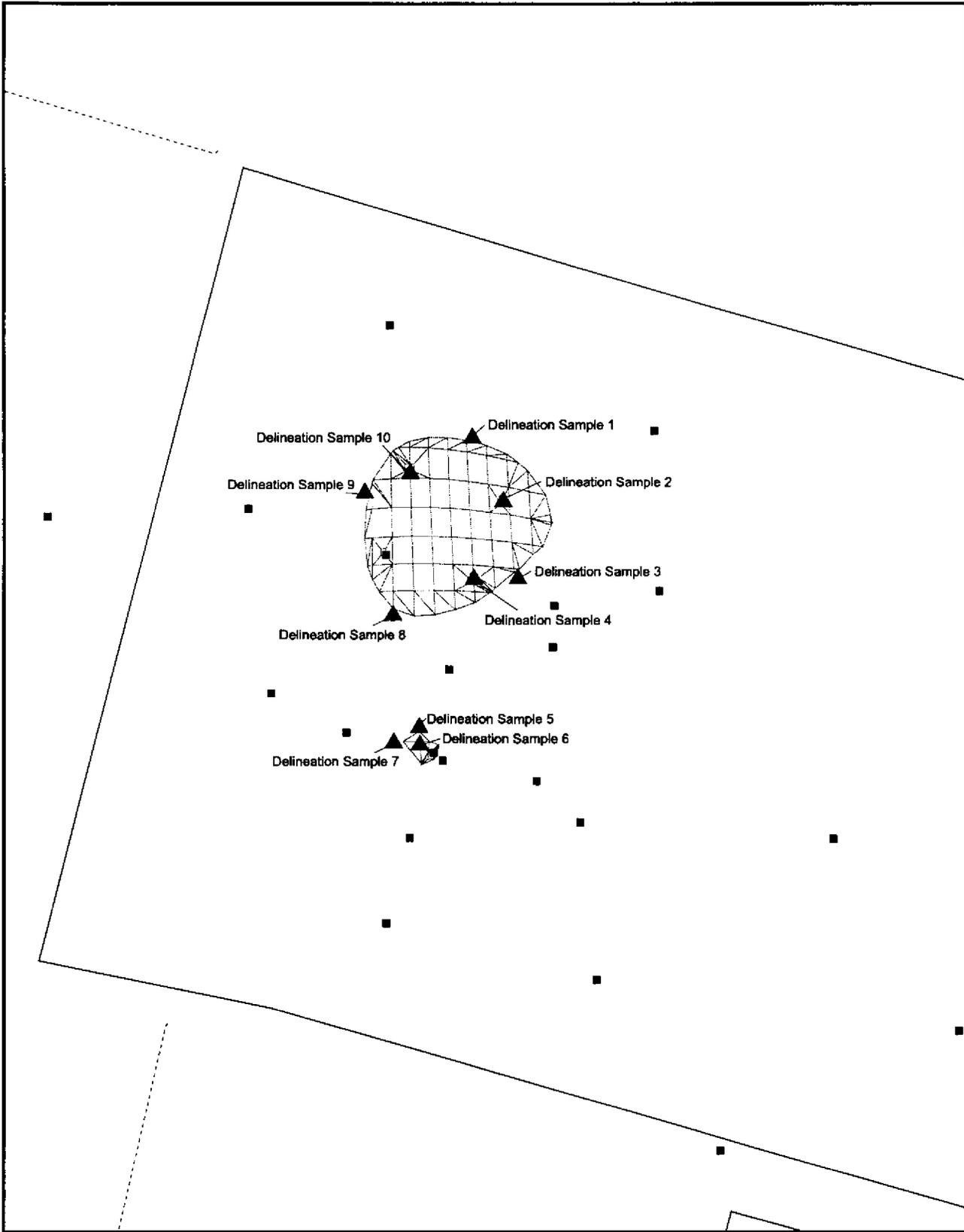
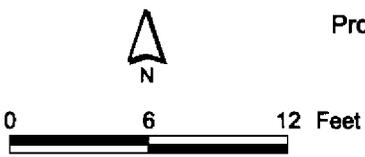


Figure 3-2
 Proposed Delineation Sample Locations
 AOC 633, Zone G
 Charleston Naval Complex

- ▲ Proposed Delineation Sample Locations
- Subsurface Soil Samples
- ∇ Excavation Area
- ⚡ Fence
- Buildings



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Section 4.0

1 **4.0 Investigation-Derived Waste**

- 2 Three waste streams will be generated as part of this IM: excavated soils, decontamination
3 wastes, and PPE. Excavated soils will be characterized in accordance with South Carolina
4 Hazardous Waste Management Regulations (Section SCDHEC R.61-79.261) and disposed of
5 in accordance with all applicable regulations and permits. Assuming soils will be
6 characterized as non-hazardous, they will be sent to a subtitle D landfill. Decontamination
7 wastes and PPE also will be disposed of in accordance with regulations.
- 8 Offsite transportation and disposal will be performed by properly permitted and licensed
9 subcontractors. Materials designated for offsite disposal will be documented, tracked, and
10 their disposition verified. This information will be reported in the IM Completion Report.

Section 5.0

1 5.0 References

- 2 EnSafe Inc./ Allen & Hoshall. *Final Comprehensive RFI Work Plan*. 1994.
- 3 EnSafe Inc. *Zone G RFI Report, NAVBASE Charleston*. Revision 0. February 28, 1998.
- 4 EnSafe Inc. *Zone G RFI Report Workplan Addendum, NAVBASE Charleston*. January 17, 2000.
- 5 40 CFR 761. Title 40 Code of Federal Regulations Part 761, *Polychlorinated Biphenyls (PCBs)*
- 6 *Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions*. July 1, 2000.
- 7 Environmental Enterprise Group. *Sampling Report, Site Delineation for PCBs at Area of*
- 8 *Concern (AOC) 633, Charleston Naval Complex, Charleston, SC*. February 26, 2000a.
- 9 Environmental Enterprise Group. *Interim Stabilization Measure, Area of Concern (AOC) 633,*
- 10 *Charleston Naval Complex, Charleston, SC*. September 15, 2000b.
- 11 U.S. Environmental Protection Agency. *Soil Screening Guidance: User's Guide*. Office of Solid
- 12 *Waste and Emergency Response (OSWER)*. April, 1996a.
- 13 U.S. Environmental Protection Agency. *Soil Screening Guidance: Technical Background*
- 14 *Document*. Office of Solid Waste and Emergency Response (OSWER). May 1996b.
- 15 U.S. Environmental Protection Agency. Environmental Services Division. *Operating*
- 16 *Procedures and Quality Assurance Manual (ESDSOPQAM)*. 1996c.