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RCRA FACILITY ASSESSMENT FOR NAVAL BASE CHARLESTON FOR VOLUME I CNC
CHARLESTON SC
05/31/1994
ENSAFE ALLEN AND HOSHALL



**RCRA FACILITY ASSESSMENT
NAVAL BASE CHARLESTON
VOLUME I**

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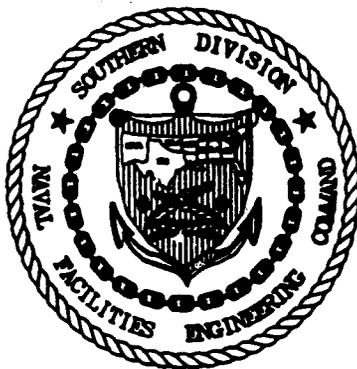
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**SITE ENGINEERING & SCREENING
BSHWM**

Prepared for:

**Department of the Navy
Southern Division
Naval Facilities Engineering Command
North Charleston, South Carolina**

**SOUTHDIV Contract Number:
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Prepared by:

**EnSafe/Allen & Hoshall
4130 Faber Place Drive Suite 107
North Charleston, South Carolina 29405
(803) 747-7937**

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1.0 INTRODUCTION

In November 1984, Congress enacted the Hazardous and Solid Waste Amendments (HSWA) to the Solid Waste Disposal Act (SWDA). SWDA is more commonly known as the Resource Conservation and Recovery Act (RCRA) and will be referred to as RCRA herein. The HSWA established a RCRA corrective action program with a primary objective of cleaning up releases of hazardous waste or hazardous substances that may pose a threat to human health and the environment. The initial phase of the corrective action process is the RCRA Facility Assessment (RFA). The purpose of the RFA is to:

- Identify solid waste management units (SWMUs) and gather information on releases at RCRA facilities;
- Evaluate SWMUs and other areas of concern (AOCs) for releases to all media and regulated units for releases to media other than groundwater;
- Making preliminary determinations regarding releases of concern and the need for further actions and interim measures at the facility;
- Screening from further investigations those SWMUs and AOCs which do not pose a threat to human health and the environment.

The Naval Base at Charleston, South Carolina is located on various contiguous and discontinuous properties. The Naval Shipyard (NSY), which represents only one of several commands present within the Naval Base, was designated as the "lead activity" for compliance with the Navy Hazardous Material Management Program for all commands and activities. As the lead activity the NSY is the holder of the RCRA Part B Permit SCO 170 022 560. Section II.B.2 of the HSWA portion of the Part B Permit outlines the RFA requirements for the NSY.

In August, 1987 Ebasco Services, Inc. under contract to the United States Environmental Protection Agency (USEPA) Region IV, prepared an Interim RFA of Naval Base, Charleston, South Carolina. On 20-22 August 1990, the USEPA and South Carolina Department of Health

and Environmental Control (SCDHEC) performed an inspection of the installation which identified additional solid waste management units (SWMUs). Subsequent to the inspection, the Southern Division Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) prepared two addendums to the RFA which addressed the new SWMUs. Upon completion of the second addendum, a total of 36 SWMUs had been identified.

On 10 August 1993, the NSY notified the U.S. Environmental Protection Agency (USEPA), Region IV and the South Carolina Department of Health and Environmental Control (SCDHEC) of three additional SWMUs and 118 sites that would be evaluated for consideration as SWMUs or AOCs.

This document addresses EPA Region IV's comments on the Draft RFA Addendum prepared and submitted by EnSafe/Allen & Hoshall on February 24, 1994. Subsequent to Draft RFA Addendum submittal, SOUTHNAVFACENGCOM completed an Environmental Baseline Survey (EBS) of every facility within Naval Base Charleston. The EBS identified several additional sites which USEPA requested to be included in the RFA.

The RFA for Naval Base Charleston will be submitted in two volumes. RFA Volume I will address EPA comments on the 118 sites and 3 SWMUs submitted February 24, 1994. The following deletions from the list of sites were agreed upon by SOUTHNAVFACENGCOM and USEPA:

SWMU #37 — Dredge Spoil Disposal Area

Potential Area of Concern #69 — SAA, ARDM 3

Potential Area of Concern #76 — <90 day AA, Building 13

Potential Area of Concern #112 — SAA, SGI Barge, Pier M

RFA Volume II will be submitted June 13, 1994 and will address the 200 remaining SWMUs and AOCs identified by the EBS and CNSY. SWMU and AOC Site Location Maps can be found in map pockets following the text of this document. Table 1-1 and Table 1-2 summarize the SWMUs and AOCs respectively identified at Naval Base Charleston.

Table 1-1
 Naval Base Charleston
 RCRA Facility Assessment
 Solid Waste Management Unit Summary

PAOC Reference	SWMU Number	RFA Section No.	SWMU Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
—	1	—	DRMO Storage Area	Hazardous Waste, Lead	—	DRMO	A
—	2	—	Lead Contaminated Area	Lead	—	DRMO	A
—	3	—	Pesticide Mixing Area	Pesticides	—	Building 249	G
—	4	—	Pesticide Storage Building	Pesticides	—	Building 381	F
—	5	—	Battery Electrolyte Treatment Area	Acids	—	Building 1797 Area	E
—	6	—	Public Works Storage Yard (Old Corral)	Hazardous Waste, Lead	—	Old Corral SW of Bldg. 380	G
—	7	—	PCB Transformer Storage Yard	PCBs	—	Old Corral SW of Bldg. 380	G
—	8	—	Oil Sludge Pit	Oil Sludges	—	Parking Area SW of Bldg. 161	G
—	9	—	Closed Landfill	Miscellaneous	—	Open Area Between Bainbridge and West Road	H
—	10	—	Hazardous Waste Storage Facility, Building 246	Miscellaneous	—	Building 246	G
—	11	—	Caustic Pond	Calcium Hydroxide	—	SE of Bldg. 190	G
—	12	—	Old Fire Fighter Training Area	Petroleum	—	Southern Tip of Base	I
—	13	—	Current Fire Fighter Training Area	Petroleum	—	Building 1303 Area	H
—	14	—	Chemical Disposal Area	Miscellaneous	—	South of Building 1897	H
—	15	—	Incinerator	Miscellaneous, Paper	—	South of Building 1843	H
—	16	—	Paint Storage Bunker	Paint	—	West of Building X-55	I
—	17	—	Oil Spill Area	Oil	—	North Side of Building 61	H

Table 1-1
 Naval Base Charleston
 RCRA Facility Assessment
 Solid Waste Management Unit Summary

PAOC Reference	SWMU Number	RFA Section No.	SWMU Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
—	18	—	PCB Spill Area	PCBs	—	Building 1278	E
—	19	—	Solid Waste Transfer Station	Miscellaneous	—	West of Least Tern Lane	H
—	20	—	Waste Disposal Area	Miscellaneous	—	NE of Building 903	H
—	21	—	Old Paint Storage Center (Waste Paint Storage Pad)	Paint	—	Facility 1275 Area	E
—	22	—	Old Plating Shop Wastewater Treatment System	Cadmium, Chromium	—	Alley Between Bldgs. 5 and 44	E
—	23	—	New Plating Shop Wastewater Treatment System	Miscellaneous	—	Building 226	E
—	24	—	Waste Oil Reclamation Facility	Waste Oil	—	Fuel Farm Area	G
—	25	—	Building 44, Old Plating Operation	Miscellaneous, Cyanide, Metals	—	Building 44	E
—	26	—	Waste Storage Area, Bldg 64-40, Pier C	Miscellaneous	—	Pier C Bldg. 64-40	E
—	27	—	Waste Storage Area East End, Pier C	Paint	—	East End Pier C	E
—	28	—	Waste Storage Area West End, Pier C	Paint	—	West End Pier C	E
—	29	—	Building X-10	Miscellaneous	—	Building X-10	G
—	30	—	Building 13 SAA #39	Miscellaneous	—	Building 13	E
—	31	—	Waste Paint Storage Area Drydock #5	Paint	—	Drydock #5	E

Table 1-1
Naval Base Charleston
RCRA Facility Assessment
Solid Waste Management Unit Summary

PAOC Reference	SWMU Number	RFA Section No.	SWMU Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
—	32	—	Waste Paint Storage Area Building 195	Paint	—	Building 195	E
—	33	—	Waste Paint Storage Area West End, Drydock #2	Paint	—	Drydock #2	E
—	34	—	MWR, Southeast of Building X-10	Miscellaneous	—	SE of Building X-10	G
—	35	—	Building X-12	Miscellaneous	—	Building X-12	G
—	36	—	Building 68, Battery Shop	Sulfuric Acid	—	Building 68	F
16	37	4.1	Sanitary Sewer System	Miscellaneous	Volume I	Basewide	L
214	38	4.1	Miscellaneous Storage	Petroleum Products Miscellaneous	Volume II	North of Bldg. 1605	A
35	39	4.2	POL Drum Storage	Petroleum Products	Volume I	North of Bldg. 1604	A
34	40	4.3	Building 1640 DRMO	Hazardous Wastes	Volume I	Building 1640	A
293	41	4.2	Battery Charging Facility (1624)	Lead Sulfuric Acid	Volume II	North of Bldg. 1602C	A
197	42	4.3	Asphalt Plant/Tanks Boiler Plant	Asphalt Products Solvents Degreasers	Volume II	NW of Bldg. 1803	A
294	43	4.4	Publications and Printing Plant Building 1628	Chromium Lead	Volume II	Building 1628	A
—	44	4.4	Coal Storage, South Side of Noisette Creek	Coal, Coal Byproducts	Volume I	South Side of Noisette Creek	C
91	45	4.5	Building NH-51 SAA #54	Photograph Fixer/Developer	Volume I	Building NH-51	C

Table 1-1
 Naval Base Charleston
 RCRA Facility Assessment
 Solid Waste Management Unit Summary

PAOC Reference	SWMU Number	RFA Section No.	SWMU Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
117	46	4.6	NH-21 SAA #T02	Miscellaneous	Volume I	Building NH-21	C
182	47	4.5	Burning Dump	Unknown	Volume II	Bldg. NSC 64, 66, 67 Area	C
92	48	4.7	Building 234 SAA #55	Photo Chemicals Ammonia EDTA Containers	Volume I	Building 234	C
263	49	4.6	Battery Charging Station(219)	Lead Sulfuric Acid	Volume II	South of Bldg. 199	C
100	50	4.8	Building NH-1 SAA #63	Miscellaneous	Volume I	Building NH-1	D
101	51	4.9	Building NH-1 SAA #64	Miscellaneous	Volume I	Building NH-1	D
104	52	4.10	Building NH-1 SAA #67	Miscellaneous	Volume I	Building NH-1	D
66	53	4.11	Building 212 SAA #29	Paint Miscellaneous	Volume I	Building 212	E
1	54	4.12	Abrasive Blast Area at SWMU #21	Blast Residue	Volume I	Building 1275 Area	E
42	55	4.13	Building 59 SAA #05 (former Boiler Shop)	Paint Glue Miscellaneous	Volume I	Building 59	E
62	56	4.14	Building 2A SAA #25	Adhesives Miscellaneous	Volume I	Building 2A	E
39	57	4.15	Building 35 SAA #02	Petroleum Miscellaneous	Volume I	Building 35	E
86	58	4.16	Building 35 SAA #49	Acids/Metals Alcohol	Volume I	Building 35	E

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 RCRA Facility Assessment
 Solid Waste Management Unit Summary

PAOC Reference	SWMU Number	RFA Section No.	SWMU Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
93	59	4.17	Building 35 SAA #56	Miscellaneous	Volume I	Building 35	E
41	60	4.18	Building 2 <90 Day Accumulation Area #04	Petroleum Products Solvents Paint Miscellaneous	Volume I	Building 2	E
59	61	4.19	Building 228 <90 Day Accumulation Area #22	Adhesives Miscellaneous	Volume I	Building 228	E
45	62	4.20	Building 226 SAA #08	Plating Solution Metal Hydroxide Misc. Plating Supplies/Debris	Volume I	Building 226	E
191	63	4.7	Battery Charging Station (73)	Lead Acids	Volume II	Building 226 Area	E
44	64	4.21	Building 56 SAA #07	Paint Miscellaneous	Volume I	Building 56	E
19	65	4.22	Building 221 Lead Storage	Lead	Volume I	Building 221	E
67	66	4.23	Pier C SAA #30	Miscellaneous	Volume I	Pier C	E
151	67	4.8	Building 3 Gauge Room	Mercury	Volume II	Building 3	E
58	68	4.24	Building 5 SAA #21	Adhesives Paints Miscellaneous	Volume I	Building 5	E
61	69	4.25	Building 5 SAA #24	Paint Adhesives	Volume I	Building 5	E

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 Naval Base Charleston
 RCRA Facility Assessment
 Solid Waste Management Unit Summary

PAOC Reference	SWMU Number	RFA Section No.	SWMU Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
161	70	4.9	Building 5 Dip Tank Area	Copper Chromium Arsenate Miscellaneous	Volume II	Building 5	E
107	71	4.26	Building 44 SAA #70	Petroleum Products Metal Shavings	Volume I	Building 44	E
330	72	4.10	Building 44 <90 Day Accumulation Area	Plating Chemical Wastes	Volume II	Building 44	E
38	73	4.27	Building 43 SAA #01	Petroleum Products Used Coolants Solvents	Volume I	Building 43	E
71	74	4.28	Building 57 SAA #34	Tetrachloroethylene Miscellaneous	Volume I	Building 57	E
115	75	4.29	Drydock #1 SAA #78	Miscellaneous	Volume I	Drydock #1	E
110	76	4.30	Building 32 SAA #73	Miscellaneous	Volume I	Building 32	E
68	77	4.31	Drydock #2 SAA #31	Miscellaneous	Volume I	Drydock #2	E
98	78	4.32	Drydock #2 SAA #61	Paint Miscellaneous	Volume I	Drydock #2	E
90	79	4.33	Building 250 SAA #53	Miscellaneous	Volume I	Building 250	E
168	80	4.11	Building 194 SAA	Miscellaneous	Volume II	Building 194	E
60	81	4.34	Building 1245 <90 Day Accumulation Area #23	Paint Trichloroethane	Volume I	Building 1245	E

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 RCRA Facility Assessment
 Solid Waste Management Unit Summary

PAOC Reference	SWMU Number	RFA Section No.	SWMU Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
106	82	4.35	Building 177 SAA #69	Solvents Xylene Petroleum Products Adhesives Preservatives Acetone, MEK Toluene	Volume I	Building 177	E
—	83	4.36	Building 9	PCBs	Volume I	Building 9	E
21	84	4.37	Building 9 Lead Storage	Lead	Volume I	Building 9	E
40	85	4.38	Building 9 SAA #03 (Boiler Shop)	Paint Debris Petroleum Products Miscellaneous	Volume I	Building 9	E
73	86	4.39	Building 9 <90 Day Accumulation Area #36	Paint Petroleum Products Miscellaneous	Volume I	Building 9	E
48	87	4.40	Building 80 <90 Day Accumulation Area #11	Paint Petroleum Products Mercury Chelating Agents Miscellaneous	Volume I	Building 80	E
109	88	4.41	Building 25 SAA #72	Miscellaneous	Volume I	Building 25	E
47	89	4.42	Building 13 SAA #10	Acids/Metals Lab Samples Freon 133	Volume I	Building 13	E
49	90	4.43	Building 13	Petroleum Products	Volume I	Building 13	E
50	91	4.44	Building 13	Petroleum Products	Volume I	Building 13	E

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 Naval Base Charleston
 RCRA Facility Assessment
 Solid Waste Management Unit Summary

PAOC Reference	SWMU Number	RFA Section No.	SWMU Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
52	92	4.45	Building 13 SAA #15	Acids/Metals (ICP Waste)	Volume I	Building 13	E
80	93	4.46	Building 13 SAA #43	Miscellaneous	Volume I	Building 13	E
82	94	4.47	Building 13 SAA #45	Acids Acids/Metals Alcohol	Volume I	Building 13	E
83	95	4.48	Building 13 SAA #46	Used Analytical Reagents	Volume I	Building 13	E
51	96	4.49	Building 236 <90 Day Accumulation Area #14	Petroleum Products Paint Miscellaneous	Volume I	Building 236	E
57	97	4.50	Building 236 <90 Day Accumulation Area #20	Petroleum Products Solvents Miscellaneous	Volume I	Building 236	E
65	98	4.51	Pier G SAA #28	Paint Miscellaneous	Volume I	Pier G	E
111	99	4.52	Pier G SAA #74	Miscellaneous	Volume I	Pier G	E
63	100	4.53	Building 218 SAA #26	Petroleum Products Paint Sandblast Grit Miscellaneous	Volume I	Building 218	E
99	101	4.54	Building 1173 SAA #62	Miscellaneous	Volume I	Building 1173	E
152	102	4.12	Building 79 Floor	Mercury	Volume II	Building 79	E
114	103	4.55	Pier H SAA #77	Miscellaneous	Volume I	Pier H	E

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 RCRA Facility Assessment
 Solid Waste Management Unit Summary

PAOC Reference	SWMU Number	RFA Section No.	SWMU Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
—	104	4.13	RESERVED		Volume II		E
70	105	4.56	Building 1518 SAA #33	Petroleum Products Paint Miscellaneous	Volume I	Building 1518	E
2	106	4.57	Blast Area Dry Dock #3	Blast Residue	Volume I	Dry Dock #3	E
118	107	4.58	Chapel CBU-412 SAA #T03	Miscellaneous	Volume I	Chapel CBU-412	F
64	108	4.59	Building 187 SAA #27	Miscellaneous	Volume I	Building 187	F
27	109	4.60	Abrasive Blast Media Storage Hoppers	Blast Media	Volume I	Structures 1364, 1365, 1393	F
94	110	4.61	Building 1346 SAA #57	Paint Grease Miscellaneous	Volume I	Building 1346	F
74	111	4.62	Building 241 SAA #37	Paint Miscellaneous	Volume I	Building 241	F
75	112	4.63	Building 241 SAA #38	Paint Miscellaneous	Volume I	Building 241	F
84	113	4.64	Building 241 SAA #47	Paint Petroleum Products Miscellaneous	Volume I	Building 241	F
85	114	4.65	Building 241 SAA #48	Petroleum Products	Volume I	Building 241	F
81	115	4.66	Building 242 SAA #44	Petroleum Products	Volume I	Building 242	F
102	116	4.67	Building 1175 SAA #65	Petroleum Products	Volume I	Building 1175	F

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 RCRA Facility Assessment
 Solid Waste Management Unit Summary

PAOC Reference	SWMU Number	RFA Section No.	SWMU Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
89	117	4.68	Building 249 SAA #52	Paint	Volume I	Building 249	G
164	118	4.14	Pier Z SAA	Miscellaneous	Volume II	Pier Z	G
291	119	4.15	Garbage Handling (1271)	Unknown	Volume II	End of 336	G
26	120	4.69	Pier M Laydown	Paint Lead	Volume I	Pier M	G
113	121	4.70	Building 801 SAA #76	VOCs Metals Petroleum Products Miscellaneous	Volume I	Building 801	H
95	122	4.71	Building 636 SAA #58	Paint Grease Miscellaneous	Volume I	Building 636	H
96	123	4.72	Building 636 SAA #59	Paint Grease Miscellaneous	Volume I	Building 636	H
97	124	4.73	Building 1508 SAA #60	Paint Petroleum Products Miscellaneous	Volume I	Building 1508	H
53	125	4.74	Building 202 SAA #16	Mercuric Nitrate Waste	Volume I	Building 202	H
54	126	4.75	Building 202 SAA #17	Mercuric Nitrate Waste	Volume I	Building 202	H
55	127	4.76	Building 202 SAA #18	Mercuric Nitrate Waste	Volume I	Building 202	H
77	128	4.77	Building 202 SAA #40	Mercuric Nitrate Waste	Volume I	Building 202	H
78	129	4.78	Building 202 SAA #41	Spent OBA Canisters	Volume I	Building 202	H

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 RCRA Facility Assessment
 Solid Waste Management Unit Summary

PADC Reference	SWMU Number	RFA Section No.	SWMU Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
79	130	4.79	Building 202 SAA #42	Petroleum Products	Volume I	Building 202	H
103	131	4.80	Building NS-67 SAA #66	Miscellaneous	Volume I	Building NS-67	H
43	132	4.81	Building 61 SAA #06	Mercuric Nitrate	Volume I	Building 61	H
46	133	4.82	Building 61 SAA #09	Borate Cupric Sulfate Petroleum Products	Volume I	Building 61	H
105	134	4.83	Building 61 SAA #68	Miscellaneous	Volume I	Building 61	H
108	135	4.84	Building 61 SAA #71	Miscellaneous	Volume I	Building 61	H
56	136	4.85	Building NS-53 SAA #19	VOCs Metals Petroleum Products Miscellaneous	Volume I	Building 53	H
72	137	4.86	Building 675 SAA #35	Miscellaneous	Volume I	Building 657	H
88	138	4.87	Building 1776 SAA #51	VOCs Waste Oil Petroleum Products Antifreeze	Volume I	Building 1776	H
165	139	4.16	Pier P SAA	Miscellaneous	Volume II	Pier P	I
166	140	4.17	Pier P SAA	Miscellaneous	Volume II	Pier P	I
116	141	4.88	Pier Q SAA #T01	Paint Miscellaneous	Volume I	Pier Q	I
87	142	4.89	Building 681 SAA #50	Paint Miscellaneous	Volume I	Building 681	I

Table 1-2
 Naval Base Charleston
 RCRA Facility Assessment
 Area of Concern Summary

PAOC Reference	AOC Number	RFA Section No.	AOC Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
170	500	5.1	UXO Site Between Piers S and T	2 Mark 47 TORPEX Loaded Depth Bombs	Volume I	Between Piers S and T	J
171	501	5.2	UXO Site in Cooper River East of Buildings X54 and X55	2 Mark 47 TORPEX Loaded Depth Bombs	Volume I	Cooper River	J
—	502	5.3	UXO Site Between Piers G and H	Three 5-inch Unexploded Shells at About 40 Feet Below MVL	Volume I	Between Piers G and H	J
172	503	5.4	UXO Site South of Building 665	2 Mark 17 Depth Bombs	Volume I	South of Bldg. 665	H
—	504	5.1	Railroad System	Petroleum Products Batteries Lead Acids Coal Unknowns	Volume II	Basewide	V
218	505	5.2	Creosote Cross-Tie/Ballast Storage Area	Creosote	Volume II	Area of Bldg. 1803	A
295	506	5.3	Flammable Storage Shelter (1629)	Unknown	Volume II	North of Bldg. 1603	A
180	507	5.4	Oil Storehouse (1010)	Petroleum Products	Volume II	Golf Course Area (1410)	B
224	508	5.5	Incinerator (19)	Petroleum Products Metals	Volume II	North of Avenue D	B
284	509	5.6	Hazardous/Flammable Storage (1079)	Unknown	Volume II	Along West Property Border	C
323	510	5.7	General Purpose Laboratory (NH-21)	Methyl Ethyl Ketone Acetone Methylene Chloride Solvents	Volume II	Avenue H	C

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 RCRA Facility Assessment
 Area of Concern Summary

PAOC Reference	AOC Number	RFA Section No.	AOC Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
181	511	5.8	Oil House (16)	Petroleum Products	Volume II	Bldg. 672 Area	C
239	512	5.9	Incinerator Building (67)	Petroleum Products Metals Combustion Products	Volume II	SW of Storage Area	C
155	513	5.10	Parking Lot/Old Morgue	Formaldehyde Miscellaneous	Volume II	SE of Bldg. NH-45	C
31 March 1993	514	5.11	Flammable Storage (1813)	Unknown	Volume II	South of NH-55	C
192	515	5.12	Building 51 Incinerator (1920s-1930s), Paint Shop (1930s-1940s)	Paints Solvents Unknowns	Volume II	Area West of Bldg. 233	C
29	516	5.5	Building 233 Wash Area	Acid Petroleum Products	Volume I	Building 233	C
159	517	5.13	Building M-192 Range	Lead Metals Miscellaneous	Volume II	Building M-192	C
189	518	5.14	Coal Bins	Coal and Coal Byproducts	Volume II	Bldg. M-1257 Area	C
285	519	5.15	Boilerhouse (1081) (not in use)	Petroleum Products	Volume II	South of Turnbull Ave.	C
319	520	5.16	Garbage House (M-1051)	Unknown	Volume II	North of 2nd Street	C
187	521	5.17	Oil Storehouse (1052)	Petroleum Products	Volume II	Building M-1262 Area	C
321	522	5.18	Grease and Wash Building (M-1252)	Petroleum Products	Volume II	SW of Bldg. 198	C

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 Area of Concern Summary

PAGC Reference	AOC Number	RFA Section No.	AOC Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
320	523	5.19	Gas Station Storage (M-1234)	Petroleum Products	Volume II	South of Bldg. 198	C
315	524	5.20	Substation (415A)	PCBs Petroleum Products	Volume II	Along Carolina Avenue	D
13	525	5.6	Building 223 Paint Shop	Paint	Volume I	Building 223	E
11	526	5.7	Building 212 Paint Area	Paint	Volume I	Building 212	E
227	527	5.21	Transformer House (24)	PCBs Petroleum Products	Volume II	Building 2 Area	E
134	528	5.22	Building 59 Steam Cleaning Shop	Grease Waste Oil Miscellaneous	Volume II	Building 59	E
6	529	5.8	Building 2A Coating and Spray Systems	Aluminum Miscellaneous	Volume I	Building 2A	E
183	530	5.23	Paint and Oil Storage (Facility 35)	Paints Possible Solvents Petroleum Products	Volume II	Building 35	E
269	531	5.24	Switching Substation (459)	PCBs Petroleum Products	Volume II	West of Building 35	E
132	532	5.25	Building 2 Copper Tank	Copper	Volume II	Building 2	E
256	533	5.26	Switching Substation - Formerly Building 460/1965 (138)	PCBs Petroleum Products	Volume II	SE corner of Building 2	E
230	534	5.27	Latrine (27)	Organic Wastes Heavy Metals	Volume II	East of Building 2	E

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Naval Base Charleston
RCRA Facility Assessment
Area of Concern Summary

PAOC Reference	AOC Number	RFA Section No.	AOC Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
231	535	5.28	Latrine (28)	Organic Wastes Heavy Metals	Volume II	East of Building 2	E
270	536	5.29	Switching Substation (460)	PCBs Petroleum Products	Volume II	North of Building 74	E
266	537	5.30	Substation (342)	PCBs Petroleum Products	Volume II	Attached to Building 228	E
28	538	5.9	Building 6 Forge Shop	Lead	Volume I	Building 6	E
130	539	5.31	Building 6	Zyglo	Volume II	Building 6	E
240	540	5.32	Plating Plant - Formerly Building 226/1975 (73)	Heavy Metals Cyanides	Volume II	NE corner of Building 3	E
185	541	5.33	Oil Storage Shops (38)	Petroleum Products	Volume II	Building 226 Area	E
184	542	5.34	Building (22) Acetylene Plant (1922-1930s) Paint Shop (1930s-1950s)	Acetylene Paints Possible Solvents	Volume II	Building 226 Area	E
326	543	5.35	Plating Plant Formerly Building 226 (NSC1026)	Zinc Inorganic Acids	Volume II	Building 3 Area	E
18	544	5.10	Building 221 Pickling Plant	Lead Miscellaneous	Volume I	Building 221	E
7	545	5.11	Building 3 Surface Coating	Epoxy Miscellaneous	Volumes I	Building 3	E
280	546	5.36	Galvanizing Shop (1025)	Zinc Inorganic Acids	Volume II	Between South end of Bldgs 56 and 74	E

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 RCRA Facility Assessment
 Area of Concern Summary

PAOC Reference	AOC Number	RFA Section No.	AOC Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
133	547	5.37	Building 5 Fiberglass Shop	Fiberglass Process Resins Miscellaneous	Volume II	Building 5	E
154	548	5.38	Building 5 Elevator	Hydraulic Oil	Volume II	Building 5	E
190	549	5.39	Scrap Yard (1054)	Metals Miscellaneous	Volume II	Building 5 Area	E
286	550	5.40	Boilerhouse for Marine Corps (1111)	Petroleum Products	Volume II	North of Pier 314 and East of 1041A	E
287	551	5.41	Boilerhouse, Pier 314 (1119)	Petroleum Products	Volume II	SE of Building 3	E
281	552	5.42	Galvanizing Shop (1030)	Zinc Inorganic Acids	Volume II	NE corner of Dry Dock #1	E
255	553	5.43	Service Station (136)	Petroleum Products Solvents Degreasers	Volume II	South of Bldg. 1295	E
274	554	5.44	Paint Shop/Locomotive Shed (1003)	Heavy Metals Acetone Xylenes Toluene	Volume II	North of Building 1021	E
232	555	5.45	Latrine and Substation, Pier 314 (29)	Organic Wastes Heavy Metals PCBs	Volume II	SE side of Building 1119	E
17	556	5.12	Dry Dock Discharges	Miscellaneous	Volume I	Drydocks	E
279	557	5.46	Latrine (1020)	Organic Wastes Heavy Metals	Volume II	South of Dry Dock #1	E

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 RCRA Facility Assessment
 Area of Concern Summary

PAOC Reference	AOC Number	RFA Section No.	AOC Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
242	558	5.47	Substation (77)	PCBs Petroleum Products	Volume II	South of Dry Dock #1	E
234	559	5.48	Central Power Station (32)	Petroleum Products Combustion Products PCBs	Volume II	Building 32	E
235	560	5.49	Disinfector (34)	Unknown	Volume II	South of Bldg. 32	E
316	561	5.50	Substation (451B)	PCBs Petroleum Products	Volume II	Along Carolina Avenue	E
243	562	5.51	Substation (84)	PCBs Petroleum Products	Volume II	South of Dry Dock #2	E
237	563	5.52	Locomotive House (37)	Solvents and Degreasers	Volume II	Building 177 Area	E
—	564	5.53	Disposal Pit Building 80	Unknown	Volume II	North Side Building 80	E
275	565	5.54	Temporary Coal Bin (1006)	Coal and Coal Byproducts	Volume II	End of Dry Dock #5	E
135	566	5.55	Building 194	Paint	Volume II	Building 194	E
241	567	5.56	Substation (75)	PCBs Petroleum Products	Volume II	East of Building 195	E
229	568	5.57	Latrine, Pier 317 (26)	Organic Wastes Heavy Metals	Volume II	Beside Building 75	E
238	569	5.58	Oil and Gasoline Service Station (40)	Solvents Degreasers Petroleum Products	Volume II	Attached to SW Corner of Bldg. 30	E
179	570	5.59	Coal Storage Area	Coal Byproducts	Volume II	Bldg. 1199 Area	E

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 Area of Concern Summary

PAOC Reference	AOC Number	RFA Section No.	AOC Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
9	571	5.13	Building 177 Paint Booths	Paint	Volume I	Building 177	E
33	572	5.14	Building 177 Motor Area	Petroleum Products Miscellaneous	Volume I	Building 177	E
137	573	5.60	Building 177 Anodizing	Miscellaneous	Volume II	Building 177	E
31	574	5.15	Building 9 Fuel Tank	Petroleum	Volume I	Building 9	E
267	575	5.61	Substation (454)	PCBs Petroleum Products	Volume II	Attached to Building 80	E
276	576	5.62	Oil and Paint Storehouse/Print Office (1012)	Heavy Metals Paints Solvents	Volume II	Building 80 Area	E
8	577	5.16	Building 25 Paint Booth	Paint	Volume I	Building 25	E
228	578	5.63	Transportation Shop and Garage (25)	Petroleum Products Lead Solvents Degreasers	Volume II	SW of Bldg. 177	E
282	579	5.64	Paint Shop (1035)	Paints Heavy Metals	Volume II	East of Building 1178	E
221	580	5.65	Pattern and Electric Shop (10)	Lead, Zinc, Solvents Degreasers	Volume II	South of Building 10	E
225	581	5.66	Waterfront Substation and Radio Lab (20)	PCBs	Volume II	Building 236 Area	E
268	582	5.67	Substation (455)	PCBs Petroleum Products	Volume II	North of Building 236	E

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Area of Concern Summary

PADC Reference	AOC Number	RFA Section No.	AOC Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
138	583	5.68	NE Corner Building 236	Freon Petroleum Products	Volume II	Building 236	E
318	584	5.69	Substation (451H)	PCBs Petroleum Products	Volume II	South of Dry Dock #5	E
236	585	5.70	Latrine for Enlisted Men (36)	Organic Wastes Heavy Metals	Volume II	End of 5th Street and near end of Pier 317-D	E
277	586	5.71	Temporary Powerhouse (1014)	PCBs	Volume II	SE of Building 11	E
226	587	5.72	Aviation Gas Storage (21)	Petroleum Products Lead	Volume II	East of Building 11	E
12	588	5.17	Building 218 Paint Booth	Paint	Volume I	Building 218	E
244	589	5.73	Substation (85)	PCBs Petroleum Products	Volume II	By River Road	E
139	590	5.74	Alley Between Bldgs. 79 and 1760	Acetone Petroleum Products	Volume II	Between 79 & 1760	E
—	591	5.75	RESERVED		Volume II		E
199	592	5.76	Asbestos Shredding Shelter (1225)	Asbestos As Waste	Volume II	South of Building 1760	E
296	593	5.77	Incinerator (1711)	Organic Wastes Heavy Metals	Volume II	Building 79 Area	E
258	594	5.78	Radcon Training & Offices (190)	Unknown	Volume II	South of 317-E	E

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 Area of Concern Summary

PDOC Reference	AOC Number	RFA Section No.	AOC Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
278	595	5.79	Ordnance Wrecking Magazine/Oil & Paint Storehouse (1018)	Petroleum Products Paints Heavy Metals	Volume II	SW of Building 101	E
186	596	5.80	Torpedo Storage (101) Machine Shop Galvanizing Plant	Explosives Propellants Solvents/Degreasers Miscellaneous	Volume II	Building 101 Area	E
245	597	5.81	Substation (91)	PCBs Petroleum Products	Volume II	North of 317F	E
153	598	5.82	Sonar Dome Area	Blast Residue Paint Miscellaneous	Volume II	End of Pier J	E
24	599	5.18	Pier J Pump House	Diesel Fuel	Volume I	Pier J	E
307	600	5.83	Coaling Pier/Oil Pier (318-L)	Petroleum and Coal Products	Volume II	317-F Area	E
264	601	5.84	Oil Pier (319)	Petroleum Products	Volume II	End of 317-F	E
247	602	5.85	Substation (95)	PCBs Petroleum Products	Volume II	SW of Dry Dock #3	E
188	603	5.86	Burning Dump	Unknown	Volume II	Drydock #3 Area	E
248	604	5.87	Substation (96)	PCBs Petroleum Products	Volume II	SW of Dry Dock #4	E
144	605	5.88	Building 1278 Southwest Area	Miscellaneous	Volume II	Building 1278	E

Table 1-2
 Naval Base Charleston
 RCRA Facility Assessment
 Area of Concern Summary

PAOC Reference	AOC Number	RFA Section No.	AOC Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
10	606	5.19	Building 187 Paint Booth	Paint	Volume I	Building 187	F
20	607	5.20	Building 1189 Dry Cleaning	Miscellaneous	Volume I	Building 1189	F
289	608	5.89	Paint Storage (1263)	Paints Heavy Metals	Volume II	SW of Bldg. 1346	F
22	609	5.21	Building 1346 Gas Station	Ethylene Glycol Petroleum Products	Volume I	Building 1346	F
14	610	5.22	Building 241 Paint Booth	Paint	Volume I	Building 241	F
290	611	5.90	Grease Rack and Hobby Shop (1264)	Petroleum Products Solvents Degreasers Methylene Chloride	Volume II	Football Field Area	F
246	612	5.91	Substation (94)	PCBs Petroleum Products	Volume II	SE on Building 1172	F
148	613	5.92	Between Buildings 241, 242, 255 (Old Locomotive Shop)	Petroleum Products	Volume II	Between Bldgs. 242, 242, 255	F
15	614	5.23	Building 242 Paint Booth	Paint	Volume I	Building 242	F
147	615	5.93	Parking Lot/North Northeast of Building 240	Epoxies and Resins	Volume II	Parking Lot NNE of Bldg. 240	F
288	616	5.94	Paint Shop (1201)	Paints Heavy Metals	Volume II	SW of Drydock #3	F
141	617	5.95	Building 69 Former Galvanizing Area	Metals Miscellaneous	Volume II	Building 69	F

Table 1-2
 Naval Base Charleston
 RCRA Facility Assessment
 Area of Concern Summary

PAOC Reference	AOC Number	RFA Section No.	AOC Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
271	618	5.96	Switching Substation (466)	PCBs Petroleum Products	Volume II	NW of Bldg. 68	F
198	619	5.97	Oil Storage Yard	Petroleum Products	Volume II	Area of Bldgs. 1824, 1836, 316, 381	F
142	620	5.98	Building 68 Battery Shop	Acid Metals	Volume II	Building 68	F
149	621	5.99	Building 68 Battery Cracking Area	Lead Acids	Volume II	Building 68	F
306	622	5.100	Ballast Water Treatment Facility (3926)	Organic Wastes Heavy Metals	Volume II	North of Oil Tanks	G
257	623	5.101	Stripper Concrete Tank (148)	Acetone Methylene Chloride	Volume II	SW of Bldg. 98	G
249	624	5.102	Fuel Oil Booster Pumphouse (98)	Petroleum Products	Volume II	West of Hobson Ave.	G
309	625	5.103	Sludge Pumphouse (3901B)	Organic Wastes Heavy Metals	Volume II	NW of Oil Tanks	G
25	626	5.24	NSC Fuel Farm	Petroleum	Volume I	Fuel Farm Area	G
177	627	5.104	Oil Spill Area at Hobson and Viaduct Road	Petroleum Products	Volume II	Hobson and Viaduct Roads	G
145	628	5.105	Building 68 Southeast Area	Paint Blast Residue	Volume II	Building 68	G
304	629	5.106	Tank Truck/Car Loading/Unloading Facility (3913)	Petroleum Products Waste Oil	Volume II	South of Drydock #4	G

Table 1-2
Naval Base Charleston
RCRA Facility Assessment
Area of Concern Summary

PAOC Reference	AOC Number	RFA Section No.	AOC Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
305	630	5.107	POL Sampling/Test Building (3914)	Petroleum Products	Volume II	South of Drydock #4	G
265	631	5.108	Fueling Pier K (325)	Petroleum Products	Volume II	End of 13th Street	G
252	632	5.109	Substation (124)	PCBs Petroleum Products	Volume II	South of Bldg. 325	G
317	633	5.110	Substation (451C)	PCBs Petroleum Products	Volume II	West of Bldg. 224	G
301	634	5.111	Flammable Storage Shelter (1814)	Unknown	Volume II	SW of Bldg. 224	G
212	635	5.112	Paint and Oil Storehouse (3902)	Paints Petroleum Products Solvents Degreasers	Volume II	Building 3902	G
195	636	5.113	Torpedo Magazine (160, 161, 162)	Explosives Propellants	Volume II	Building 161	G
196	637	5.114	Dump Area	Unknown	Volume II	Bldg. 161 Area	G
194	638	5.115	Torpedo Workshop (132)	Explosives Propellants	Volume II	Building 132	G
193	639	5.116	Alcohol Storage	Alcohol	Volume II	Building 132 Area	G
322	640	5.117	Fuel Oil Pier (322)	Petroleum Products	Volume II	South of 337	G
308	641	5.118	Stripper Pumphouse (39-K)	Acetone Methylene Chloride	Volume II	Base of 336	G
200	642	5.119	Pistol Range	Lead Explosives	Volume II	Parking Lot Bldgs. X-10, X-12, 1431	G

Table 1-2
 Naval Base Charleston
 RCRA Facility Assessment
 Area of Concern Summary

PAOC Reference	AOC Number	RFA Section No.	AOC Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
253	643	5.120	Substation (125)	PCBs Petroleum Products	Volume II	Base of 327	G
299	644	5.121	Substation (1793)	PCBs Petroleum Products	Volume II	North of 327	G
313	645	5.122	Transformer Vault (3906S)	PCBs Petroleum Products	Volume II	Chicora Tank Farm	G
311	646	5.123	Operational Storage (3906Q)	Unknown	Volume II	Chicora Tank Farm	G
312	647	5.124	Transformer Vault (3906R)	PCBs Petroleum Products	Volume II	Chicora Tank Farm	G
206	648	5.125	Transformer Vault	PCB Oils	Volume II	West of Building 672	H
215	649	5.126	Braswell Shipyards, Inc. Storage Area	UnKnown	Volume II	East of Bldg. 672	H
216	650	5.127	Metal Trades, Inc. Storage Area	Unknown	Volume II	East of Bldg. 672	H
—	651	5.128	Sandblasters, Inc. Storage Area	Unknown	Volume II	East of Bldg. 672	H
4	652	5.25	Building 636 Spray Booth	Paint	Volume I	Building 636	H
30	653	5.26	Building 150B MWR Hobby Shop	Petroleum Products Paint Miscellaneous	Volume I	Building 150B	H
297	654	5.129	Septic Tank and Drain Field (1718) (abandoned)	Organic Wastes Heavy Metals	Volume II	Bldg. 661 Area	H
176	655	5.130	Oil Spill Area Behind Base Exchange	Petroleum Products	Volume II	Behind Base Exchange	H

Table 1-2
Naval Base Charleston
RCRA Facility Assessment
Area of Concern Summary

PAOC Reference	AOC Number	RFA Section No.	AOC Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
123	656	5.131	Between Buildings 602 & NS-71	Petroleum Products	Volume II	Between Bldgs 602 and NS-71	H
272	657	5.132	Engine Overhaul Facility (645)	Solvents Degreasers Petroleum Products Chlorofluorocarbons	Volume II	Building 645	H
261	658	5.133	Gas Storage (203)	Petroleum Products	Volume II	East of Bldg. 1303	H
222	659	5.134	Diesel Storage (14)	Petroleum Products	Volume II	South of Hobson Ave.	H
213	660	5.135	Mosquito Control (31)	Pesticides	Volume II	Bldg. NS-6 Area	H
210	661	5.136	Explosives Storage	Explosives	Volume II	Area South of Bldg. 601	H
36	662	5.27	Building NS-54 Former Gas Station	Petroleum Products	Volume I	Building NS-54	H
273	663	5.137	Gas/Diesel Pumping Station (851)	Petroleum Products	Volume II	East of Bldg. 1817	H
329	664	5.138	Transformer Vault (X33A)	PCBs Petroleum Products	Volume II	Bldg. NS-53 Area	H
203	665	5.139	Pyrotechnic Storage (159)	Pyrotechnic Explosives	Volume II	Bldg. 1889 Area	H
325	666	5.140	Fuel Storage (NS-45)	Petroleum Products	Volume II	By Osprey Street	H
32	667	5.28	CBU-412 Vehicle Area	Petroleum Products	Volume I	CBU-412	H
302	668	5.141	Hazardous Material Storage (1899)	Oxygen Acetylene Welding Supplies	Volume II	SW of Bldg. 1776	H
156	669	5.142	Building 1888 Range	Lead	Volume II	Building 1888	H

Table 1-2
Naval Base Charleston
RCRA Facility Assessment
Area of Concern Summary

PAOC Reference	AOC Number	RFA Section No.	AOC Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
158	670	5.143	Field South of Building 1897	Lead Miscellaneous	Volume II	Field South of Bldg. 1897	H
310	671	5.144	Meter House (Gasoline) (3905G)	Petroleum Products	Volume II	North of Hobson	I
254	672	5.145	Substation (126)	PCBs Petroleum Products	Volume II	North of Hobson Ave.	I
211	673	5.146	Paint and Oil Storehouse (169) Flammable Storehouse	Paints Petroleum Products Solvents Degreasers	Volume II	Building 169	I
328	674	5.147	Paint Storage (RTC 4)	Paints Heavy Metals Solvents	Volume II	South of Building 330	I
324	675	5.148	Fuel Oil Storage (NS-4)	Petroleum Products	Volume II	Along Thompson Ave.	I
217	676	5.149	Incinerator	Unknown	Volume II	Area of Bldg. NS-2	I
23	677	5.29	Building NS-2 Grounds	Petroleum Products	Volume I	Building NS-2	I
201	678	5.150	Firefighting School (2-V)	Petroleum Products	Volume II	Building NS-1 Area	I
202	679	5.151	Wash Rack	Paint Petroleum Products	Volume II	Building NS-1 Area	I
126	680	5.152	Building NS-26 NE Side	Asbestos As Waste	Volume II	Building NS-26	I
3	681	5.30	Blast Booth Building 681	Blast Residue	Volume I	Building 681	I
5	682	5.31	Building 681 Spray Booth	Miscellaneous	Volume I	Building 681	I

Table 1-2
 Naval Base Charleston
 RCRA Facility Assessment
 Area of Concern Summary

PAOC Reference	AOC Number	RFA Section No.	AOC Name	Materials Released, Stored, or Disposed	RFA Volume No.	Location	Study Zone
205	683	5.153	Transformer Vault	PCB Oils	Volume II	Building 678 Area	I
157	684	5.154	Old Pistol Range (1888)	Lead	Volume II	Building 1888	I
204	685	5.155	Smoke Drum (157)	Unknown	Volume II	Partridge Ave. and Juneau Ave. Area	I
207	686	5.156	High Explosive Storage (54)	Explosives	Volume II	Building X-54	I
208	687	5.157	High Explosive Storage (55)	Explosives	Volume II	Building X-55	I
209	688	5.158	High Explosive Storage (56)	Explosives	Volume II	Building X-56	I
127	689	5.159	Southern Tip of Base	Dioxins	Volume II	Southern Tip of Base	I
160	690	5.160	Spoils Area Road	Chemical Wastes Miscellaneous	Volume II	South End of Base	I
120	691	5.161	Waterfront	Petroleum Products	Volume II	Waterfront	J
162	692	5.162	Free Oil from Areas Along Cooper River	Petroleum Products	Volume II	Waterfront	J
250	693	5.163	Fuse and Primer House (117)	Petroleum Products Reactives	Volume II	Along Submerged Dredge Line	K
178	694	5.164	Former Naval Ammunition Depot	Explosives Heavy Metals	Volume II	Clouter Creek Dredge Area	K
251	695	5.165	Electric Locomotive Shed (119)	Solvents Degreasers	Volume II	SW of Bldg. 117	K

2.0 DESCRIPTION OF FACILITY OPERATIONS AND WASTE GENERATION

See RCRA Facility Assessment dated August 1987 produced by EBASCO Services Inc. under USEPA contract.

3.0 ENVIRONMENTAL SETTING

See RCRA Facility Assessment dated August 1987 produced by EBASCO Services Inc. under USEPA contract.

4.0 SOLID WASTE MANAGEMENT UNITS

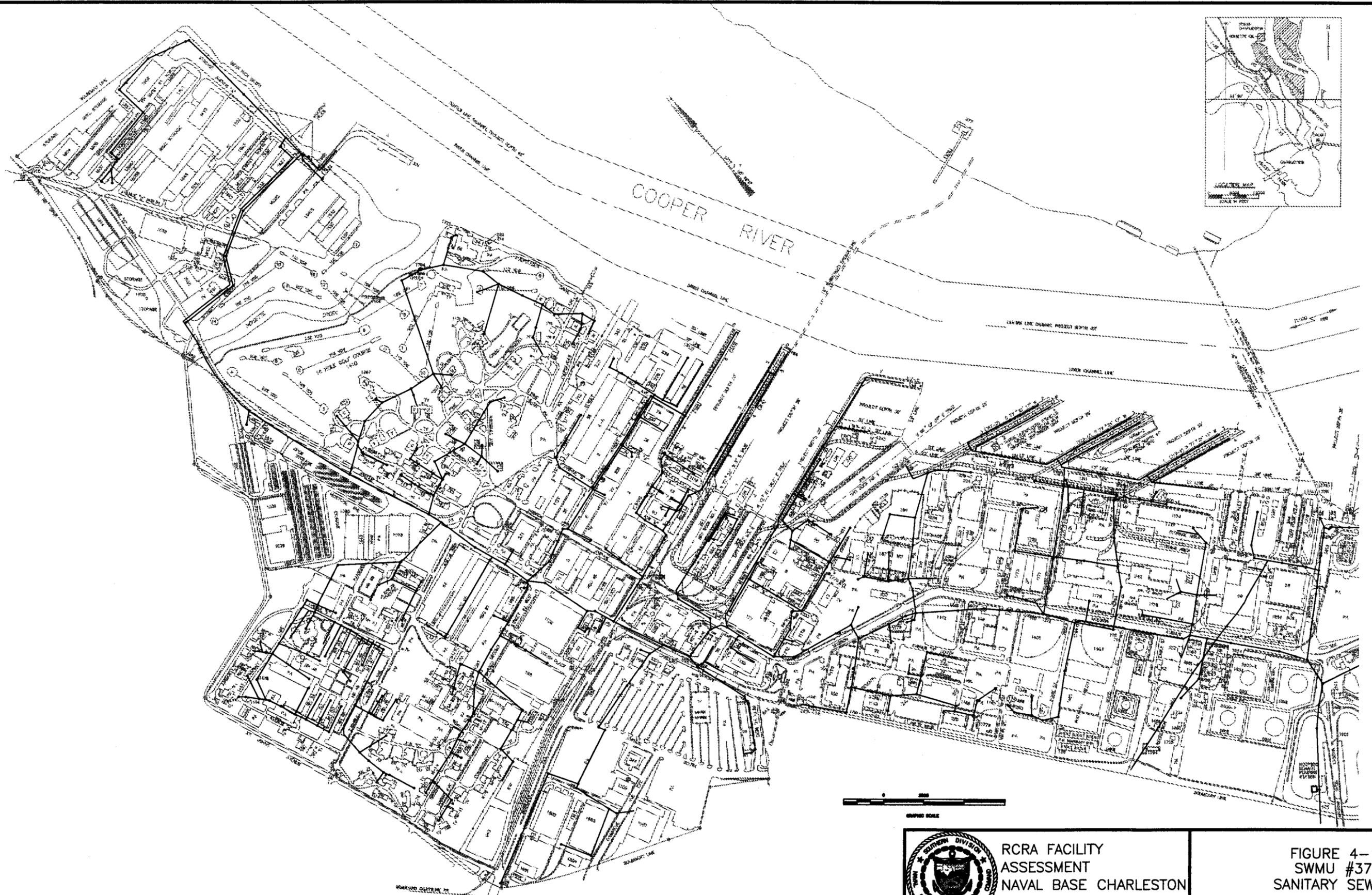
4.1 SWMU #37 — Sanitary Sewer System

4.1.1 Unit Characteristics

The sanitary sewer system serving Naval Base Charleston consists of approximately 90,000 linear feet of gravity sewers and 22 pump stations with associated force mains. Most lines are constructed of vitrified clay while others are constructed of ductile iron and PVC. All wastewater generated at the Naval Base is collected by one of two trunk lines. One serves the Naval Shipyard portion of the base while the other trunk serves the remainder of the base. Wastewater entering the system is from five major sources: residential areas, commercial facilities, industrial facilities, medical facilities, and Naval vessels. Wastewater is routed into the North Charleston Sewer District (NCSD) system where it receives secondary biological treatment prior to being discharged into the Cooper River. The *Wastewater Facilities Evaluation, Charleston Naval Base, Charleston, S. C.*, [September, 1990] by Davis and Floyd, Inc. identifies specific problems with the existing sanitary sewer system. According to the report, infiltration inflow estimated at 0.75 million gallons/day accounted for approximately 45 percent of the daily average flow. The report identified the major sources of infiltration inflow as storm sewer cross connections and groundwater infiltration. The "most serious storm sewer connections" included oil-water separators at the Fire Fighter Training facility (SWMU #13). Figure 4-1 shows a schematic of the present sanitary sewer system.

4.1.2 Waste Characteristics

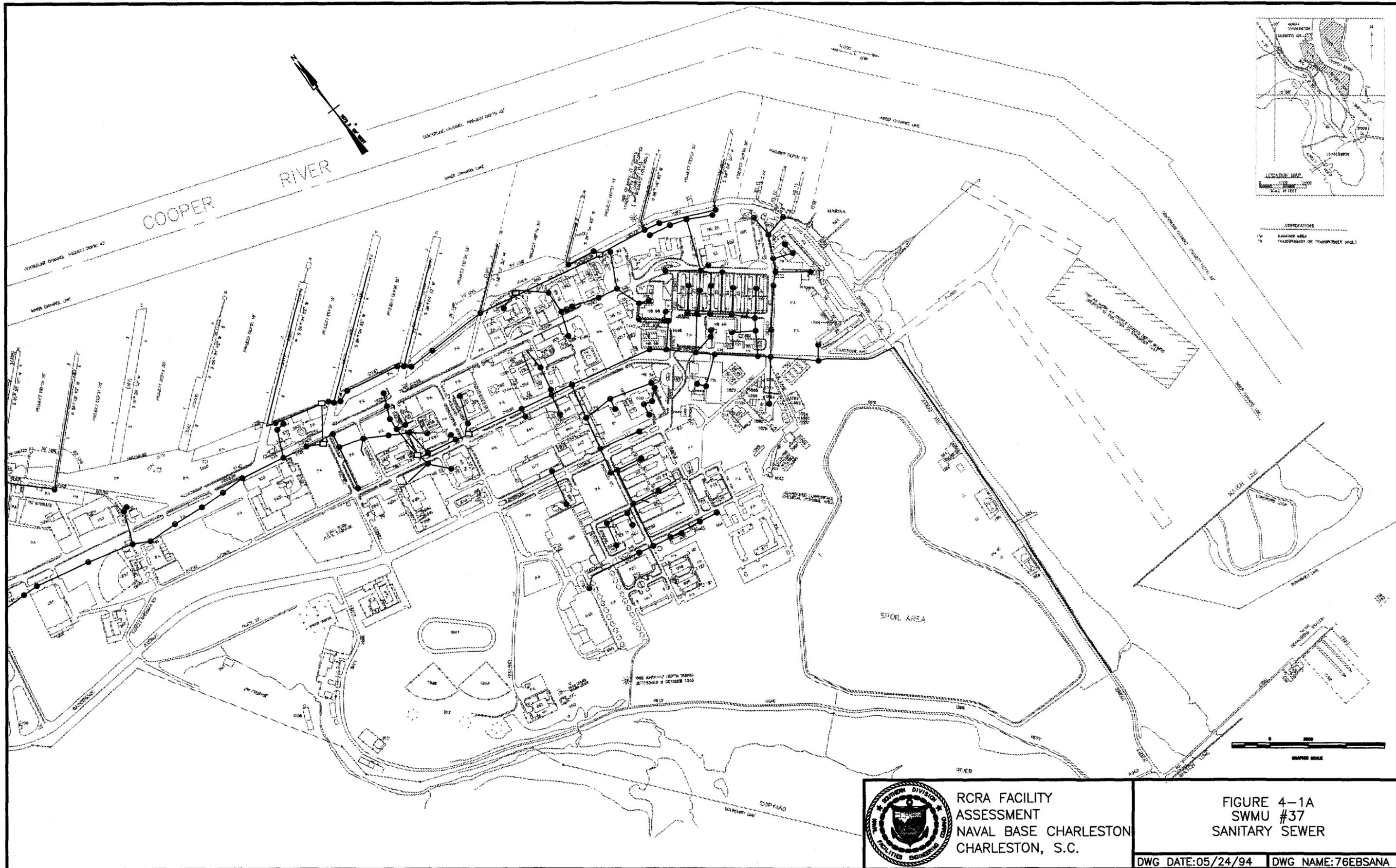
Routine monitoring for compliance with the NCSD Non-Domestic Wastewater Discharge Permit and documented discharges from industrial facilities has identified heavy metals, petroleum hydrocarbons, chlorinated solvents, surfactants, acids, caustic solutions, organotin, and tributyltin in compounds as likely to be or to have been present in the wastewater discharges.



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CHARLESTON, S.C.

FIGURE 4-1
SWMU #37
SANITARY SEWER

DWG DATE:02/25/94 | DWG NAME:76EBSANB



RCRA FACILITY ASSESSMENT
 NAVAL BASE CHARLESTON
 CHARLESTON, S.C.

FIGURE 4-1A
 SWMU #37
 SANITARY SEWER

DWG DATE: 05/24/94 DWG NAME: 76EBSANA

4.1.3 Migration Pathways

Due to the nature of sewer line construction, a certain amount of leakage/infiltration is expected. As a consequence, soil and groundwater at leakage points would probably serve as a contaminant migration pathway. Data suggest that tidal fluctuations influence infiltration inflow. If groundwater infiltration is occurring at high tide, it is reasonable to assume leakage at low tide. Numerous connections exist between the sanitary sewer system and the storm sewer system. The waters of the Cooper River could act as a contaminant migration pathway since they receive the discharge from the storm sewer system.

4.1.4 Evidence of Release

Numerous environmental incident reports are on file with Code 106 regarding discharges of various materials to the sanitary system. Most of these reports concern releases to the system that were in violation of the NCSD discharge permit requirements; however, the noted cross connections between the oil-water separators and storm sewer have resulted in discharges of wastes to the Cooper River.

4.1.5 Exposure Potential

There appears to be significant risk to human health and the environment due to the questionable integrity of the sewer line and potential for direct discharges to the Cooper River via the storm drains.

4.1.6 Recommended Action

A RFI is recommended for the sanitary sewer system.

4.2 SWMU #39 — Former POL Drum Storage Area, Building 1604

4.2.1 Unit Characteristics

SWMU #39 is a former storage area for petroleum, oil, and lubricant (POL) drums located on an asphalt-paved area north of Building 1604. POL drum storage operations were discontinued (date unknown) and the area is currently an outdoor storage yard for DRMO. No POL containers were observed during a site visit on February 3, 1994. The SWMU Site Location Map locates the unit within Naval Base Charleston. Figure 4-2 depicts the location of the SWMU in relation to Building 1604.

4.2.2 Waste Characteristics

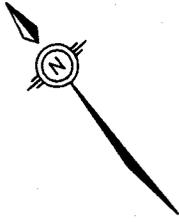
This SWMU is a former POL drum storage site and the waste constituents associated with it are likely to be petroleum-related. No inventory of POL or other hazardous wastes possibly stored here was available.

4.2.3 Migration Pathways

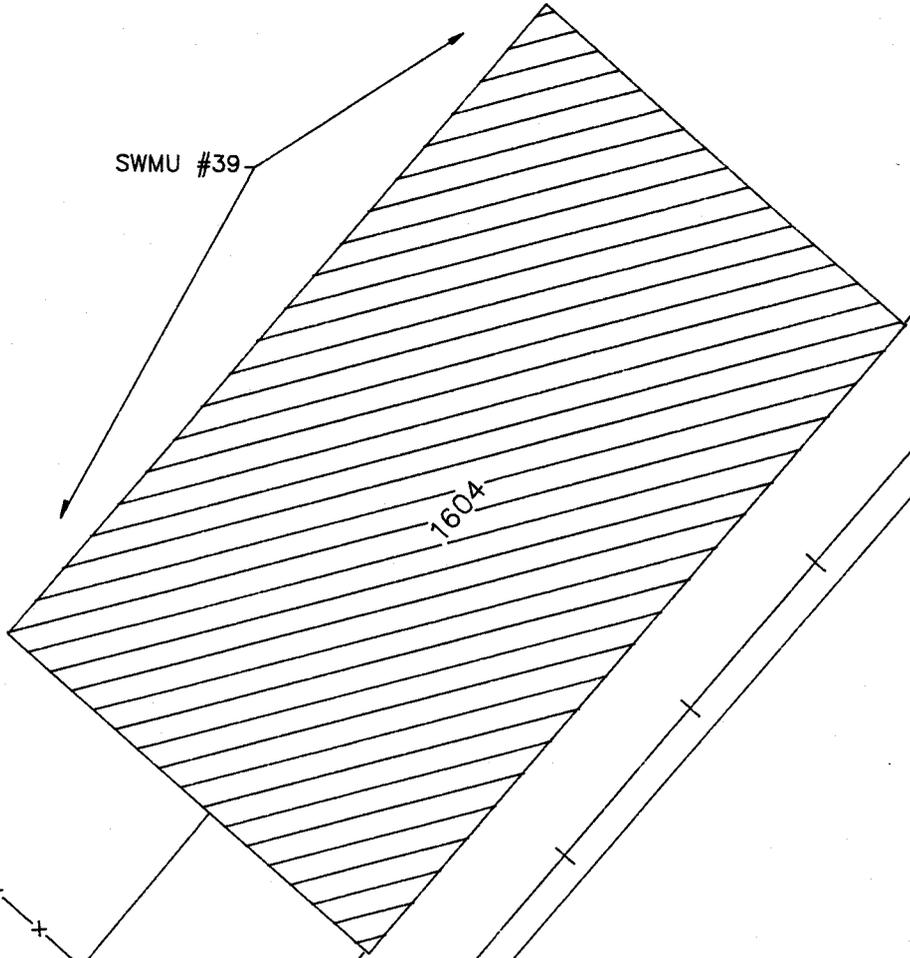
Should any of the liquid previously stored here have reached the asphalt, it would have likely flowed to the stormwater catch basin, then directly to the Cooper River. The potential for migration of contaminants through the asphalt to the underlying soil and shallow groundwater is possible. Soil gas migration is also considered a viable pathway if vapors resulting from the volatilization of petroleum hydrocarbons trapped were to accumulate.

4.2.4 Evidence of Release

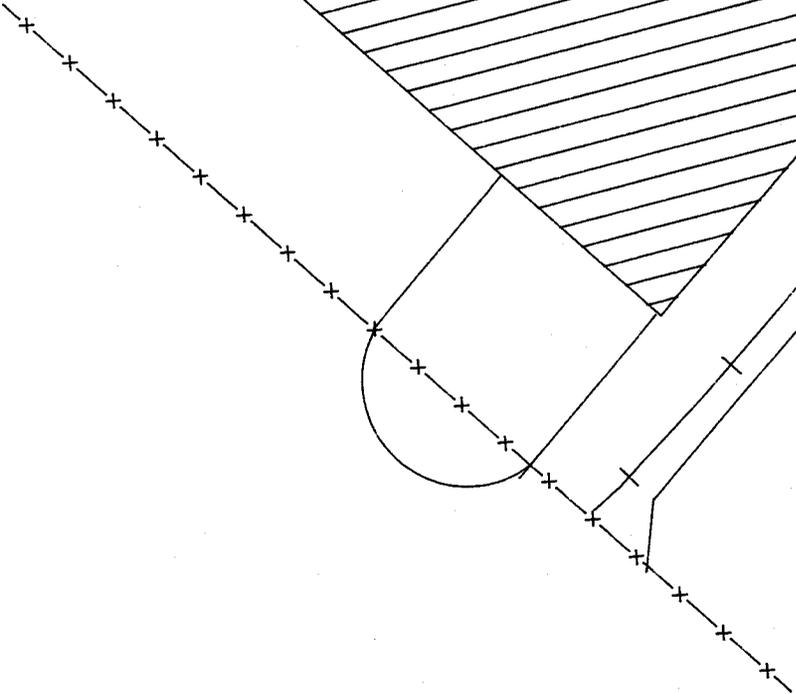
Past excavations have revealed petroleum-contaminated soil. No spill reports, inspection reports, employee interviews or visual observations indicated the incidence of spills at this unit. No sampling has been conducted to assess the contamination potential at this SWMU.



SWMU #39



1604



NOT TO SCALE



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NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 4-2
SWMU #39
BUILDING 1604, POL DRUM STORAGE

DWG DATE: 05/19/94 DWG NAME: 27N1604

4.2.5 Exposure Potential

Since the area is no longer used for storage, the current potential impacts this site may have on the Cooper River is thought to be minimal. There is evidence that releases have occurred which creates a potential risk for exposure to site workers, particularly those whose job may require excavation in the area.

4.2.6 Recommended Action

Due to the evidence of past releases and lack of a thorough assessment of potential hazards associated with these releases, a RFI is recommended.

4.3 SWMU #40 — DRMO, Building 1640

4.3.1 Unit Characteristics

This unit is a storage area operated by the Naval Shipyard with Defense Reutilization and Marketing Office (DRMO) oversight for hazardous waste awaiting shipment for disposal. Building 1640 is a 36,000 square foot structure with 14 module bays built circa 1989 to RCRA Part B specifications for the purpose of storing hazardous wastes. The SWMU Site Location Map locates Building 1640 within Naval Base Charleston. Figure 4-3 locates the AOC within Building 1640.

During a site survey conducted in January 1994, the site appeared clean and containers of various sizes were stored in designated locations, both on pallets and shelves.

4.3.2 Waste Characteristics

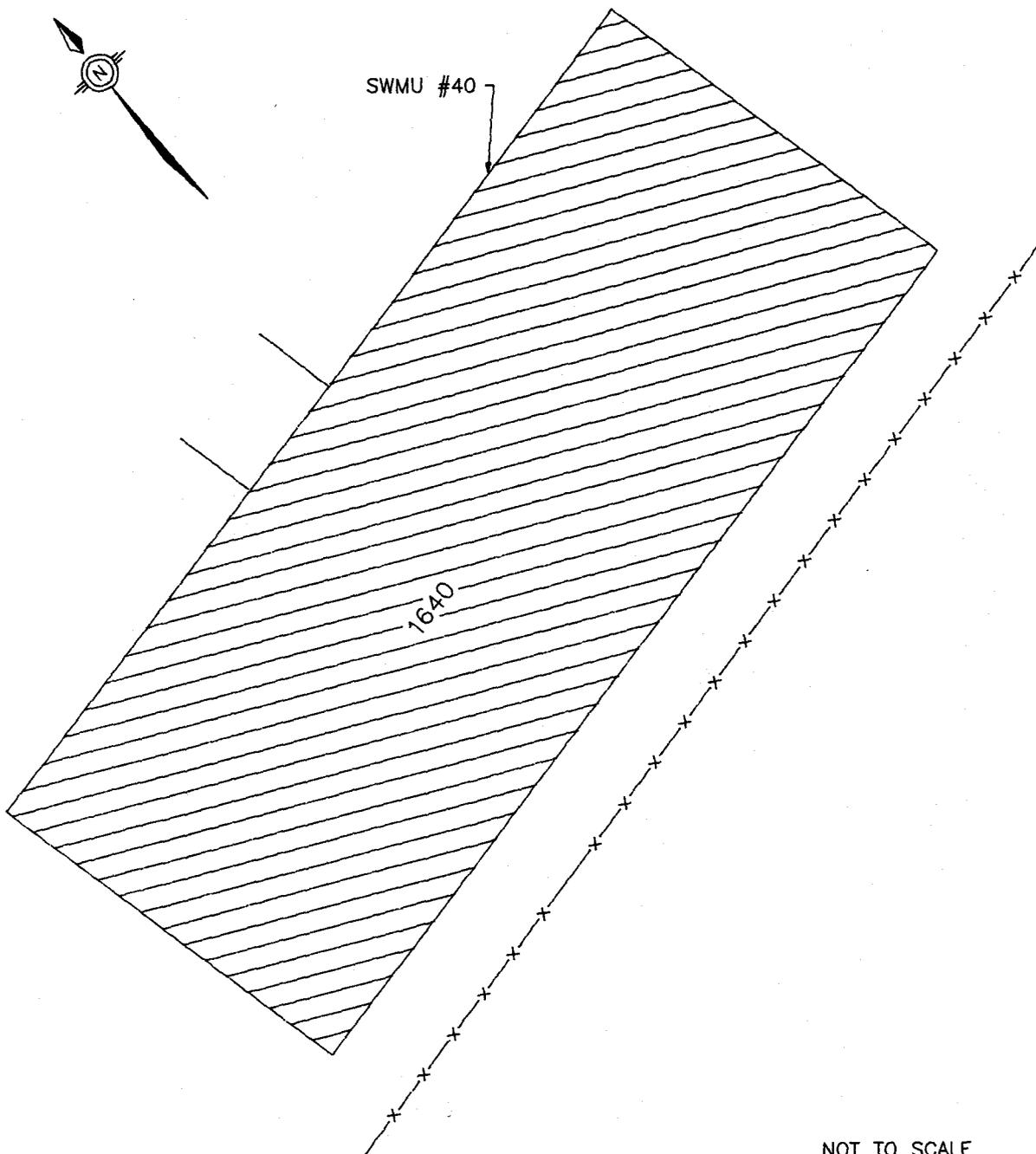
This SWMU temporarily stores hazardous waste awaiting shipment for proper disposal. Therefore, the type of waste stored at this facility is variable but encompasses much of the hazardous waste generated at the CNSY.

4.3.3 Migration Pathways

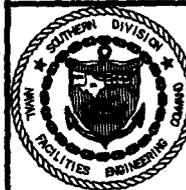
Because the wastes stored at SWMU #40 are stored in a facility designed to contain any releases that may occur and the waste is handled by trained personnel, the potential for migration of contaminants is unlikely.

4.3.4 Evidence of Release

No evidence of a release from this unit has been documented by incident reports. During the visual site inspection, no physical evidence of a release was observed and interviews conducted with site workers did not reveal knowledge of past releases.



NOT TO SCALE



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ASSESSMENT
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 4-3
SWMU #40
BUILDING 1640, DRMO

DWG DATE: 05/19/94 | DWG NAME: 27N1640

4.3.5 Exposure Potential

This SWMU is not in close proximity to any residential areas; however, the Cooper River is within approximately 200 feet of Building 1640. Due to design features of the building and restricted access, the risk of exposure should be limited to site workers.

4.3.6 Recommended Action

No further investigation of this SWMU is recommended due to the storage practices, design features of the building, the limited migration pathways, and lack of evidence of past releases. This SWMU will be noted in the record as a Regulated Unit (RU).

4.4 SWMU #44 — Coal Storage Yard

4.4.1 Unit Characteristics

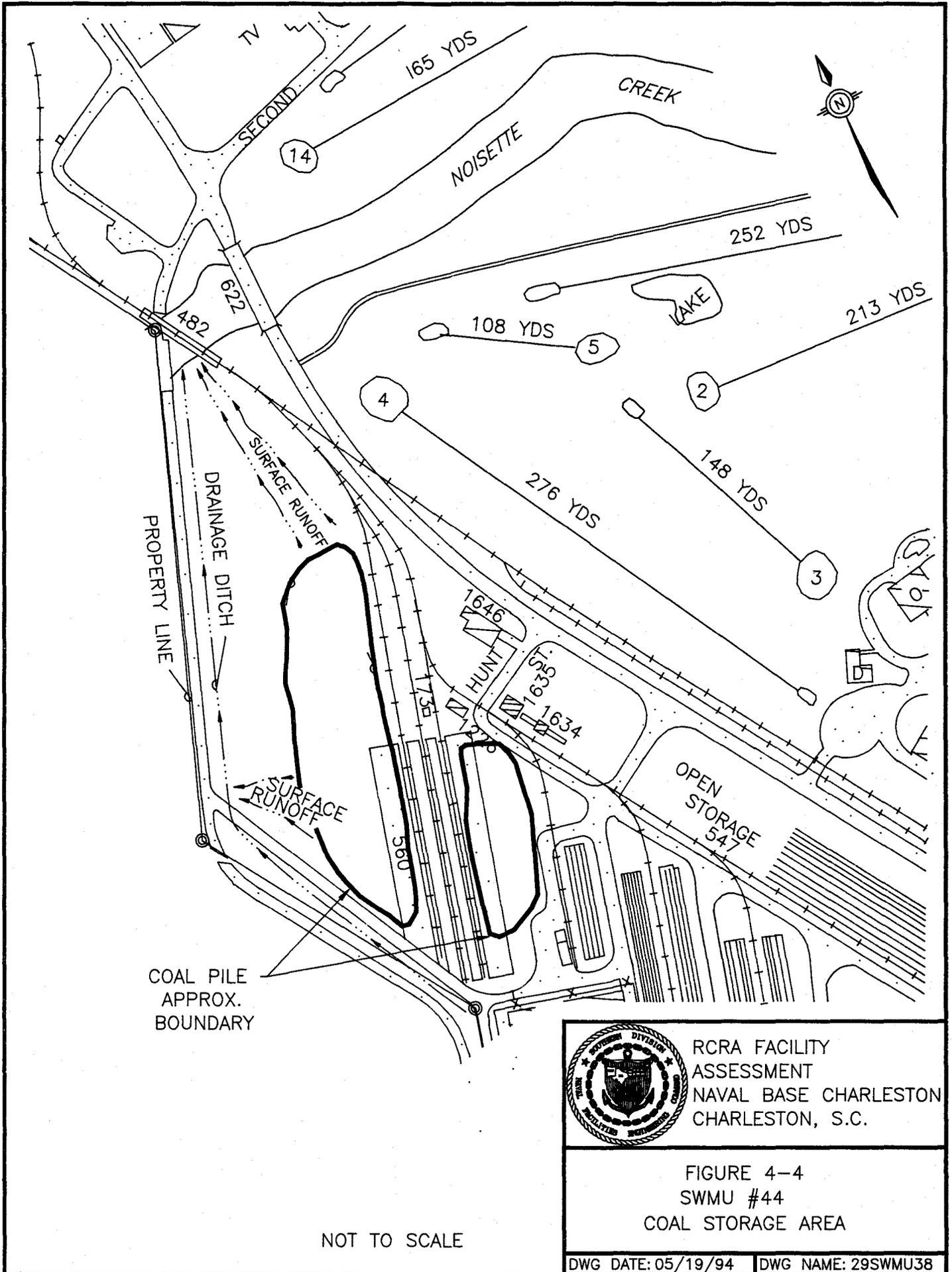
The coal storage yard began operations in the 1940s, and is used for the unloading of coal railcars and for the intermediate storage of coal prior to use at the steam generation plant (Building 32). The coal pile is approximately 80 feet x 400 feet. Coal currently stored at the coal pile may be 17 years old.

The coal storage yard is on Naval Supply Center property in the northwestern corner of the Naval Base (SWMU Site Location Map). The coal pile is located south of McRitchie Avenue, adjacent to the western property boundary of the base and immediately south of Noisette Creek and associated marshes (Figure 4-4).

According to aerial photographs the coal storage yard is in an area that has been landfilled with dredge material in the past. The primary structure in the storage yard is a trestle upon which railroad cars are parked while they are unloaded. Coal is unloaded through the bottom of railcars onto concrete pads beneath and on either side of the trestle, then moved away from the trestle by crane. Two inactive septic systems are located on the east side of the coal pile near Building 1226. No (sanitary) wastewater is produced, and no access to a sewer system is provided. No berms are present to contain or control stormwater runoff.

4.4.2 Waste Characteristics

The stored coal itself is not considered hazardous, but rainwater percolating through the coal produces runoff water which has been very acidic (pH average as low as 2.5) and has had elevated total suspended solids and total metals. The pH of the runoff varies with the sulfur content of the coal.



4.4.3 Migration Pathways

Soil, groundwater, and surface water are potential migration pathways. The level topography of the coal storage yard, combined with a high mean rainfall and the relative absence of vegetation, causes stormwater runoff into drainage systems and Noisette Creek wetlands. Currently, stormwater runoff flows either into an earthen ditch on the west side of the coal pile (stormwater outfall number 4100), or across approximately 150 feet of wetland area to the north into a drainage ditch that discharges to Noisette Creek, which in turn discharges to the Cooper River. It is estimated that 3,265,500 gallons of stormwater runs off annually (using 51.4 inches average rainfall at 75% runoff). The estimated remaining 25 percent of stormwater infiltrates the soil and may transport contaminated coal pile leachate. Standing pools of stormwater runoff occur on the east side of the coal pile. At high tide water collects in the drainage ditch on the west side of the coal storage yard.

The EPA Effluent Guidelines and Standards for Steam Electric Power Generating Point Source Category (40 CFR 423) require that the pH of all coal pile discharges, except once-through cooling water, shall be within the range of 6.0 to 9.0, and that the total suspended solids (TSS) concentration not exceed 50 ppm. The volume of runoff subject to these criteria is limited to the 10-year, 24-hour rainfall, which for the Charleston area is approximately 7 inches. The stormwater runoff is not NPDES permitted. Treatment processes for the stormwater runoff have been proposed, but none have been implemented.

Fugitive dust caused by crane and tractors moving the coal is unregulated and unpermitted. It is likely that coal dust has covered surrounding properties.

4.4.4 Evidence of Release

On September 2, 1981, during dry weather, a sample of pooled leachate was collected and analyzed for pH (3.0) and phenol (0.004 ppm). On September 7, 1981, during a rain storm, a sample of the stormwater runoff was collected and analyzed for pH (2.5), total suspended

solids (158 ppm), total solids (1,482 ppm), phenol (0.11 ppm), chloride (4.5 ppm), biological oxygen demand (1.5 ppm), chemical oxygen demand (265 ppm), cadmium (0.005 ppm), total chromium (0.04 ppm), chrome VI (0.04 ppm), copper (0.05 ppm), lead (95.0 ppm), mercury (0.0002 ppm), nickel (0.12 ppm), silver (0.01 ppm), and zinc (0.202 ppm).

Stormwater runoff samples collected on February 23, 1983 from depressions within the drainage area immediately downgradient of the coal pile had an average pH value of 2.5, and the TSS concentrations were below 50 ppm. Samples collected on February 23, 1983 from the drainage ditch adjacent to the coal pile were within the effluent NPDES guidelines for pH and TSS.

A soil sample collected on February 24, 1983 near the intersection of the drainage ditch and Noisette Creek was analyzed for pH (8.00), total solids (63.6 wt%), phenol (6.84 ug/gm), chloride (1.5 ug/gm), cadmium (<0.08 ppm), chromium (8.75 ppm), hexavalent chromium (<0.05 ppm), copper (201 ppm), lead (55.2 ppm), mercury (<0.1 ppm), nickel (124 ppm), silver (0.04 ppm), zinc (95.3 ppm), EP Toxicity Extract — arsenic (0.001 ppm), EP Toxicity Extract — selenium (<0.001 ppm), and total organic carbon (1.84 wt%).

A coal pile runoff liquid sample collected on March 1, 1983 was analyzed for pH (2.26), total suspended solids (25 ppm), total solids (23,150 ppm), phenol (0.002 ppm), chloride (90 ppm), biological oxygen demand (101 ppm), chemical oxygen demand (359 ppm), cadmium (0.08 ppm), chromium (0.33 ppm), hexavalent chromium (<0.05 ppm), copper (4.3 ppm), lead (<0.1 ppm), mercury (<0.002 ppm), nickel (14.4 ppm), silver (<0.03 ppm), zinc (45.4 ppm), EP Toxicity Extract — arsenic (0.002 ppm), and EP Toxicity Extract — selenium (<0.001 ppm).

Eight coal pile runoff liquid samples were collected between August 20, 1985 and November 1, 1985. The range of parameter concentrations is as follows: pH (2.16 - 6.56), total suspended solids (4 - 4,180 ppm), cadmium (<0.01 - 0.03 ppm), chromium (<0.05 -

0.22 ppm), copper (<0.1 - 2.3 ppm), lead (<0.05 ppm), nickel (<0.05 - 2.01 ppm), and zinc (<0.1 - 5.2 ppm).

Five liquid samples collected on October 22, 1985 and November 1, 1985 from a drainage ditch near the coal pile were analyzed for pH (2.61 - 6.56), total suspended solids (73 - 456 ppm), cadmium (<0.01 ppm), chromium (<0.05 - 0.05 ppm), copper (<0.1 - 0.3 ppm), lead (<0.05 ppm), nickel (0.05 - 0.33 ppm), and zinc (<0.1 - 1.1 ppm).

On August 31, 1988, four samples were collected from the coal pile and analyzed for heating value (13200 - 16500 Btu/lb), water content (2.37% - 4.37%), and sulfur (1120 ppm - 10400 ppm).

Grab samples of the stormwater runoff (collection date unknown) have contained aluminum (121 ppm), chromium (0.4 ppm), copper (1.7 ppm), iron (541 ppm), magnesium (93 ppm), manganese (2.6 ppm), nickel (5.7 ppm), tin (0.5 ppm), and zinc (17 ppm).

4.4.5 Exposure Potential

This SWMU is not close to any residential areas. However, the coal storage yard is approximately 200 feet from Noisette Creek. Wetlands exist on the west side of the coal pile. Approximately 3 to 5 acres may be affected by stormwater runoff from the coal pile. More wetlands habitats may be associated with this facility according to the 1988 US Department of the Interior Fish and Wildlife Service National Wetland Inventory Maps 5050 III SW and 5049 IV NW, the Army Corps of Engineers 1988 Wetland Delineation Survey of Naval Base Charleston (Drawing H606-268, Map of Charleston Naval Shipyard Naval Station and Contiguous Activities Existing and Planned — as modified by the US Army Corps of Engineers Charleston District 2 February 1988), and visual observations.

4.4.6 Recommended Action

A RCRA Facility Investigation is recommended.

4.5 SWMU #45 — Satellite Accumulation Area, Building NH-51

4.5.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building NH-51 within the Naval Base.

Wastes are stored in closed 5-gallon plastic containers. The floor surface is tile over concrete. Figure 4-5 locates the SAA in Building NH-51.

4.5.2 Waste characteristics

This SAA stores photographic fixer. Additional characteristics are unknown.

4.5.3 Migration Pathways

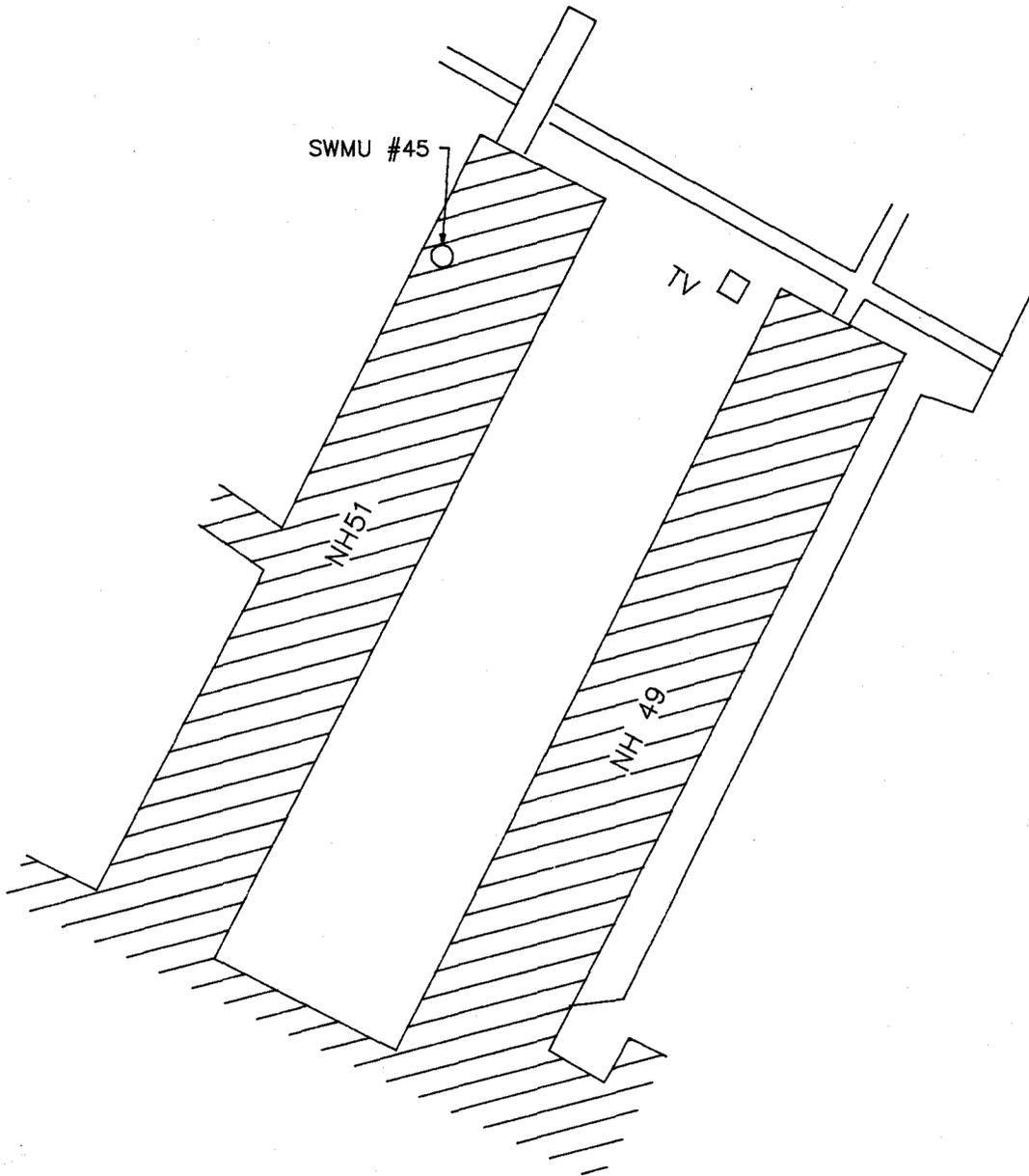
Because this SAA is located inside Building NH-51, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks, protecting the underlying soil and groundwater.

4.5.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.5.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. The limited storage capacity, nature of waste, and lack of evidence of a major release limits potential exposures to Naval Base employees.



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-5
SWMU #45
BUILDING NH51, SAA

DWG DATE: 05/20/94 | DWG NAME: 27NNH49

4.5.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.6 SWMU #46 — Temporary Satellite Accumulation Area, Building NH-21

4.6.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. This SAA is no longer operational. The SWMU Site Location Map locates Building NH-21 within the Naval Base. Figure 4-6 locates the former position of the SAA within Building NH-21.

4.6.2 Waste Characteristics

Lead paint removal debris was stored at this SAA. The major constituents of concern are volatile organic compounds and metals.

4.6.3 Migration Pathways

Sufficient information is not available to determine migration pathways.

4.6.4 Evidence of Release

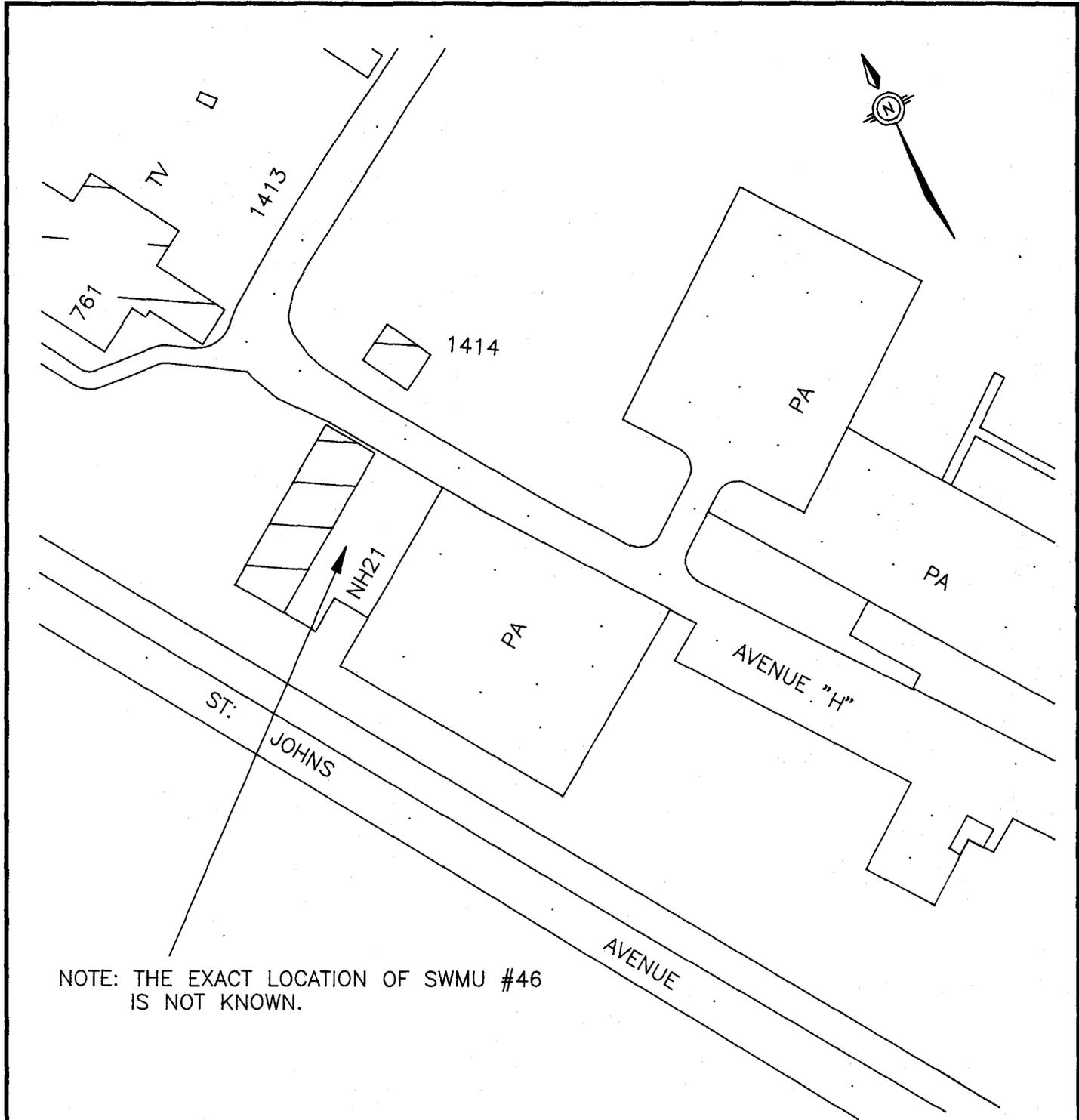
Sufficient information is not available to determine evidence of release.

4.6.5 Exposure Potential

This SAA is not in close proximity to any residential areas or other sensitive environments.

4.6.6 Recommended Action

This SAA is no longer operational. Per 40 CFR 262.34(a)(1), certification of closure is required in accordance with 40 CFR 265.111 and 114.



NOTE: THE EXACT LOCATION OF SWMU #46 IS NOT KNOWN.

NOT TO SCALE



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ASSESSMENT
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 4-6
SWMU #46
NH-21, SAA

DWG DATE: 05/19/94 DWG NAME: 29AOC117

4.7 SWMU #48 — Satellite Accumulation Area, Building 234

4.7.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 234 within the Naval Base. Figure 4-7 locates the SWMU within Building 234.

Wastes at this unit are stored in closed 5-gallon plastic containers, which are in a drip pan. The floor surface is floor tile over concrete.

4.7.2 Waste Characteristics

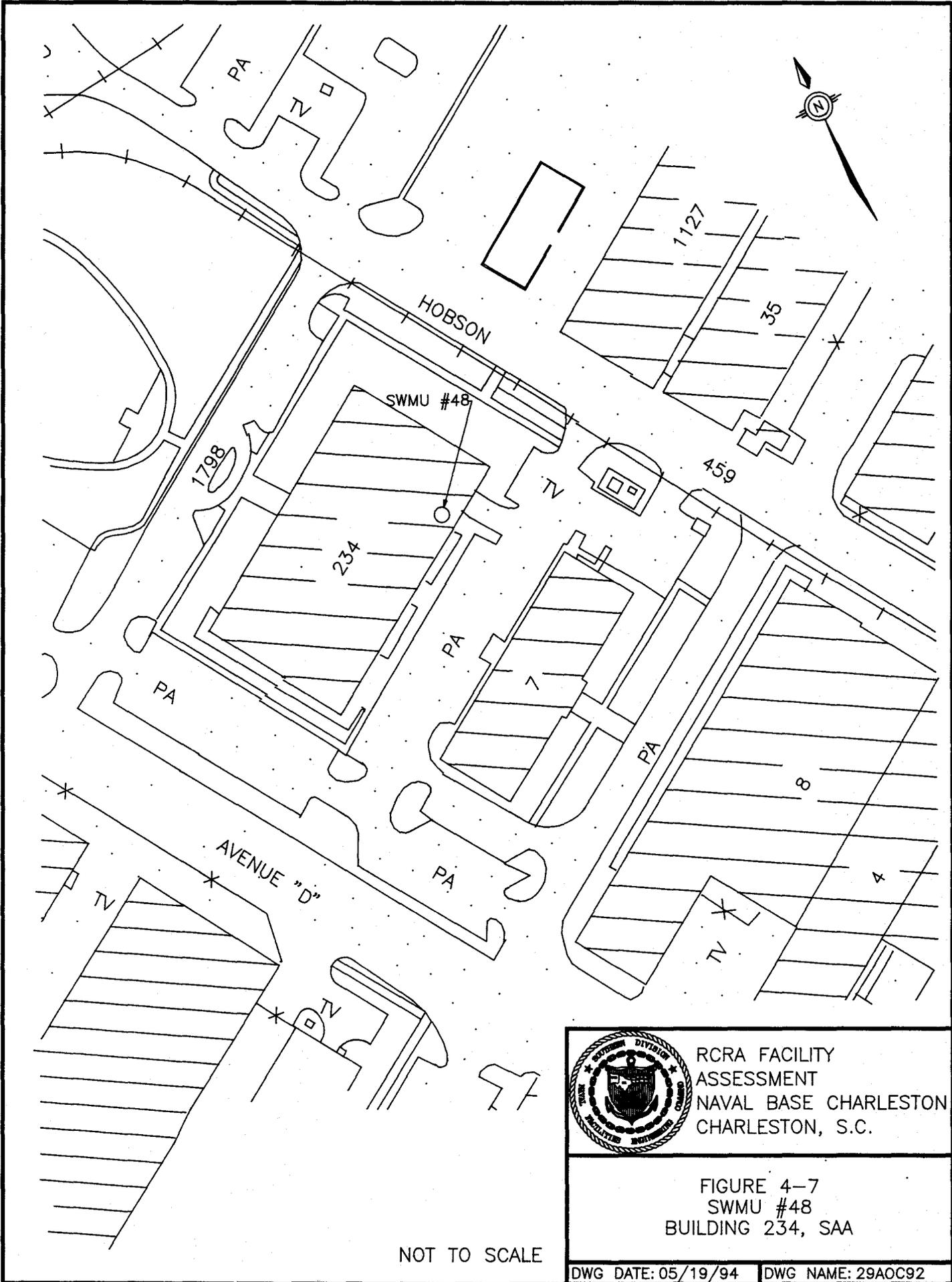
Photographic developer chemicals including fixers with hardeners (ammonium thiosulfate, sodium sulfite, acetic acid, and boric acid), ammonia, and EDTA containers are stored at this SAA.

4.7.3 Migration Pathways

Because this SAA is located inside Building 234, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks, protecting the underlying soil and groundwater.

4.7.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



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 CHARLESTON, S.C.

FIGURE 4-7
 SWMU #48
 BUILDING 234, SAA

NOT TO SCALE

4.7.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. The lack of evidence of a release and limited migration pathways limits the potential exposures to Naval Base employees.

4.7.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.8 SWMU #50 — Satellite Accumulation Area, Building NH-1

4.8.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building NH-1 within the Naval Base. This SAA is located in the histology lab in Building NH-1. Figure 4-8 locates the SWMU within Building NH-1.

Wastes are stored in 6-gallon cans. The floor surface is floor tile over concrete. The cans are in a ventilation hood.

4.8.2 Waste Characteristics

Xylene, toluene and coating resin are stored.

4.8.3 Migration Pathways

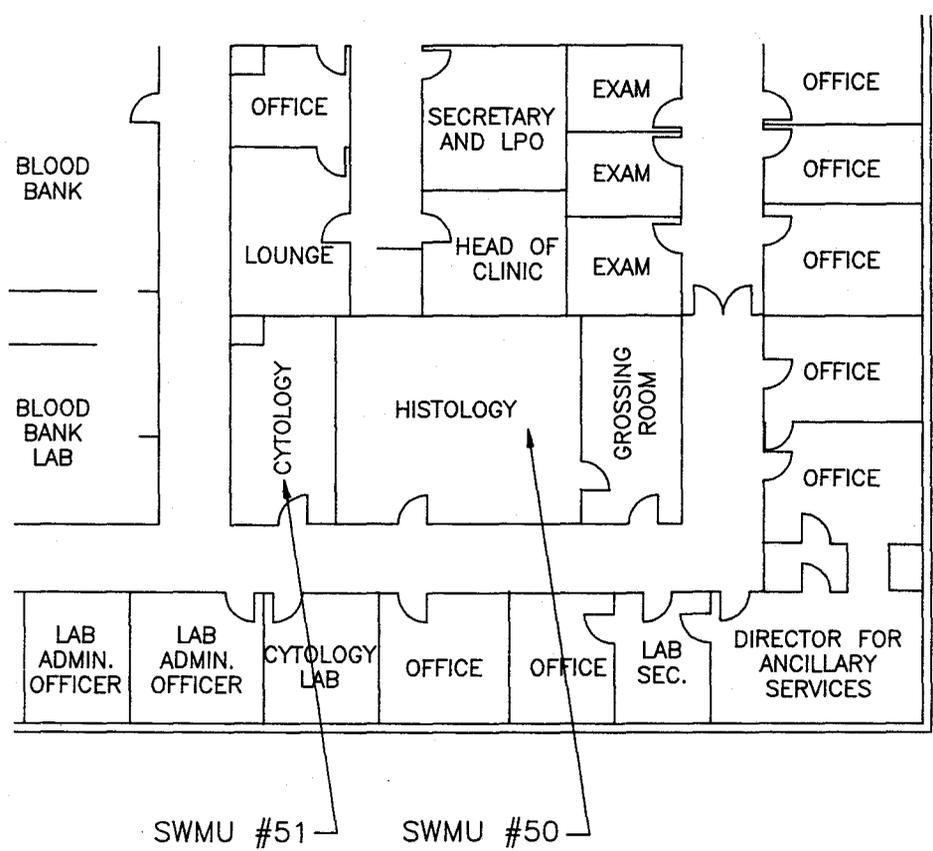
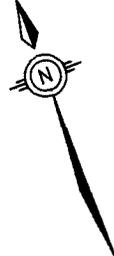
Because this SAA is located inside Building NH-1, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.8.4 Evidence of Release

No spill reports, inspection reports, employee interviews or visual observations indicated spills at this unit.

4.8.5 Exposure Potential

This SAA is not close to any sensitive environments. Naval Base employees may be exposed to air emissions if the ventilation hood is not operating properly.



NOT TO SCALE



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NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 4-8
SWMU #50
BUILDING NH1, SAA

4.8.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.9 SWMU #51 — Satellite Accumulation Area, Building NH-1

4.9.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building NH-1 within the Naval Base. This SAA is located in the cytology ward in Building NH-1. Figure 4-9 locates the SWMU within Building NH-1.

Wastes are stored in a 4 foot x 3 foot ventilation hood. The floor surface is floor tile over concrete.

4.9.2 Waste Characteristics

Containers of alcohol, Hemo-DE, xylene, clarifier, bluing agent, Cyto-gain, henataxiplin, and Eosin-Y are stored.

4.9.3 Migration Pathways

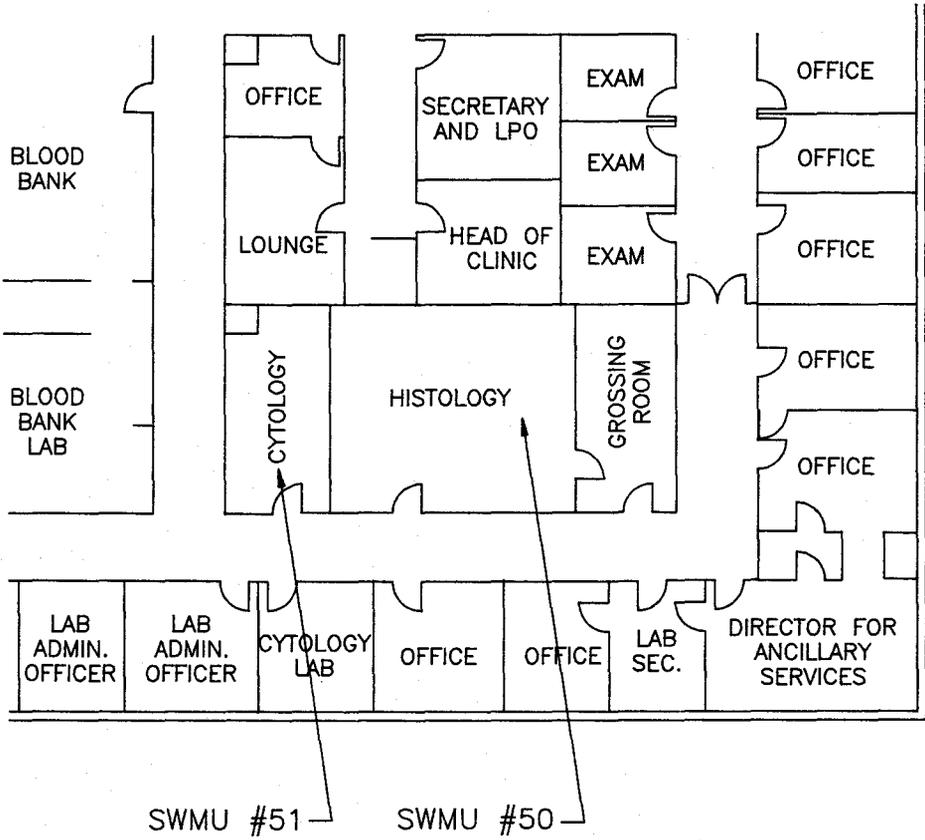
Because this SAA is located inside Building NH-1, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.9.4 Evidence of Release

No spill reports, inspection reports, employee interviews or visual observations indicate spills at this SAA.

4.9.5 Exposure Potential

This SAA is not close to any sensitive environments. Naval Base employees may be exposed to air emissions if the ventilation hood is not operating properly.



NOT TO SCALE



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ASSESSMENT
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 4-9
SWMU #51
BUILDING NH1, SAA

DWG DATE: 05/24/94

DWG NAME: 29SWMU51

4.9.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.10 SWMU #52 — Satellite Accumulation Area, Building NH-1

4.10.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building NH-1 within the Naval Base. This SAA was located in the dental ward on the third floor of Building NH-1. Figure 4-10 locates the SWMU within Building NH-1.

4.10.2 Waste Characteristics

Sufficient information is not available to determine waste characteristics.

4.10.3 Migration Pathways

Because this SAA was located inside Building NH-1, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.10.4 Evidence of Release

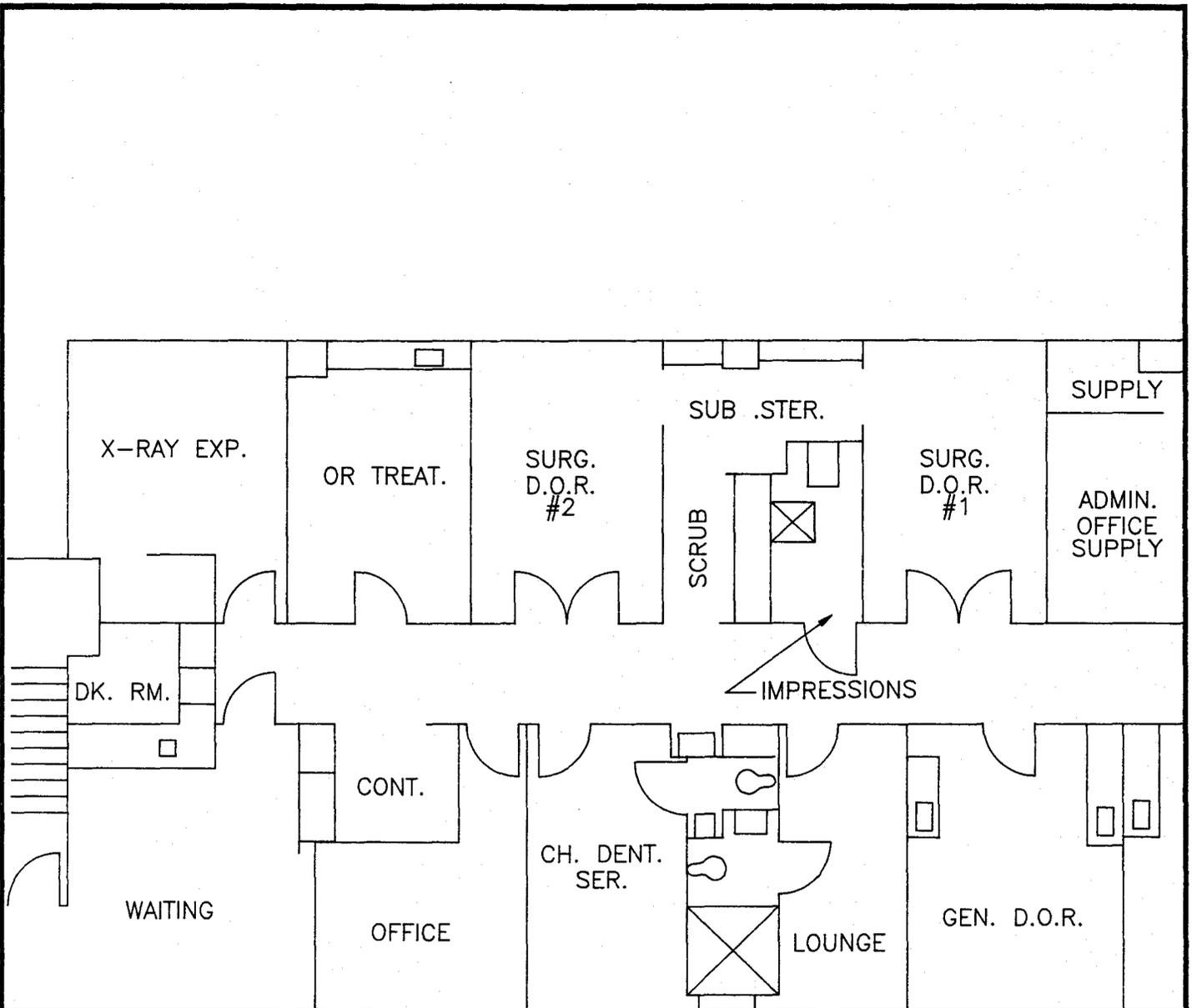
No spill reports, inspection reports, employee interviews or visual observations indicate spills at this SAA.

4.10.5 Exposure Potential

This SAA is not close to any sensitive environments.

4.10.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.



NOTE: THE EXACT LOCATION OF SWMU #52 IS NOT KNOWN

NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-10
SWMU 52
BUILDING NH1, SAA

4.11 SWMU #53 — Satellite Accumulation Area, Building 212

4.11.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. This SAA has been dismantled. The SWMU Site Location Map locates Building 212 within the Naval Base.

Wastes were stored in 55-gallon drums on an asphalt surface. No containment berm existed. Figure 4-11 locates the former position of the SAA near Building 212.

4.11.2 Waste Characteristics

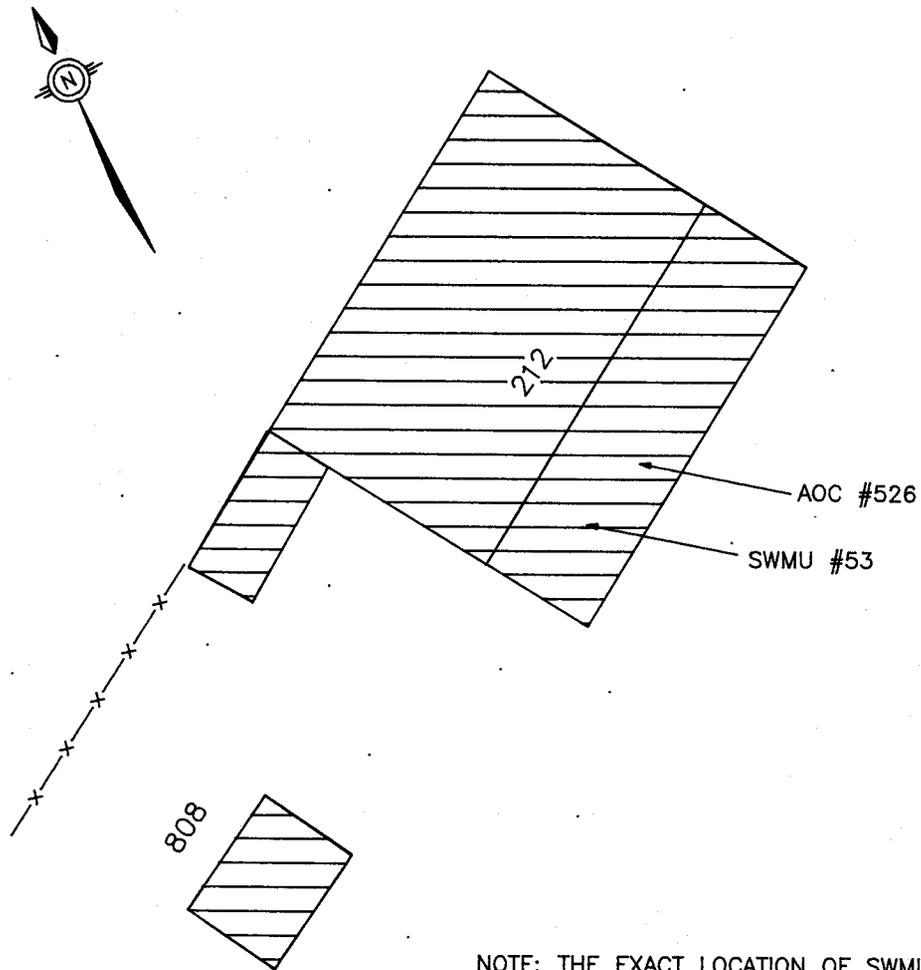
Empty cans, paint-contaminated debris, liquid paint wastes, and degreasing wastes were stored at this SAA. The major constituents of concern are volatile organic compounds, and petroleum hydrocarbons.

4.11.3 Migration Pathways

This SAA is located outside of Building 212; therefore, surface migration from surface runoff may occur. The asphalt surface on which the unit was located is not impermeable to the solvents stored here; therefore, soil and groundwater are potential migration pathways.

4.11.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or physical evidence indicate spills at this SAA.



NOTE: THE EXACT LOCATION OF SWMU #53 IS NOT KNOWN SINCE IT HAS BEEN DISMANTLED.

NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-11
SWMU #53
BUILDING 212, SAA

4.11.5 Exposure Potential

There is the potential for workers who frequent this area to be exposed to airborne constituents of the solvents and possible dermal contact.

4.11.6 Recommended Action

This SAA is no longer operational. Per 40 CFR 262.34(a)(1), certification of closure is required in accordance with 40 CFR 265.111 and 114. This SAA was located in the same area as AOC #526 and should be included in the AOC #526 RFI.

4.12 SWMU #54 — Former Abrasive Blasting Area

4.12.1 Unit Characteristics

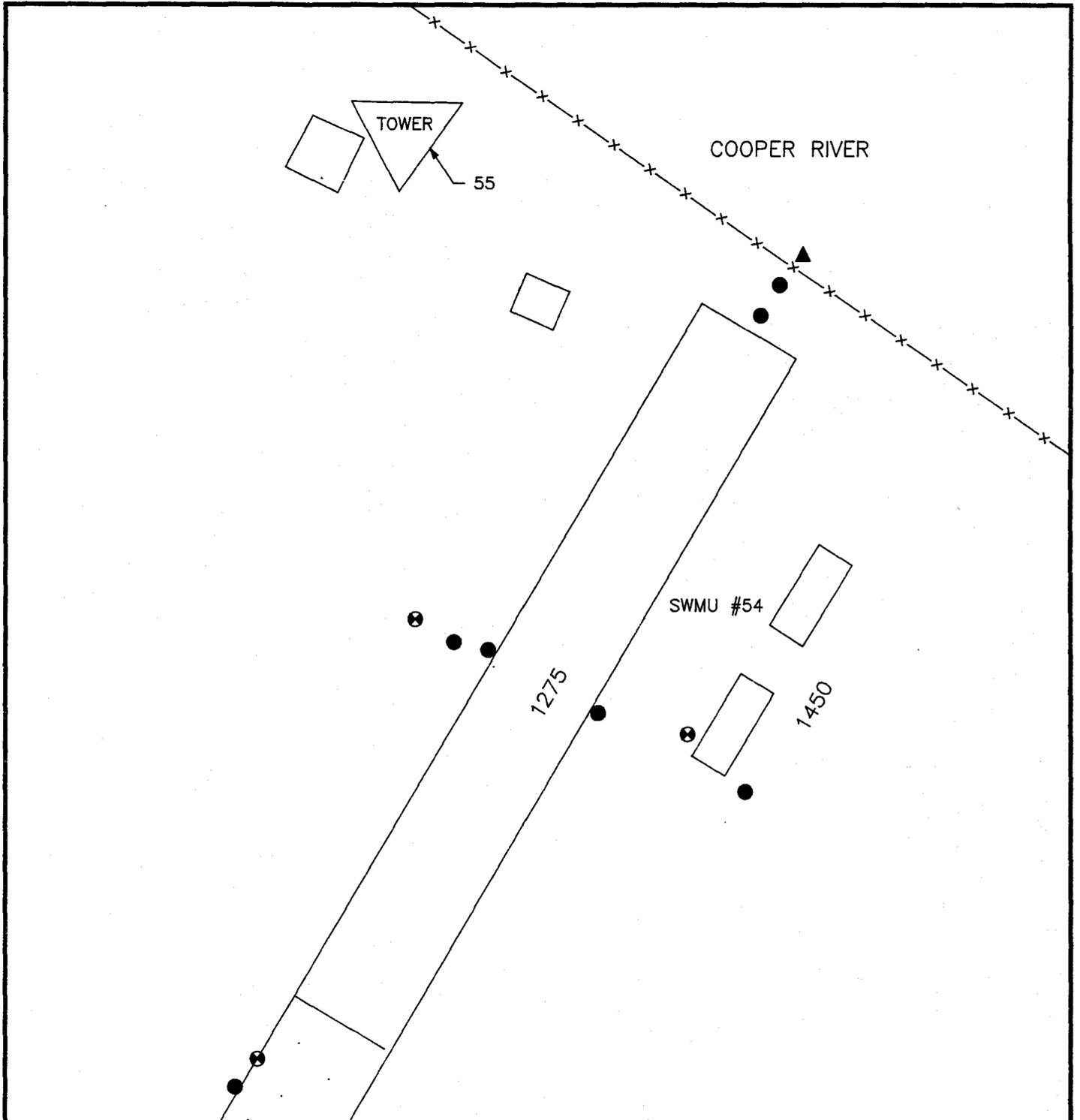
The former abrasive blasting area is south of Building 223 near the Cooper River. As illustrated in the Solid Waste Management Unit (SWMU) Site Location Map, that area surrounds Slab 1275, the waste paint storage pad, where an RFI is underway. Figure 4-12 identifies the features associated with the former abrasive blasting area. Elevated hoppers for blasting abrasive comprise Facility 1450, immediately south of Slab 1275. Aerial photographs indicate that the abrasive blasting area has been industrialized since 1939. Originally, the slab and adjoining area were used for welding (estimated 1943-1955); later for abrasive blasting (hoppers were identified on a 1967 base map) and painting of ship components; more recently for storage of containerized waste paint and solvents and currently for anchor chain painting. In 1988, while the slab was undergoing RCRA closure, abrasive blasting and painting were observed in the immediate area. At that time, spent blasting grit (Black Beauty) covered the ground surrounding the paint pad; in November 1993, the environmental baseline survey (EBS) identified approximately 3 inches of grit covering the soil surrounding the slab.

4.12.2 Waste Characteristics

According to the 1993 *Remedial Investigation/Feasibility Study Compliance Oversight-Charleston Naval Shipyard (Dynamac)*, wastes associated with the slab area included cadmium, chromium, lead, cyanide, toluene, tetrachloroethylene and organotin paints from abrasive blasting. EP toxicity tests indicated that paint chips raked from the soil surface surrounding the slab were characteristically non-hazardous.

4.12.3 Migration Pathways

The abrasive blasting area adjoins the Cooper River, and no surface drainage control structures prevent runoff from the area entering that waterway. The layer of spent abrasive media and paint chips, observed during the 1988 paint pad closure, could impact the underlying soil and shallow groundwater. In 1990, spent blasting media were reportedly used in a fill south of



NOT TO SCALE

- LEGEND
- ⊗ - MONITORING WELL
 - - SEDIMENT SAMPLE LOCATION
 - ▲ - SOIL SAMPLING LOCATION

LOCATIONS ARE APPROXIMATE



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FIGURE 4-12
SWMU #54
ABRASIVE BLAST AREA

Slab 1275. Both SOUTHNAVFACENGCOM and SCDHEC have identified the abrasive blasting operation as an uncontrolled emissions source of particulates and volatile organic compounds into the air.

4.12.4 Evidence of Release

The recent EBS indicated that several spills from the abrasive blasting area have been reported (notably from Slab 1275). A preliminary review of analytical results from soil boring and monitoring well (see Figure 4-12) samples indicate that essentially no organic constituents are present in the soil immediately surrounding the concrete slab or in groundwater immediately north and south of the slab. Concentrations of inorganic constituents (e.g., copper, mercury, nickel, zinc) in soil or groundwater suggest a possible release.

4.12.5 Exposure Potential

Considering the location of the former abrasive blasting area within Naval Base Charleston, human exposures are limited to workers and occasionally users of the Cooper River. The EBS identified an estimated 1.5 acres of wetland habitat approximately 250 feet north of Slab 1275. Under appropriate conditions (particularly wind direction and velocity) those wetlands could have been impacted by surface spills or airborne particulates or volatile organics.

4.12.6 Recommended Action

Due to the evidence of past releases and lack of a thorough assessment of the potential hazards associated with these releases, a RFI is recommended. Considering the similarity in operations and wastes associated with Slab 1275 and the surrounding abrasive blasting area, segregation of the impact of the units is impractical. Therefore, expanding the RFI for SWMU #21 to integrate SWMU #54 is also recommended.

4.13 SWMU #55 — Satellite Accumulation Area, Building 59A

4.13.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 59A within the Naval Base.

Wastes are stored in 55-gallon drums and 30-gallon containers. The floor surface is floor tile overlying concrete. No containment berm exists. The SAA is a 12 foot x 8 foot area. Figure 4-13 locates the SAA near Building 59A.

4.13.2 Waste Characteristics

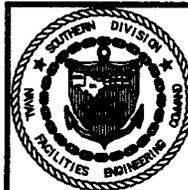
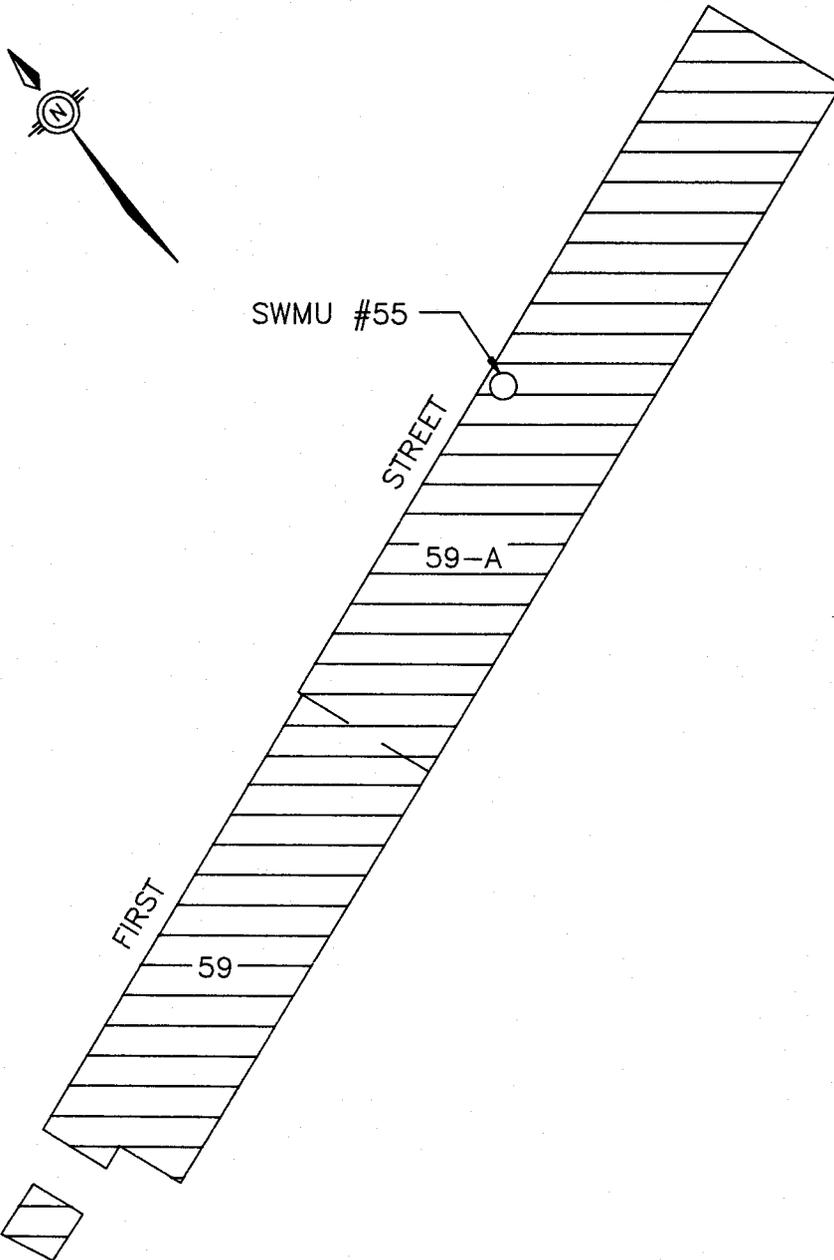
Empty paint and aerosol cans, empty metal and plastic containers, glue-contaminated debris, soiled rags, lubricants, glues, primers, insecticides, hand cleaners, sealing compounds, adhesives, and dry paint are stored. The major constituents of concern are volatile organic compounds, metals, and petroleum hydrocarbons.

4.13.3 Migration Pathways

This SAA is located outside of Building 59A; therefore, surface migration from surface runoff may occur. The floor in the vicinity of the SAA is free of cracks, protecting the underlying soil and groundwater.

4.13.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



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FIGURE 4-13
SWMU #55
BIUILDING 59-A, SAA

DWG DATE: 05/20/94

DWG NAME: 27N59

4.13.5 Exposure Potential

Building 59A is located approximately 300 feet from military housing and 600 feet from the Cooper River at Pier C. The design features of the unit and lack of evidence of a release minimize the likelihood of potential exposures to Naval Base employees.

4.13.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste (i.e. cans, rags), storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.14 SWMU #56 — Satellite Accumulation Area, Building 2A

4.14.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 2A within the Naval Base.

Wastes are stored in 55-gallon drums which are on pallets. The floor surface is wood. The drums are enclosed in a 10 foot x 6 foot tarpaulin shed. Figure 4-14 locates the SAA near Building 2A.

4.14.2 Waste Characteristics

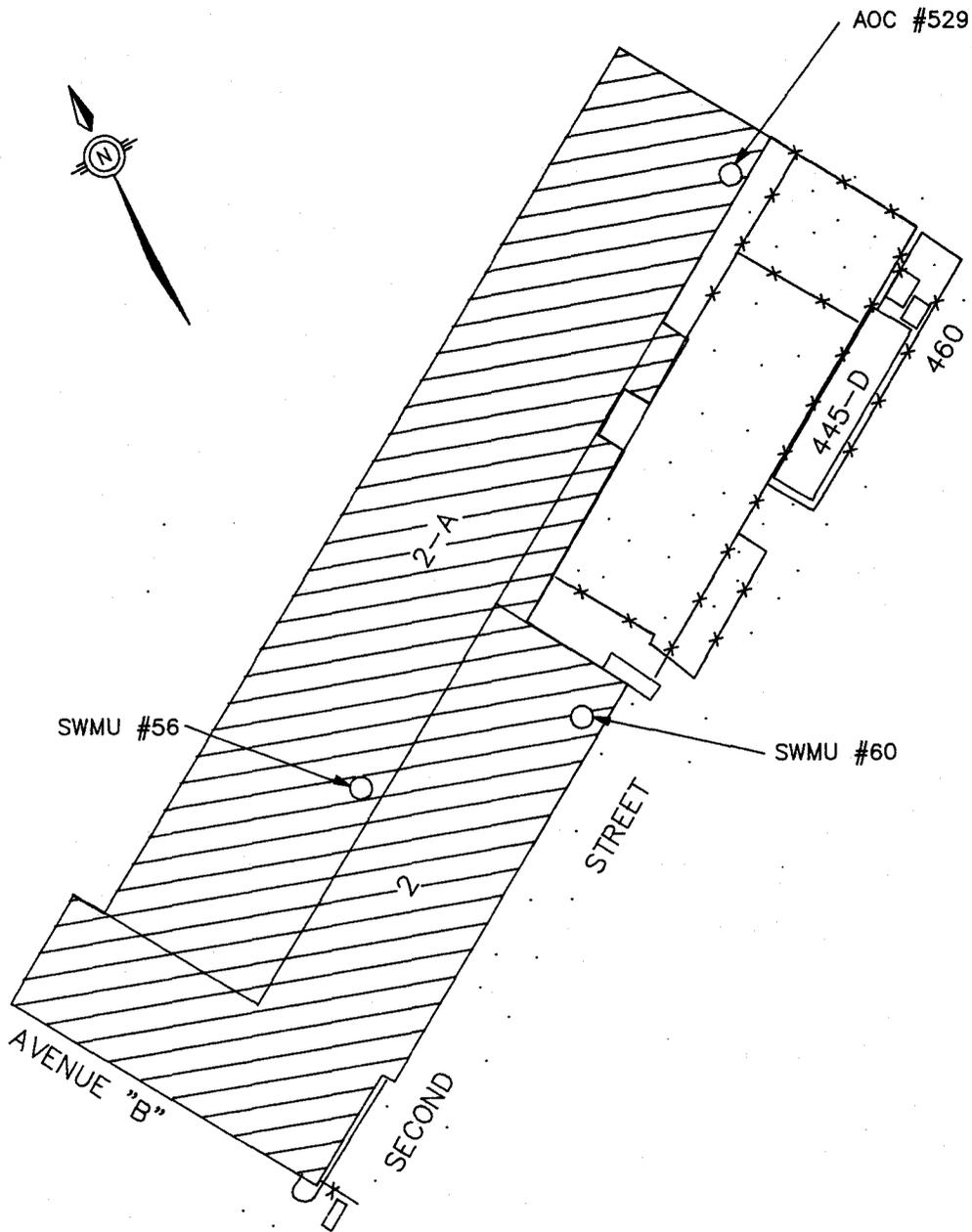
Aerosol cans, spray paint, empty adhesive tubes and glue cans, cutting oils/fluids, kerosene-contaminated rags, glue-contaminated rags, and paint-contaminated debris are stored. The major constituents of concern are volatile organic compounds, metals, and petroleum hydrocarbons.

4.14.3 Migration Pathways

This SAA is located outside of Building 2A; therefore, surface migration from surface runoff may occur, although the tarpaulin shed helps minimize exposure of the area to precipitation. Soil and groundwater are potential migration pathways due to the wooden base of the SAA.

4.14.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



NOT TO SCALE



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FIGURE 4-14
SWMU #56
BUILDING 2, <90 STORAGE AREA

DWG DATE: 05/19/94 | DWG NAME: 29AOC62

4.14.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. The lack of evidence of a major release minimizes the likelihood of potential exposures to Naval Base employees.

4.14.6 Recommended Action

Due to the likelihood of contaminant migration and lack of a thorough assessment of the potential hazards, a RFI is recommended.

4.15 SWMU #57 — Satellite Accumulation Area, Building 35

4.15.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55-gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 35 within the Naval Base.

Wastes are stored in 6 intermediate-sized containers (21-gallon capacity). The floor surface is floor tile overlying concrete. No containment berm exists. The SAA is approximately 3 feet x 4 feet. Figure 4-15 locates the SAA within Building 35.

SWMU #58, an adjacent SAA storing acetic, hydrochloric, and nitric acids, was recently consolidated with SWMU #57. See Section 4.16 for more information.

4.15.2 Waste Characteristics

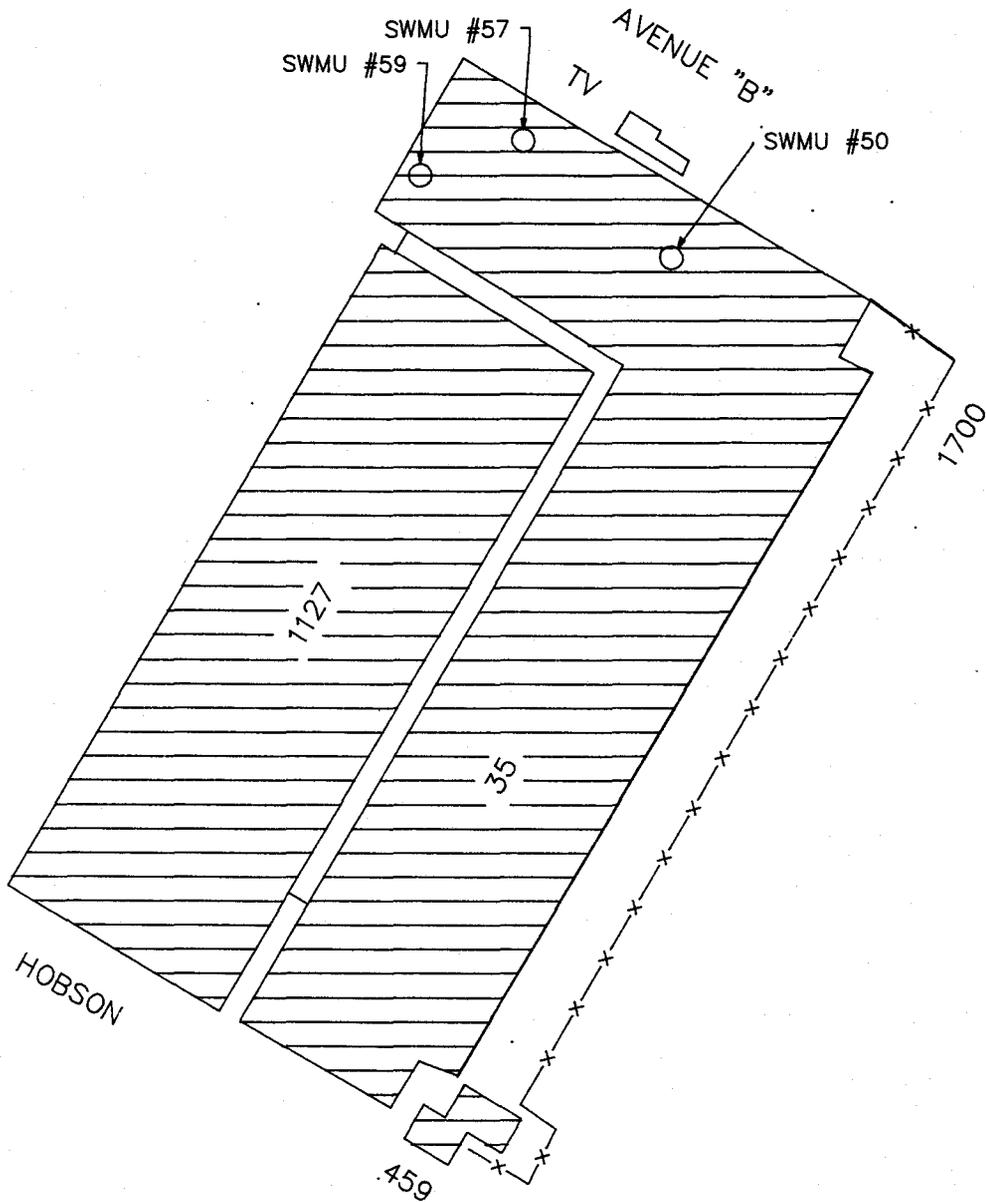
The waste stream associated with this SAA includes spent aerosol cans, oily rags, and empty containers used for the storage of acetic, hydrochloric, and nitric acids.

4.15.3 Migration Pathways

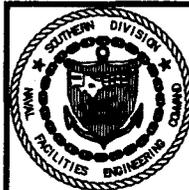
Because this SAA is located inside Building 35, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks and it is highly unlikely the types of materials stored in this area would result in a release that would escape the building.

4.15.4 Evidence of Release

No incident reports, inspection reports, employee interviews, or physical evidence indicate that a release from this SAA has ever occurred.



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-15
SWMU #57
BUILDING 35, SAA

DWG DATE: 05/19/94 | DWG NAME: 29AOC39

4.15.5 Exposure Potential

Due to the type of materials stored in this SAA and the location of the SAA, the potential for exposure is likely to be limited to site workers.

4.15.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste (i.e. empty containers and rags), storage practices, lack of evidence of a release, and the limited migration pathways.

4.16 SWMU #58 — Satellite Accumulation Area, Building 35

4.16.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55-gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. SWMU #58 has been combined with SWMU #57. The SWMU Site Location Map locates Building 35 within the Naval Base. Figure 4-16 locates SWMU #58 within Building 35.

SWMU #58 was under a 2 foot x 3 foot ventilation hood in Building 35. The floor surface at the former location is linoleum over concrete.

4.16.2 Waste Characteristics

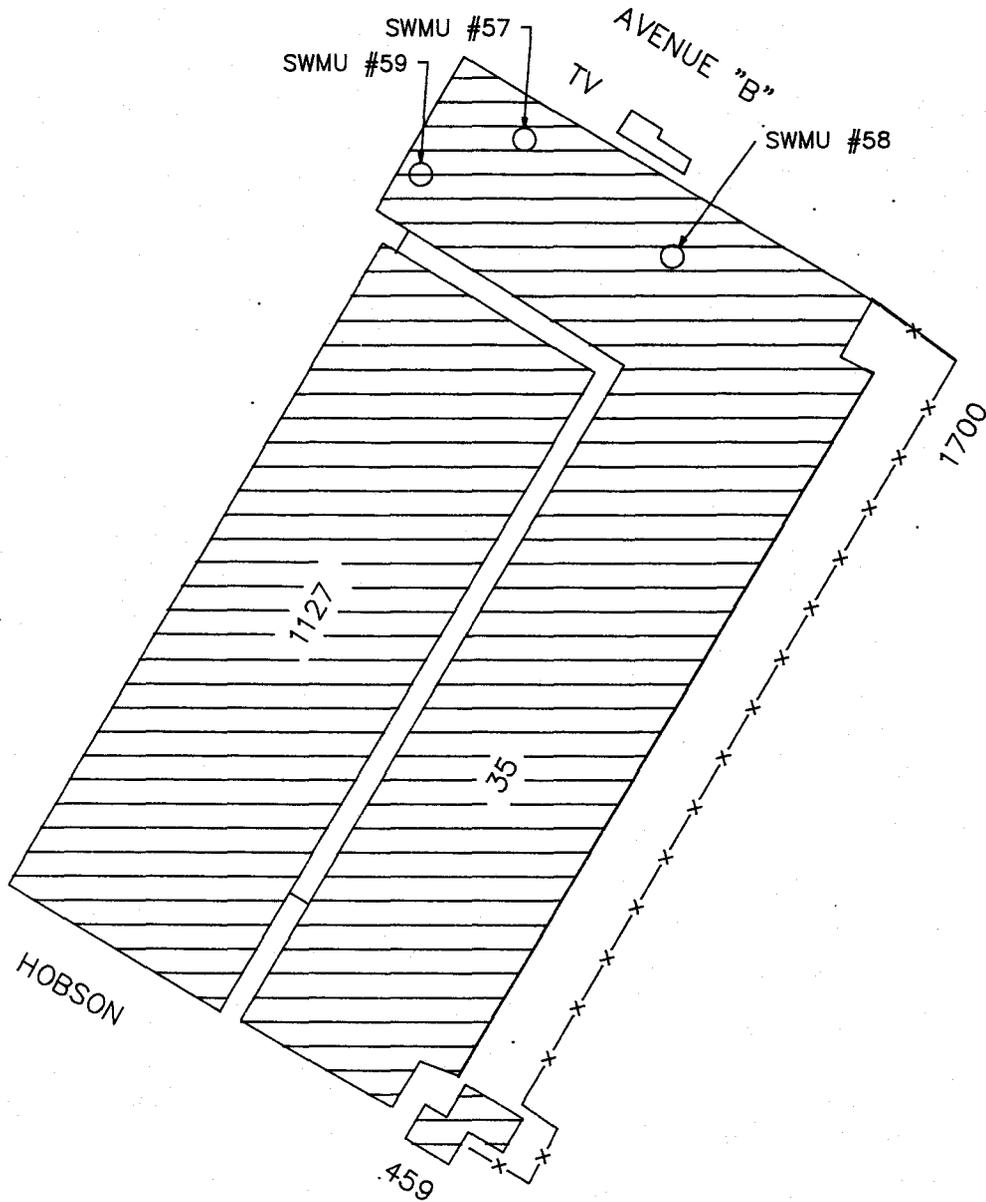
Acetic, hydrochloric, and nitric acids, ammonium persulfate, and hydrogen peroxide were stored at this SAA.

4.16.3 Migration Pathways

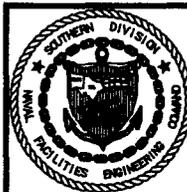
Because this SAA is located inside Building 35 and under a ventilation hood, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks, protecting the underlying soil and groundwater.

4.16.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



NOT TO SCALE



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ASSESSMENT
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 4-16
SWMU #58
BUILDING 35, SAA

DWG DATE: 05/19/94 | DWG NAME: 29AOC86

4.16.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. The lack of evidence of a release and the restricted migration pathways limit the potential exposures to Charleston Naval Base employees.

4.16.6 Recommended Action

This SAA is no longer operational. Per 40 CFR 262.34(a)(1), certification of closure is required in accordance with 40 CFR 265.111 and 114.

4.17 SWMU #59 — Satellite Accumulation Area, Building 35

4.17.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. SWMU #59 has been combined with SWMU #57. The SWMU Site Location Map locates Building 35 within the Naval Base.

Wastes are stored in drums ranging in size from 6 to 21 gallons. The floor surface is tile over concrete. No containment berm exists. Figure 4-17 shows the current location of SWMU #59 inside Building 35.

4.17.2 Waste Characteristics

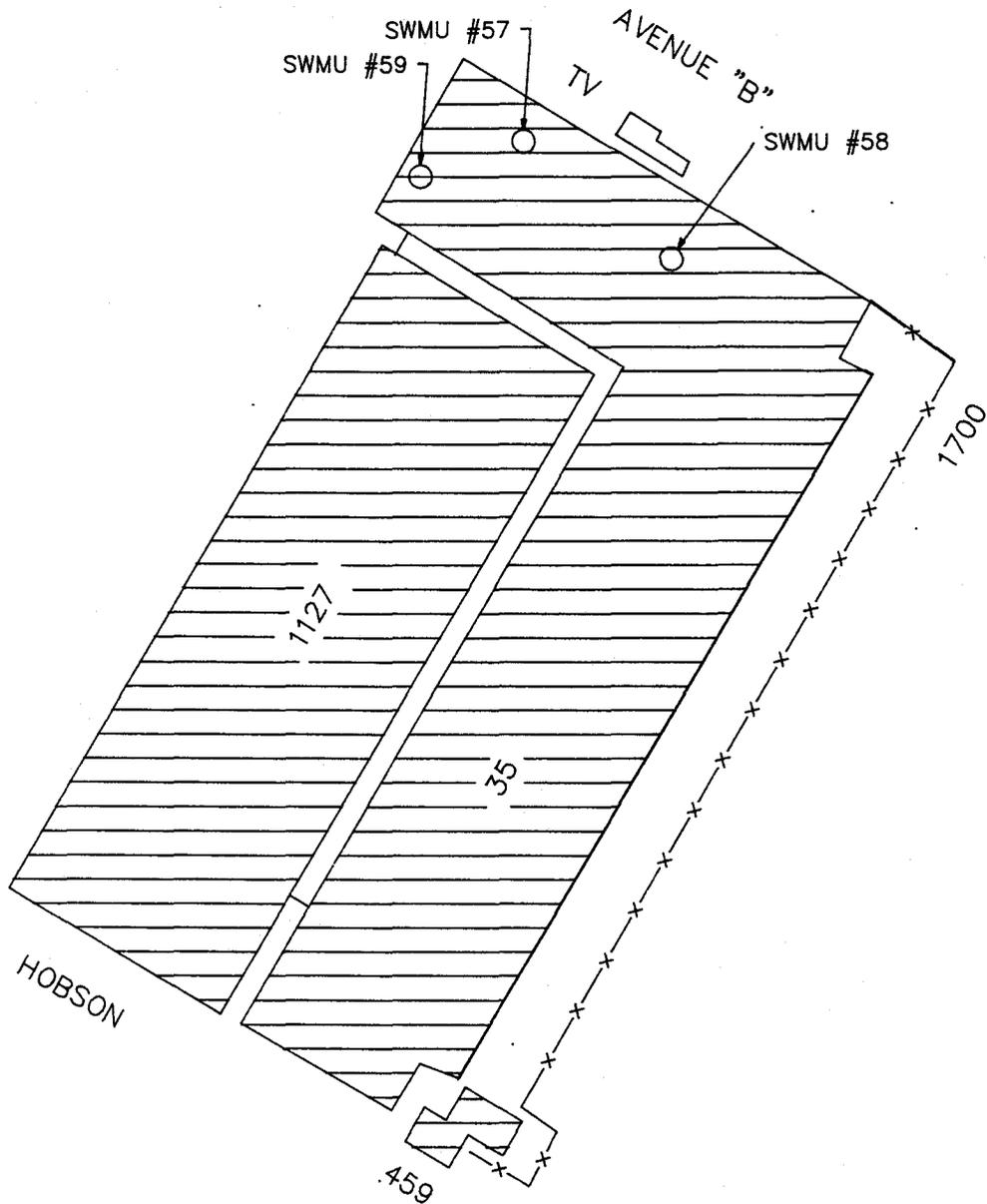
Spent aerosol cans and oily rags are stored here. The major constituents of concern are volatile organic compounds and petroleum hydrocarbons.

4.17.3 Migration Pathways

Because this SAA is located inside Building 35, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks, protecting the underlying soil and groundwater.

4.17.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



NOT TO SCALE



RCRA FACILITY
ASSESSMENT
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 4-17
SWMU #59
BUILDING 35, SAA

DWG DATE: 05/19/94 | DWG NAME: 29AOC93

4.17.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. The limited storage capacity, nature of waste, and lack of evidence of a release limits potential exposures to Charleston Naval Base employees.

4.17.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste (aerosol cans and oily rags), storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.18 SWMU #60 — Less-than-90-day Accumulation Area, Building 2

4.18.1 Unit Characteristics

This less-than-90-day Accumulation Area (AA) is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an AA for less than 90 days, then transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 2 within the Naval Base. Figure 4-18 locates the SWMU inside Building 2.

Wastes at this AA are stored in 55-gallon drums, which are enclosed in a 12 foot x 10 foot steel cage and underlain by a metal-lined drip pan. During the visual site inspection on February 1, 1994, SWMU #60 was in good condition. Four 55-gallon drums and one 55-gallon spill kit were observed. SWMU #60 is still operational.

4.18.2 Waste Characteristics

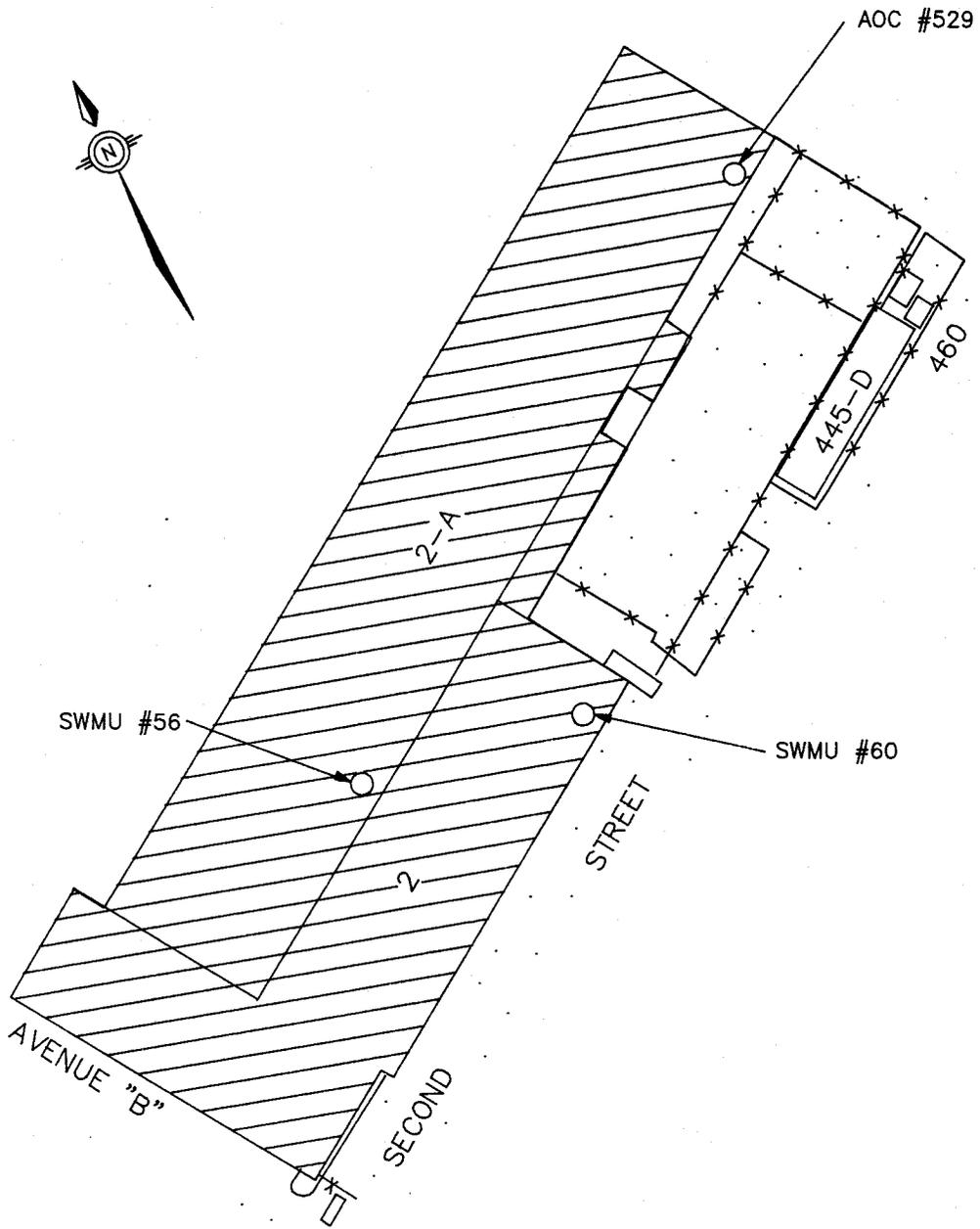
Aerosol cans, spray paint, empty adhesive tubes, hydraulic fluid containers, dye penetrant, oily rags, cutting oils/fluids, kerosene-contaminated rags, solvent developer, paint cans, and paint-contaminated debris are stored here.

4.18.3 Migration Pathways

Because this AA is located inside Building 2, soil, groundwater, and surface water migration is unlikely. The floor in the vicinity of this AA is free of cracks. The likelihood of any liquid escaping the unit is remote.

4.18.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this AA.



NOT TO SCALE



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FIGURE 4-18
SWMU #60
BUILDING 2, <90 STORAGE AREA

DWG DATE: 05/19/94 | DWG NAME: 29AOC41

4.18.5 Exposure Potential

Building 2 is located approximately 500 feet from military housing and the Cooper River at Pier C. The design features of the unit and nature of waste (i.e. cans, tubes, rags) limit the potential exposures to Naval Base employees.

4.18.6 Recommended Action

No further investigation of this AA is recommended due to the nature of the waste, storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.19 SWMU #61 — Less-than-90-Day Accumulation Area, Building 228

4.19.1 Unit Characteristics

This SWMU is a less-than-90-day Accumulation Area (AA), which is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an AA for less than 90 days, then transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 228 within the Naval Base. Figure 4-19 locates the SWMU within Building 228.

Wastes stored at this AA are in 55-gallon drums. A 55-gallon spill kit is also present. The AA consists of a 6 foot x 10 foot x 7 foot wooden structure over asphalt with the perimeter defined by a yellow and black painted barrier.

4.19.2 Waste Characteristics

Items reported/observed to be stored at this AA include aerosol cans, empty adhesive cans, and glue-contaminated debris.

4.19.3 Migration Pathways

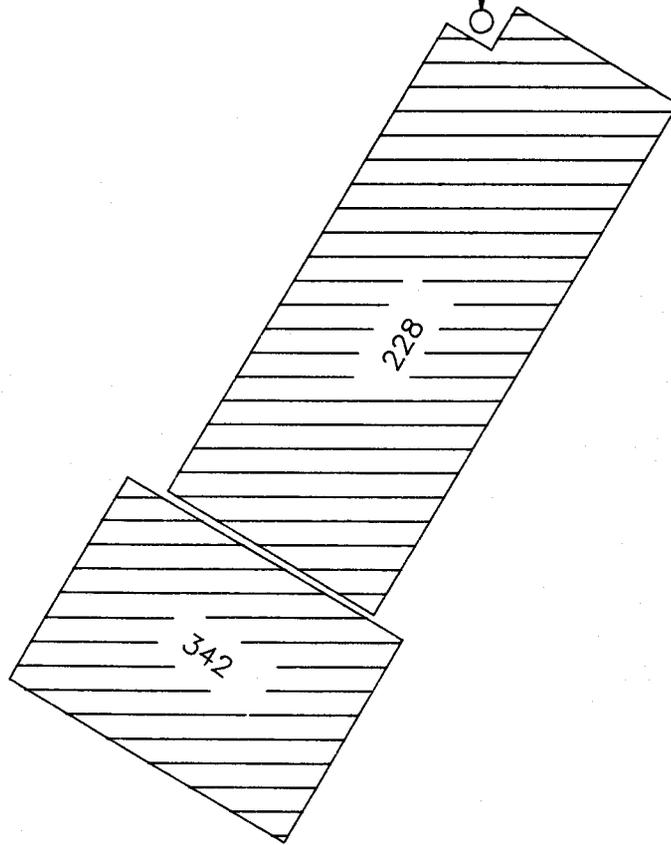
Because this AA is located inside Building 228 and is underlain by an asphalt floor, soil, groundwater, and surface water migration is unlikely.

4.19.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this AA.



SWMU #61



NOT TO SCALE



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ASSESSMENT
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 4-19
SWMU #61
BUILDING 228, <90 STORAGE AREA

DWG DATE: 05/19/94 | DWG NAME: 29AOC59

4.19.5 Exposure Potential

This SWMU is not close to any residential areas or sensitive environments. The limited storage capacity and nature of waste limit the potential exposures to Naval Base employees.

4.19.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste, storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.20 SWMU #62 — Satellite Accumulation Area, Building 226

4.20.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 226 within the Naval Base.

Wastes are stored in closed 55-gallon drums and plastic tubes in an 8 foot x 6 foot x 12 foot wooden building with a concrete floor. Figure 4-20 locates the SAA near Building 226.

4.20.2 Waste Characteristics

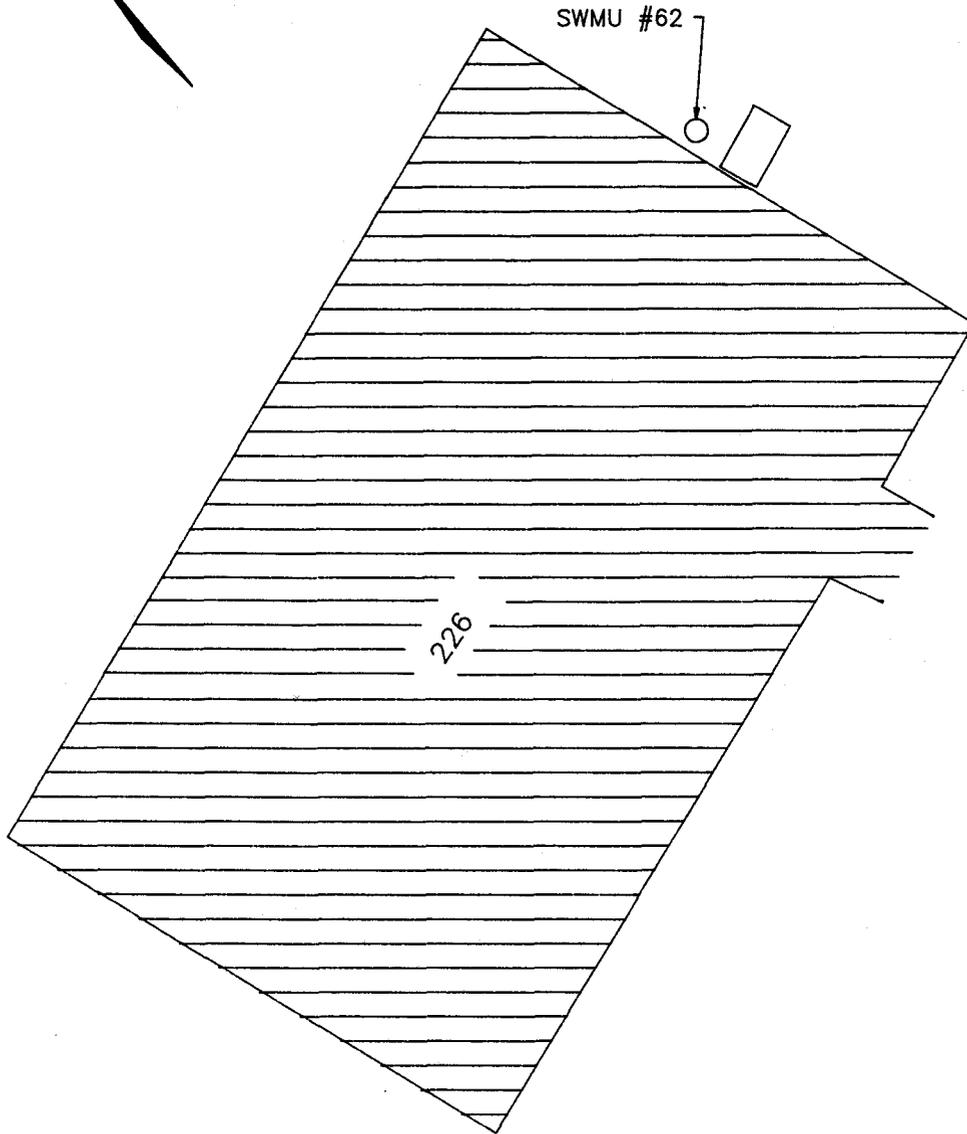
Aerosol cans, brush plating solution, metal hydroxide solution, spent plating materials, and plating solution spill residue are stored at this SAA.

4.20.3 Migration Pathways

This SAA is located outside of Building 226; therefore, surface migration from surface runoff may occur if the wooden building does not constitute a "closed" environment. The floor in the vicinity of the SAA is free of cracks, protecting the underlying soil and groundwater.

4.20.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-20
SWMU #62
BUILDING 226, STORAGE AREA

DWG DATE: 05/16/94 | DWG NAME: 27N226

4.20.5 Exposure Potential

Building 226 is approximately 800 feet from military housing and 500 feet from the Cooper River at Pier C. The design features of the unit and lack of evidence of a release minimize the likelihood of potential exposures to Naval Base employees.

4.20.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.21 SWMU #64 — Satellite Accumulation Area, Building 56

4.21.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 56 within the Naval Base.

Wastes are stored in closed 55-gallon drums and other steel containers in a 12 foot x 8 foot steel shed with a concrete floor. No containment berm exists. Figure 4-21 locates the SAA near Building 56.

4.21.2 Waste Characteristics

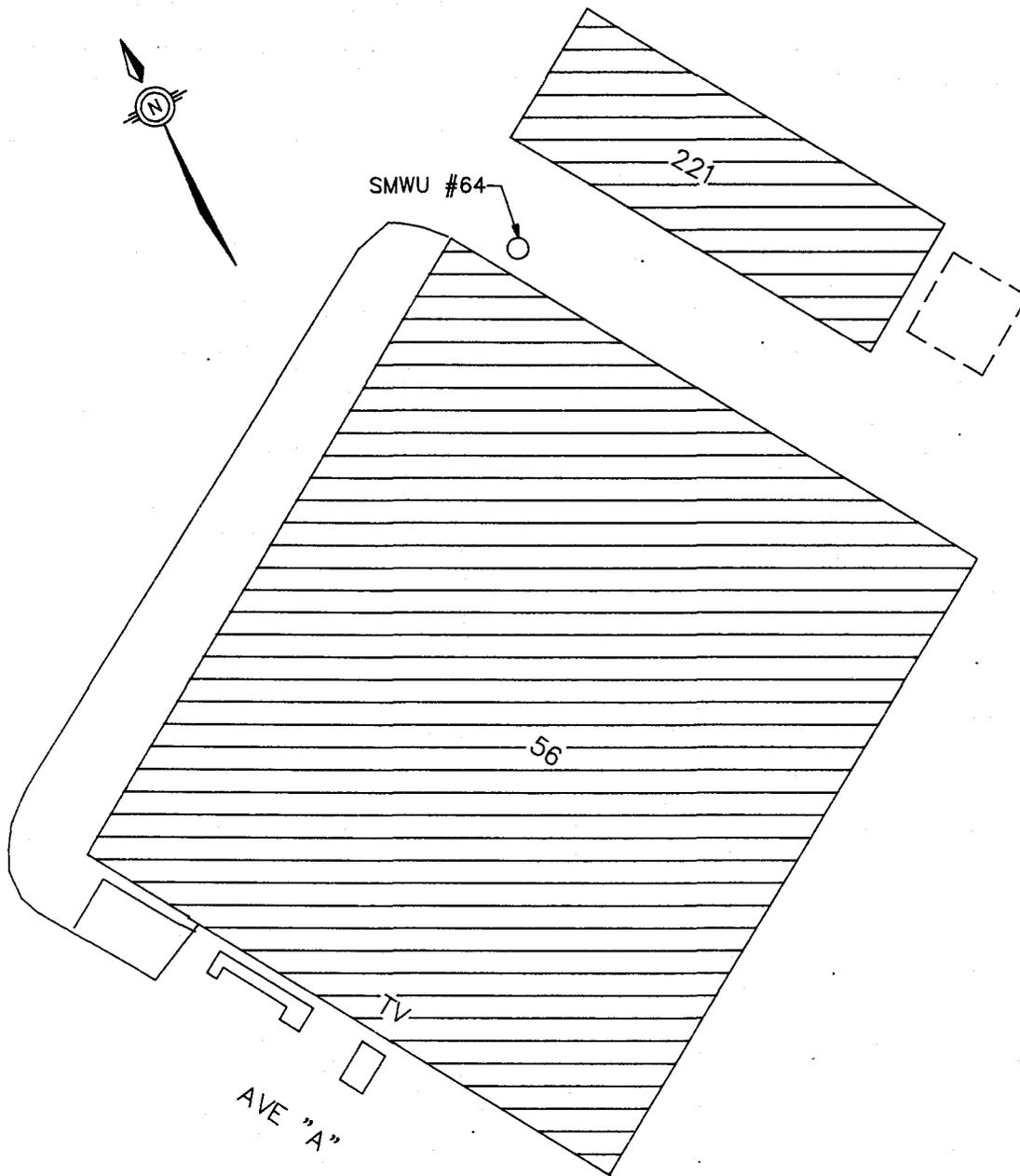
Empty paint cans and paint-contaminated debris are stored at this SAA. The major constituents of concern are volatile organic compounds and metals.

4.21.3 Migration Pathways

This SAA is located outside of Building 56; therefore, surface migration from surface runoff may occur. The floor in the vicinity of the SAA is free of cracks, protecting the underlying soil and groundwater.

4.21.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



NOT TO SCALE



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FIGURE 4-21
SWMU #64
BUILDING 56, SAA

DWG DATE: 05/19/94 | DWG NAME: 29AOC44

4.21.5 Exposure Potential

Building 56 is approximately 800 feet from military housing, and is adjacent to Pier C. The design features of the unit, nature of waste (i.e. cans, debris), and lack of evidence of a release minimize the likelihood of potential exposures to Naval Base employees.

4.21.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste, storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.22 SWMU #65 — Lead Storage, Building 221

4.22.1 Unit Characteristics

SWMU #65 is a lead storage area where lead blankets and shielding used in submarine radiological work are stored on pallets and rack-and-stack shelves inside the building, and on pallets in the yard on the south end of Building 221. Most of the lead is encased in rubber but some exposed lead is stored beneath a tarp. SWMU #65 has a concrete floor. The SWMU Site Location Map locates Building 221 within Naval Base Charleston. Figure 4-22 locates SWMU #65 in Building 221.

SWMU #65 is the former location of a pickling operation (AOC #544; see Section 5.10 for details) which was active until 1983/84. Currently, the building and adjacent storage yard are used for storing lead blankets and shielding. SWMU #65 also is used as a staging area for scrap lead awaiting disposal.

4.22.2 Waste Characteristics

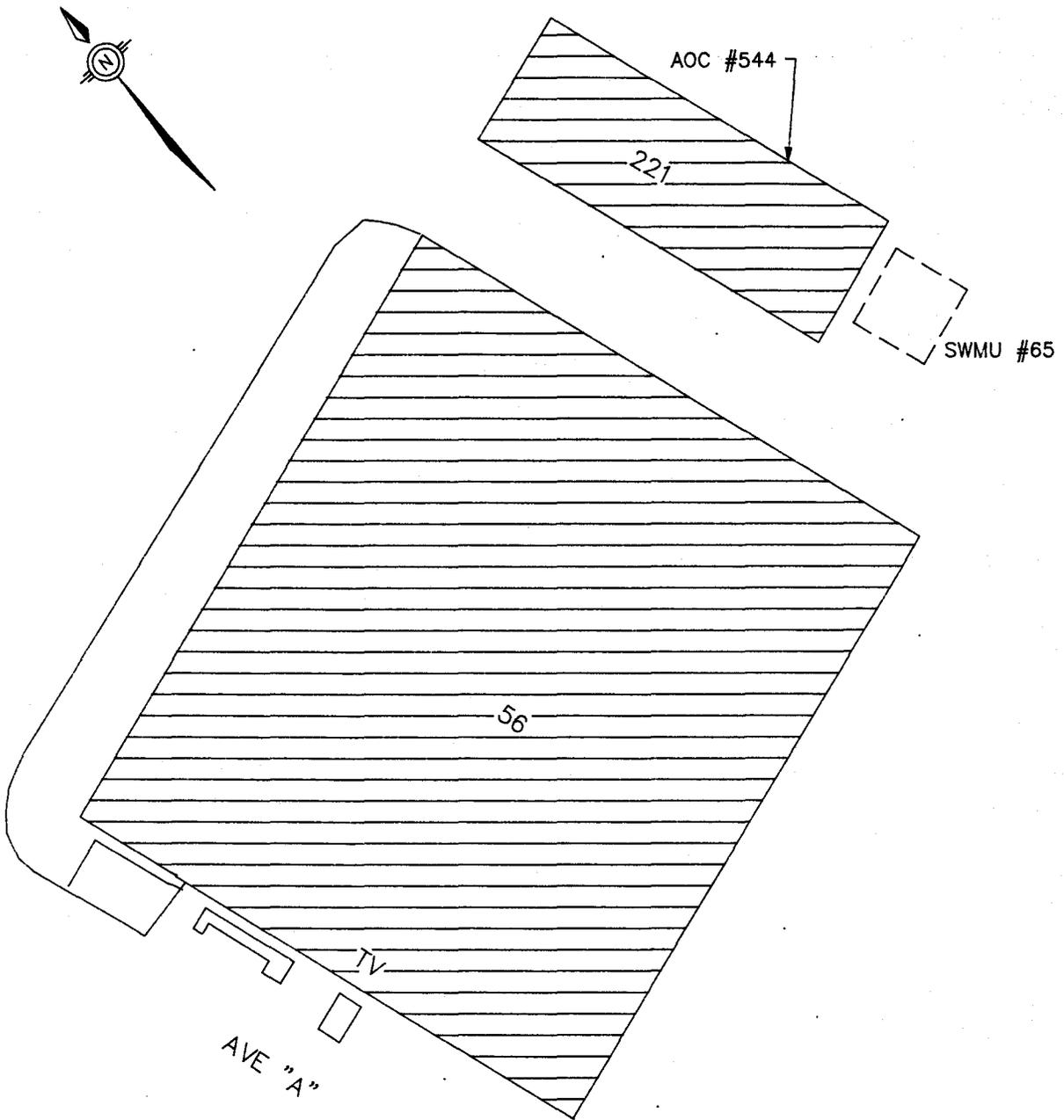
The waste associated with this SWMU is scrap lead, lead-lined drums, etc. The wastes associated with past pickling operations at this facility are also a concern.

4.22.3 Migration Pathways

Soil, groundwater, and surface water are potential migration pathways. Contaminants associated with the scrap lead stored in the open area to the south may either flow into a stormwater catch basin and then into the Cooper River or percolate into the soil, possibly into the shallow groundwater (because of the presence of acidic pickling solutions).

4.22.4 Evidence of Release

Zone Inspection Report (May 13, 1992) documented seven pallets of lead waste labeled with hazardous waste labels and stored in an unpermitted area. Also listed was a damaged 55-gallon



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FIGURE 4-22
SWMU #65
BUILDING 221, LEAD STORAGE AREA

DWG DATE: 05/19/94 | DWG NAME: 27N56AA

lead-lined drum, open and filled with rust-colored rainwater. Corrective actions were taken by responsible parties.

4.22.5 Exposure Potential

Building 221 is approximately 800 feet from military housing. Building 221 is adjacent to Pier C. Contaminants may have flowed into the stormwater catch basin and then to the Cooper River.

4.22.6 Recommended Action

Due to the waste management practices and lack of a thorough assessment of the potential hazards associated with the lead storage area, a RFI is recommended. Discharges to the Cooper River will be investigated as a separate unit.

4.23 SWMU #66 — Satellite Accumulation Area, Pier C

4.23.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55-gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. This SAA is no longer operational. The SWMU Site Location Map locates Pier C within the Naval Base and Figure 4-23 locates the former SAA on Pier C.

4.23.2 Waste Characteristics

Empty cans, paint contaminated debris, liquid paint waste, and thinner paint were stored. The major constituents of concern are volatile organic compounds and metals.

4.23.3 Migration Pathways

Due to this unit's location on Pier C, surface water is a possible migration pathway.

4.23.4 Evidence of Release

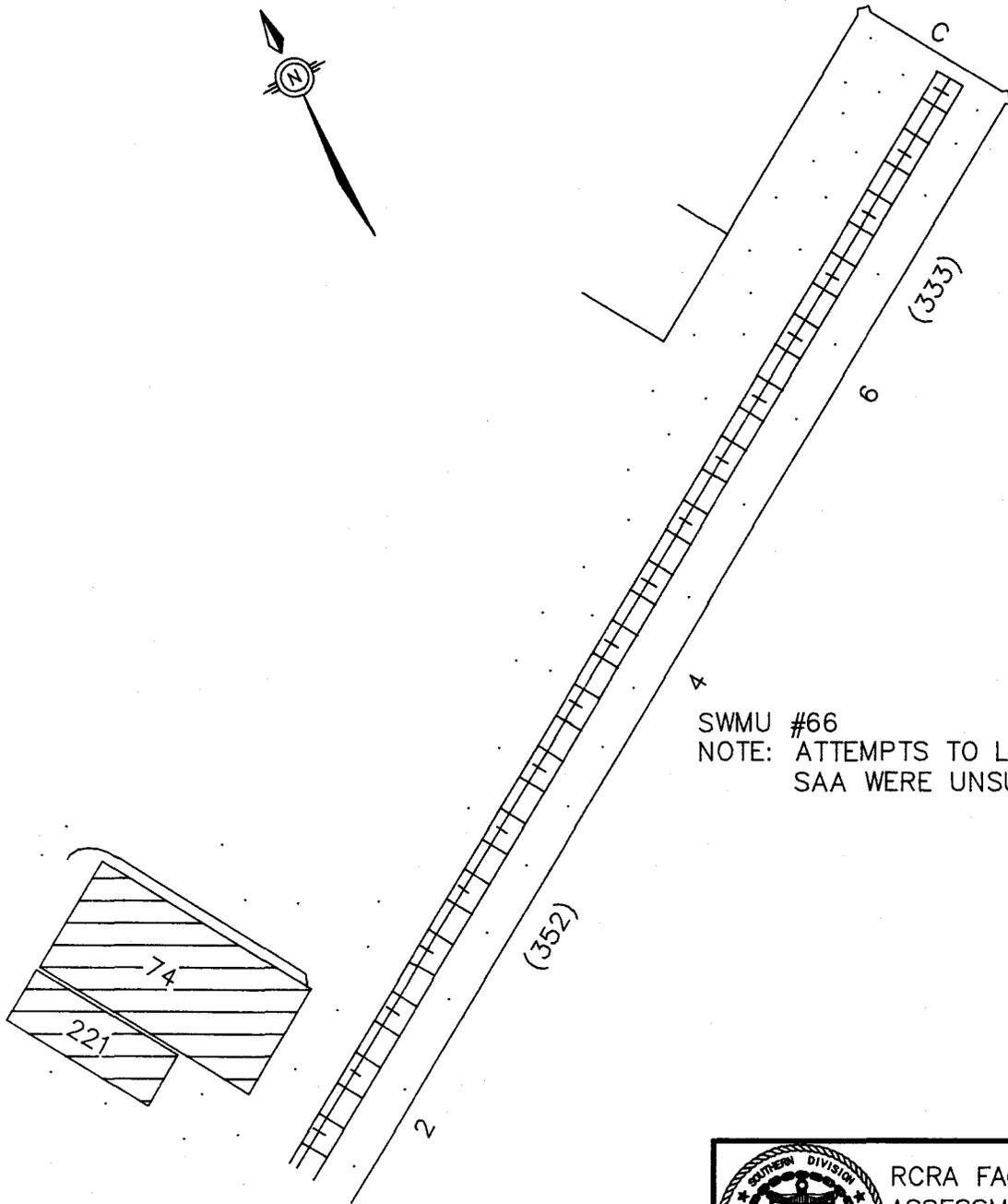
No spill reports, inspection reports, visual observations, or employee interviews indicate spills at this unit.

4.23.5 Exposure Potential

The pier is not close to any residential areas; however, it is located near the Cooper River and organisms in this ecosystem may have been exposed.

4.23.6 Recommended Action

The Cooper River will be investigated as a separate unit and any releases from this unit would have entered the Cooper River. This SAA is no longer operational. Per 40 CFR 262.34(a)(1), certification of closure is required in accordance with 40 CFR 265.111 and 114.



SWMU #66
NOTE: ATTEMPTS TO LOCATE THIS
SAA WERE UNSUCCESSFUL.



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FIGURE 4-23
SWMU #66
PIER C, SAA

4.24 SWMU #68 — Satellite Accumulation Area, Building 5

4.24.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 5 within the Naval Base. Figure 4-24 locates the SWMU near Building 5.

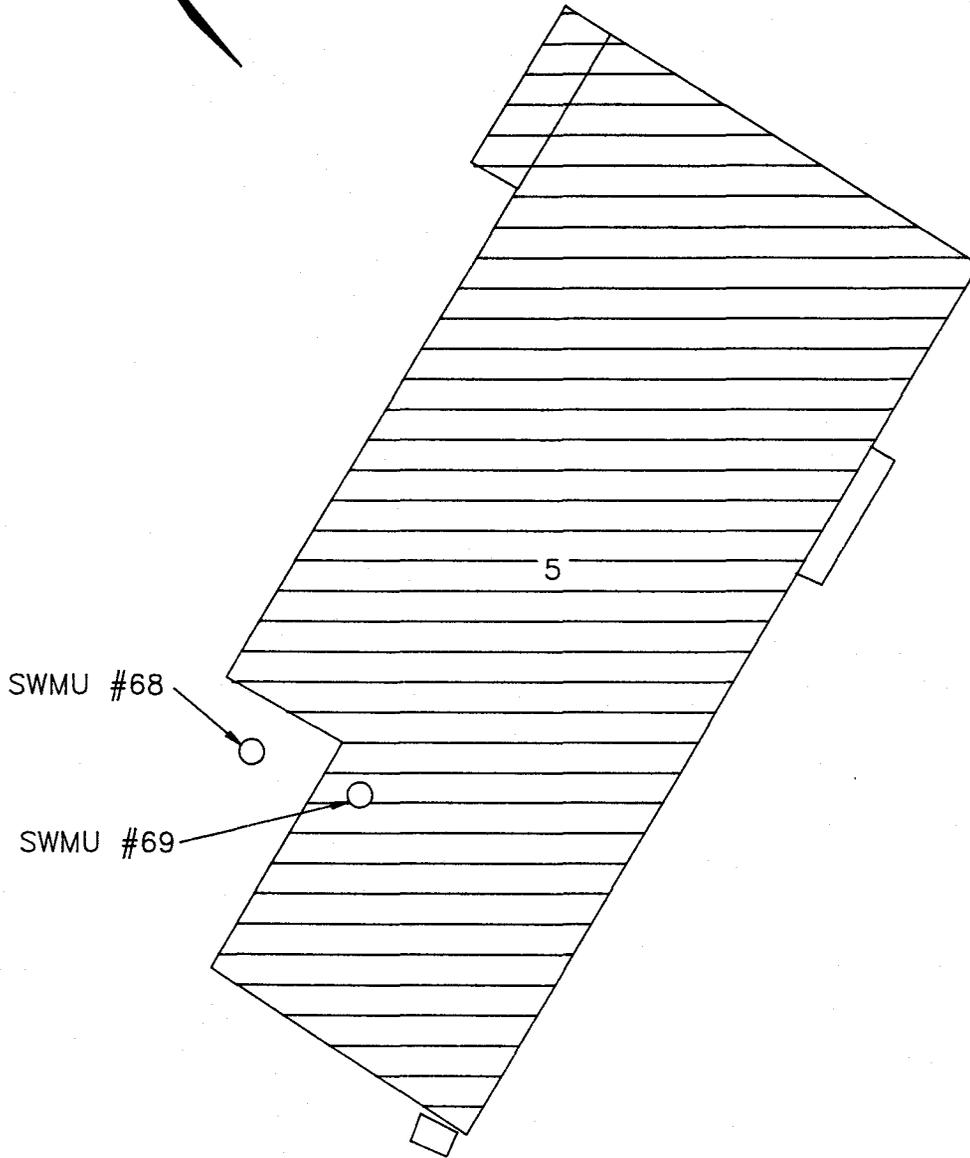
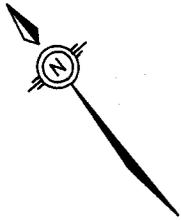
This satellite accumulation area is located immediately outside Building 5, near the northwest corner of the building. SWMU #68 is a 4 foot x 10 foot wooden shed with a tongue-and-groove wooden floor. The drums stored here are within a 3 foot x 10 foot secondary containment. The age of the unit is unknown.

4.24.2 Waste Characteristics

The drums within the SAA receive small, empty containers (e.g., adhesive cans, aerosol cans, paint cans, and brushes).

4.24.3 Migration Pathways

At this outdoor SAA, small, empty containers are collected into drums, which are protected by secondary containment within the shed. Therefore, the likelihood of any liquid escaping the unit is remote.



NOT TO SCALE



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FIGURE 4-24
SWMU #68
BUILDING 5, SAA

DWG DATE: 05/20/94 | DWG NAME: 27N5

4.24.4 Evidence of Release

No spill reports, inspection reports, employee interviews or visual observations indicated spills at this unit.

4.24.5 Exposure Potential

This SWMU is not close to any residential areas or sensitive environments. The limited storage capacity and nature of waste limit the potential exposures to Naval Base employees.

4.24.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste (empty cans, brushes, etc.), storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.25 SWMU #69 — Satellite Accumulation Area, Building 5

4.25.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. This SAA is no longer operational. The SWMU Site Location Map locates Building 5 within the Naval Base.

Wastes were stored in closed 55-gallon drums on a 6 foot x 8 foot wooden deck elevated above a concrete floor. No containment berm existed. Figure 4-25 locates the SAA in Building 5.

4.25.2 Waste Characteristics

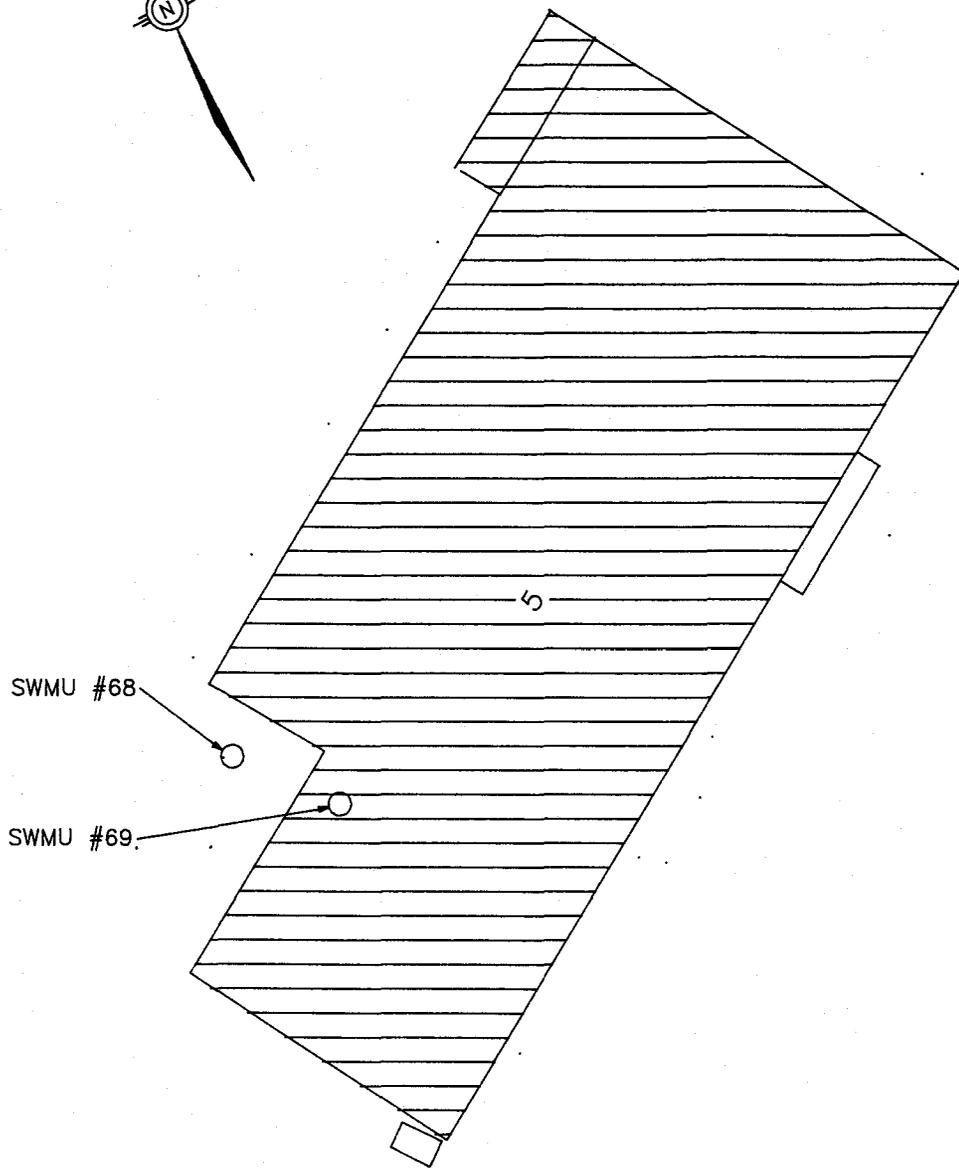
Aerosol cans, adhesive cans, and adhesive-contaminated debris were stored. The major constituents of concern are volatile organic compounds.

4.25.3 Migration Pathways

Because this SAA is located inside Building 5, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.25.4 Evidence of Release

No spill reports, inspection reports, employee interviews or visual observations indicate spills at this SAA.



NOT TO SCALE



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FIGURE 4-25
SWMU #69
BUILDING 5, SAA

4.25.5 Exposure Potential

This SAA is not in close proximity to any residential areas or sensitive environments. The nature of the waste, limited migration pathways, and lack of evidence of a major release minimize potential exposure to Naval Base employees.

4.25.6 Recommended Action

This SAA is no longer operational. Per 40 CFR 262.34(a)(1), certification of closure is required in accordance with 40 CFR 265.111 and 114.

4.26 SWMU #71 — Satellite Accumulation Area, Building 44

4.26.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 44 within the Naval Base.

Wastes are stored in closed 6-gallon metal containers. The floor surface is floor tile overlying concrete. No containment berm exists. Figure 4-26 locates the SAA within Building 44.

4.26.2 Waste Characteristics

Oily rags, cutting oil (Kaltenbach 2000), and rags with metal shavings are stored. The major constituents of concern are heavy metals and petroleum hydrocarbons.

4.26.3 Migration Pathways

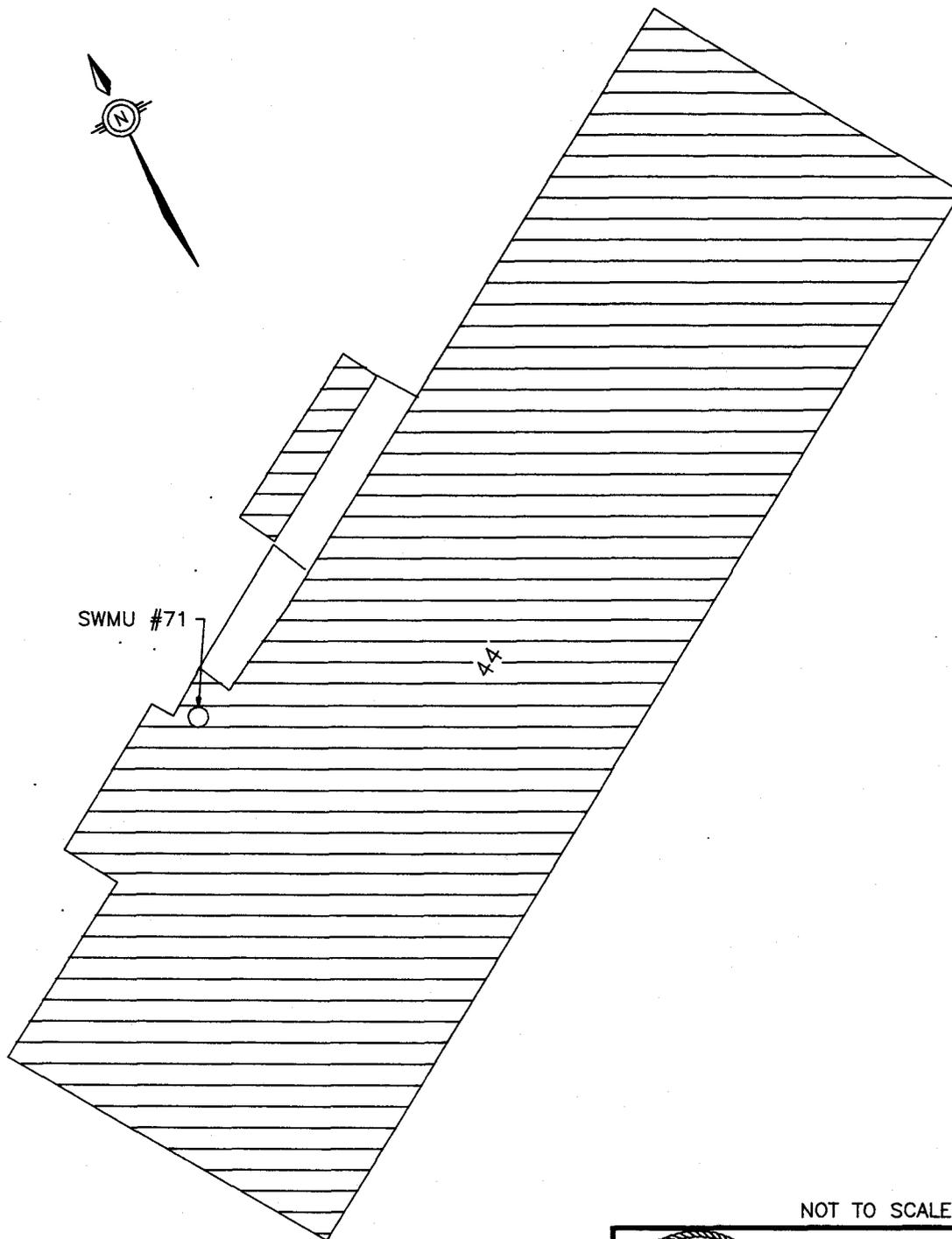
Because this SAA is located inside Building 44, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.26.4 Evidence of Release

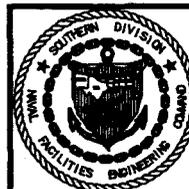
No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.26.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. The limited storage capacity and lack of evidence of a major release minimize the potential exposures to Naval Base employees.



NOT TO SCALE



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FIGURE 4-26
SWMU #71
BUILDING 44, SAA

DWG DATE: 05/19/94 | DWG NAME: 29AOC107

4.26.6 Recommended Action

No further investigation of this SAA is recommended due to the limited storage capacity, storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.27 SWMU #73 — Satellite Accumulation Area, Building 43

4.27.1 Unit Characteristics

This Satellite Accumulation Area (SAA) is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55-gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport off the Naval Base for ultimate treatment or disposal. The SWMU Site Location Map locates Building 43 within Naval Base Charleston. Figure 4-27 depicts the approximate location of the SAA in relation to Building 43. Wastes are stored in plastic bags and drums on a pallet. No containment berm exists. The approximate size of the satellite accumulation area is 12 feet x 8 feet.

4.27.2 Waste Characteristics

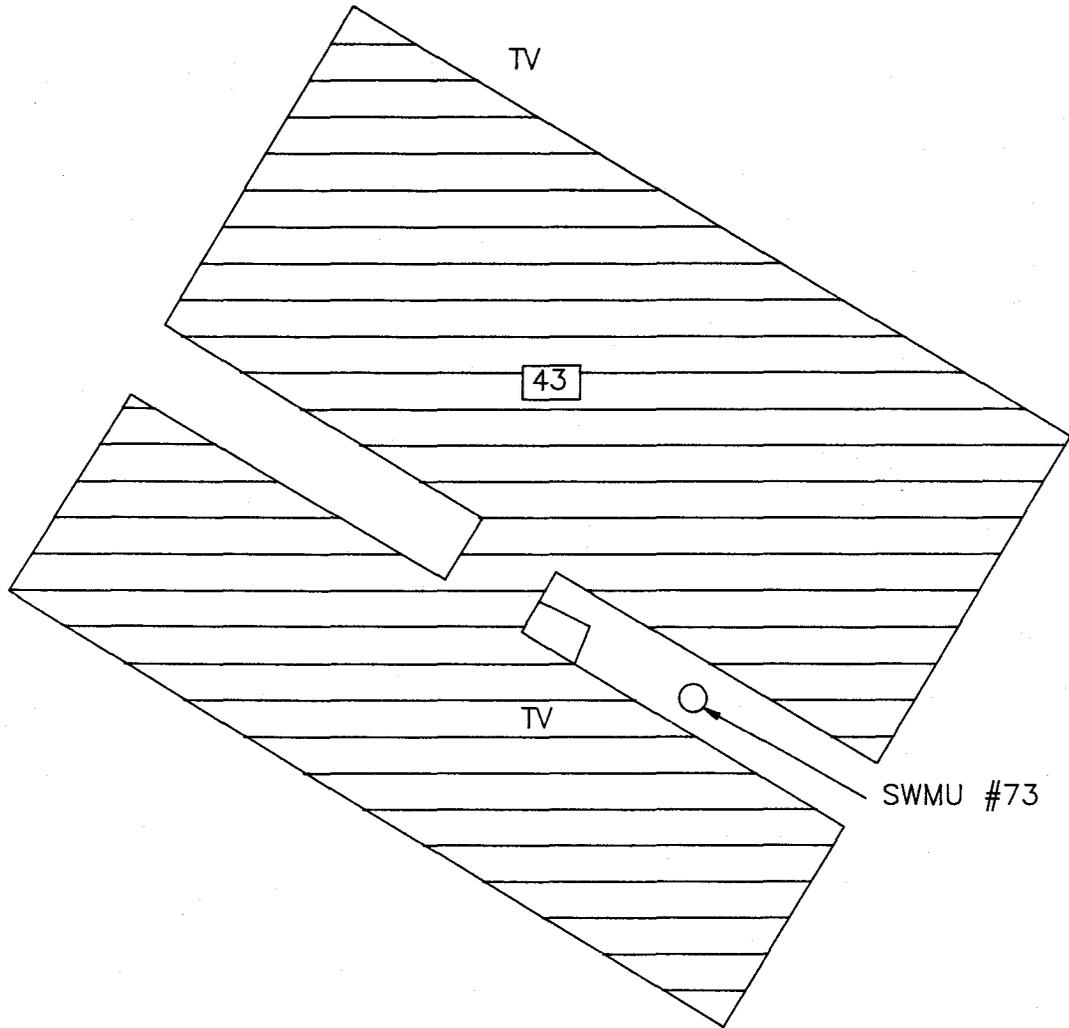
Oily rags, miscellaneous spill residue, used coolant, dry cleaning solvent, spent halogenated hydrocarbon solvents, and used petroleum naphtha solvent are stored at this SAA. The major constituents of concern are volatile organic compounds and petroleum hydrocarbons.

4.27.3 Migration Pathways

Should a release occur, soil and groundwater would be viable contaminant migration pathways considering the nature of the wastes stored in this SAA. Soil gas transport of constituents present would also be distinctly possible.

4.27.4 Evidence of Release

No incident reports, inspection reports, employee interviews, or physical evidence indicate that a release has occurred at this SAA.



NOT TO SCALE



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FIGURE 4-27
SWMU #73
BUILDING 43, SAA

4.27.5 Exposure Potential

This SAA is located within a restricted access industrial area which is not in close proximity to any residential areas or sensitive environments. If a release were to occur, the potential for exposure to contaminants would likely be limited to site workers.

4.27.6 Recommended Action

No further investigation of this SAA is recommended based on the information available and the lack of physical evidence that a release has occurred.

4.28 SWMU #74 — Satellite Accumulation Area, Building 57

4.28.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 57 within the Naval Base.

Wastes are stored in closed 55-gallon drums, which are on pallets on a tongue-and-groove wooden floor. The SAA is a 20 foot x 15 foot area. No containment berm exists. Figure 4-28 locates the SAA within Building 57.

4.28.2 Waste Characteristics

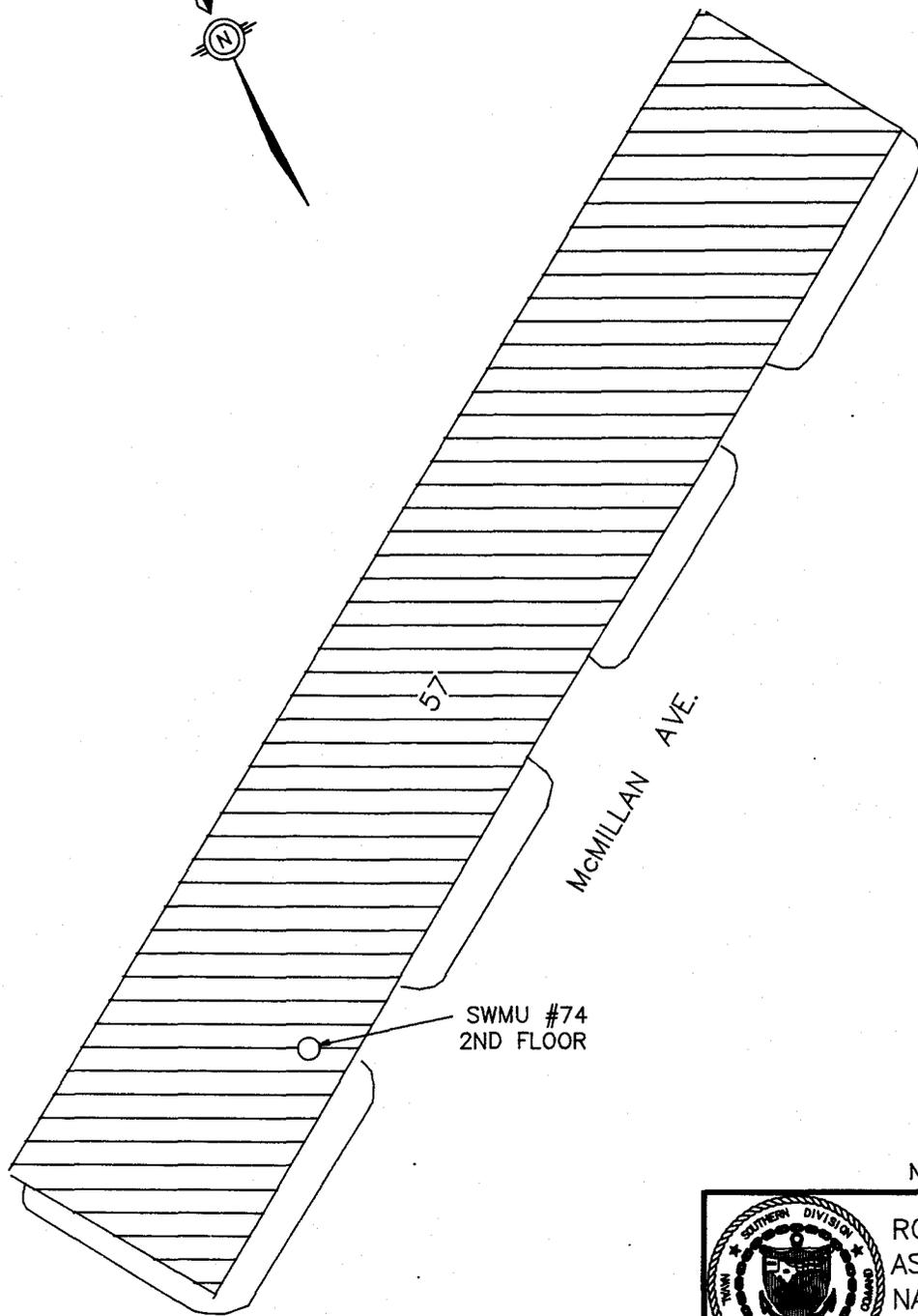
Zinc ingots (stacked), used/unused tetrachloroethylene solvent, empty aerosol cans, used spill kits, and grease are stored. The major constituents of concern are volatile organic compounds, metals, and petroleum hydrocarbons.

4.28.3 Migration Pathways

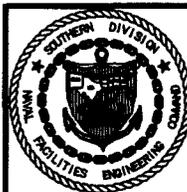
Because the floor of the SAA is wooden, the potential for migration to soil and groundwater exists.

4.28.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-28
SWMU #74
BUILDING 57, SAA

DWG DATE: 05/19/94 DWG NAME: 29AOC71

4.28.5 Exposure Potential

This SAA is not close to any residential areas. Building 57 is approximately 150 feet from the Cooper River at drydock 1. The lack of evidence of a release minimizes the likelihood of potential exposures to Naval Base employees.

4.28.6 Recommended Action

No further investigation of this SAA is recommended due to the lack of evidence of a release from this unit.

4.29 SWMU #75 — Satellite Accumulation Area, Drydock Number 1

4.29.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55-gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Drydock Number 1 within the Naval Base and Figure 4-29 locates the SAA on the drydock.

Wastes are stored in closed 55-gallon drums, which are on a steel frame structure. The floor surface is asphalt. No containment berm exists.

4.29.2 Waste Characteristics

Hydraulic oil-soaked rags are stored at this SAA. The major constituents of concern are petroleum hydrocarbons.

4.29.3 Migration Pathways

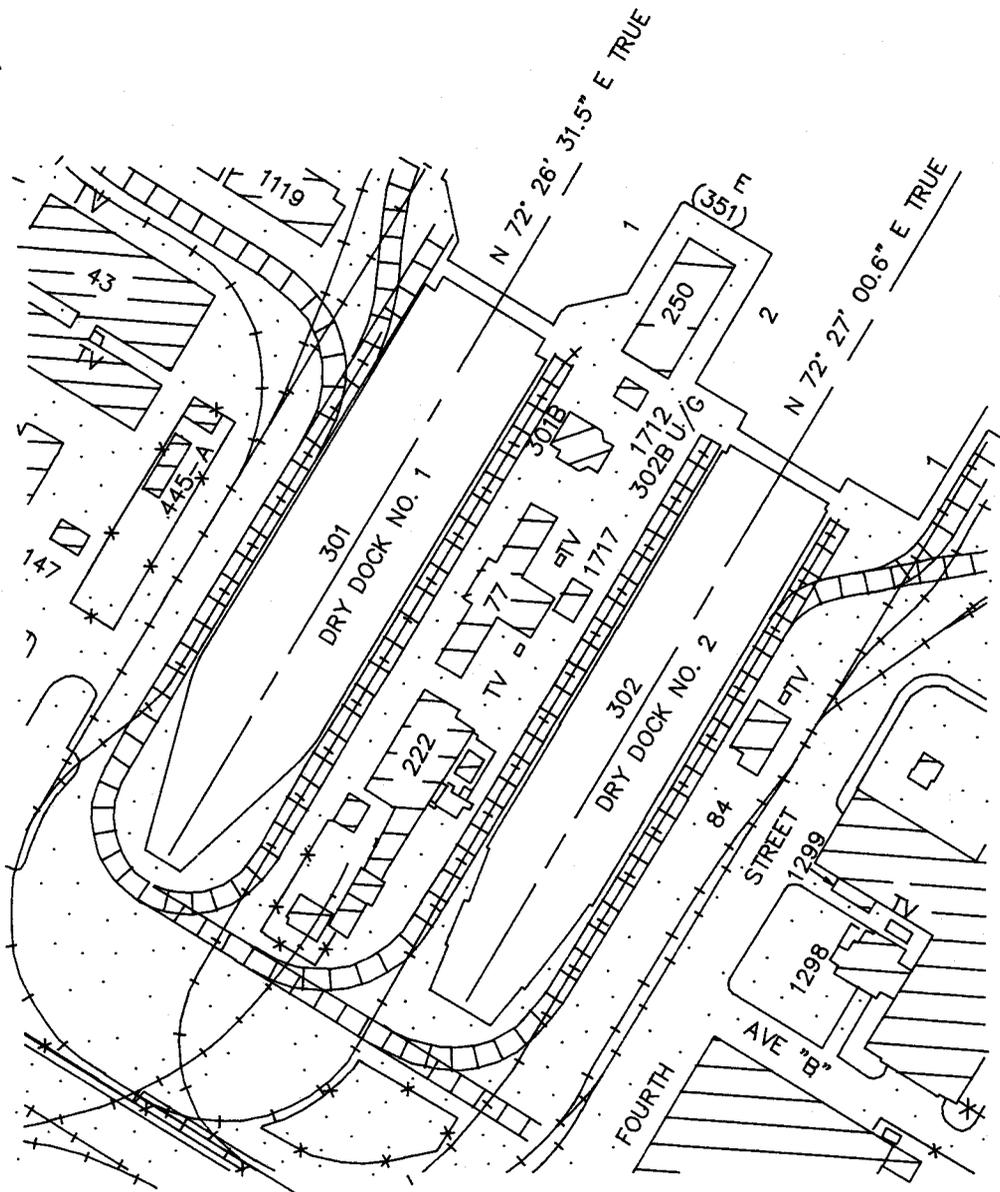
Because this SAA is located on the drydock, surface migration from surface runoff may occur. The Cooper River is approximately 25 feet from this SAA.

4.29.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or physical evidence indicate spills at this unit.

4.29.5 Exposure Potential

The site is not close to any residential areas; however, it is located near the Cooper River, which might be impacted should a spill occur.



NOTE: THE EXACT LOCATION OF SWMU #75 IS UNKNOWN

NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-29
SWMU #75
DD #1, SAA

4.29.6 Recommended Action

The drydock discharges will be investigated as a separate unit. Any releases from this unit would have entered the Cooper River. No further action is recommended for this SWMU.

4.30 SWMU #76 — Satellite Accumulation Area, Building 32

4.30.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 32 within the Naval Base.

Wastes are stored in closed 55-gallon drums in a caged area. The floor surface is floor tile overlying concrete. No containment berm exists. Figure 4-30 locates the SAA within Building 32.

4.30.2 Waste Characteristics

Paint, lube oil, and Caustic Soda Diaphragm Number 4 Flake are stored at this SAA. The major constituents of concern are volatile organic compounds, metals, and petroleum hydrocarbons.

4.30.3 Migration Pathways

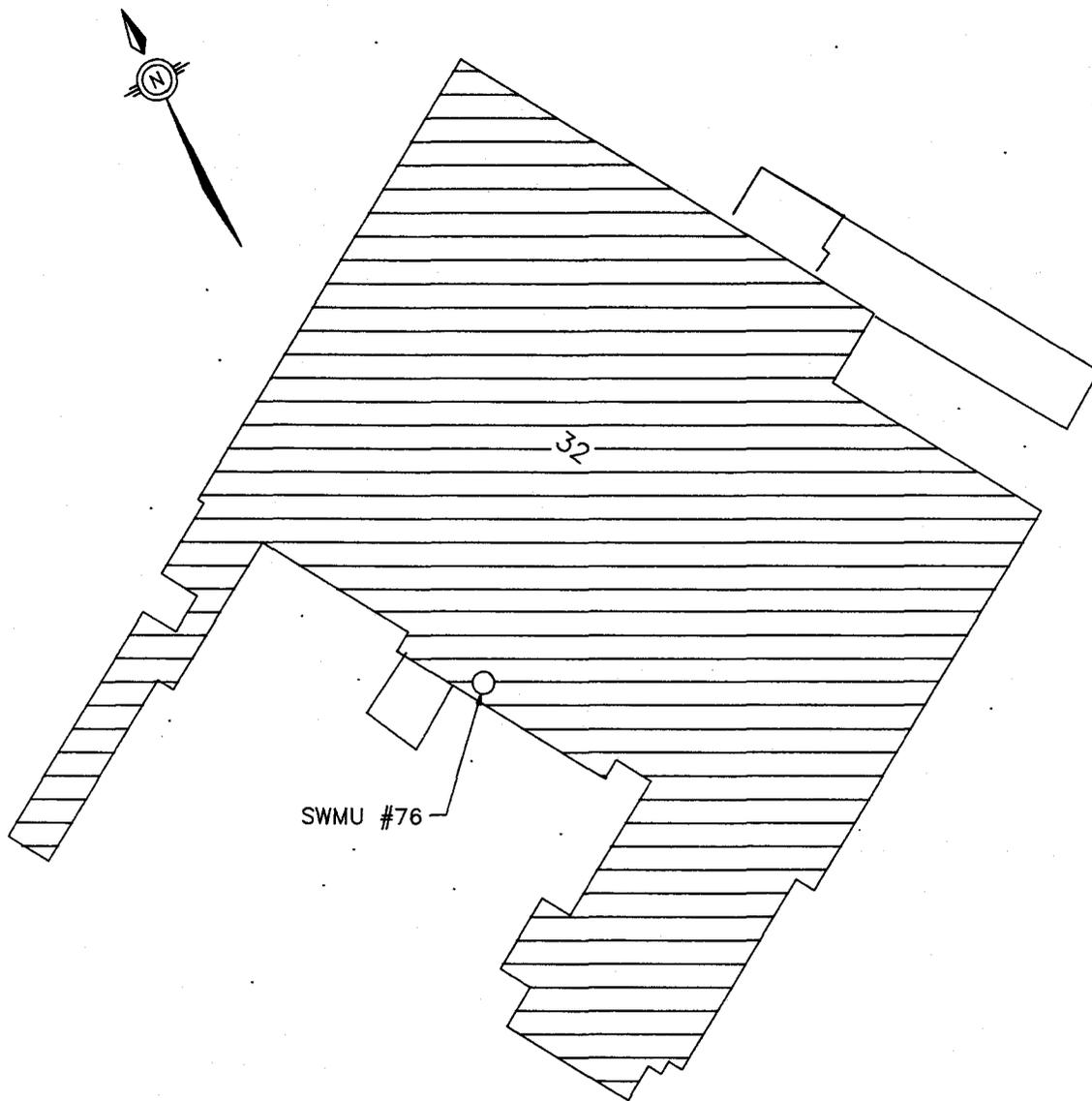
Because this SAA is located inside Building 32, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.30.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.30.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. The limited storage capacity and lack of evidence of a major release minimizes the potential exposures to Naval Base employees.



NOT TO SCALE



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FIGURE 4-30
SWMU #76
BUILDING 32, SAA

DWG DATE: 05/19/94 | DWG NAME: 29AOC110

4.30.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.31 SWMU #77 — Satellite Accumulation Area, Drydock Number 2

4.31.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55-gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates DryDock Number 2 within the Naval Base. Figure 4-31 locates the SAA on the drydock.

4.31.2 Waste Characteristics

Empty paint cans, paint-contaminated debris, liquid paint waste, and thinner paint are stored. The major constituents of concern are volatile organic compounds and metals.

4.31.3 Migration Pathways

This SAA is located on a drydock in the immediate vicinity of the Cooper River and surface migration may occur from stormwater runoff discharging into the river.

4.31.4 Evidence of Release

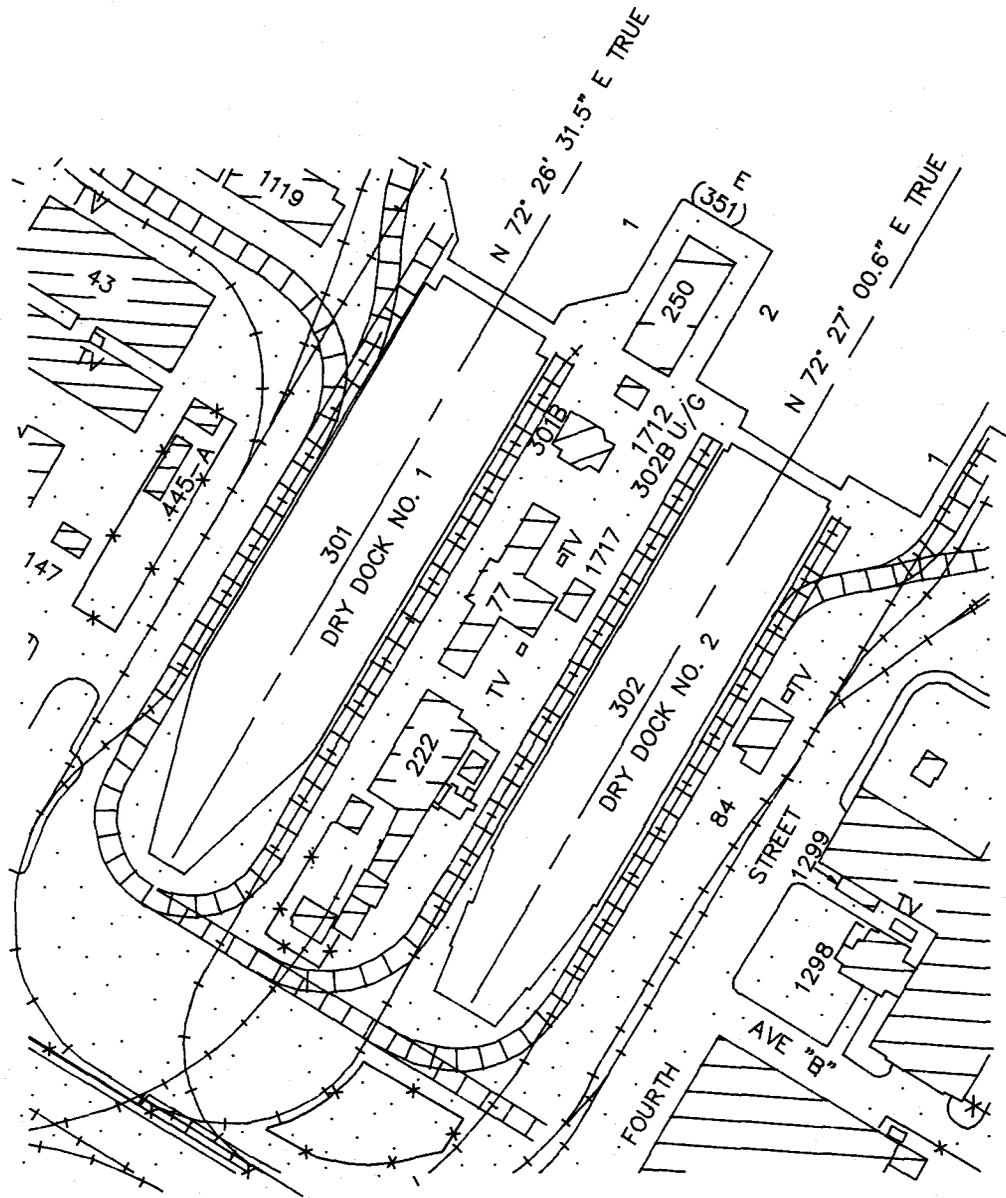
No spill reports, inspection reports, or employee interviews indicate spills at this SAA.

4.31.5 Exposure Potential

The drydock is not close to any residential areas; however, it is located near the Cooper River which may be impacted if a spill occurs. The potential for exposure to workers who frequent this site is minimized due to the nature of the waste and the minimal amount of waste stored.

4.31.6 Recommended Action

The Cooper River will be investigated as a separate unit and any releases from this unit would have entered the Cooper River. No further investigation is recommended for this SWMU.



NOTE: THE EXACT LOCATION
OF SWMU #77 IS UNKNOWN

NOT TO SCALE



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ASSESSMENT
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 4-31
SWMU #77
DD #2, SAA

DWG DATE: 05/19/94

DWG NAME: 29AOC68

4.32 SWMU #78 — Satellite Accumulation Area, Drydock Number 2

4.32.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. This SAA is no longer operational. The SWMU Site Location Map locates the drydock within the Naval Base. Figure 4-32 shows the location of SWMU #78 in relation to Drydock Number 2.

4.32.2 Waste Characteristics

Sufficient information is not available to determine waste characteristics.

4.32.3 Migration Pathways

Because this SAA was located on a drydock, surface migration from surface runoff may have occurred. The Cooper River is in the immediate vicinity of the drydock.

4.32.4 Evidence of Release

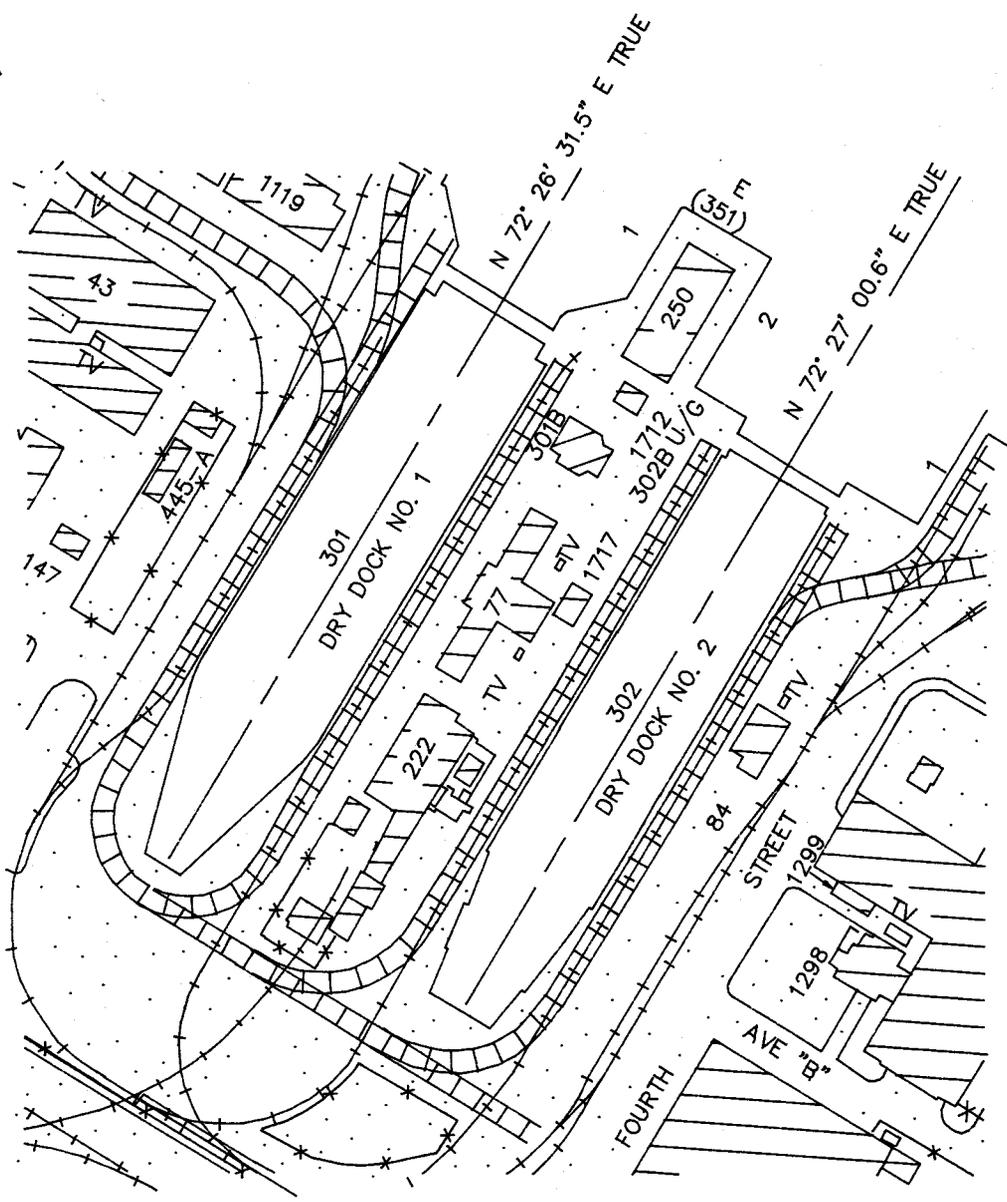
No spill reports, inspection reports, or employee interviews indicate spills at this SAA.

4.32.5 Exposure Potential

The drydock is not close to any residential areas; however, it is located near the Cooper River, which may be impacted if a spill occurs.

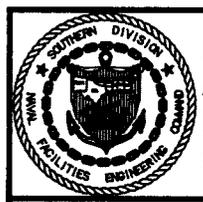
4.32.6 Recommended Action

This SAA is no longer operational. Per 40 CFR 262.34(a)(1), certification of closure is required in accordance with 40 CFR 265.111 and 114.



NOTE: THE EXACT LOCATION OF SWMU #78 IS UNKNOWN

NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-32
SWMU #78
DD #2, SAA

4.33 SWMU #79 — Satellite Accumulation Area, Building 250

4.33.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 250 within the Naval Base. Figure 4-33 locates the SWMU inside Building 250.

4.33.2 Waste Characteristics

Information required to determine waste characteristics is currently not available.

4.33.3 Migration Pathways

Information required to determine migration pathways is currently not available.

4.33.4 Evidence of Release

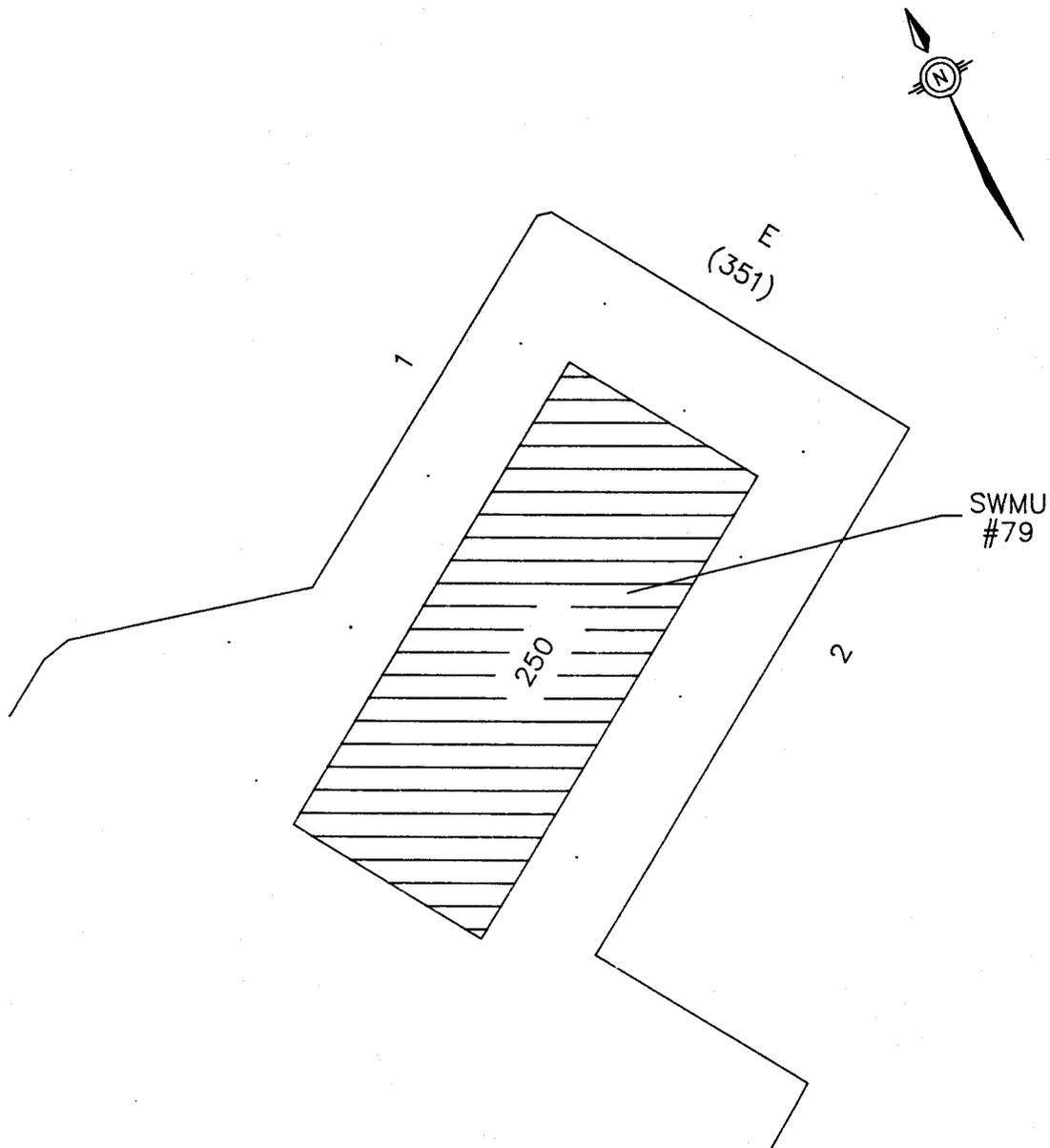
Information required to determine evidence of release is currently not available

4.33.5 Exposure Potential

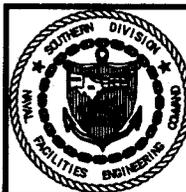
This SAA is not in close proximity to any residential areas or sensitive environments. Information required to determine exposure potential is currently not available.

4.33.6 Recommended Action

Due to insufficient information regarding this SAA, a Confirmation Sampling Investigation (CSI) is recommended to confirm whether or not a release to the environment has occurred.



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-33
SWMU #79
BUILDING 250, SAA

NOTE: THE EXACT LOCATION OF
SWMU #79 IS NOT KNOWN

4.34 SWMU #81 — Less-than-90-Day Accumulation Area, Building 1245

4.34.1 Unit Characteristics

This SWMU is a less-than-90-day Accumulation Area (AA), which is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an AA for less than 90 days, then transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 1245 within the Naval Base. Figure 4-34 locates the SWMU within Building 1245. Information concerning this unit's design and construction are currently not available.

4.34.2 Waste Characteristics

Empty paint cans and empty trichloroethane (TCE) cans are reportedly stored at this AA. The major constituents of concern are volatile organic compounds and metals.

4.34.3 Migration Pathways

Information is currently not available to determine migration pathways.

4.34.4 Evidence of Release

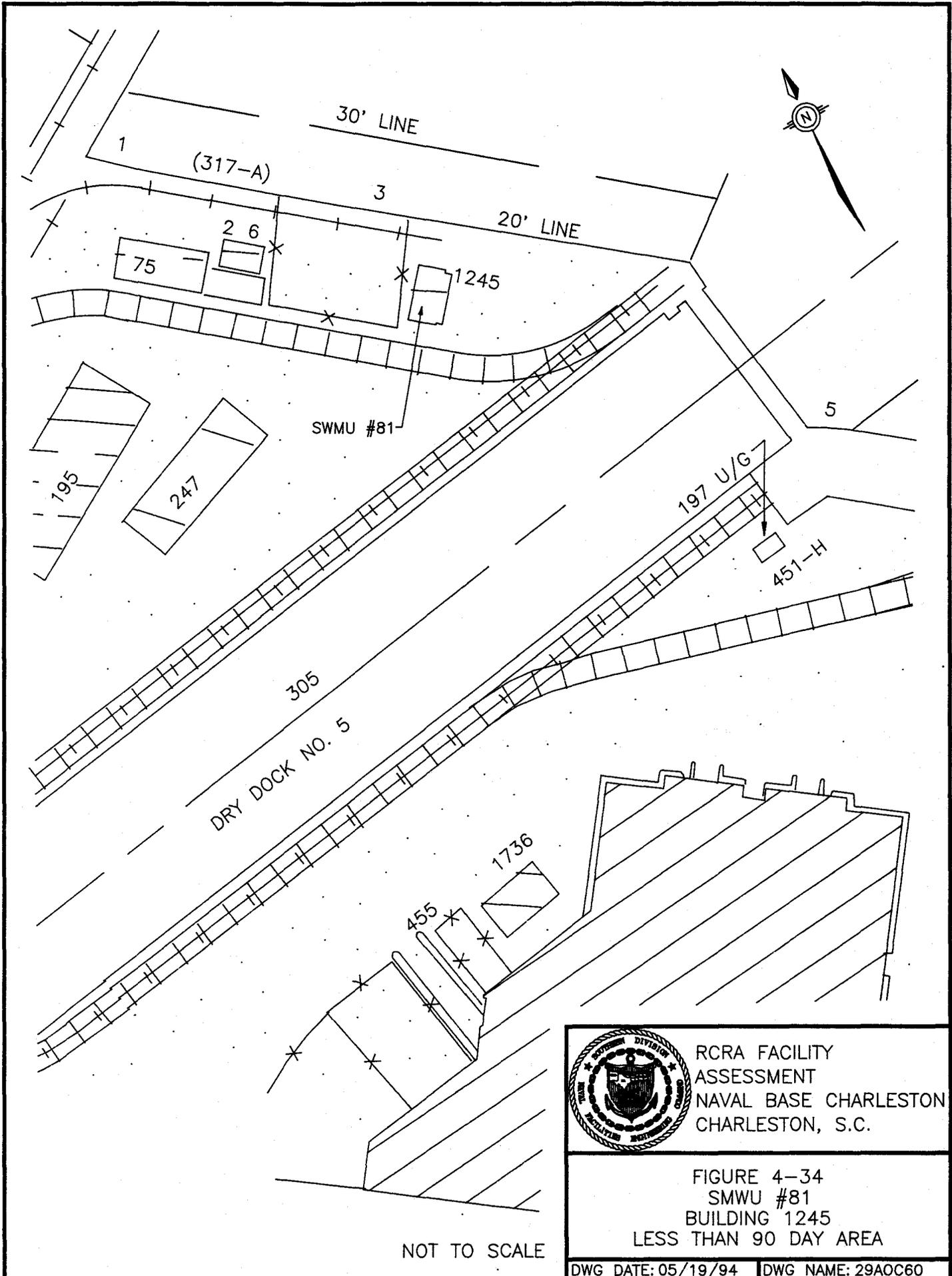
Information is currently not available to determine evidence of release.

4.34.5 Exposure Potential

This SWMU is not close to any residential areas or sensitive environments. Additional information is currently not available.

4.34.6 Recommended Action

Due to insufficient information regarding this AA, a CSI is recommended to confirm whether or not a release to the environment has occurred.



NOT TO SCALE



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FIGURE 4-34
SMWU #81
BUILDING 1245
LESS THAN 90 DAY AREA

4.35 SWMU #82 — Satellite Accumulation Area, Building 177

4.35.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 177 within the Naval Base.

Wastes are stored in 55-gallon drums, 1- and 5-gallon cans, and plastic bags, all of which are on pallets. The floor surface is floor tile overlying concrete. No containment berm exists. Figure 4-35 locates the SAA inside Building 177.

4.35.2 Waste Characteristics

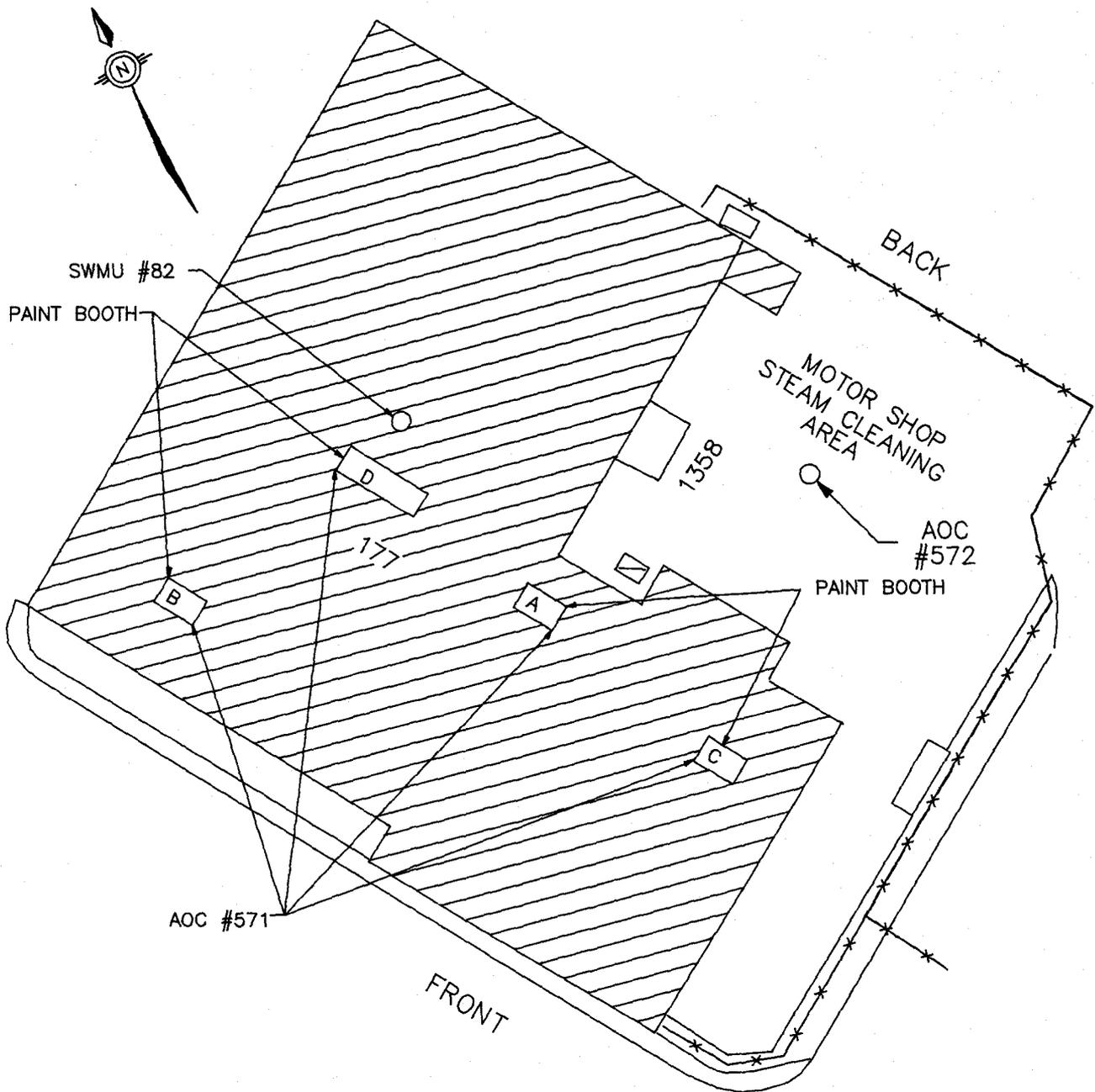
Empty paint and aerosol cans, used paint rollers and brushes, rags, spent Stoddard solvent, spent xylene, empty grease and lube oil cans, varsol solvent, gasket adhesive tubes, petroleum preservatives, and empty Plastikote containers (acetone, methyl ethyl ketone, and toluene) are stored.

4.35.3 Migration Pathways

Because this SAA is located inside Building 177, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.35.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



NOT TO SCALE



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FIGURE 4-35
SWMU #82
BUILDING 177, SAA

4.35.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. The storage capacity and lack of evidence of any major releases minimizes the potential exposures to Naval Base employees.

4.35.6 Recommended Action

No further investigation of this SAA is recommended due to storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.36 SWMU #83 — Building 9 Foundry

4.36.1 Unit Characteristics

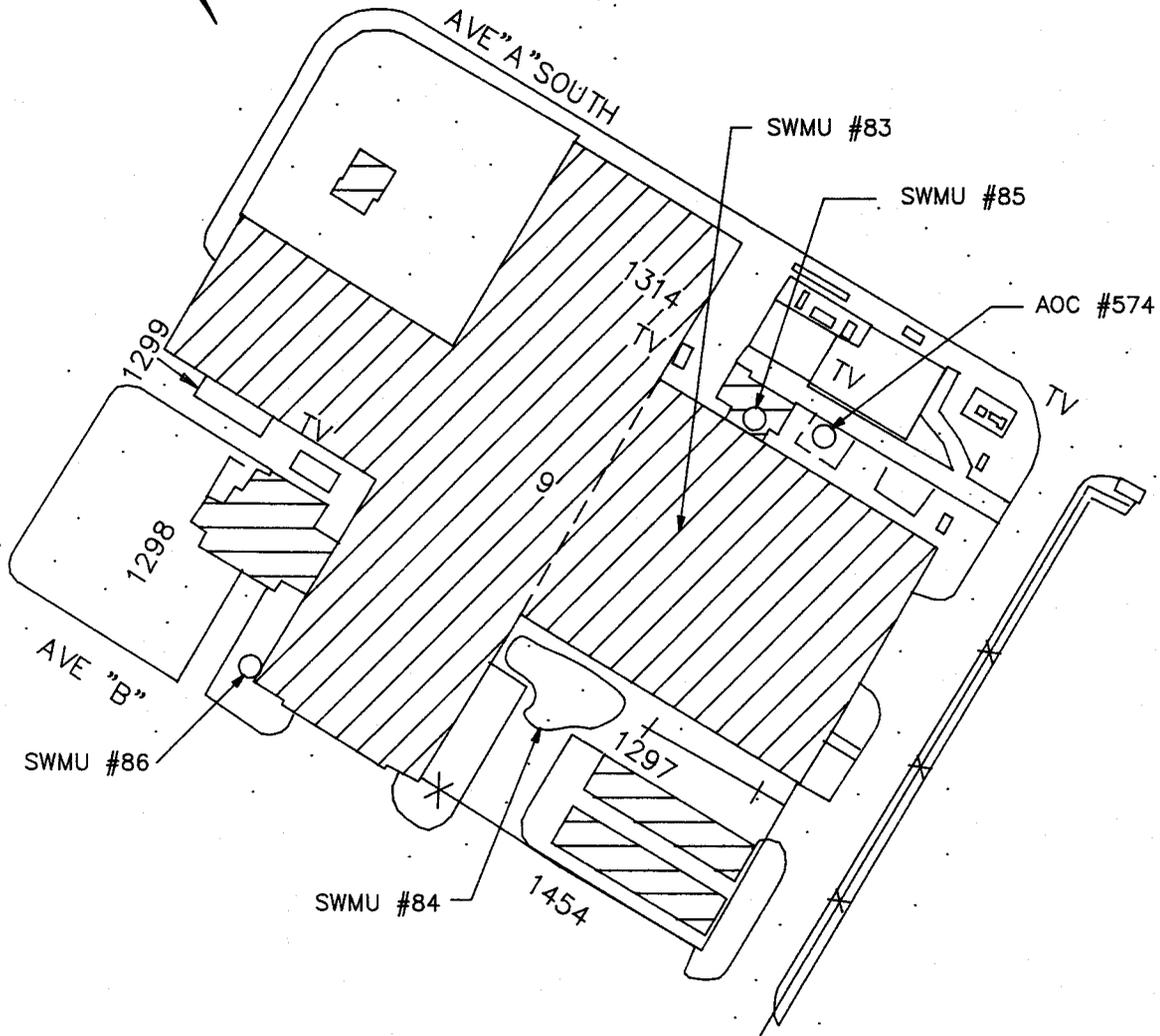
Building 9 contains electrical power supply equipment, capacitors, transformers, rectifiers, furnaces, and ovens associated with foundry operations which are reportedly no longer in use. The SWMU Site Location Map locates Building 9 within the Naval Base and Figure 4-36 depicts the location of the foundry area within the building. The foundry, built in 1906, was used to cast metal parts used in refitting ships. Processes associated with this facility included melting of copper alloy materials, and a "mixing and shakeout" procedure which used copper alloy and sands. The foundry is currently used by Shop 06 for the repair of hydraulic equipment and as a power substation (providing power for smoldering activities).

A foundry furnace, designated as company point I.D. Number 53 on the Bureau of Air Quality Control Permit Number 0560-0002, has an associated stack 67 feet high that was not equipped with continuous emission monitors.

A foundry molds cyclone, designated as company point I.D. Number 54 on the Bureau of Air Quality Control Permit Number 0560-0002, has a 30 foot high, 2-foot inside diameter stack that was not equipped with continuous emission monitors.

Two above ground fuel oil storage tanks once served the foundry's furnaces and torches. Although the two tanks are no longer in use, they have not been decommissioned. One tank has a 3700-gallon capacity (AOC #574), the other has a 586-gallon capacity.

An abandoned oven in the foundry area is posted with a sign indicating that it contains PCBs. An approximately 10 cubic foot pit filled with soot and metal scrap was observed below an electric furnace in the foundry. Electrical panels in the former foundry area are intact. The smoldering pots contain friable asbestos.



NOT TO SCALE



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FIGURE 4-36
SWMU #83
BUILDING 9

DWG DATE: 05/19/94

DWG NAME: 29SWMU39

Lead bricks and drums of hazardous materials (lead shot, linseed oil, and solvents) from previous foundry operations are currently stored in Building 1297.

4.36.2 Waste Characteristics

Waste streams associated with past and/or present operations at the foundry include lead, linseed oil, solvents, copper, PCBs, friable asbestos, ceramic fibers, isopropanol, petroleum hydrocarbons, and paint waste.

4.36.3 Migration Pathways

Because this SWMU is located inside Building 9, the potential for impacts to soil and shallow groundwater are not known. The diversity of the waste stream, the age of the facility, and unknown past handling practices may have resulted in releases that were not contained within the building causing soil and groundwater to be viable migration pathways. Air emissions associated with the foundry operation are likely to have deposited particulate matter in the area surrounding the facility.

4.36.4 Evidence of Release

Several PCB-related releases have been reported. In a hand-written Department of the Navy memorandum, a transformer oil spill is reported for Building 9. The spill occurred on August 22, 1979, when a contractor was removing transformers. Transformer oil was spilled on the ground and cement on the southeast side of Building 9. According to the Shop 06 foreman at the time, approximately 100+ gallons of oil were spilled. The foreman took a sample of the fluid which was on concrete, and submitted it to a laboratory for PCB analysis (results unknown). The area was roped off and posted with "keep out" signs and a PCB notice. The spill was covered with an absorbent; the remainder of the cleanup history is unknown.

According to Hazardous Material Incident Report Number 84-55, on September 18, 1984, a capacitor in an electrical power supply exploded, spraying burned Pyranol oil residue inside a

small (8 foot x 6 foot x 7 foot) containment room. The containment room was subsequently sealed off and posted with PCB warning labels. The damaged capacitor was removed on October 3, 1984. The containment room was cleaned up on October 19, 1984. The capacitor and cleanup debris were containerized in a 55-gallon drum and signed over for disposal through a Defense Logistics Agency (DLA) contract.

Environmental Incident Report Number 88-68 states that notification of a spill comprising 1/2 gallon of oil mixed with soot occurred on August 31, 1988. The mixture was on a rectifier and the cement pad on which the rectifier was seated. On August 26, 1988, a composite sample of three locations in the area of concern was collected and analyzed for PCBs (124 ppm Aroclor 1260). The area was cleaned; cleanup debris was placed in a drum and taken to Building 246 for disposal. For additional information, two wipe samples were subsequently sampled and analyzed for PCBs; one from the rectifier (120 $\mu\text{g}/\text{swab}$ Aroclor 1254) and one from the cement pad on which the rectifier was seated (347 $\mu\text{g}/\text{swab}$ Aroclor 1254). Due to these results, a double rinse cleanup was conducted on September 7, 1988.

Wipe samples were collected in January, 1989 from around the drain plug area of the cabinet and cement pad of transformer NS 1A and analyzed for PCBs. The reported PCB concentrations were 1290 $\mu\text{g}/\text{swab}$ of Aroclor 1260 (drain plug area) and 19000 $\mu\text{g}/\text{swab}$ of Aroclor 1260 (cement pad). The same two areas were sampled in early February 1989 with PCB results of 125 $\mu\text{g}/\text{swab}$ and 5620 $\mu\text{g}/\text{swab}$ Aroclor 1260, respectively. These analytical results necessitated further cleaning to meet the EPA requirements of 100 $\mu\text{g}/100 \text{ cm}^2$. The spill area was recleaned and resampled on April 15, 1989 (drain plug area 78 $\mu\text{g}/\text{swab}$ and cement pad 132 $\mu\text{g}/\text{swab}$, Aroclor 1260) and again on May 27, 1989 (cement pad <10 $\mu\text{g}/\text{swab}$ Aroclor 1260; it is unknown if the drain plug area was also sampled on this date).

Environmental Incident Report Number 91-83 states that a fire was discovered in the generating station at the foundry on May 23, 1991. The generating station provided the electricity to

operate the induction heaters which operated the foundry's ovens. The generating station contained PCB capacitors. It was determined that an air-cooled transformer overheated and caught on fire. The PCB capacitors were not damaged. Any subsequent cleanup procedures are not known.

On September 19, 1988, three wipe samples were collected from the interior of the foundry Ajax oven and analyzed for PCBs. One sample was a wipe of a 100 cm² area on top of the second capacitor from the left in the bottom bank (386.32 μ g/wipe Aroclor 1254). The other two samples are not based on a per unit area due to the large amount of dirt and grease also incidentally collected. These two samples were collected from the wooden base under the bottom bank of the capacitor (235.29 mg/g Aroclor 1254) and from the floor behind the capacitor banks (26.28 mg/g Aroclor 1254).

On October 27, 1988, airborne PCB (Aroclors 1254 and 1242) monitoring was conducted inside an Ajax Oven Control Center in the foundry while the oven was operating. Three areas were monitored over an approximate 3-hour period; only one area had a reported PCB concentration (0.0029 mg/m³ Aroclor 1254) above the laboratory quantitation limit of 0.0020 mg/m³.

4.36.5 Exposure Potential

Building 9 is located in a restricted-access industrial area. Consequently, the risk of exposure to contaminants at this facility is likely to be limited to site workers. Due to the known history of releases the risk posed may be substantial.

4.36.6 Recommended Action

Due to evidence of several past releases and lack of a thorough assessment of the potential hazards associated with these releases, it is recommended that a RCRA Facility Investigation be conducted.

4.37 SWMU #84 — Lead Storage, Building 9

4.37.1 Unit Characteristics

SWMU #84 is the area outside Building 9 used for the storage of lead blankets and shielding used primarily in submarine work. SWMU #84 is still operational. The SWMU Site Location Map locates this unit within Naval Base Charleston. Figure 4-37 shows the location of SWMU #84 inside Building 9.

The lead-containing materials were placed on concrete or on a combination of pallets and concrete. No berms or overhead protection were used. The approximate dimension of the lead storage area is 65 feet x 35 feet. Most of the lead stored was encased in rubber or fabric; however, bare lead has also been stored. During a site survey conducted on January 31, 1994, cracks were observed in the concrete. Otherwise, SWMU #84 was in good condition.

4.37.2 Waste Characteristics

The primary waste associated with this SWMU is lead.

4.37.3 Migration Pathways

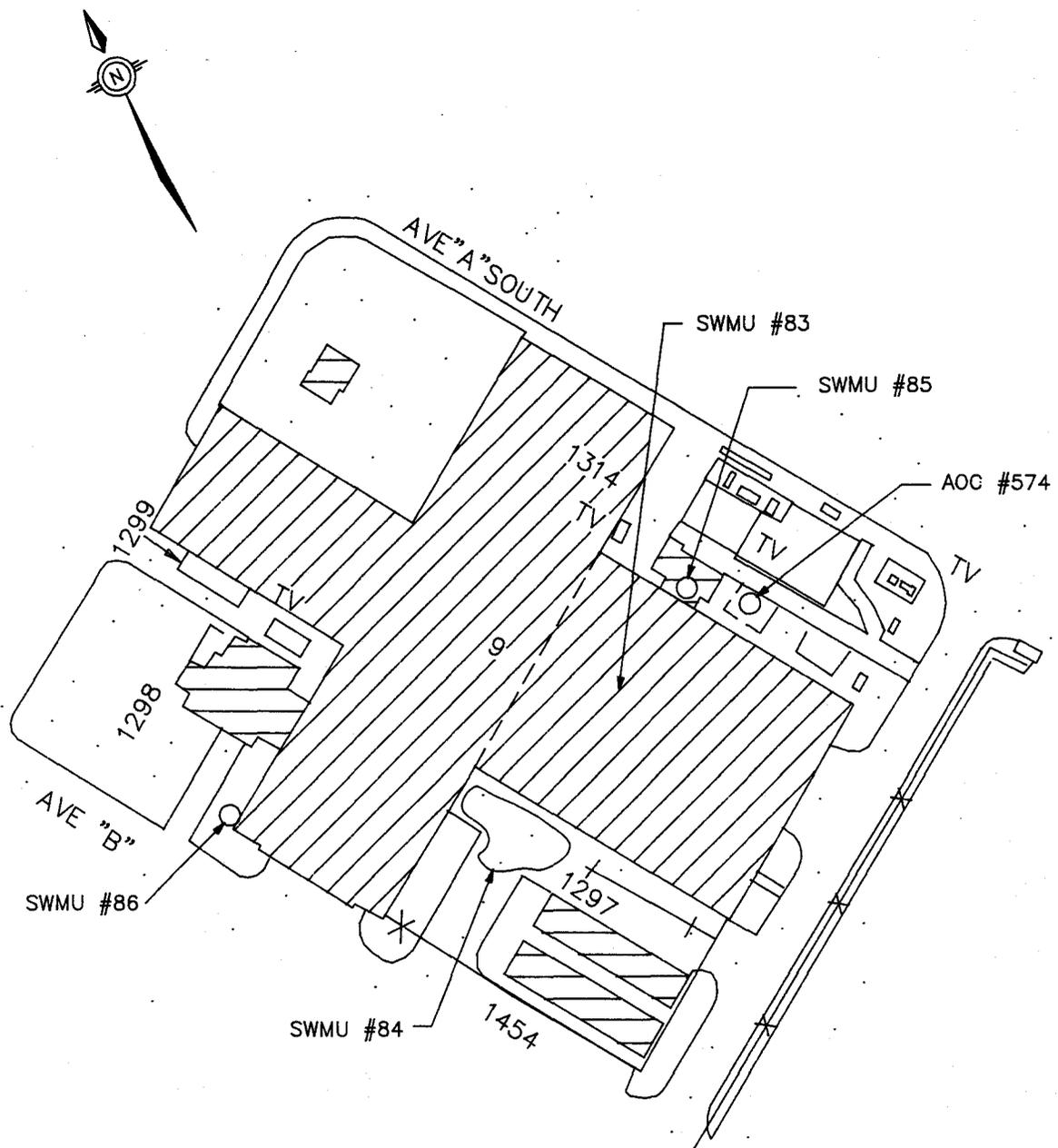
The potential exists for lead-contaminated stormwater to migrate from this unit. Stormwater from this unit drains into a catch basin and discharges into the Cooper River.

4.37.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or physical evidence indicate spills at this SWMU.

4.37.5 Exposure Potential

This SWMU is not in close proximity to any residential areas. Stormwater from this unit discharges into the Cooper River.



NOT TO SCALE



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FIGURE 4-37
SWMU #84
BUILDING 9, LEAD STORAGE

4.37.6 Recommended Action

There is no evidence of a release from this unit. However, a RFI is recommended due to the nature of the waste and the design of the unit which may allow migration of any potential releases.

4.38 SWMU #85 — Satellite Accumulation Area, Building 9

4.38.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 9 within the Naval Base. Figure 4-38 locates the SAA in relation to Building 9.

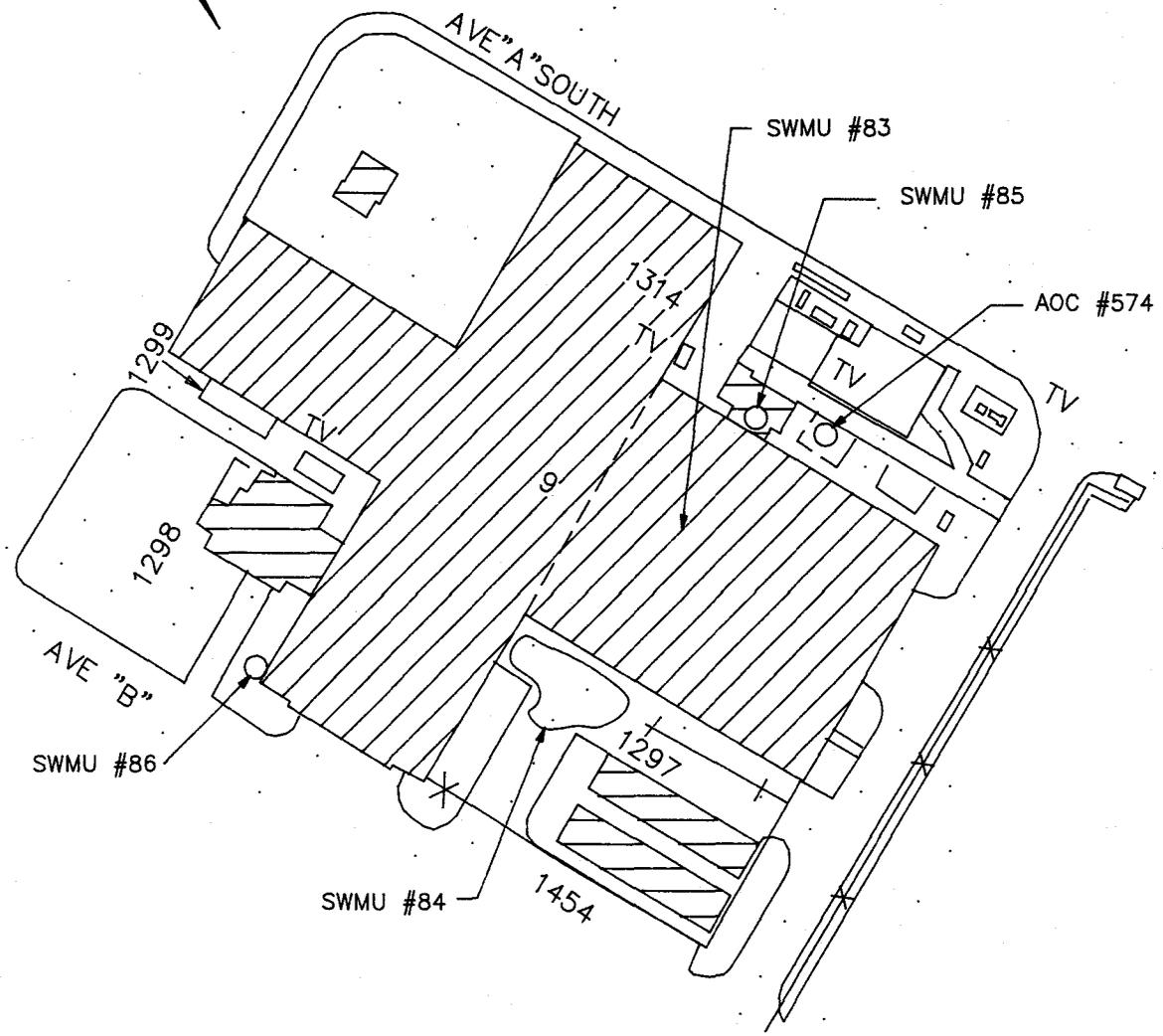
Wastes at this SAA are stored in closed 55-gallon drums and 5-gallon metal containers, all of which are underlain by concrete. The metal containers are also stored on shelves. The designated storage area is approximately 10 feet x 8 feet. On 1-31-94, SWMU #85 was clean. However, some fractures were observed in the concrete.

4.38.2 Waste Characteristics

The waste stream associated with this SAA includes but may not be limited to empty paint and aerosol cans, used paint brushes and rollers, used fuel and oil filters, and oil spill residue.

4.38.3 Migration Pathways

Some fractures were observed in the concrete floor in the vicinity of the SAA, but the potential for a release entering the underlying media is not likely based on the types of waste known to be managed in this area.



NOT TO SCALE



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FIGURE 4-38
SWMU #85
BUILDING 9, SAA

4.38.4 Evidence of Release

No incident reports, inspection reports, employee interviews, or physical evidence indicate that a release has ever occurred at this SAA.

4.38.5 Exposure Potential

This SAA is not in close proximity to any residential areas or sensitive environments. If a release were to occur, the risk of exposure would likely be limited to site workers.

4.38.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste (i.e. empty containers, brushes, filters, etc.), storage practices, lack of evidence of a release, and the limited migration pathways.

4.39 SWMU #86 — Less-Than-90-Day Accumulation Area, Building 9

4.39.1 Unit Characteristics

This less-than-90-day Accumulation Area (AA) is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an AA for less than 90 days, then transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 9 within the Naval Base.

Wastes are stored in closed 55-gallon drums, which are on pallets on a concrete floor. The drums are in a shed. The AA is approximately 15 feet x 100 feet. Figure 4-39 locates the AA near Building 9.

4.39.2 Waste Characteristics

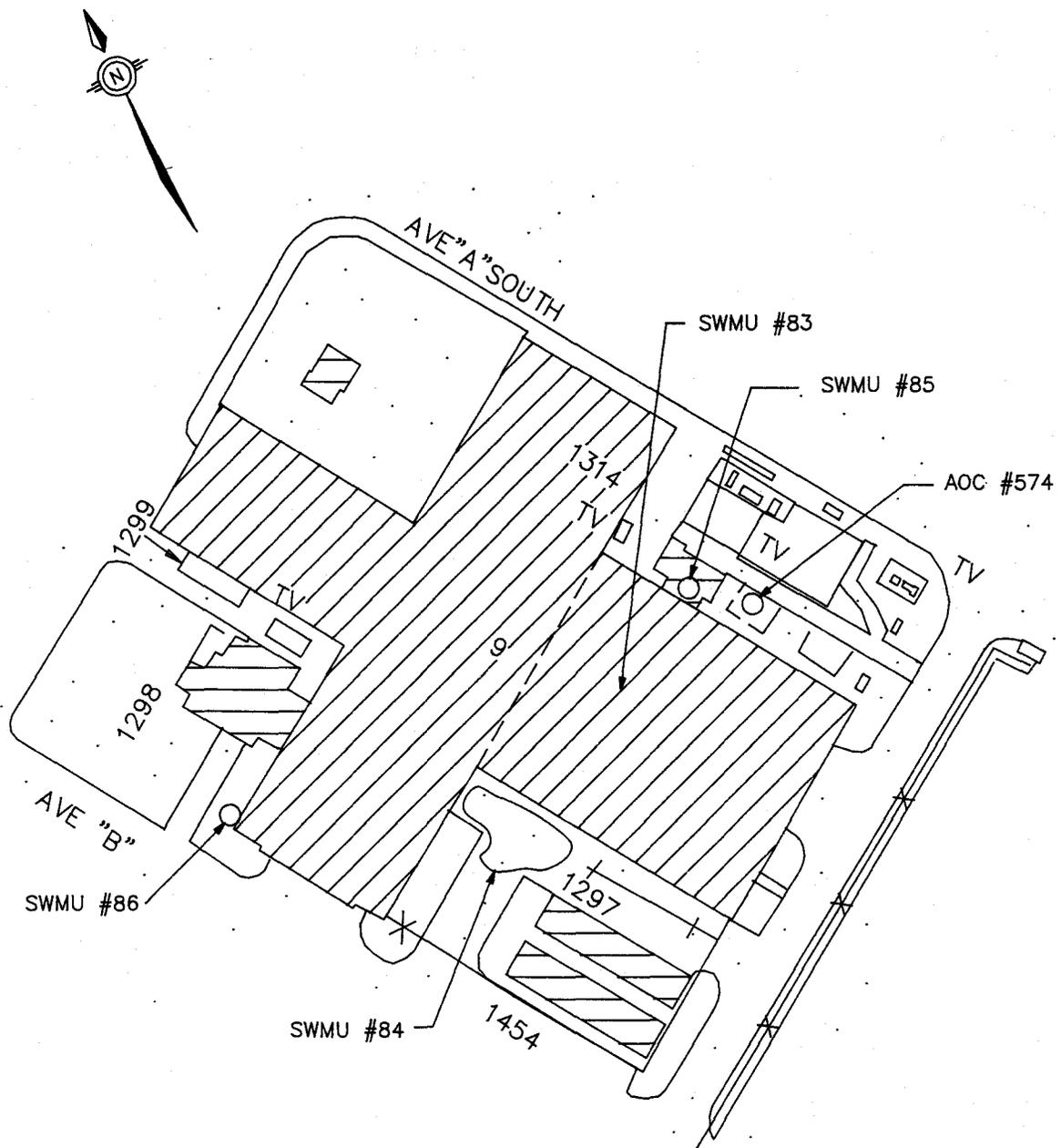
Empty paint and aerosol cans, used paint rollers and brushes, liquid and thinner paint waste, 1-quart oil cans, oily rags, oil spill residue, and a spill kit are stored. The major constituents of concern are volatile organic compounds, metals, and petroleum hydrocarbons.

4.39.3 Migration Pathways

Because this AA is located in a shed with a concrete floor, soil, groundwater, and surface water are unlikely migration pathways.

4.39.4 Evidence of Release

A Hazardous Waste Storage Area Inspection Report states that on December 11, 1991, a bag of waste was leaking at SWMU #86. The leaking bag was subsequently secured, the area was cleaned, and the waste disposed of properly.



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-39
SWMU #86
BUILDING 9, SAA

4.39.5 Exposure Potential

This AA is not close to any residential areas. Building 9 is approximately 250 feet from the Cooper River at drydock 2. The design features of the unit and lack of evidence of a release minimize the likelihood of potential exposures to Naval Base employees.

4.39.6 Recommended Action

No further investigation of this AA is recommended due to the storage practices and limited migration pathways.

4.40 SWMU #87 — Less-Than-90-Day Accumulation Area, Building 80

4.40.1 Unit Characteristics

This less-than-90-day Accumulation Area (AA) is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an AA for less than 90 days, then transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 80 within the Naval Base. Figure 4-40 locates the SWMU near Building 80.

Wastes are stored in closed 55-gallon drums and in plastic bags in a 12 foot x 12 foot metal building on pallets above an asphalt floor.

4.40.2 Waste Characteristics

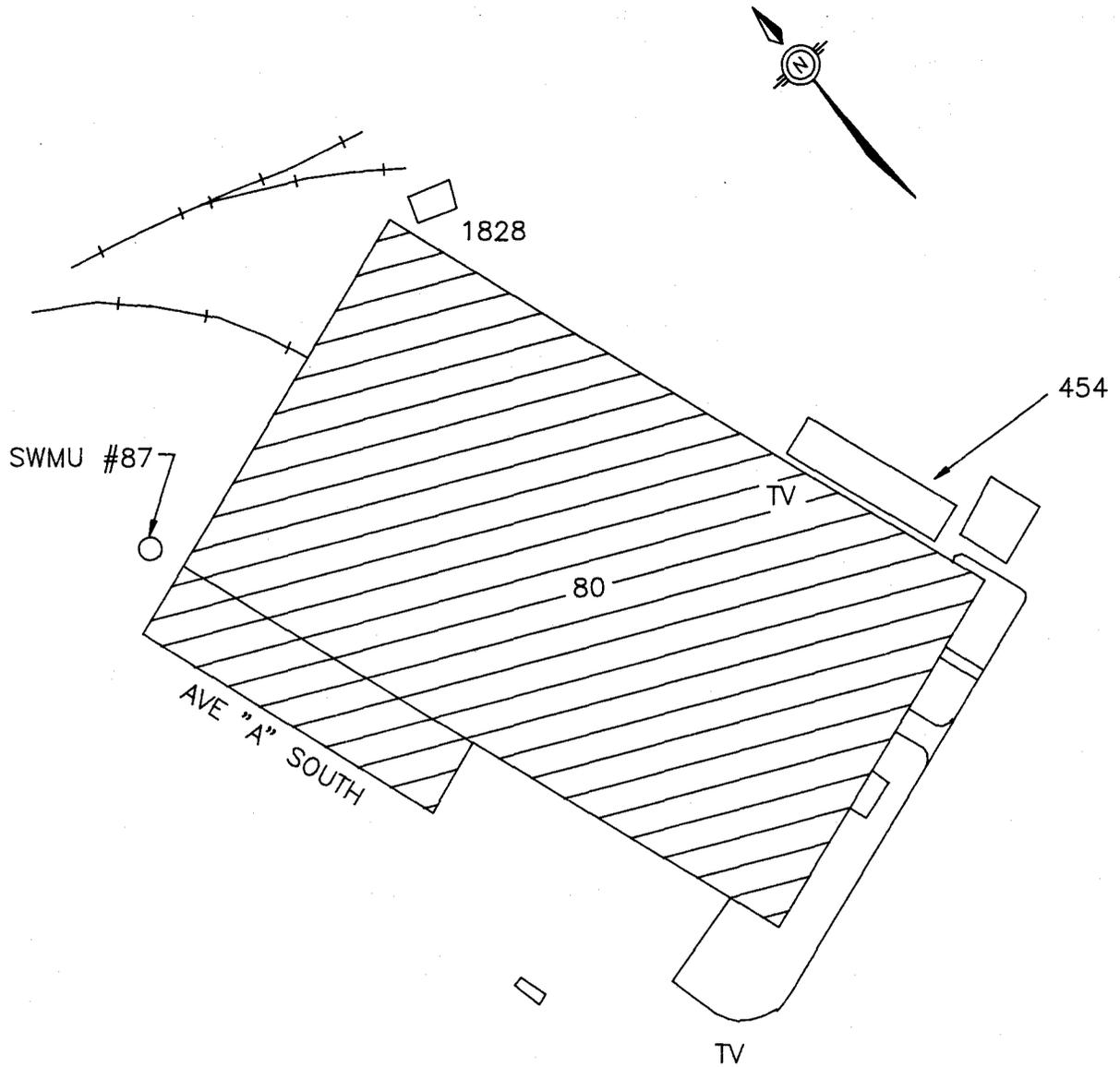
Empty paint and aerosol cans, used diesel oil filters, fuel filters, mercury-containing equipment (thermometers and king gauges), oil sludges, empty grease tubes, oily rags, dyes, anti-freeze, and chelating agents (sodium thiosulfate and EDTA) are stored at this AA.

4.40.3 Migration Pathways

Because materials are stored in a metal building, soil, groundwater, and surface water migration is unlikely.

4.40.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or physical evidence indicate spills at this AA.



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-40
SWMU #87
BUILDING 80, <90 STORAGE AREA

DWG DATE: 05/20/94 | DWG NAME: 27N80

4.40.5 Exposure Potential

Building 80 is not close to any residential areas, and is approximately 300 feet from the Cooper River at drydocks 2 and 5. The design features of the unit limits potential exposures to Naval Base employees.

4.40.6 Recommended Action

No further investigation of this AA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.41 SWMU #88 — Satellite Accumulation Area, Building 25

4.41.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 25 within the Naval Base.

Wastes are stored in closed 55-gallon drums. The floor surface is floor tile overlying concrete. No containment berm exists. Figure 4-41 locates the SAA within Building 25.

4.41.2 Waste Characteristics

Paint rags, empty paint containers, and empty solvent (paint thinner) containers are stored. The major constituents of concern are volatile organic compounds and metals.

4.41.3 Migration Pathways

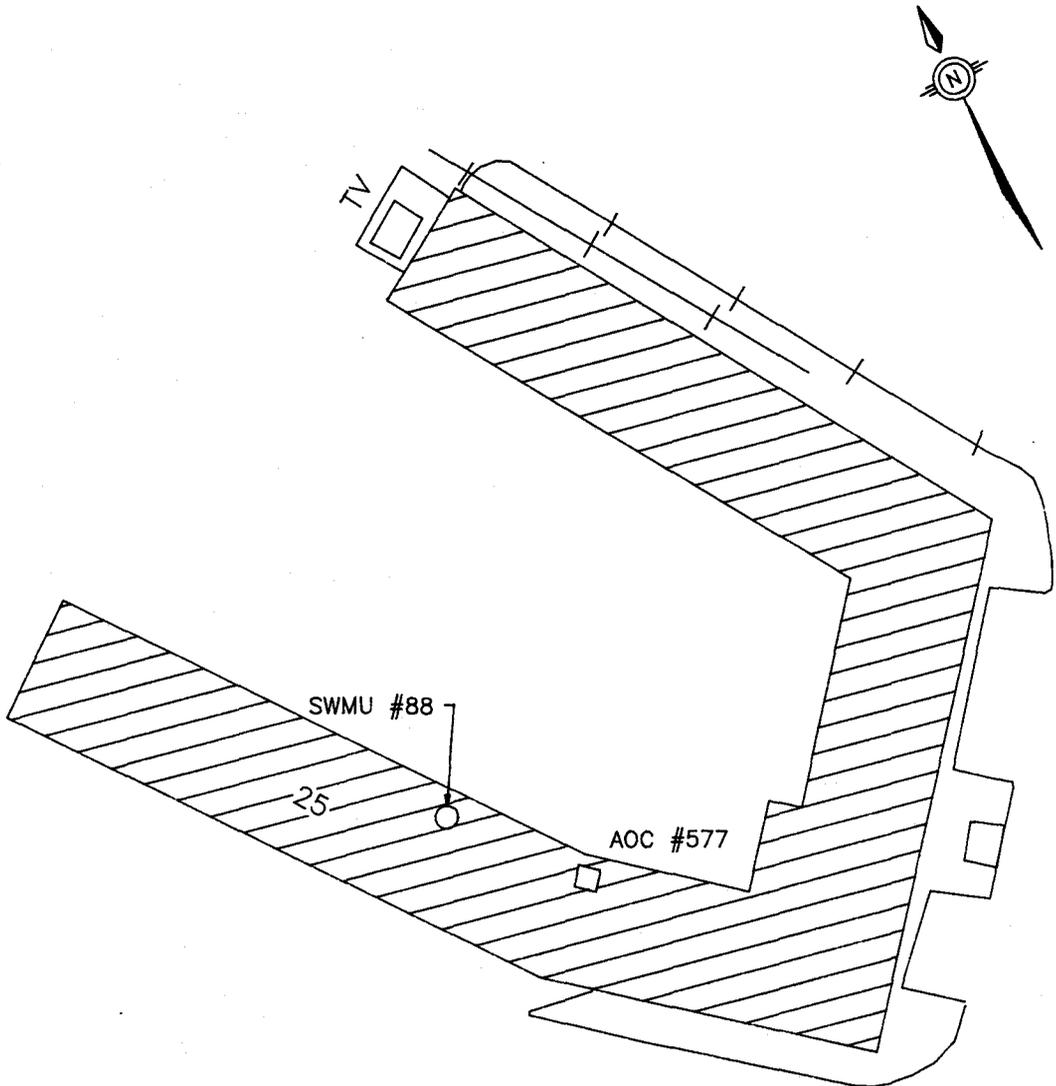
Because this SAA is located inside Building 25, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.41.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.41.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. The nature of waste, and lack of evidence of a major release minimize the potential exposures to Naval Base employees.



NOT TO SCALE



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FIGURE 4-41
SWMU #88
BUILDING 25, SAA

4.41.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste (empty containers and rags), storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.42 SWMU #89 — Satellite Accumulation Area, Building 13

4.42.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 13 within the Naval Base. Figure 4-42 locates the SWMU within Building 13.

SWMU #89 is an active SAA consisting of three plastic storage containers in the north corner of Building 13. The containers are used to collect wastes from the laboratory's atomic absorption instruments. The floor surface of the 3 foot x 4 foot area is floor tile over concrete.

4.42.2 Waste Characteristics

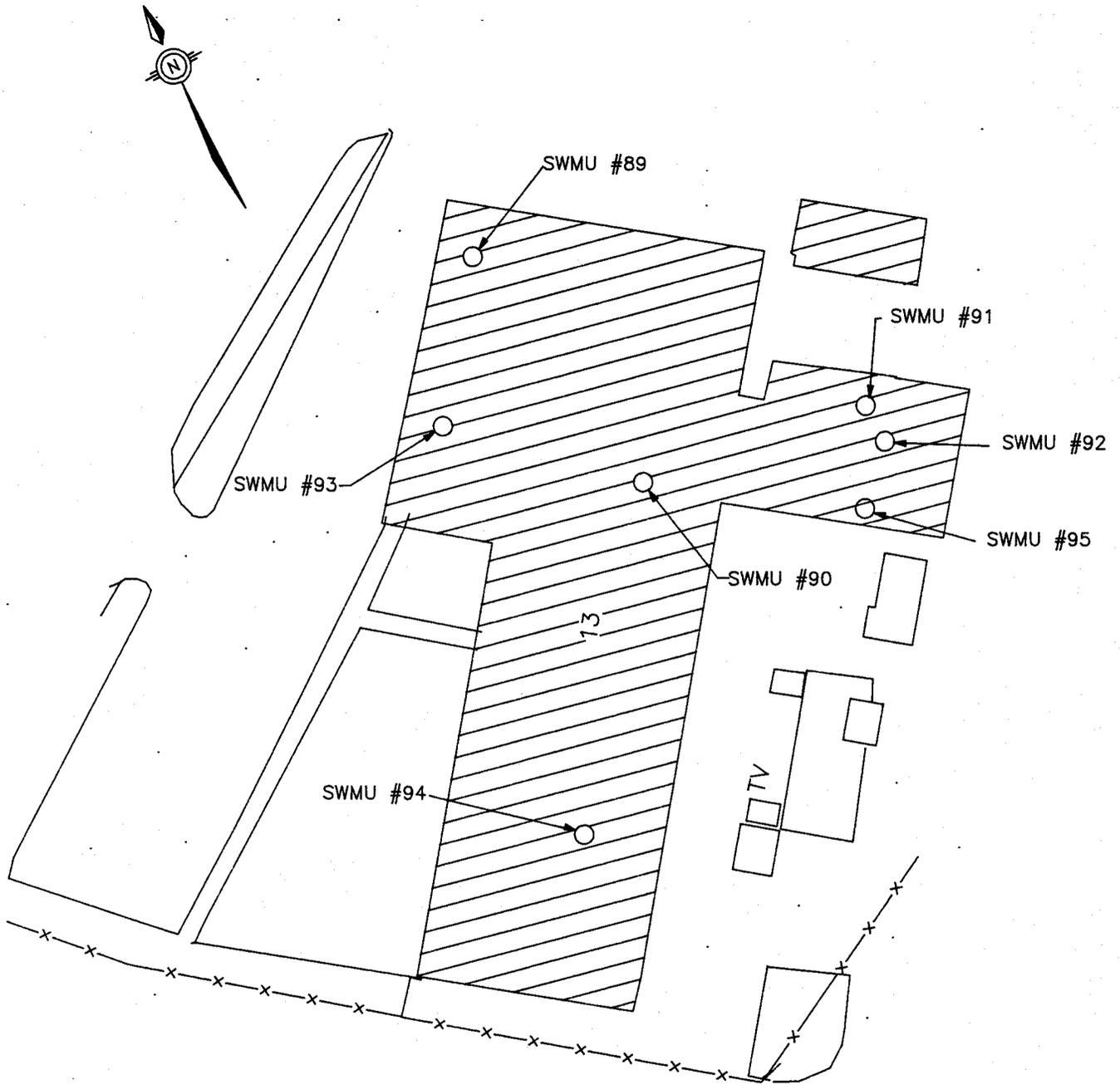
Wastes stored at this SAA consist of dilute acids containing traces of various metals, used Freon 133 and residues from samples.

4.42.3 Migration Pathways

The SAA is located inside Building 13; therefore, migration from surface runoff is unlikely. The floor in the vicinity of the unit is free of cracks, protecting the underlying soil and groundwater. Should a spill occur, the small quantity stored in any container would not likely escape the building.

4.42.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



NOT TO SCALE



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FIGURE 4-42
SWMU #89
BUILDING 13, SAA

4.42.5 Exposure Potential

Building 13 is not close to residential areas. The unit is located inside a building within the boundaries of a restricted access industrial area, limiting exposure to Naval Base workers. Building 13 is approximately 400 feet from the Cooper River at drydock 5. The potential risk of impact on the Cooper River from a release at this SAA is expected to be minimal.

4.42.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.43 SWMU #90 — Satellite Accumulation Area, Building 13

4.43.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 13 within the Naval Base. Figure 4-43 locates the SAA within Building 13.

Wastes are stored in 5-gallon containers on a counter top in the laboratory. Waste stores at this SAA are generated during the analysis of petroleum hydrocarbon samples. The floor surface is floor tile over concrete.

4.43.2 Waste Characteristics

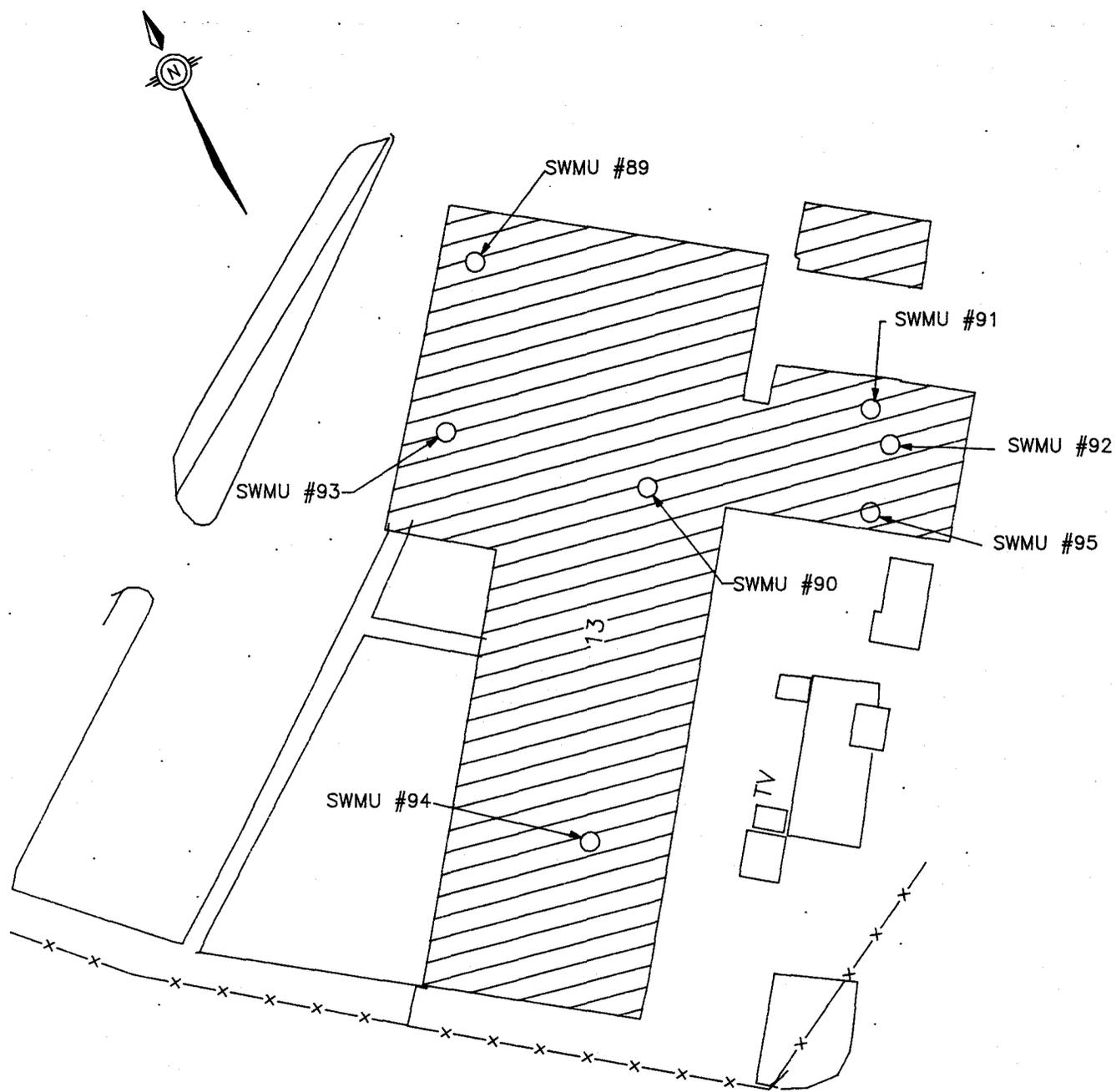
Waste oil, titration solvents, and naphtha are stored.

4.43.3 Migration Pathways

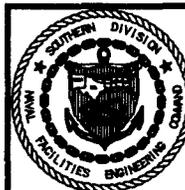
This SAA is located inside Building 13; therefore, migration from surface runoff is unlikely. The floor in the vicinity of the unit is free of cracks, protecting the underlying soil and groundwater. Should a spill occur, the small quantity stored in any container would not likely escape the building.

4.43.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



NOT TO SCALE



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NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 4-43
SWMU #90
BUILDING 13, SAA

4.43.5 Exposure Potential

Building 13 is not close to residential areas. The unit is located inside a building within the boundaries of a restricted access industrial area, limiting exposure to Naval Base workers. Building 13 is located approximately 400 feet from the Cooper River at drydock 5, which represents a sensitive environment. The potential risk of impact on the Cooper River from a release at this SAA is expected to be minimal.

4.43.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.44 SWMU #91 — Satellite Accumulation Area, Building 13

4.44.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 13 within the Naval Base. Figure 4-44 locates the SAA within Building 13.

Wastes are stored in closed 5-gallon plastic cans. The floor surface is floor tile over concrete. No containment berm exists.

4.44.2 Waste Characteristics

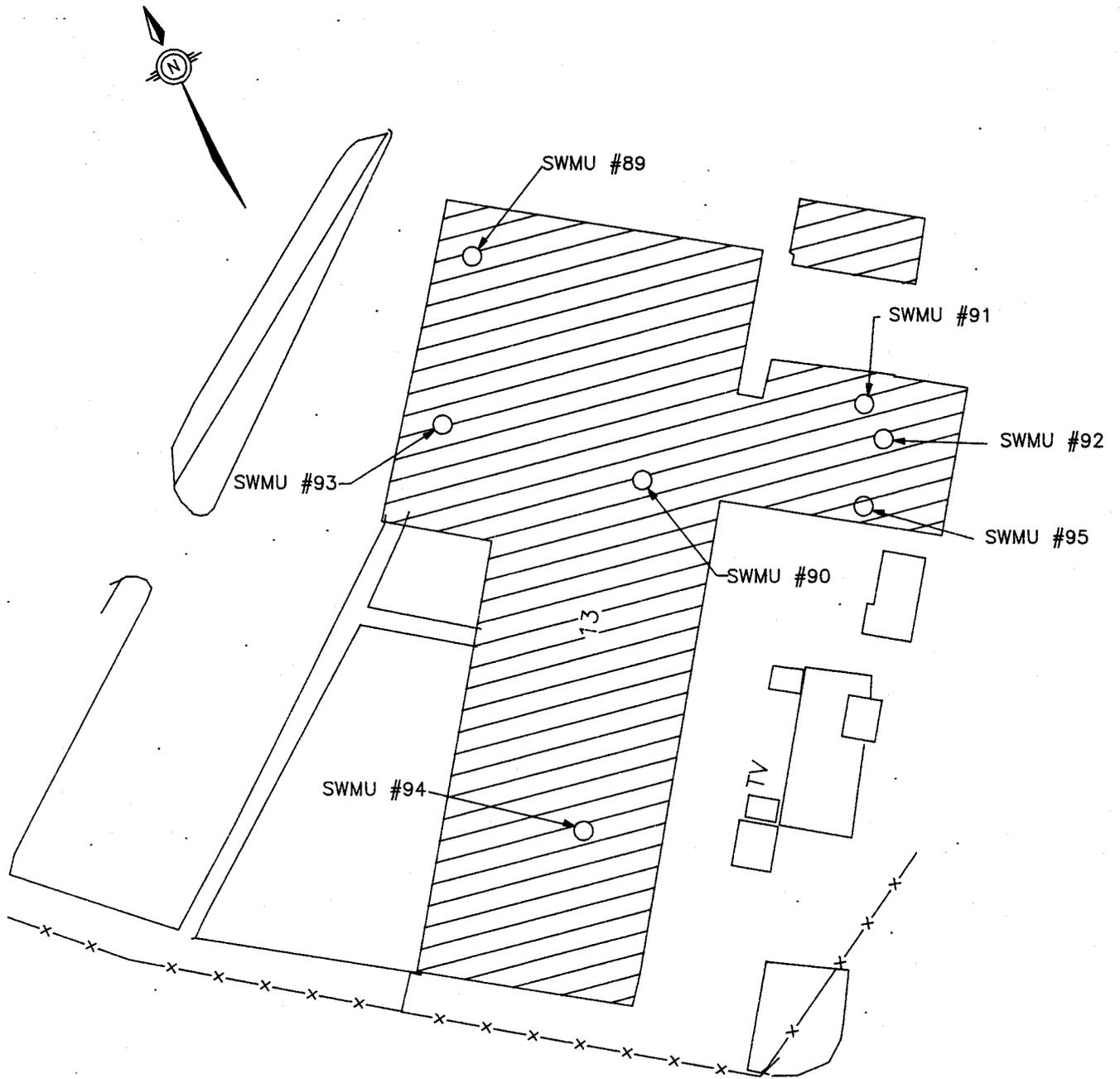
Used oil is stored.

4.44.3 Migration Pathways

This SAA is located inside Building 13; therefore, surface migration from surface runoff is unlikely. The floor in the vicinity of the unit is free of cracks, protecting the underlying soil and groundwater. Should a spill occur, the small quantity in any container would not likely escape the building.

4.44.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-44
SWMU #91
BUILDING 13, SAA

4.44.5 Exposure Potential

Building 13 is not close to residential areas. The unit is located inside a building within the boundaries of a restricted access industrial area, limiting potential exposures to Naval Base employees. Building 13 is approximately 400 feet from the Cooper River at drydock 5.

4.44.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.45 SWMU #92 — Satellite Accumulation Area, Building 13

4.45.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 13 within the Naval Base. Figure 4-45 locates the SWMU within Building 13.

SWMU #92 is an active SAA consisting of 5-gallon plastic storage containers located in the southeast corner of Building 13. The containers, which are closed during storage, are used for the collection of wastes from the laboratory's ICP instruments. An area designated for the temporary storage of wastes is defined by yellow and black caution tape. The floor is tile overlying concrete.

4.45.2 Waste Characteristics

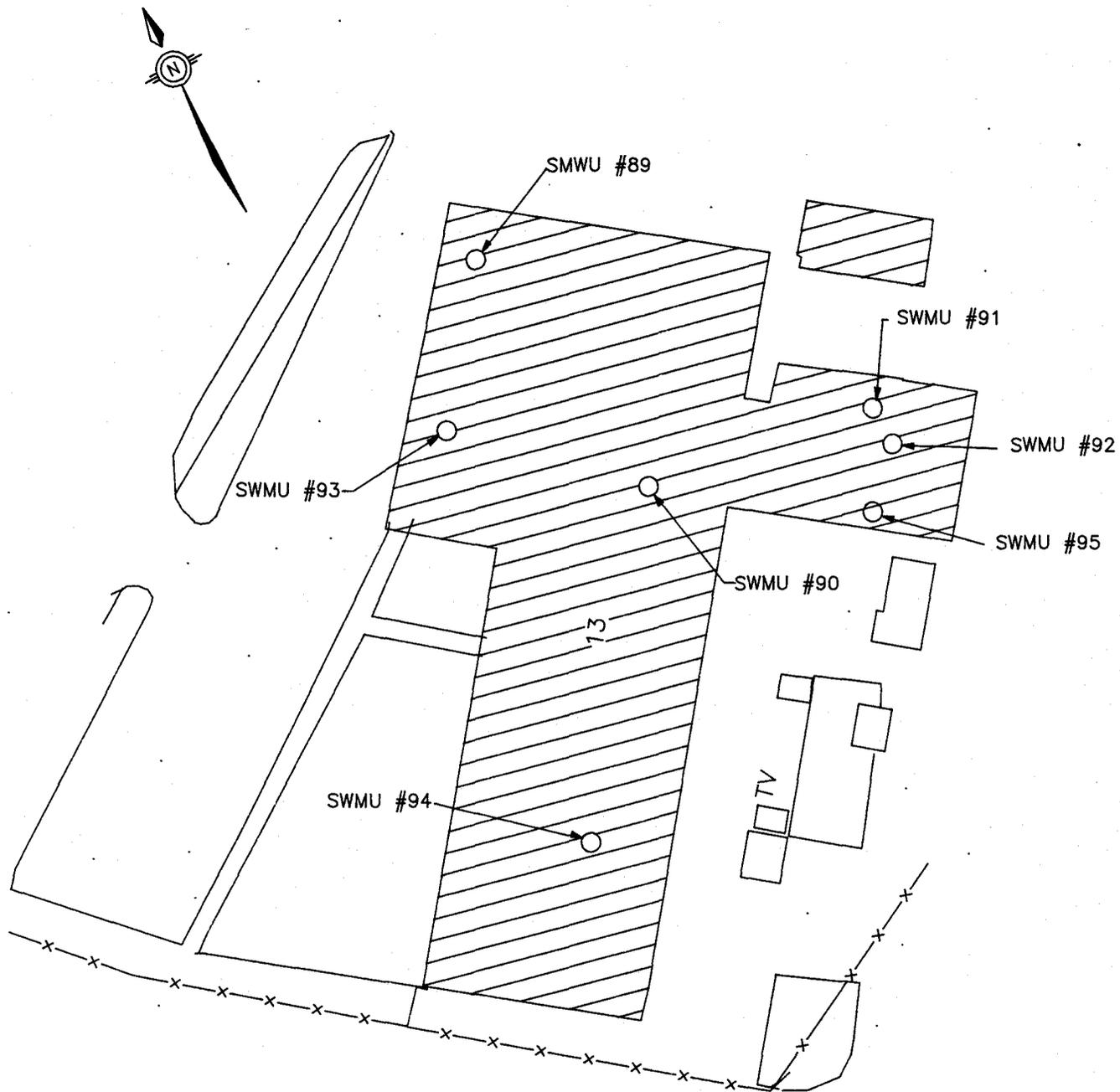
Wastes stored at this SAA consist of dilute acids containing traces of various metals.

4.45.3 Migration Pathways

Because this SAA is located inside Building 241, soil, groundwater, and surface water migration is unlikely. The floor in the vicinity of the unit is free of cracks, protecting the underlying soil and groundwater. Should a spill occur, the small quantity stored in any container would not likely escape the building.

4.45.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-45
SWMU #92
BUILDING 13, SAA

4.45.5 Exposure Potential

The unit is in a building within the boundaries of a restricted access industrial area, limiting exposure to Naval Base workers. The closest sensitive environment to Building 13 is the Cooper River, approximately 500 feet away. Any potential impact to the Cooper River by a release from this SAA is expected to be minimal.

4.45.6 Recommended Action

No further investigation of this SAA is recommended due to storage practices, lack of evidence of a release, and limited migration pathways.

4.46 SWMU #93 — Satellite Accumulation Area, Building 13

4.46.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SAA began operation in August 1991. The SWMU Site Location Map locates Building 13 within the Naval Base.

Wastes are stored in 15-gallon containers. Figure 4-46 locates the SAA within Building 13.

4.46.2 Waste Characteristics

Kodak fixer solution is stored.

4.46.3 Migration Pathways

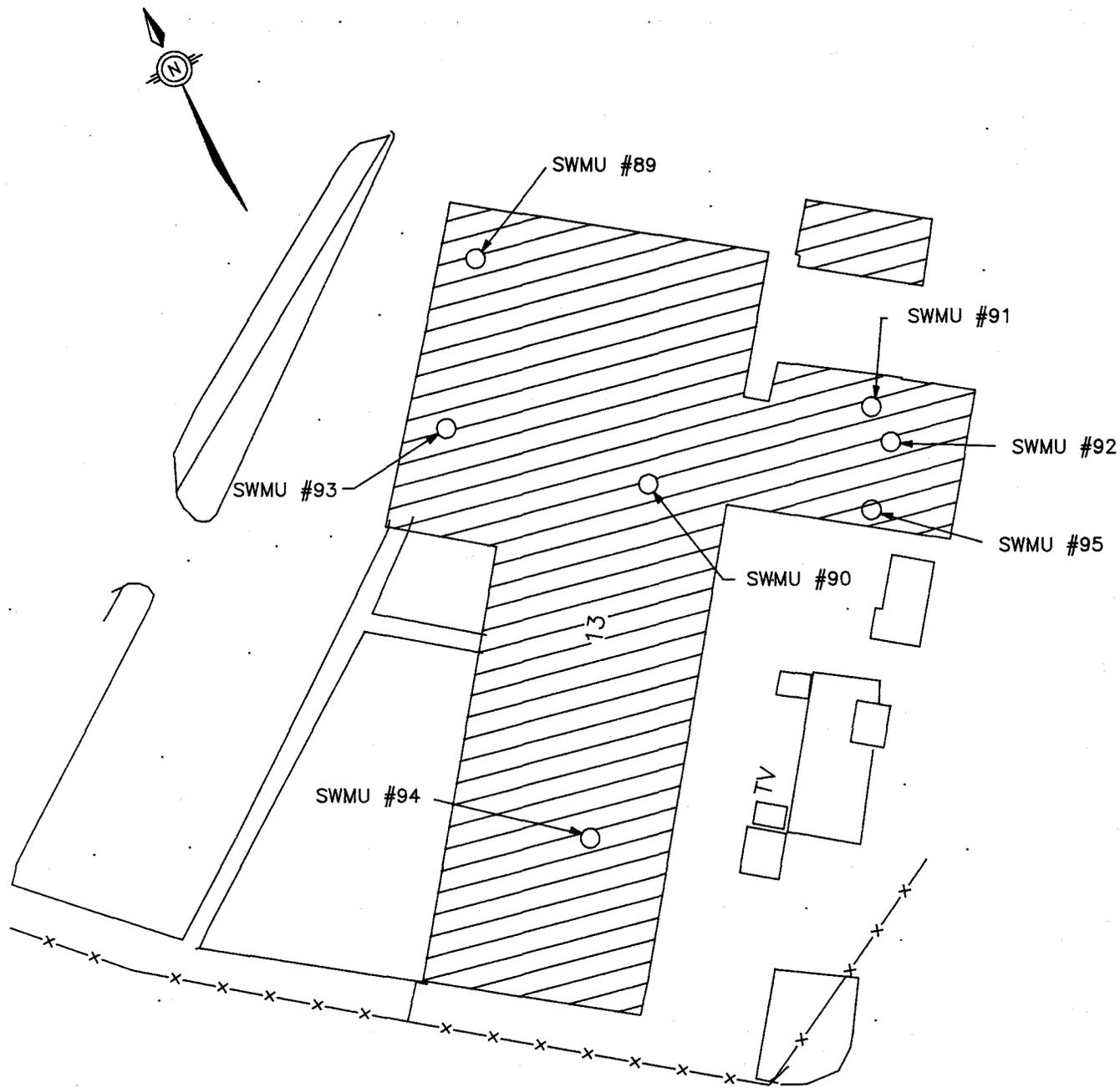
Because this SAA is located inside Building 13, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.46.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.46.5 Exposure Potential

This SAA is not close to any residential areas. Building 13 is approximately 400 feet from the Cooper River at drydock 5. The design features of the unit and lack of evidence of a release minimize the likelihood of potential exposures to Naval Base employees.



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-46
SWMU #93
BUILDING 13, SAA

4.46.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.47 SWMU #94 — Satellite Accumulation Area, Building 13

4.47.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 13 within the Naval Base.

Wastes are stored in 5-gallon containers on a counter top. Figure 4-47 locates the SAA within Building 13.

4.47.2 Waste Characteristics

Dilute acids/metals, waste acid used in an etching process, and used alcohol are stored.

4.47.3 Migration Pathways

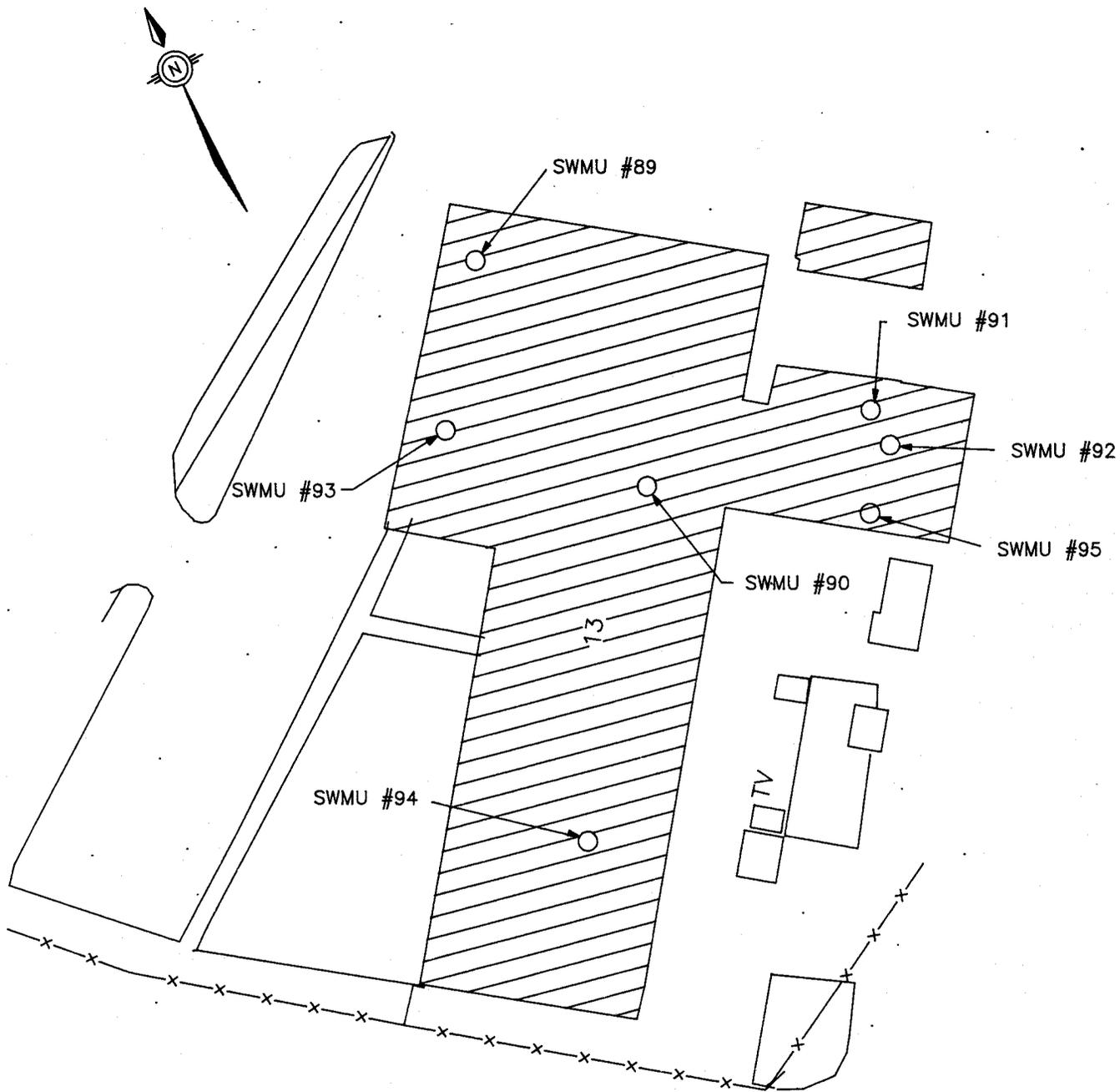
Because this SAA is located inside Building 13, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.47.4 Evidence of Release

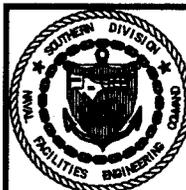
No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.47.5 Exposure Potential

This SAA is not close to any residential areas, however Building 13 is located approximately 700 feet from the Cooper River. The limited storage capacity and lack of evidence of a major release minimize the potential exposures to Naval Base employees.



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-47
SWMU #94
BUILDING 13, SAA

DWG DATE: 05/19/94 DWG NAME: 29AOC82

4.47.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.48 SWMU #95 — Satellite Accumulation Area, Building 13

4.48.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SAA began operation in August 1991. The SWMU Site Location Map locates Building 13 within the Naval Base.

Wastes are stored in 5-gallon plastic containers. The floor surface is floor tile overlying concrete. No containment berm exists. The SAA is approximately 2 feet x 3 feet. Figure 4-48 locates the SAA within Building 13.

4.48.2 Waste Characteristics

Liquid scintillation cocktail, mercuric nitrate solution, and spent analytical reagents are stored.

4.48.3 Migration Pathways

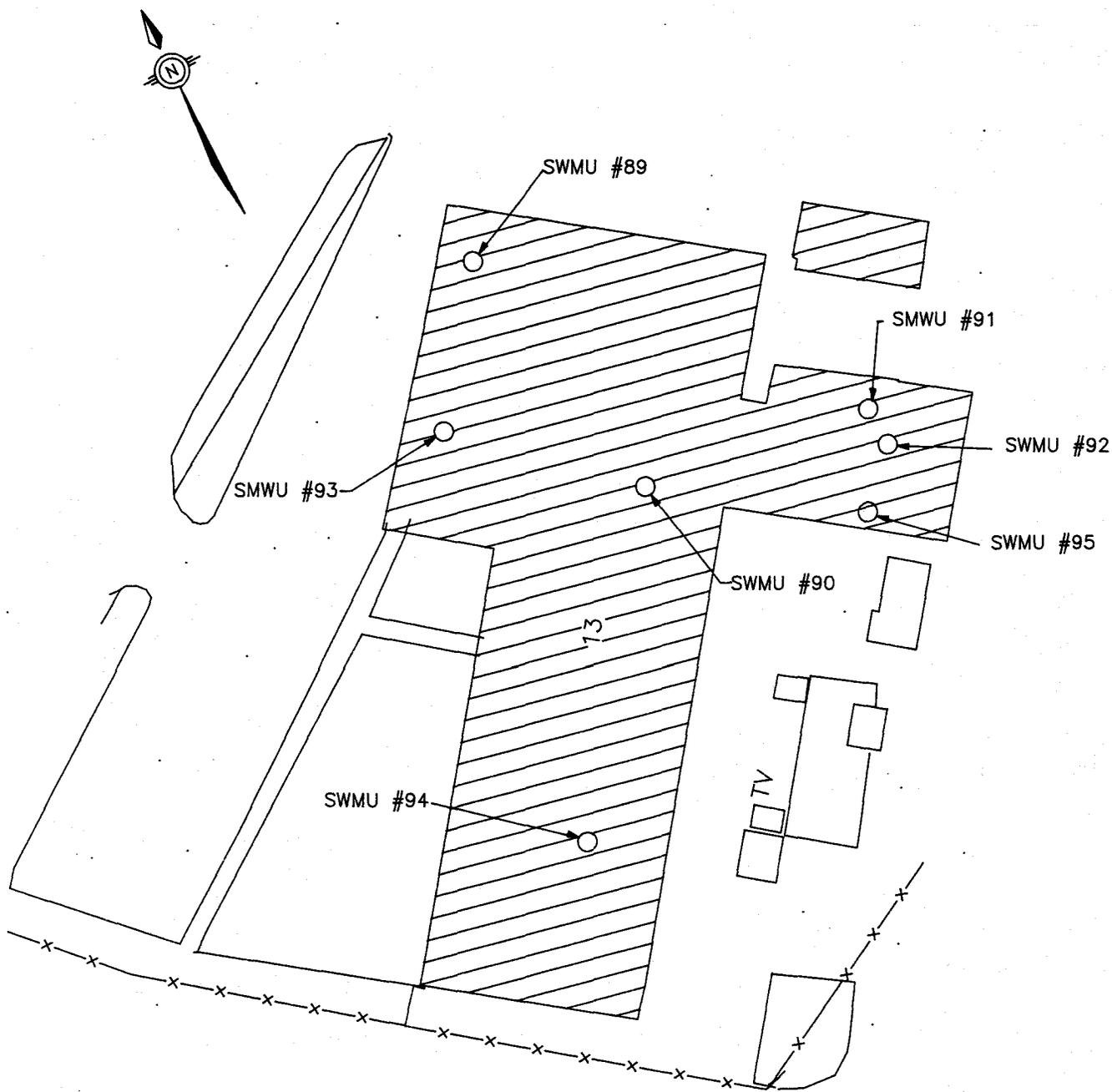
Because this SAA is located inside Building 13, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.48.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.48.5 Exposure Potential

This SAA is not close to any residential areas, however it is located approximately 700 feet from the Cooper River. The storage



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-48
SWMU #95
BUILDING 13, SAA

capacity and lack of evidence of a major release minimize the potential exposure to Naval Base employees.

4.48.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.49 SWMU #96 — Less-Than-90-day Accumulation Area, Building 236

4.49.1 Unit Characteristics

This SWMU is a less-than-90-day Accumulation Area (AA), which is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an AA for less than 90 days, then transferred to a permitted hazardous waste storage facility prior to transport outside the Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 236 within the Naval Base. Figure 4-49 locates the SWMU within Building 236.

SWMU #96 is a container storage area with its perimeter defined by floor tape. Wastes are stored in 55-gallon drums (located on pallets) and plastic bags on an unbermed concrete floor.

4.49.2 Waste Characteristics

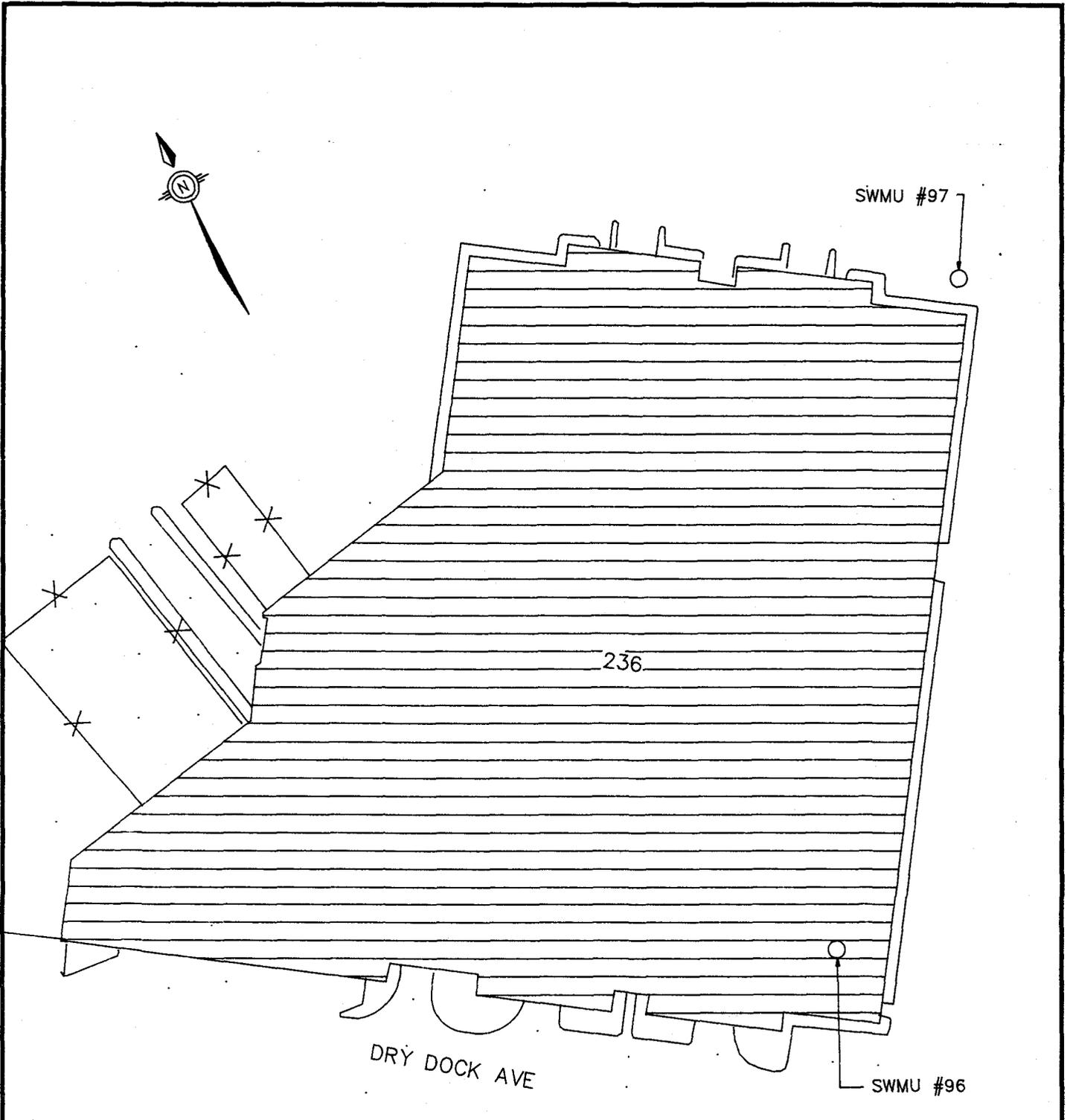
This AA is used to store paint, oil, corrosives, and flammable materials.

4.49.3 Migration Pathways

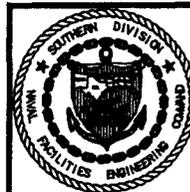
Because this AA is located inside Building 236, soil, groundwater, and surface water migration is unlikely. The concrete floor in the vicinity of this SAA is free of cracks, protecting the underlying soil and groundwater.

4.49.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this AA.



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-49
SWMU #96
BUILDING 236, <90 STORAGE AREA

4.49.5 Exposure Potential

The location of the unit within an industrial building, more than 500 yards from both the Naval Base boundary and the Cooper River, limits potential exposures to Naval Base workers.

4.49.6 Recommended Action

No further investigation of this AA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.50 SWMU #97 — Less-than-90-Day Storage Area, Building 236

4.50.1 Unit Characteristics

This SWMU is a less-than-90-day Accumulation Area (AA), which is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an AA for less than 90 days, then transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 236 within the Naval Base. Figure 4-50 locates the SWMU within Building 236.

This unit is a 20 foot x 20 foot steel shed with an unbermed asphalt floor. Wastes were stored in a closed one 55-gallon drum on a wood pallet. The AA was observed to be in good condition and was not storing waste. There was no other indication, however, that the AA was no longer operational.

4.50.2 Waste Characteristics

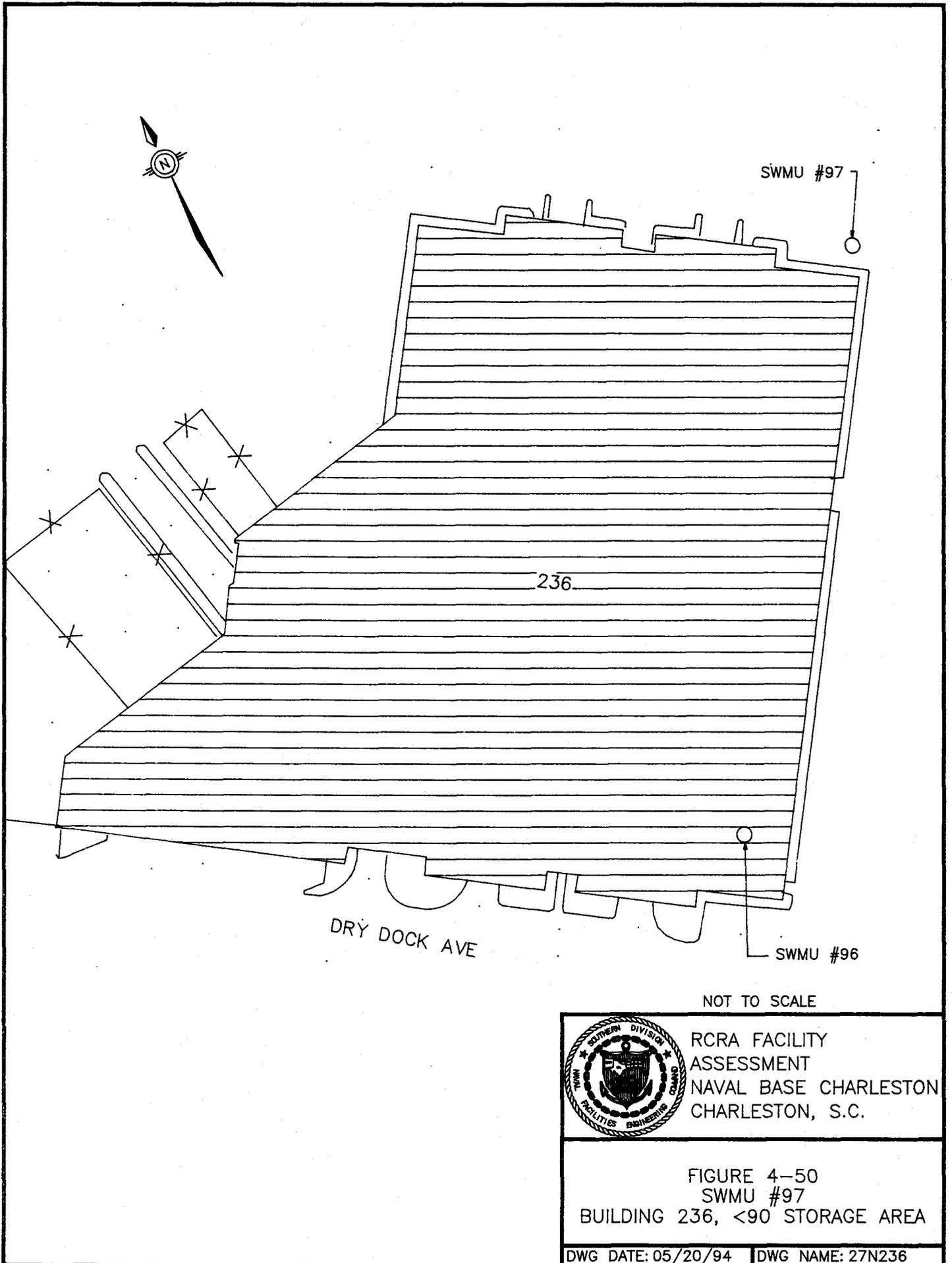
This unit was formerly used to store refrigeration oil, oily rags, and Freon cleaning solvent. During the visual site inspection conducted on February 2, 1994, no wastes were being stored at this location.

4.50.3 Migration Pathways

Because this AA is enclosed, soil, groundwater, and surface water migration is unlikely. The asphalt in the vicinity of this AA is free of cracks, but may still lack the integrity to protect the underlying soil and groundwater from a potential release.

4.50.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate the incidence of spills at this AA.



SWMU #97

236

DRY DOCK AVE

SWMU #96

NOT TO SCALE



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 NAVAL BASE CHARLESTON
 CHARLESTON, S.C.

FIGURE 4-50
 SWMU #97
 BUILDING 236, <90 STORAGE AREA

DWG DATE: 05/20/94 | DWG NAME: 27N236

4.50.5 Exposure Potential

This SWMU is not close to any residential areas but is within 300 feet of the Cooper River. The limited storage capacity and nature of waste, however, limit the potential exposures to Naval Base employees.

4.50.6 Recommended Action

There is no evidence of a release from this unit. However, a RFI is recommended due to the nature of the waste (POLs) and the design of the unit (on top of asphalt) which may allow migration of any potential releases into the underlying soil and groundwater.

4.51 SWMU #98 — Satellite Accumulation Area, Pier G

4.51.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55-gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. This SAA is no longer located on Pier G. The SWMU Site Location Map locates Pier G within the Naval Base. Figure 4-51 locates the former position of the SAA on Pier G.

4.51.2 Waste Characteristics

Sufficient information is not available to determine waste characteristics.

4.51.3 Migration Pathways

Surface water is a potential migration pathway due to the immediate proximity of the Cooper River to Pier G.

4.51.4 Evidence of Release

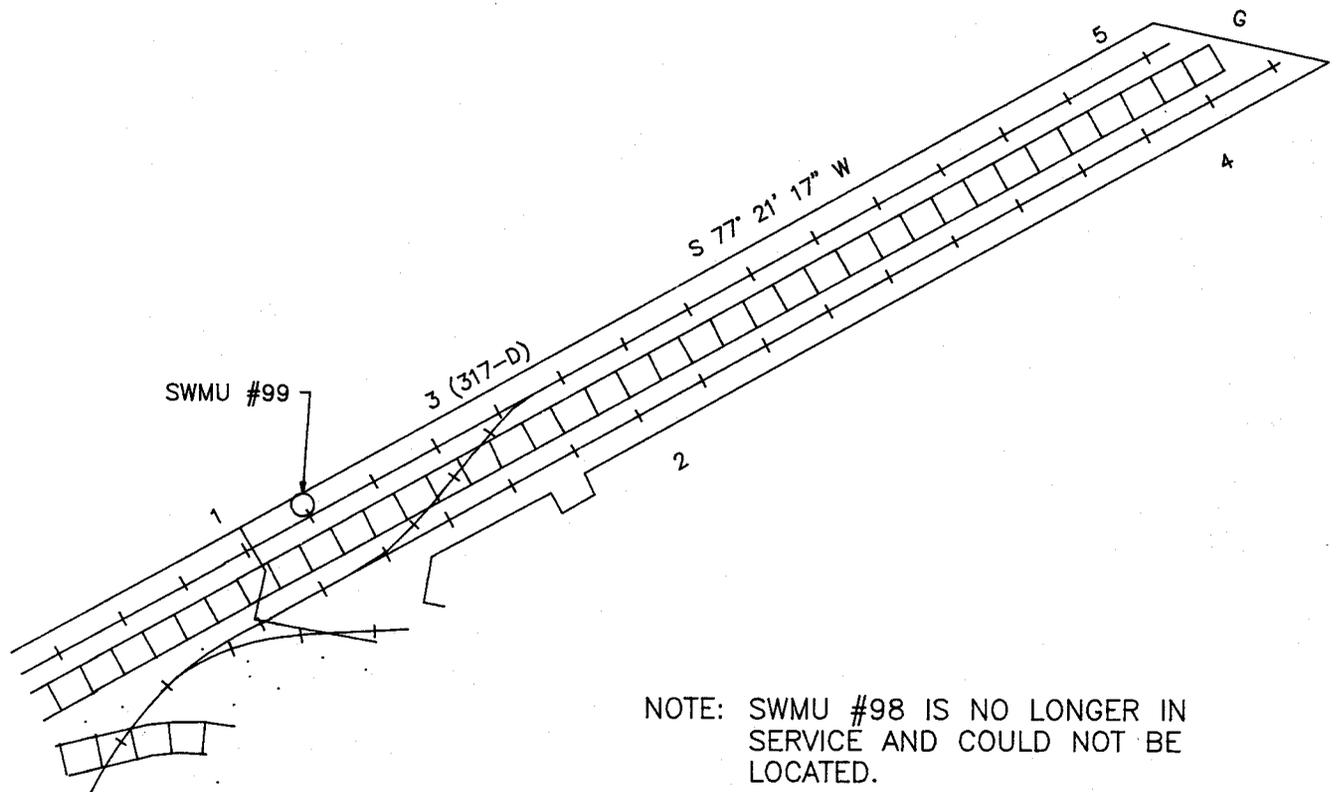
Sufficient information is not available to determine evidence of release.

4.51.5 Exposure Potential

This SAA is not close to any residential areas. However, the Cooper River is in the immediate vicinity of Pier G and may be impacted if a spill has occurred.

4.51.6 Recommended Action

This SAA is no longer operational. Per 40 CFR 262.34(a)(1), certification of closure is required in accordance with 40 CFR 265.111 and 114.



NOTE: SWMU #98 IS NO LONGER IN SERVICE AND COULD NOT BE LOCATED.

NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-51
SWMU #98
PIER G, SAA

DWG DATE: 05/19/94 | DWG NAME: 29AOC65

4.52 SWMU #99 — Satellite Accumulation Area, Pier G

4.52.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55-gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Pier G within the Naval Base and Figure 4-52 locates the position of the SAA on Pier G.

Wastes are stored in a closed 55-gallon drum, a 5-gallon bucket, and plastic bags, all of which are in a drip pan. The storage containers are in a 6 foot x 12 foot metal shed with a concrete floor.

4.52.2 Waste Characteristics

Paint and diesel fuel are stored. The major constituents of concern are volatile organic compounds, metals, and petroleum hydrocarbons.

4.52.3 Migration Pathways

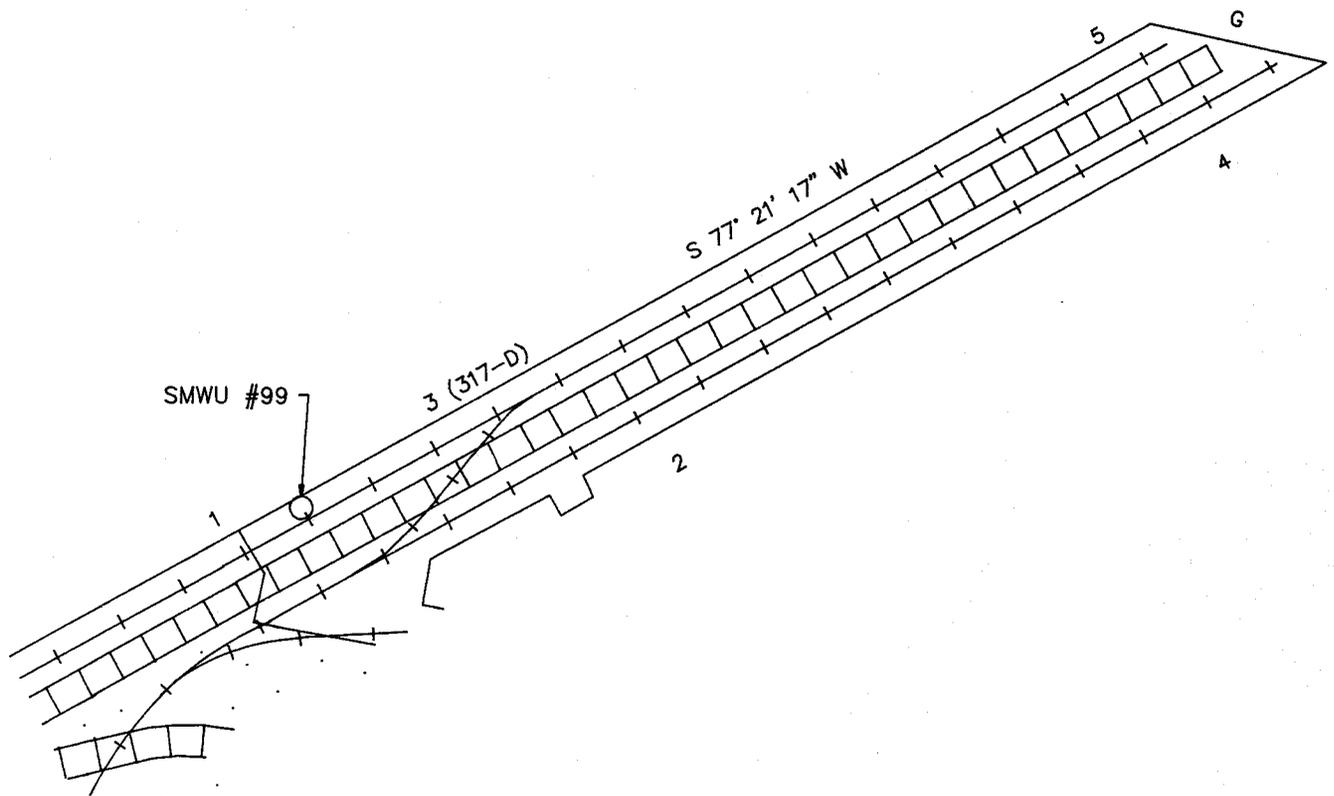
Because the Cooper River is in the immediate vicinity of Pier G, surface water is a potential migration pathway.

4.52.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or physical evidence indicate spills at this SAA.

4.52.5 Exposure Potential

This SAA is not close to any residential areas. The potential exists for impact of the Cooper River due to the SAA's location on a pier.



NOT TO SCALE



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FIGURE 4-52
SWMU #99
PIER G, SAA

DWG DATE: 05/19/94

DWG NAME: 29AOC111

4.52.6 Recommended Action

The Cooper River will be investigated as a separate unit and any releases from this unit would have entered the Cooper River. No further action is recommended for this SWMU.

4.53 SWMU #100 — Satellite Accumulation Area, Building 218

4.53.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55-gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 218 within the Naval Base.

Wastes are stored in 55-gallon drums on an asphalt paved surface. No containment berm exists. Figure 4-53 locates the SAA near Building 218.

4.53.2 Waste Characteristics

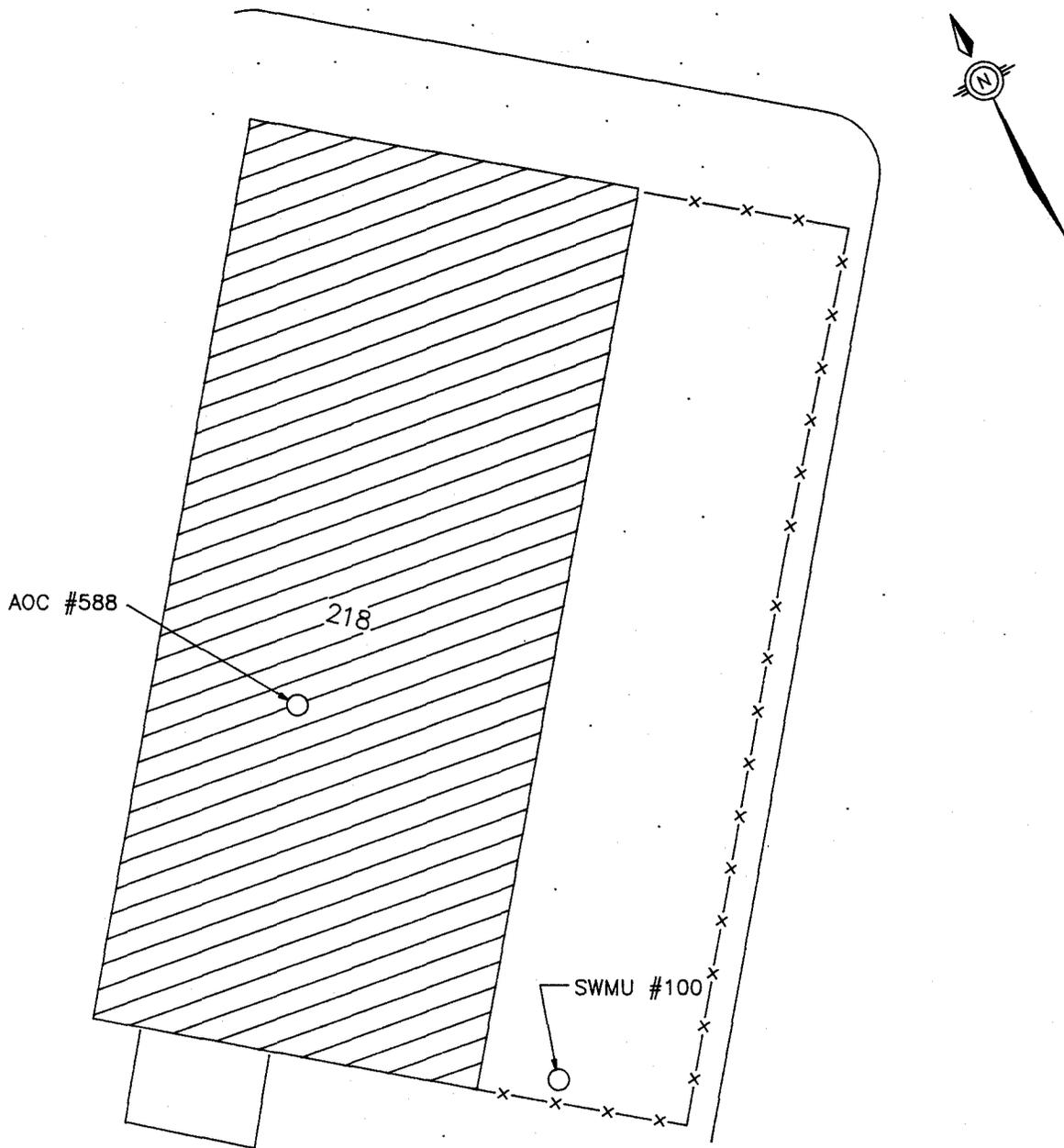
Spent paint and aerosol cans, empty adhesive and solvent containers, epoxy containers, paint, oily rags, used abrasive blast grit, and waste oil are stored. The major constituents of concern are volatile organic compounds, metals, and petroleum hydrocarbons.

4.53.3 Migration Pathways

This SAA is located outside of Building 2A; therefore, surface migration from surface runoff may occur. The pavement in the vicinity of the SAA is free of cracks.

4.53.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



NOT TO SCALE



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FIGURE 4-53
SWMU #100
BUILDING 218, SAA

DWG DATE: 05/19/94

DWG NAME: 29AOC63

4.53.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. The limited storage capacity, nature of waste, and lack of evidence of a major release minimize the potential exposures to Naval Base employees.

4.53.6 Recommended Action

There is no evidence of a release from this unit. However, a RFI is recommended due to the nature of the waste and the design of the unit which may allow migration of any potential releases.

4.54 SWMU #101 — Less-Than-90-Day Accumulation Area, Building 1173

4.54.1 Unit Characteristics

This less than 90-day Accumulation Area (AA) is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an AA for less than 90 days, then transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 1173 within the Naval Base. Figure 4-54 shows the location of SWMU #101 within Building 1173.

4.54.2 Waste Characteristics

Sufficient information is not available to determine waste characteristics.

4.54.3 Migration Pathways

Sufficient information is not available to determine migration pathways.

4.54.4 Evidence of Release

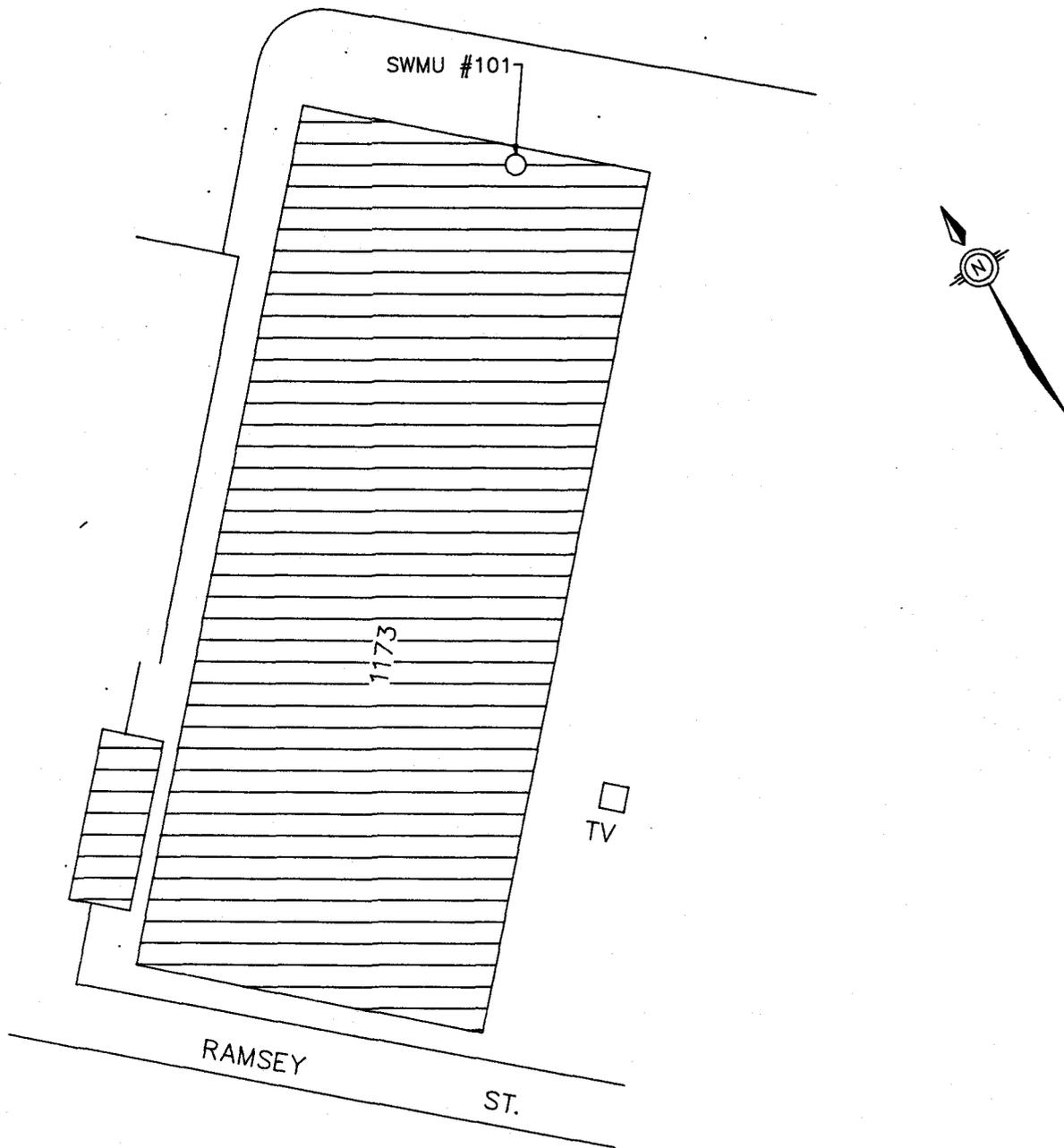
Sufficient information is not available to determine evidence of release.

4.54.5 Exposure Potential

This AA is not close to any residential areas. The Cooper River is approximately 1500 feet from Building 1173.

4.54.6 Recommended Action

There is no evidence of a release from this unit. However, confirmation sampling is recommended due to insufficient available information.



NOT TO SCALE



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FIGURE 4-54
SWMU #101
BUILDING 1173, SAA

4.55 SWMU #103 — Satellite Accumulation Area, Pier H

4.55.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55-gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. This SAA was located on Pier H. The SWMU Site Location Map locates Pier H within the Naval Base, and Figure 4-55 shows the approximate former location of the SAA on Pier H.

4.55.2 Waste Characteristics

Sufficient information is not available to determine waste characteristics.

4.55.3 Migration Pathways

Because this SAA was located on the pier, surface migration from surface runoff may have occurred. The Cooper River is in the immediate vicinity of the pier.

4.55.4 Evidence of Release

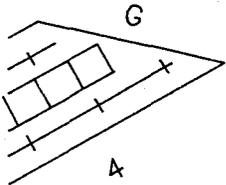
No spill reports, inspection reports, or employee interviews indicate spills at this SAA.

4.55.5 Exposure Potential

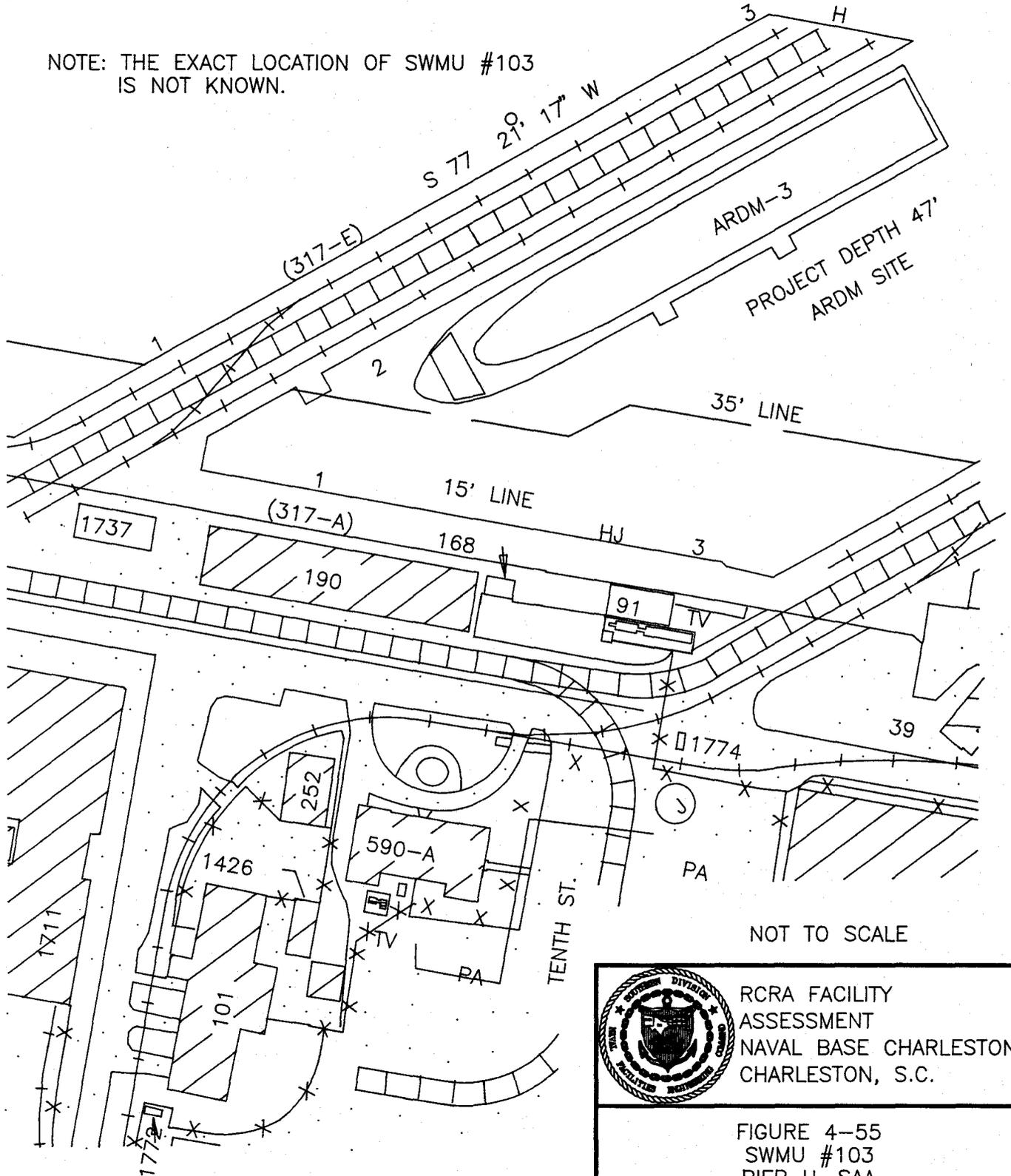
The pier is not close to any residential areas; however, it is located near the Cooper River, which might have been impacted if a spill occurred.

4.55.6 Recommended Action

This SAA is no longer operational. Per 40 CFR 262.34(a)(1), certification of closure is required in accordance with 40 CFR 265.111 and 114.



NOTE: THE EXACT LOCATION OF SWMU #103 IS NOT KNOWN.



NOT TO SCALE



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FIGURE 4-55
SWMU #103
PIER H, SAA

4.56 SWMU #105 — Satellite Accumulation Area, Building 1518 (diver's locker)

4.56.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 1518 within the Naval Base and Figure 4-56 locates the SAA within Building 1518. It should be noted that SWMU #105 is located on an active Naval vessel.

4.56.2 Waste Characteristics

Aerosol cans, contaminated waste oil, oily rags, paint-contaminated debris, oil spill residue, used diesel fuel filters, and used oil filters are stored. The major constituents of concern are volatile organic compounds, metals, and petroleum hydrocarbons.

4.56.3 Migration Pathways

Surface water is a viable migration pathway due to this unit's location near the Cooper River.

4.56.4 Evidence of Release

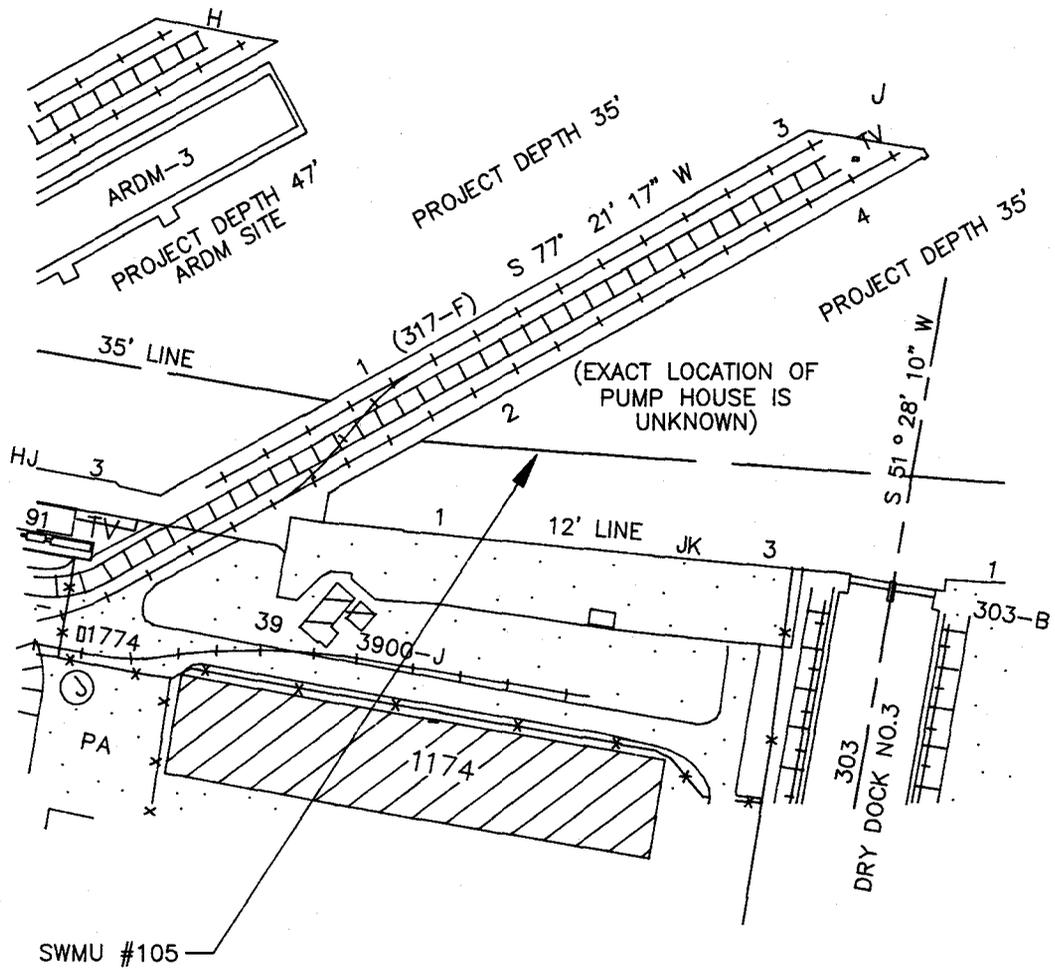
Sufficient information is not available to determine evidence of release.

4.56.5 Exposure Potential

This SAA is not in close proximity to any residential areas but is located very near the Cooper River.

4.56.6 Recommended Action

The Cooper River will be investigated as a separate unit and any releases from this unit would have entered the Cooper River. This unit is located on an active Naval vessel, no further action is recommended for this SWMU.



NOTE: THE EXACT LOCATION OF SWMU #105 IS NOT KNOWN

NOT TO SCALE



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NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 4-56
SWMU #105
BUILDING 1518, SAA

4.57 SWMU #106 — Blast Area in Drydock #3

4.57.1 Unit Characteristics

SWMU #106 is a blast area in the vicinity of Drydocks (DD) 3 and 4. The blast area is outside and consists of an asphalt and concrete base. Temporary structures are erected using scaffolding and herculite to contain blast material. The area is now paved; before paving, the area was graded and covered with rock. Few jobs are done each year and the resulting abrasive blast waste is very small (approximately 3 containers/year). Steel grit and sodium bicarbonate are the reported materials used for all the dry dock abrasive blasting. The SWMU Site Location Map locates Drydocks 3 and 4 within Naval Base Charleston. Figure 4-57 locates the blast area in relation to the drydocks.

4.57.2 Waste Characteristics

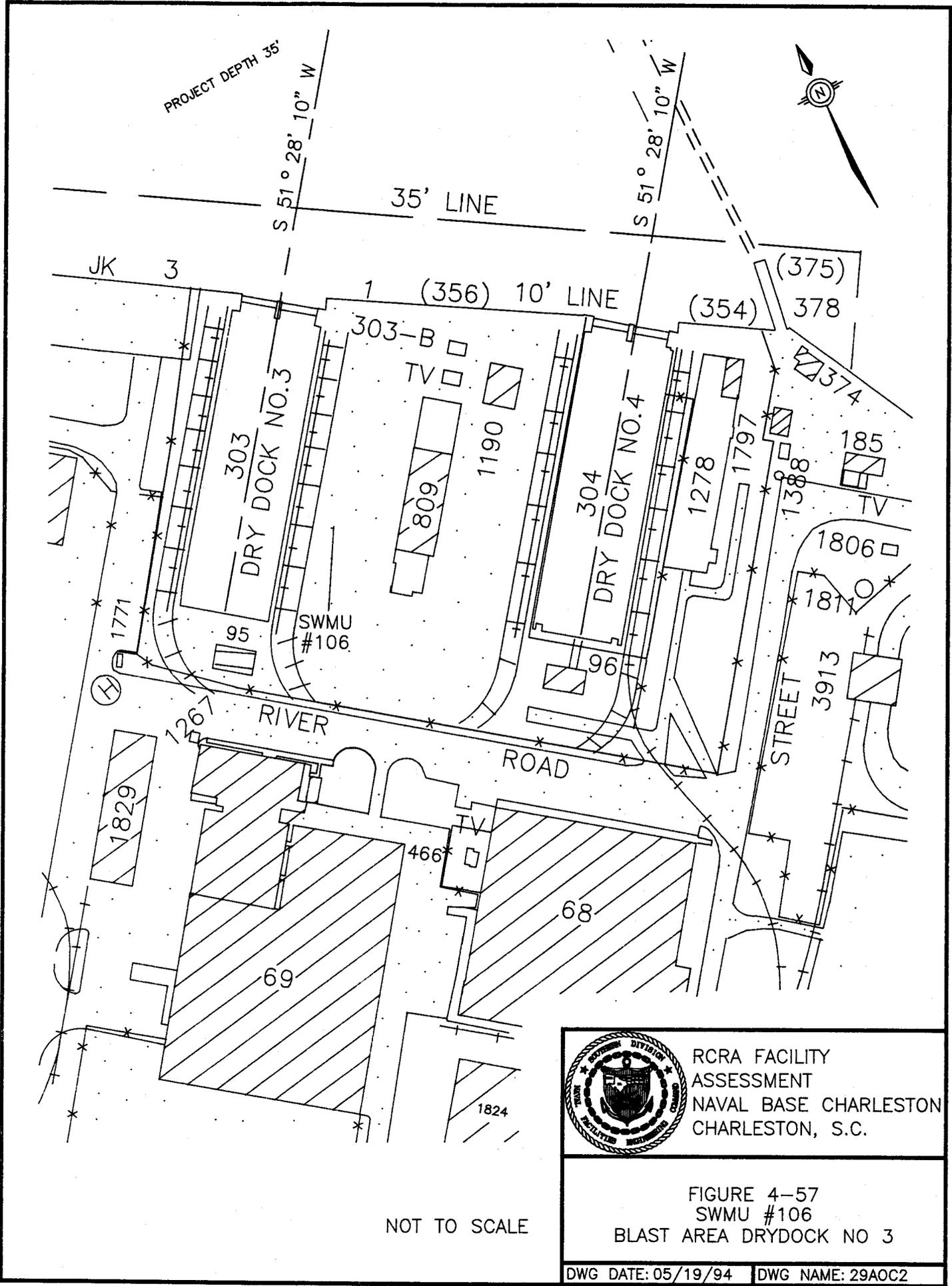
Blasting wastes possibly containing paint, organic solvent, and metallic residues.

4.57.3 Migration Pathways

Soil, groundwater, surface water (the Cooper River is approximately 150 feet from the blast area), sediment, and air are all potential migration pathways. It has been estimated that 24.0866 pounds/hour (25.0500 tons/year) of actual particulate matter are emitted from all drydock abrasive blasting activities.

4.57.4 Evidence of Release

Sand blasting wastes from all Charleston Navy Yard operations were sampled on October 24, 1980 and analyzed to determine EP toxicity. The range of analytical results is as follows: cadmium (<0.01 - 0.02 ppm), chromium (0.02 - 0.04 ppm), and lead (<0.1 - 1.1 ppm; from the sample collected from the active sandblasting area at Pier H.) The EP toxicity criteria for RCRA in 1980 was cadmium (1.0 ppm), chromium (5.0 ppm), and lead (5.0 ppm). The SCDHEC criteria in 1980 was cadmium (0.10 ppm), chromium (0.50 ppm), and lead (0.50 ppm).



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-57
SWMU #106
BLAST AREA DRYDOCK NO 3

The quay wall between DD 3 and 4 was sampled on June 2, 1989 and analyzed for flash point (>140F), total halogens (0.12 wt%), pH (7.00 @ 25°C), arsenic (<1.00 ppm), cadmium (<0.50 ppm), chromium (<1.00 ppm), and lead (<1.00 ppm).

Based on the waste characterization analysis, there is no evidence of a release related to the blast grit and paint residue.

4.57.5 Exposure Potential

The abrasive blasting area is not close to any residential areas but is near the Cooper River, a sensitive environment. Exposure to workers in the area may also occur. Based on available data, the materials present at this SWMU do not pose a threat to the environment.

4.57.6 Recommended Action

Due to the limited data available and the potential for release to the environment, a RFI is recommended.

4.58 SWMU #107 — Temporary Satellite Accumulation Area, CBU-412 Chapel

4.58.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. This temporary SAA is closed and is no longer operational. The SWMU Site Location Map locates the chapel within the Naval Base. Figure 4-58 locates the SAA within the chapel.

4.58.2 Waste Characteristics

Lead paint removal debris was stored. The major constituents of concern are volatile organic compounds and metals.

4.58.3 Migration Pathways

Sufficient information is not available to determine migration pathways.

4.58.4 Evidence of Release

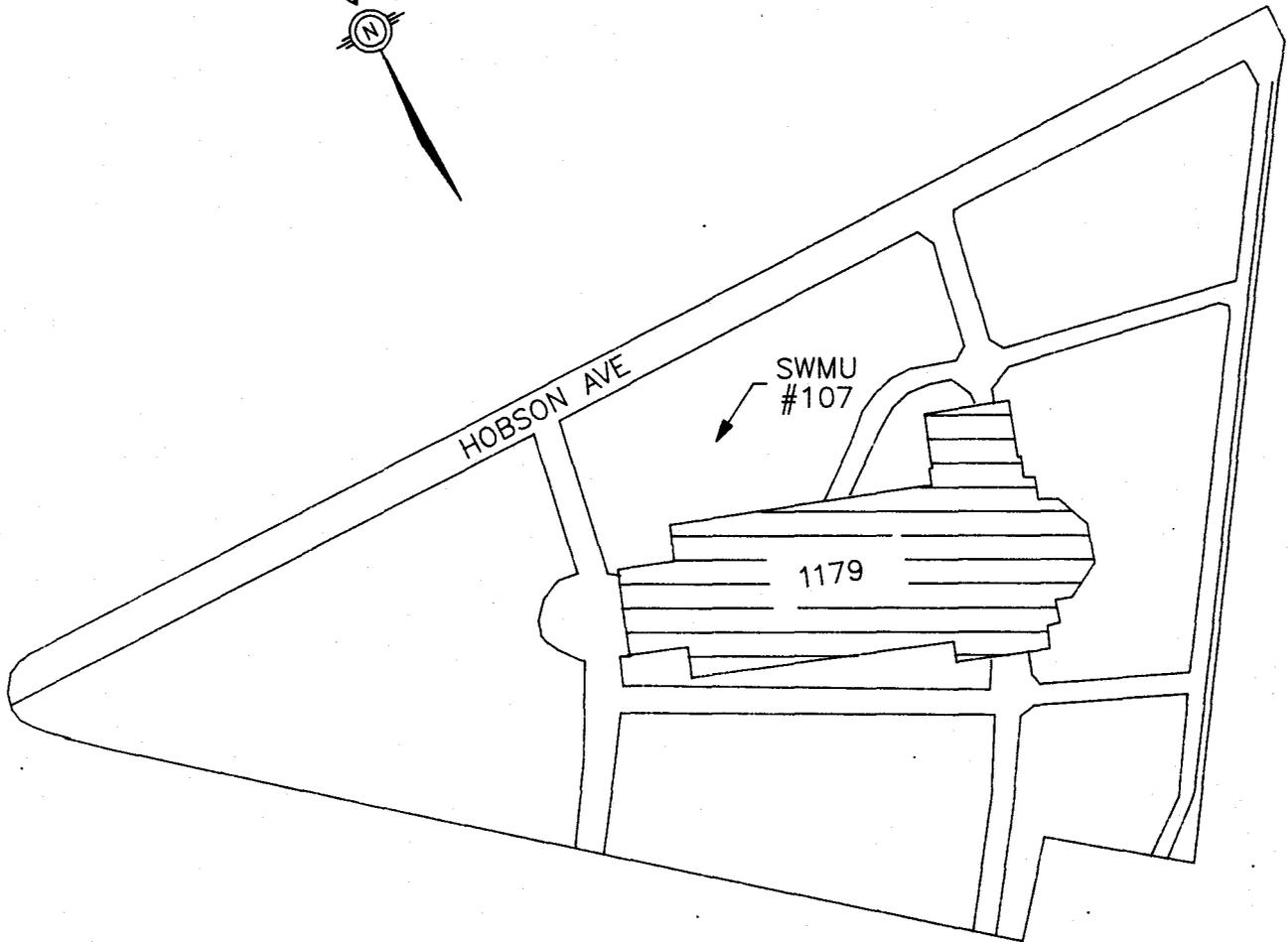
Sufficient information is not available to determine evidence of release.

4.58.5 Exposure Potential

This SAA was not close to any residential areas.

4.58.6 Recommended Action

This SAA is no longer operational. Per 40 CFR 262.34(a)(1), certification of closure is required in accordance with 40 CFR 265.111 and 114.



NOT TO SCALE

NOTE: THE EXACT LOCATION OF
SWMU #107 IS NOT KNOWN



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FIGURE 4-58
SWMU #107
CBU 412, SAA

DWG DATE: 05/20/94 | DWG NAME: 29AOC118

4.59 SWMU #108 — Satellite Accumulation Area, Building 187

4.59.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55-gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 187 within the Naval Base.

Wastes are stored in closed 55-gallon drums and plastic bags. The SWMU is located outside the building on a gravel and dirt surface. No containment berm exists. Figure 4-59 locates the SAA within Building 187.

4.59.2 Waste Characteristics

Aerosol cans and miscellaneous empty cans are stored.

4.59.3 Migration Pathways

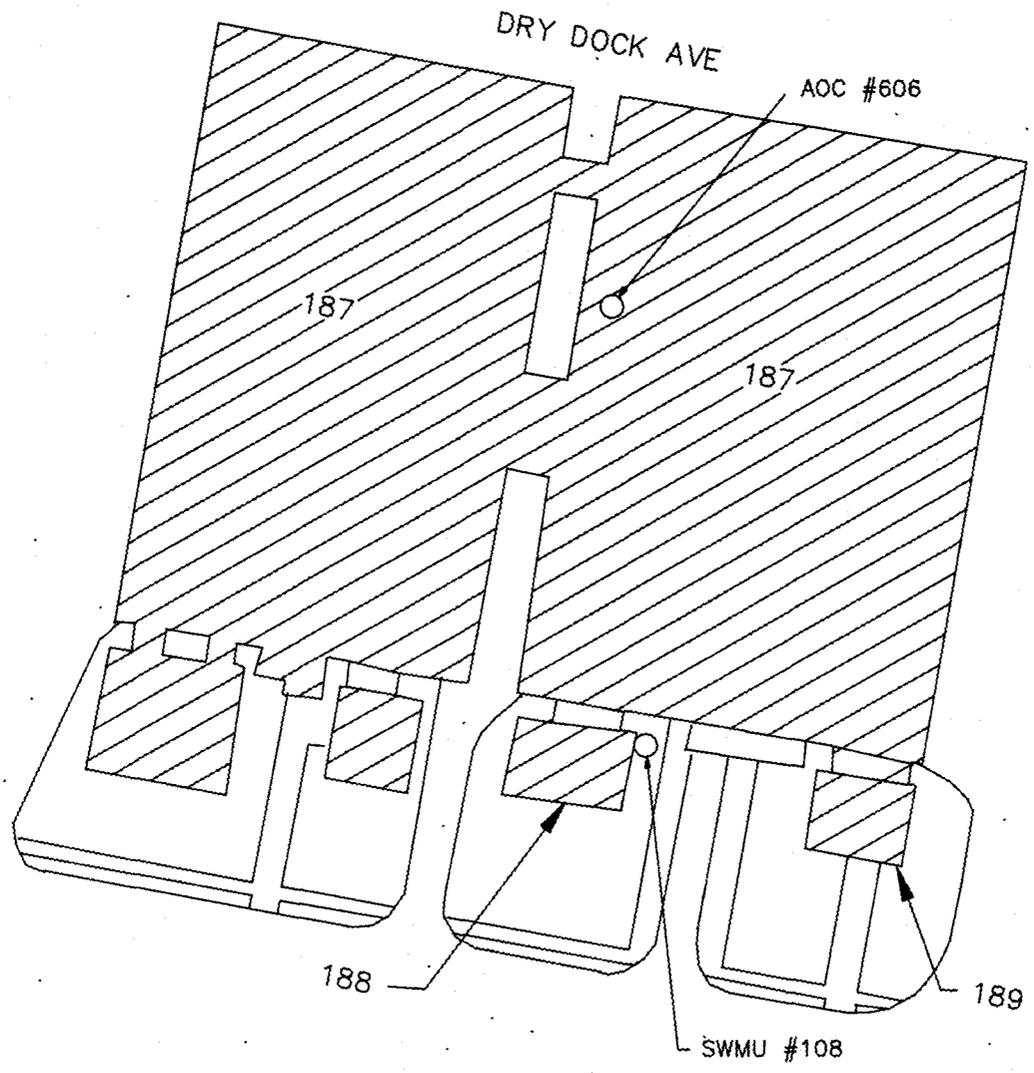
Because this SAA is located outside Building 187, soil, groundwater, and surface waters are likely pathways. The ground in the vicinity of this SAA is free of stains.

4.59.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.59.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. The limited storage capacity, nature of waste, and lack of spill evidence minimizes the potential exposures to Naval Base employees.



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-59
SWMU #108
BUILDING 187, SAA

DWG DATE: 05/19/94 | DWG NAME: 29AOC64

4.59.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste (empty cans contained by 55-gallon drums and plastic bags), storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.60 SWMU #109 — Abrasive Blast Media Storage Area

4.60.1 Unit Characteristics

Buildings 1364, 1365, and 1393 each contain a blast hopper used for temporary storage of abrasive blast media unloaded via truck from rail cars prior to transfer to various sandblast facilities on the base. Two hoppers have operated since 1949; the third (Building 1393) was installed in 1962. The hoppers were added to the Bureau of Air Quality Control Permit Number 0560-0002 in 1992. The SWMU Site Location Map locates the blast media storage area within Naval Base Charleston. Figure 4-60 locates the position of the hoppers.

4.60.2 Waste Characteristics

In the past, the hoppers contained blast grit. The constituents of this grit are unknown. An undated inventory lists each hopper using 200 lbs/year of aluminum oxide.

4.60.3 Migration Pathways

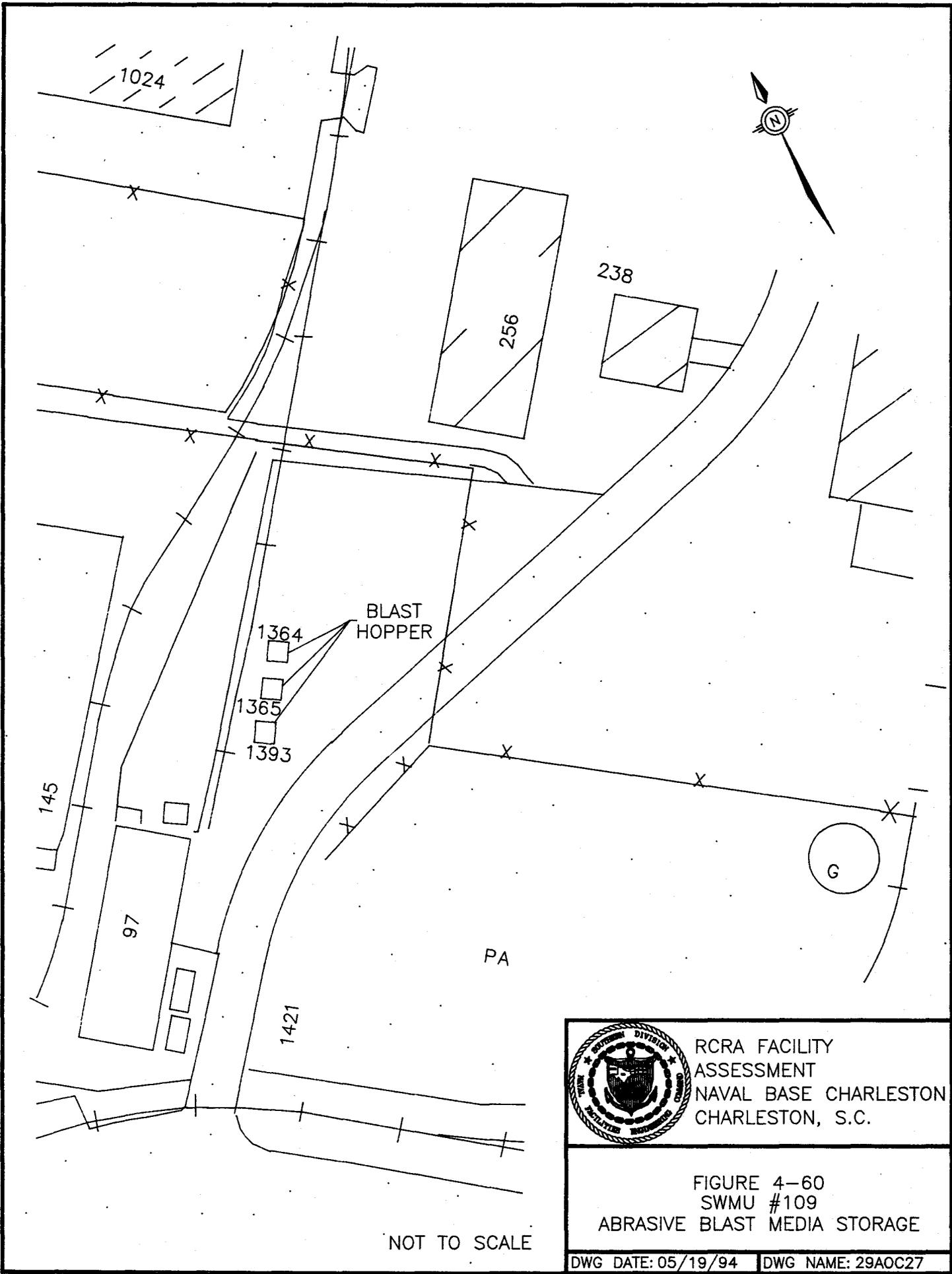
Soil is a viable migration pathway due to the heavy layer of blast media surrounding the hoppers. Groundwater, subsurface gas, and surface water are also potential migration pathways due to the residual blast media surrounding the hoppers and the uncertainty of its content.

4.60.4 Evidence of Release

No environmental incident reports were on file but blast media is visible throughout the immediate area.

4.60.5 Exposure Potential

This SWMU is not in close proximity to any residential areas or sensitive environments. Naval Base employees may be exposed to airborne blast media.



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-60
SWMU #109
ABRASIVE BLAST MEDIA STORAGE

DWG DATE: 05/19/94 | DWG NAME: 29AOC27

4.60.6 Recommended Action

There is no evidence of a release from this unit. However, confirmation sampling is recommended due to uncertainty about the nature of the waste and the design of the unit which may allow migration of any potential releases.

4.61 SWMU #110 — Satellite Accumulation Area, Building 1346

4.61.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 1346 within the Naval Base.

Wastes are stored in closed 55-gallon drums and a 20-gallon drum. The floor surface is floor tile overlying concrete. No containment berm exists. Hazardous waste is generated from the retail fuel distribution activities performed at this location. Figure 4-61 locates the SAA in Building 1346.

4.61.2 Waste Characteristics

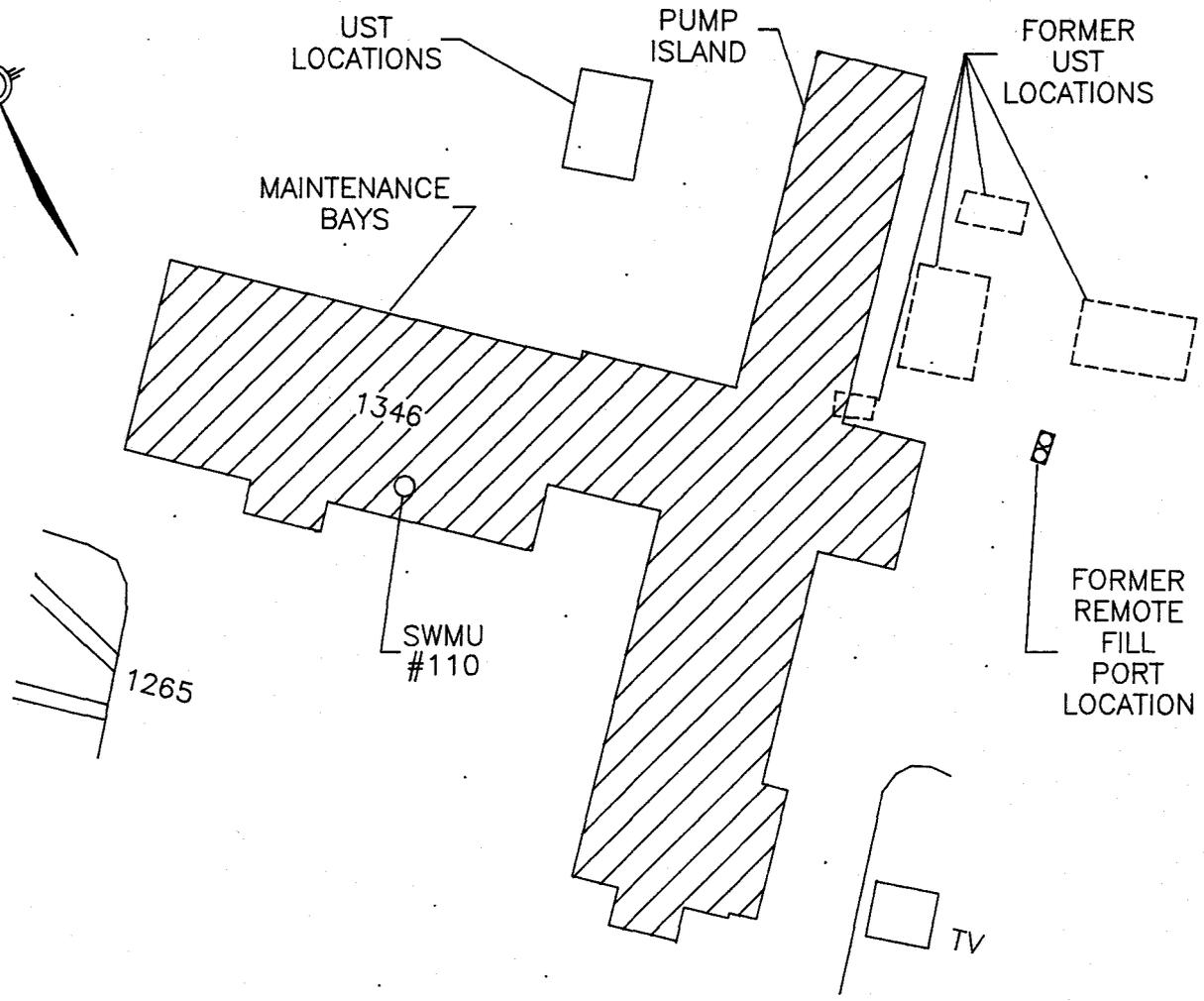
Empty aerosol cans, oily rags, used oil filters, and empty oil containers are stored. The major constituents of concern are volatile organic compounds and petroleum hydrocarbons.

4.61.3 Migration Pathways

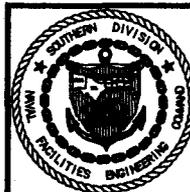
Because this SAA is located inside Building 1346, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.61.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



NOT TO SCALE



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ASSESSMENT
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 4-61
SWMU #110
BUILDING 1346, SAA

4.61.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. The limited storage capacity, nature of waste, and lack of evidence of a major release minimize potential exposures to Naval Base employees.

4.61.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste (aerosol cans and oily rags), storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.62 SWMU #111 — Satellite Accumulation Area, Building 241

4.62.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 241 within the Naval Base.

Wastes are stored in closed 55-gallon drums in a 6 foot x 5 foot shed. The floor surface is floor tile over concrete. No containment berm exists. Figure 4-62 locates the SWMU within Building 241.

4.62.2 Waste Characteristics

Spent paint cans and aerosol cans are stored. The major constituents of concern are volatile organic compounds and metals.

4.62.3 Migration Pathways

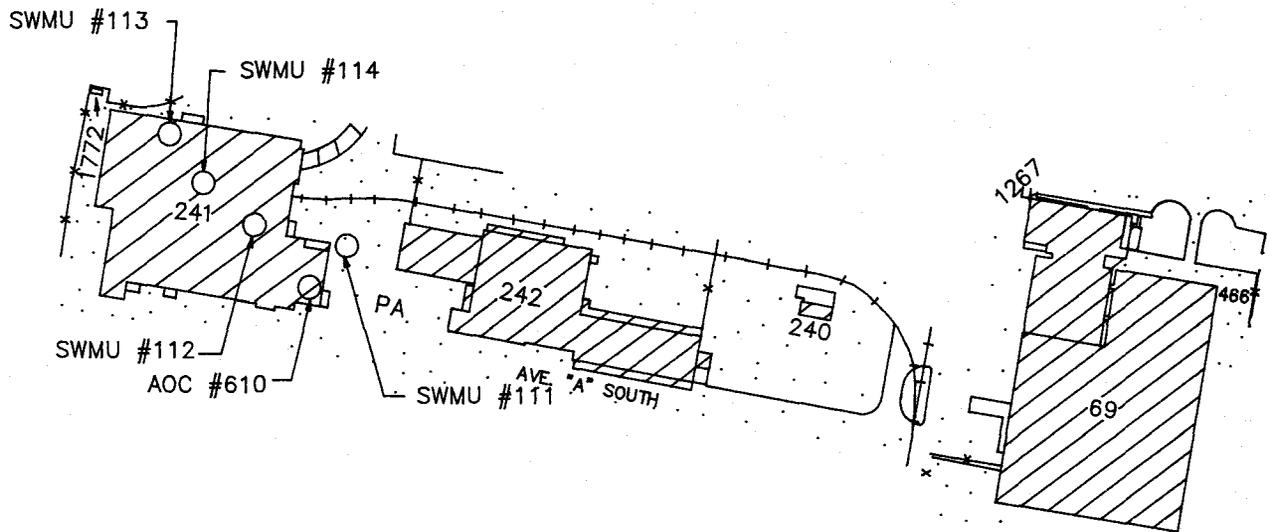
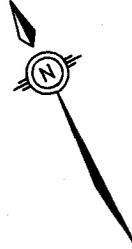
This SAA is located inside Building 241; therefore, soil, groundwater, and surface water are not likely pathways. No cracks were noted in the floor in the vicinity of this SAA.

4.62.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.62.5 Exposure Potential

This SAA is not close to any residential areas. The Cooper River is approximately 1400 feet from Building 241. The design features of the unit and nature of waste (i.e. cans) minimize the likelihood of potential exposures to Naval Base employees.



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-62
SWMU #111
BUILDING 241, SAA

DWG DATE: 05/19/94 | DWG NAME: 29AOC74

4.62.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste, storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.63 SWMU #112 — Satellite Accumulation Area, Building 241

4.63.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 241 within the Naval Base.

SWMU #112 is still operational. The floor where SWMU #112 is floor tile over concrete. Figure 4-63 locates Building 241 within the Naval Base.

4.63.2 Waste Characteristics

Empty paint cans, paint-contaminated debris, and liquid paint waste were stored at this SAA. The major constituents of concern are volatile organic compounds and metals.

4.63.3 Migration Pathways

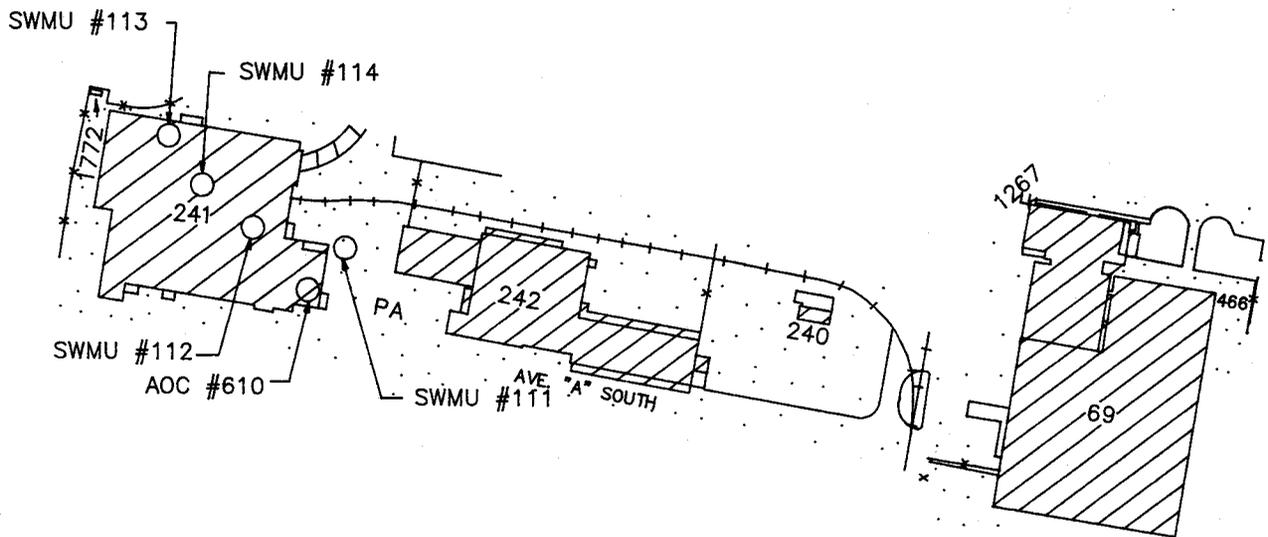
Because this SAA is located inside Building 241, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.63.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.63.5 Exposure Potential

This SAA is not close to any residential areas. The Cooper River is approximately 1400 feet from Building 241. This SAA is still operational, but there is no evidence of a release, and potential exposure to Naval Base employees is minimal.



NOT TO SCALE



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ASSESSMENT
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CHARLESTON, S.C.

FIGURE 4-63
SWMU #112
BUILDING 241, SAA

DWG DATE: 05/19/94 | DWG NAME: 29AOC75

4.63.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste, storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.64 SWMU #113 — Satellite Accumulation Area, Building 241

4.64.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 241 within the Naval Base.

Wastes are stored in closed 55-gallon drums, which are on pallets. The floor surface is floor tile over concrete. No containment berm exists. Figure 4-64 locates the SAA within Building 241.

4.64.2 Waste Characteristics

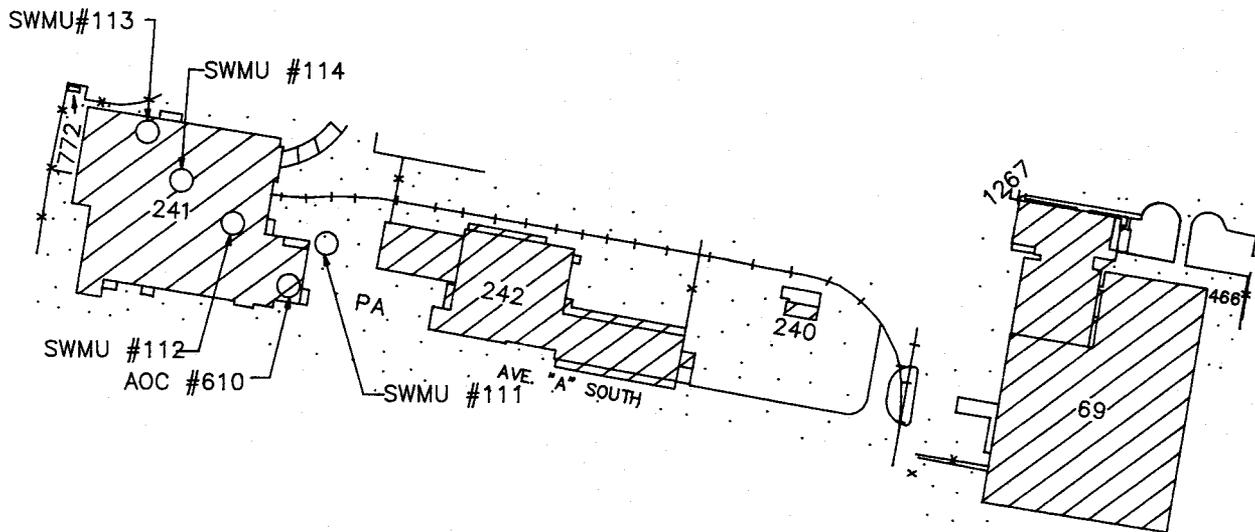
Fifty-five-gallon drums of empty paint and spot check cans, empty anti-freeze containers, plastic and cloth gloves, coveralls, and oily rags are stored at this SAA. The major constituents of concern are volatile organic compounds, metals, and petroleum hydrocarbons.

4.64.3 Migration Pathways

Because this SAA is located inside Building 241, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.64.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-64
SWMU #113
BUILDING 241, SAA

DWG DATE: 05/19/94 | DWG NAME: 29AOC84

4.64.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. The limited storage capacity and nature of waste minimize potential exposures to Naval Base employees.

4.64.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste (solid waste with very little liquid content), storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.65 SWMU #114 — Satellite Accumulation Area, Building 241

4.65.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 241 within the Naval Base.

Wastes are stored in closed 55-gallon drums on pallets. In a 5 foot x 6 foot shed with a tile over concrete floor. No containment berm exists. Figure 4-65 locates the SAA within Building 241.

4.65.2 Waste Characteristics

Used diesel fuel oil filters, used oil filters, and empty oil cans are stored. The major constituents of concern are petroleum hydrocarbons.

4.65.3 Migration Pathways

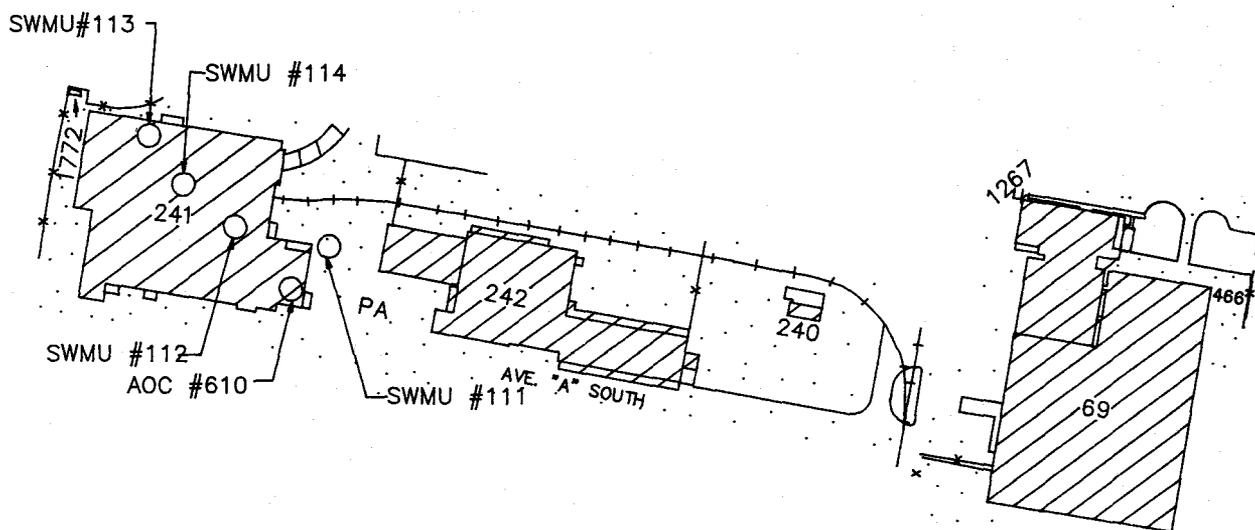
Because this SAA is located inside Building 241, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.65.4 Evidence of Release

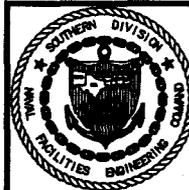
No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.65.5 Exposure Potential

This SAA is not in close proximity to any residential areas or sensitive environments. The limited storage capacity and nature of waste minimizes the potential exposures to Naval Base employees.



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-65
SWMU #114
BUILDING 241, SAA

DWG DATE: 05/19/94 | DWG NAME: 29AOC85

4.65.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste (solid waste with low liquid volume), storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.66 SWMU #115 — Satellite Accumulation Area, Building 242

4.66.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 242 within the Naval Base.

Wastes are stored in closed 55-gallon drums on pallets. The drums are stored in an 8 foot x 16 foot shed with a concrete floor. No containment berm exists. Figure 4-66 locates the SAA near Building 242.

4.66.2 Waste Characteristics

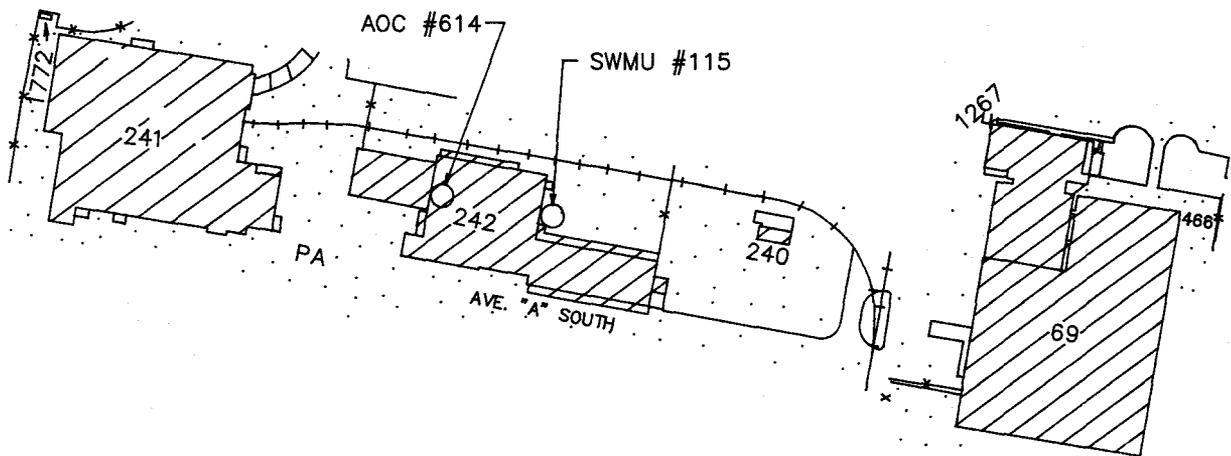
Oily rags, oil spill residue, and used oil filters are stored at this SAA. The major constituents of concern are petroleum hydrocarbons.

4.66.3 Migration Pathways

This SAA is located inside a metal shed, soil, groundwater, and surface waters are unlikely pathways. The floor of the shed is free of cracks, protecting the underlying soil and groundwater.

4.66.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



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FIGURE 4-66
SWMU #115
BUILDING 242, SAA

DWG DATE: 05/19/94 | DWG NAME: 29AOC81

4.66.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. The limited storage capacity and nature of waste minimizes the potential exposures to Naval Base employees.

4.66.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste (solid waste in drums containerized with very little liquid), storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.67 SWMU #116 — Satellite Accumulation Area, Building 1175

4.67.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 1175 within the Naval Base.

Wastes are stored in closed 55-gallon drums. The floor surface is floor tile over concrete. No containment berm exists. Figure 4-67 locates the SAA within Building 1175.

4.67.2 Waste Characteristics

Empty oil cans, oily rags, and engine oil are stored.

4.67.3 Migration Pathways

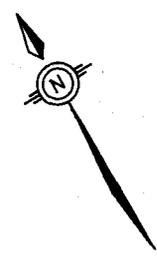
Because this SAA is located inside Building 1175, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.67.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

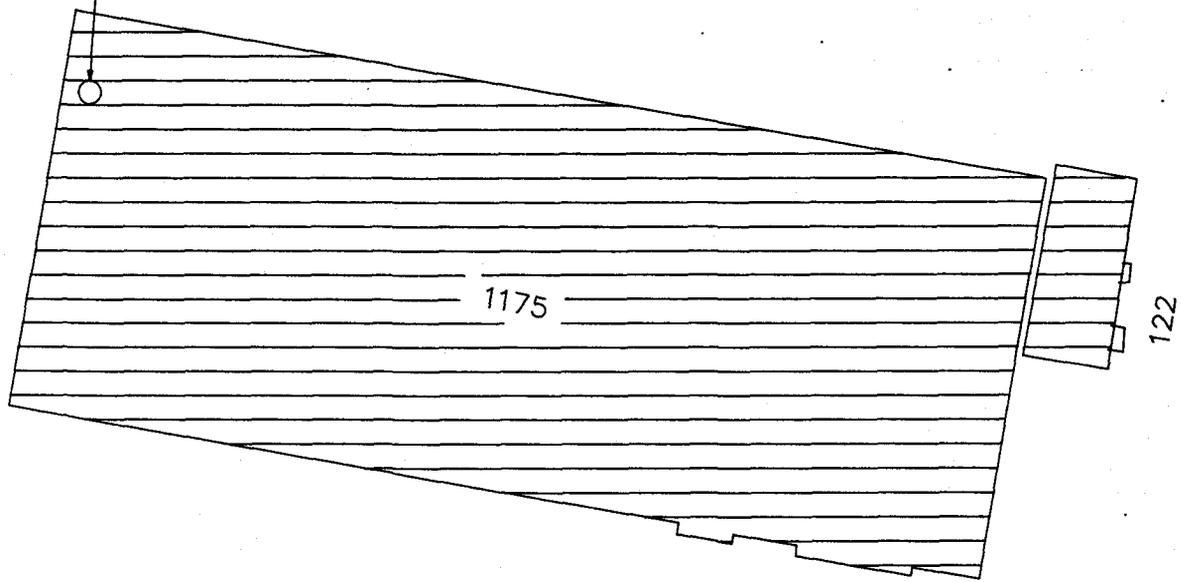
4.67.5 Exposure Potential

This SAA is not close to any residential areas. The Cooper River is approximately 900 feet from Building 1175. The design features of the unit, nature of waste (i.e. cans, rags), and lack of evidence of a release minimize the likelihood of potential exposures to Naval Base employees.



AVE. "A" SOUTH

SWMU #116



RAMSEY ST.

NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 4-67
SWMU #116
BUILDING 1175, SAA

DWG DATE: 05/19/94 | DWG NAME: 29AOC102

4.67.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste, storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.68 SWMU #117 — Satellite Accumulation Area, Building 249

4.68.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 249 within the Naval Base. Figure 4-68 locates the SWMU within Building 249. Information regarding the design and construction features of this SAA is currently unavailable.

4.68.2 Waste Characteristics

Aerosol paint cans are stored at this SAA. The major constituents of concern are volatile organic compounds and metals.

4.68.3 Migration Pathways

Information required to determine migration pathways is currently not available .

4.68.4 Evidence of Release

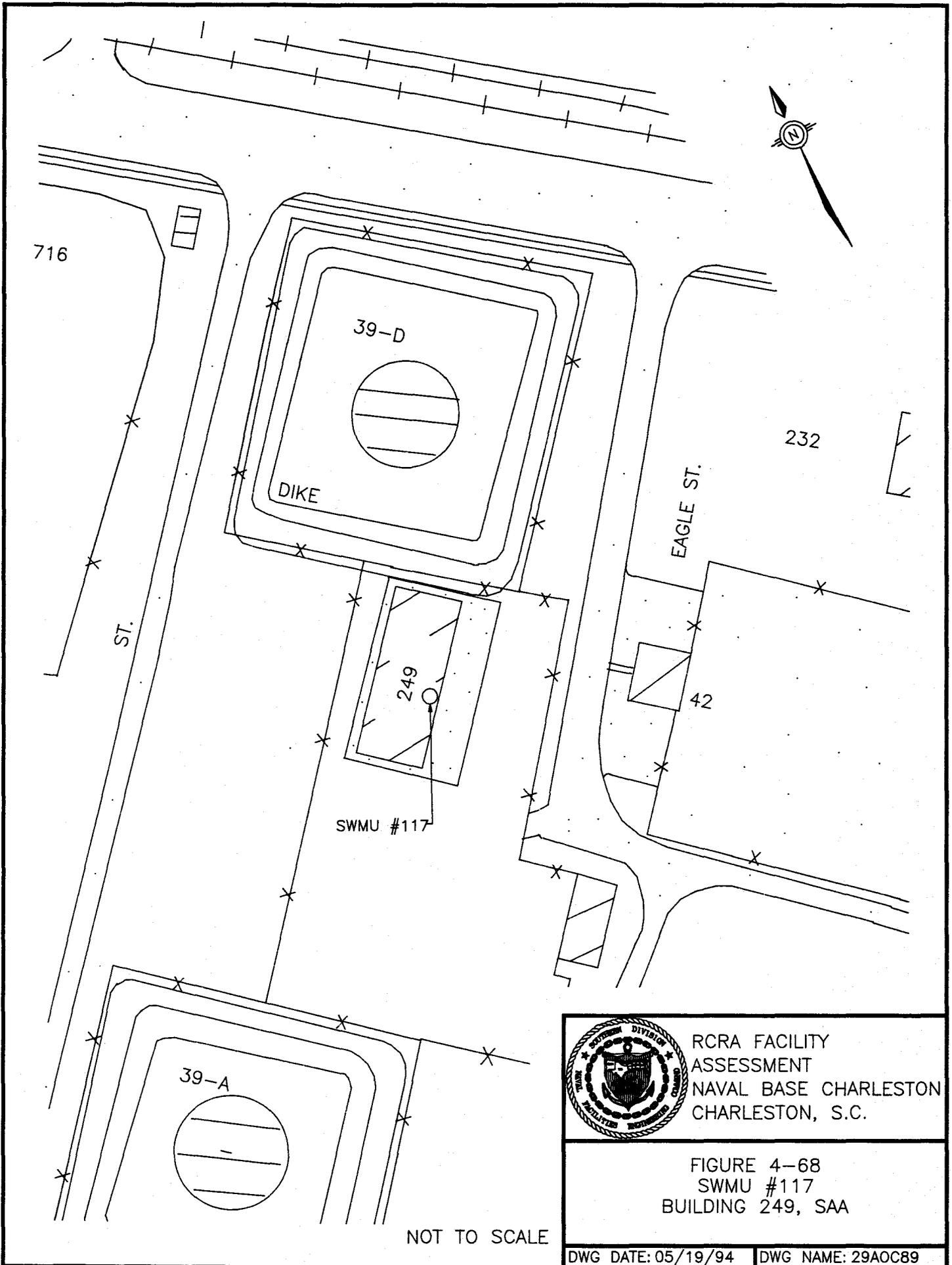
Information required to determine evidence of release is currently not available.

4.68.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. Additional information required to determine exposure potential is currently not available.

4.68.6 Recommended Action

Due to insufficient information regarding this SAA, a CSI is recommended to confirm whether or not a release to the environment has occurred.



4.69 SWMU #120 — Pier M Laydown

4.69.1 Unit Characteristics

The location of the laydown area is in the vicinity of Pier M, but the exact location is not known. The SWMU Site Location Map locates Pier M within Naval Base Charleston. The Pier M laydown area has been used by Submarine Squadron Four personnel to store lead shielding and other material. An abandoned spray booth may be located in this area. It is likely that radiologically contaminated tarps from radiation control areas are placed in the laydown area. Figure 4-69 locates the SWMU in relation to Pier M.

4.69.2 Waste Characteristics

Lead-containing materials are known to be stored. Sufficient information is not available to determine other possible waste characteristics.

4.69.3 Migration Pathways

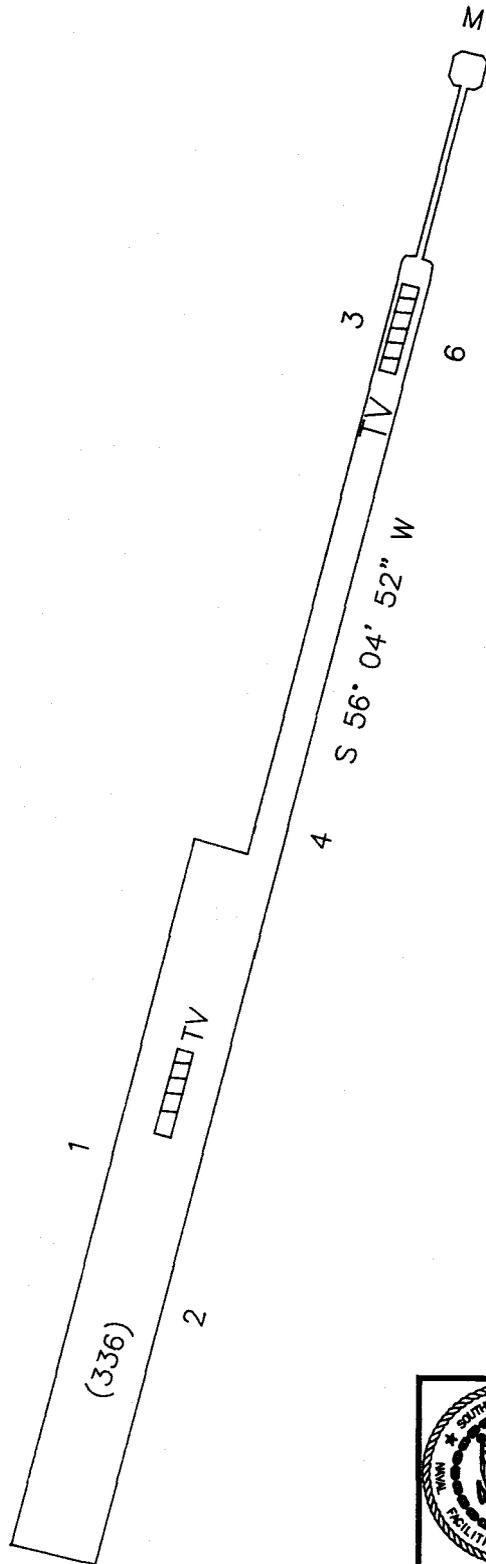
Surface water is a potential migration pathway due to SWMU #120's location near the Cooper River. Soil is another viable migration pathway due to design characteristics of this laydown yard.

4.69.4 Evidence of Release

No spill reports, inspection reports, or employee interviews indicate spills at this unit.

4.69.5 Exposure Potential

The site is not in close proximity to any residential area. This unit is located very near the Cooper River.



NOT TO SCALE



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FIGURE 4-69
SWMU #120
PIER M, LAYDOWN AREA

NOTE: THE EXACT LOCATION OF SWMU #120
IS NOT KNOWN.

DWG DATE: 05/19/94 | DWG NAME: 29AOC26

4.69.6 Recommended Action

There is no evidence of a release from this unit. However, confirmation sampling is recommended due to the nature of the waste and the design of the unit which may allow migration of any potential releases.

4.70 SWMU #121 — Satellite Accumulation Area, Building 801

4.70.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55-gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 801 within the Naval Base.

The SAA is an 8 foot x 8 foot sheet metal building with a concrete floor. Inside, aerosol paint cans are punctured and the paint is collected in a 55-gallon drum. A separate drum is used for storage of used oil. Used automobile batteries are stored on wooden pallets approximately 50 feet from the accumulation area. No containment berm exists. Figure 4-70 locates the SAA with respect to Building 801.

4.70.2 Waste Characteristics

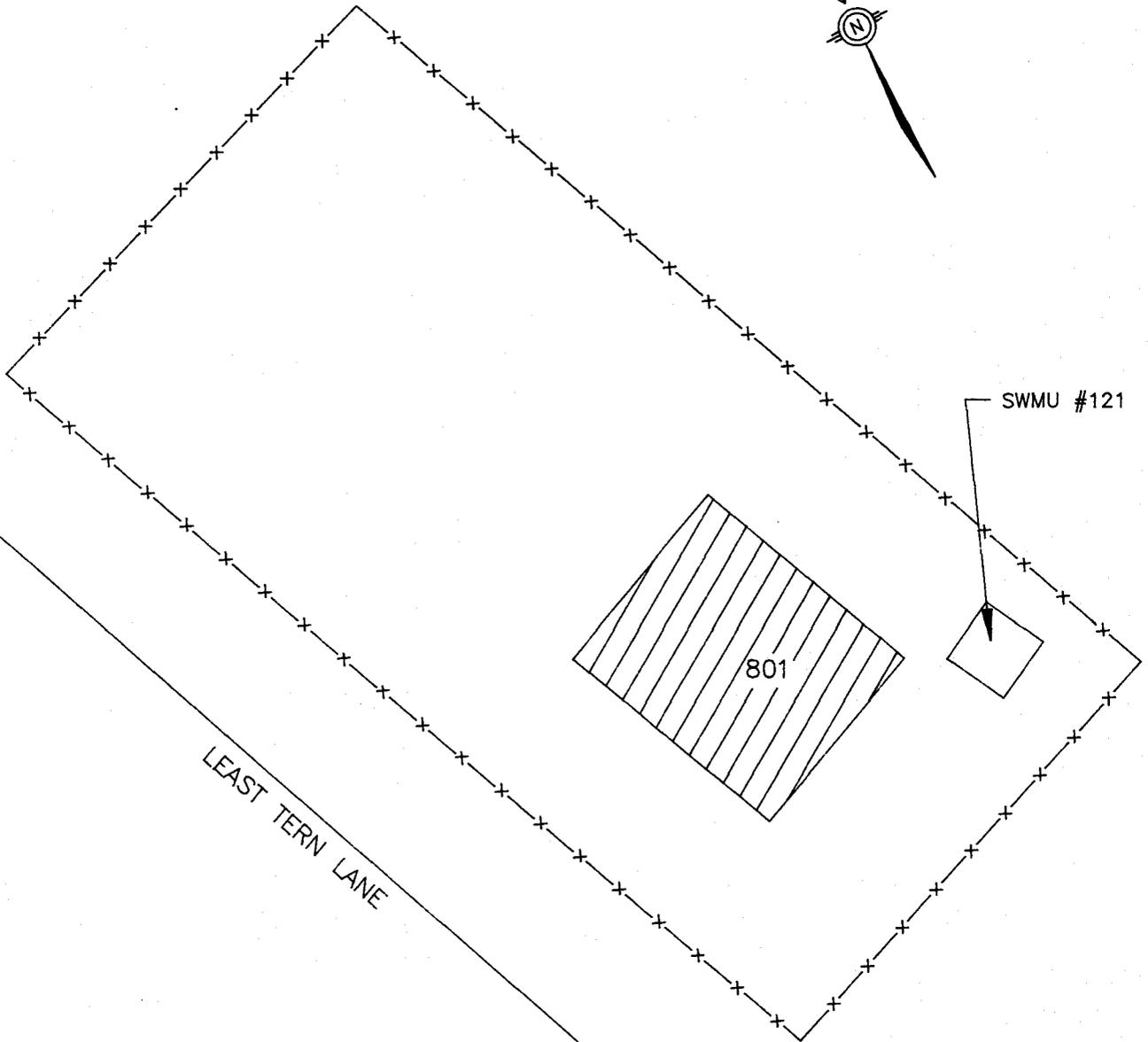
Used oil and contents from punctured aerosol cans (e.g., paint) are stored. The major constituents of concern are volatile organic compounds, metals, and petroleum hydrocarbons.

4.70.3 Migration Pathways

This SAA was located outside of Building 801; therefore, surface migration from surface runoff may occur. Because the ground surface is gravel outside of the SAA metal building, soil and groundwater may also be migration pathways.

4.70.4 Evidence of Release

No spill reports, inspection reports or employee interviews indicate spills at this SAA. However, water puddles were evident on the floor of the SAA during the visual site inspection. During a subsequent tour on March 16, 1994, it was discovered that this SAA had been removed.



LEAST TERN LANE

NOT TO SCALE



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NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 4-70
SWMU #121
BUILDING 801, SAA

DWG DATE: 05/19/94

DWG NAME: 29AOC113

4.70.5 Exposure Potential

This SAA was in a remote area near the southern perimeter of Naval Base Charleston. Therefore, human exposure is limited to Naval Base employees who occasionally work at Building 801. Those employees were subject to exposure to volatile organic compounds, particularly during the aerosol paint can puncturing operations. Shipyard Creek is within 300 feet of Building 801, across Least Tern Lane. Wetlands (the area south of Least Tern Lane, along Shipyard Creek) are nearby.

4.70.6 Recommended Action

The SWMU is within the boundary of SWMU #9, which is being investigated in the RFI. SWMU #121 should be incorporated into the SWMU #9 investigation.

4.71 SWMU #122 — Satellite Accumulation Area, Building 636

4.71.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 636 within the Naval Base.

Wastes are stored in closed 55-gallon drums. The floor surface is concrete. No containment berm exists. Figure 4-71 locates the SAA within Building 636.

4.71.2 Waste Characteristics

Empty aerosol and paint cans, paint rags, and empty grease containers are stored. The major constituents of concern are volatile organic compounds, metals, and petroleum hydrocarbons.

4.71.3 Migration Pathways

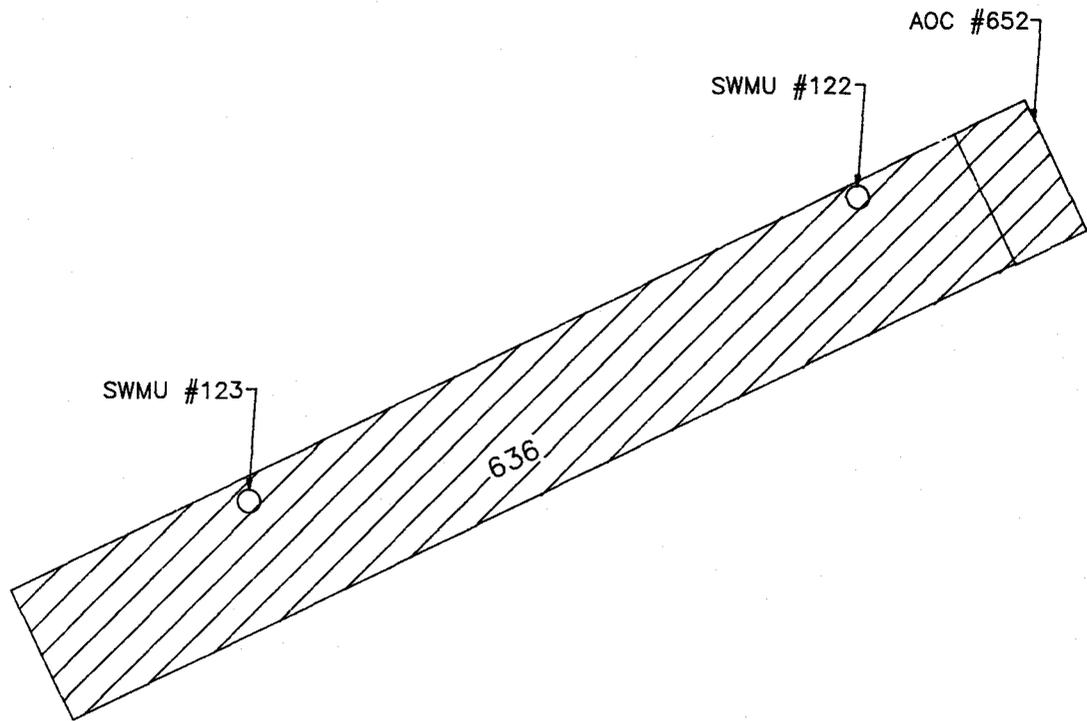
Because this SAA is located inside Building 636, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.71.4 Evidence of Release

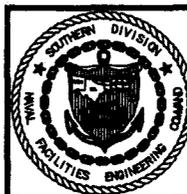
No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.71.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. The limited storage capacity, nature of waste, and lack of evidence of a major release minimizes potential exposures to Naval Base employees.



NOT TO SCALE



RCRA FACILITY
ASSESSMENT
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 4-71
SWMU #122
BUILDING 636, SAA

DWG DATE: 05/19/94 | DWG NAME: 27S636B

4.71.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste (solid waste with very little liquid content), storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.72 SWMU #123 — Satellite Accumulation Area, Building 636

4.72.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 636 within the Naval Base.

Wastes are stored in closed 55-gallon drums on a concrete slab. No containment berm exists. Figure 4-72 locates the SAA within Building 636.

4.72.2 Waste Characteristics

Spent aerosol and paint cans, paint rags, and empty grease containers are stored. The major constituents of concern are volatile organic compounds, metals, and petroleum hydrocarbons.

4.72.3 Migration Pathways

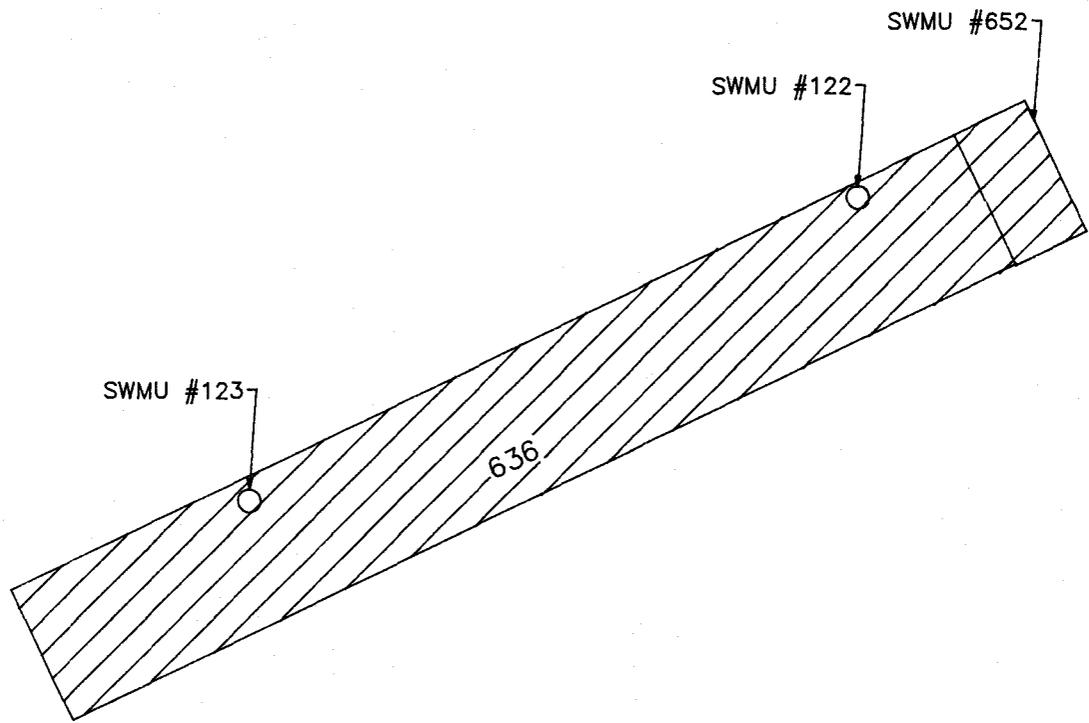
Because this SAA is located inside Building 636, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.72.4 Evidence of Release

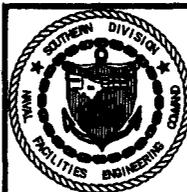
No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.72.5 Exposure Potential

This SAA is not close to any residential areas. The Cooper River is approximately 1800 feet from Building 636. The design features of the unit, nature of waste (i.e. cans, rags), and lack of evidence of a release minimize the likelihood of potential exposures to Naval Base employees.



NOT TO SCALE



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FIGURE 4-72
SWMU #123
BUILDING 636, SAA

DWG DATE: 05/19/94 | DWG NAME: 27S636C

4.72.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste, storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.73 SWMU #124 — Satellite Accumulation Area, Building 1508

4.73.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 1508 within the Naval Base.

Wastes are stored in closed 55-gallon drums. The floor surface is floor tile overlying concrete. No containment berm exists. Figure 4-73 locates the SAA within Building 1508.

4.73.2 Waste Characteristics

Oily rags, oily paper, oil-dry compound, and used oil containers are stored. The major constituents of concern are petroleum hydrocarbons.

4.73.3 Migration Pathways

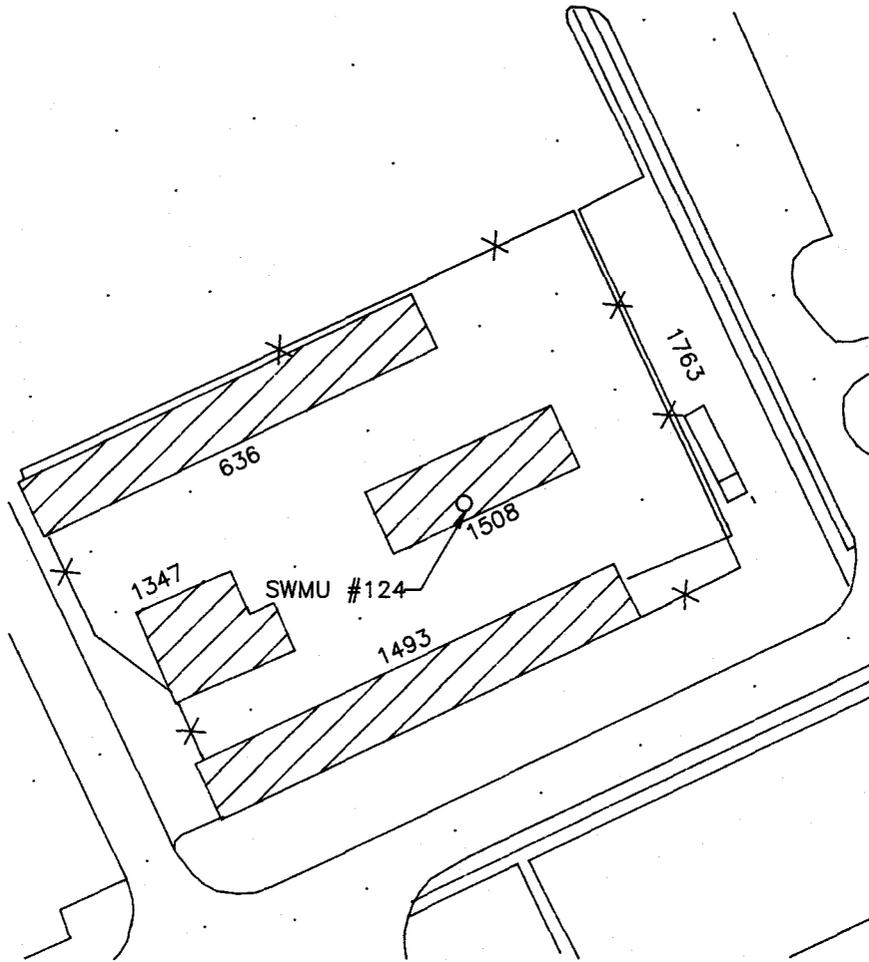
Because this SAA is located inside Building 1508, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.73.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.73.5 Exposure Potential

This SAA is not in close proximity to any residential areas. The Cooper River is approximately 1800 feet from Building 1508. The design features of the unit, nature of waste (i.e. rags, paper, containers), and lack of evidence of a release minimize the likelihood of potential exposures to Naval Base employees.



NOT TO SCALE



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FIGURE 4-73
SWMU #124
BUILDING 1508, SAA

DWG DATE: 05/31/94 | DWG NAME: 29AOC97

4.73.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste, storage practices, lack of evidence of a release from this unit, and limited migration pathways. However, due to the general, visible appearance of contamination in the area, it is recommended that this SAA be investigated in conjunction with the RFI for AOC #653.

4.74 SWMU #125 — Satellite Accumulation Area, Building 202

4.74.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 202 within the Naval Base. Figure 4-74 locates the SWMU within Building 202.

Wastes at this SAA are stored in 5-gallon closed plastic containers within a drip pan underlain by a concrete floor. During a visual site inspection on January 26, 1994, SWMU #125 was clean and in good condition.

4.74.2 Waste Characteristics

An unknown volume of mercuric nitrate waste is stored at this satellite accumulation area.

4.74.3 Migration Pathways

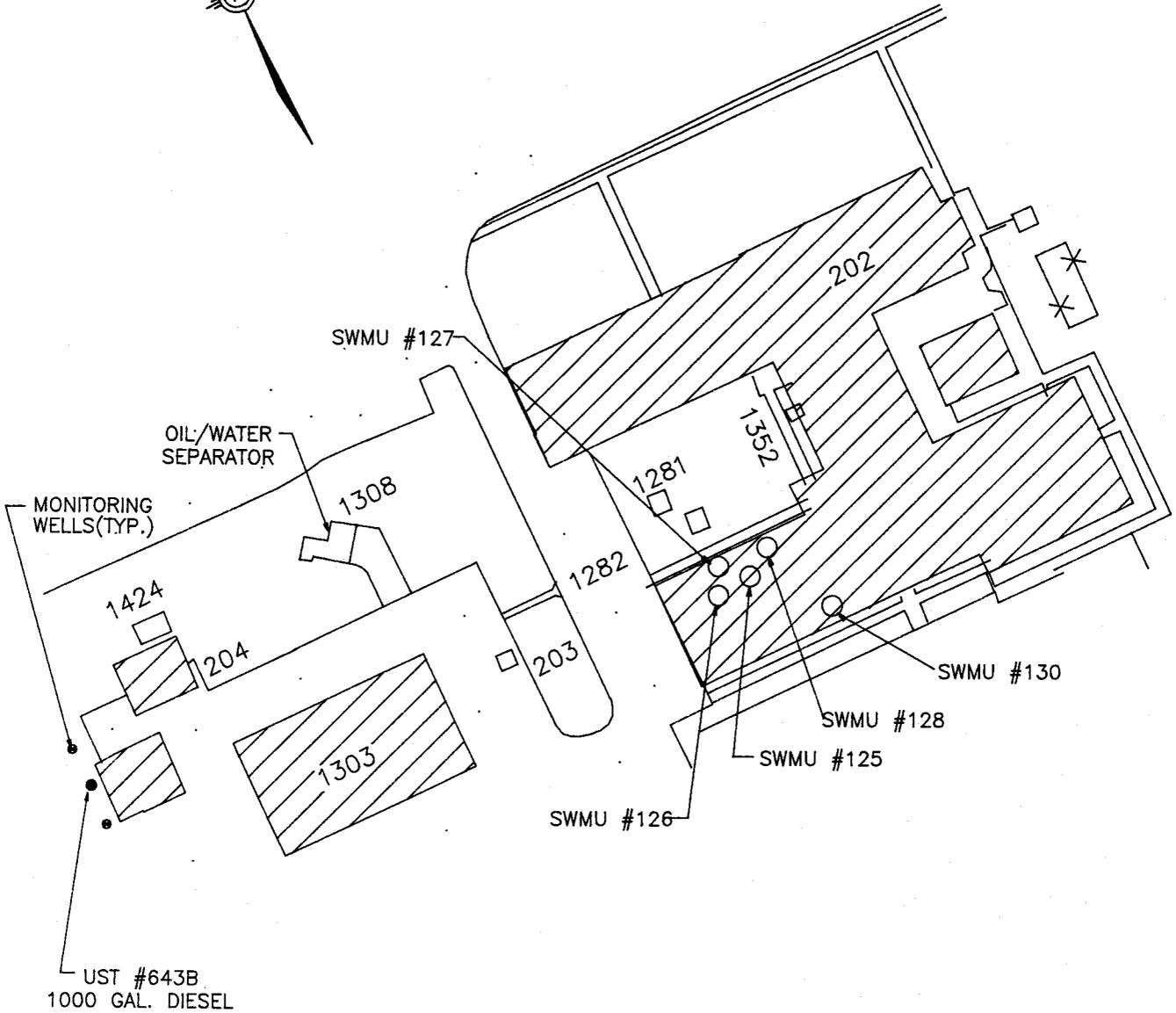
Because this SAA is located inside Building 202, soil, groundwater, and surface water migration is unlikely. The concrete floor in the vicinity of this SAA is free of cracks, thus reducing subsurface migration potential.

4.74.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.74.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. The limited storage capacity and nature of waste limit the potential exposures to Naval Base employees.



NOT TO SCALE



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FIGURE 4-74
SWMU #125
BUILDING 202, SAA

4.74.6 Recommended Action

No further investigation of this SAA is recommended due to the design features of this unit, lack of evidence of a release, and limited migration pathways.

4.75 SWMU #126 — Satellite Accumulation Area, Building 202

4.75.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 202 within the Naval Base. Figure 4-75 locates the SWMU within Building 202.

Wastes at this satellite accumulation area are stored in 5-gallon closed plastic containers. The plastic containers are placed in a drip pan, which is underlain by concrete. During a visual site inspection on January 26, 1994, SWMU #126 was clean and in good condition.

4.75.2 Waste Characteristics

An unknown volume of mercuric nitrate waste is stored at this SAA.

4.75.3 Migration Pathways

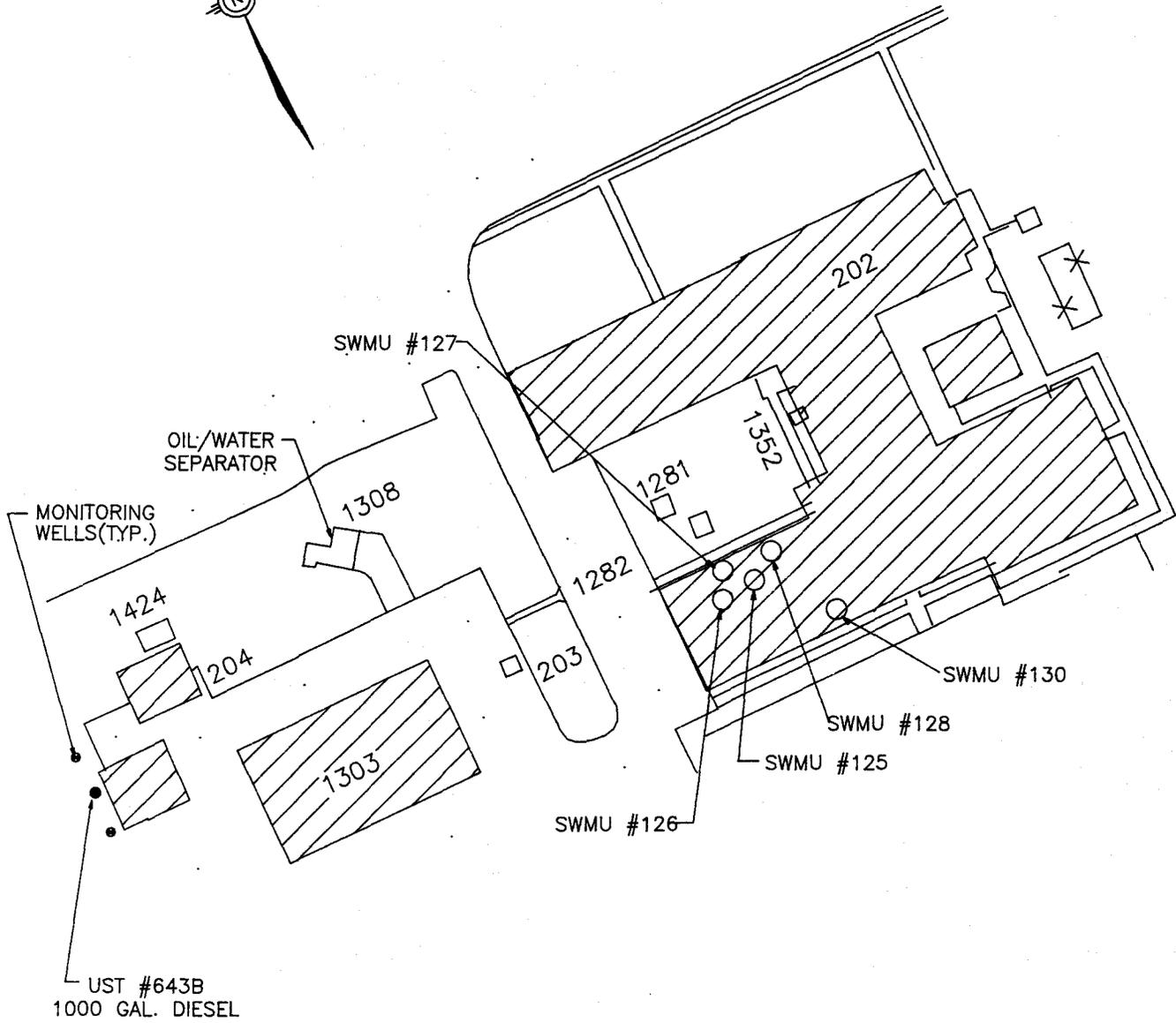
Because this SAA is located inside Building 202, soil, groundwater, and surface water migration is unlikely. The concrete floor surrounding the unit was free of cracks, protecting the underlying soil and groundwater.

4.75.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.75.5 Exposure Potential

This SWMU is not close to any residential areas or sensitive environments. The limited storage capacity limits the potential exposures to Naval Base employees.



NOT TO SCALE



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FIGURE 4-75
SWMU #126
BUILDING 202, SAA

DWG DATE: 05/19/94

DWG NAME: 29AOC53

4.75.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.76 SWMU #127 — Satellite Accumulation Area, Building 202

4.76.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 202 within the Naval Base. Figure 4-76 locates the SWMU within Building 202.

Wastes at this satellite accumulation area are stored in 5-gallon closed plastic containers. The plastic containers are placed in a drip pan, which is underlain by concrete. During a January 26, 1994 visual site inspection, SWMU #127 was clean and in good condition.

4.76.2 Waste Characteristics

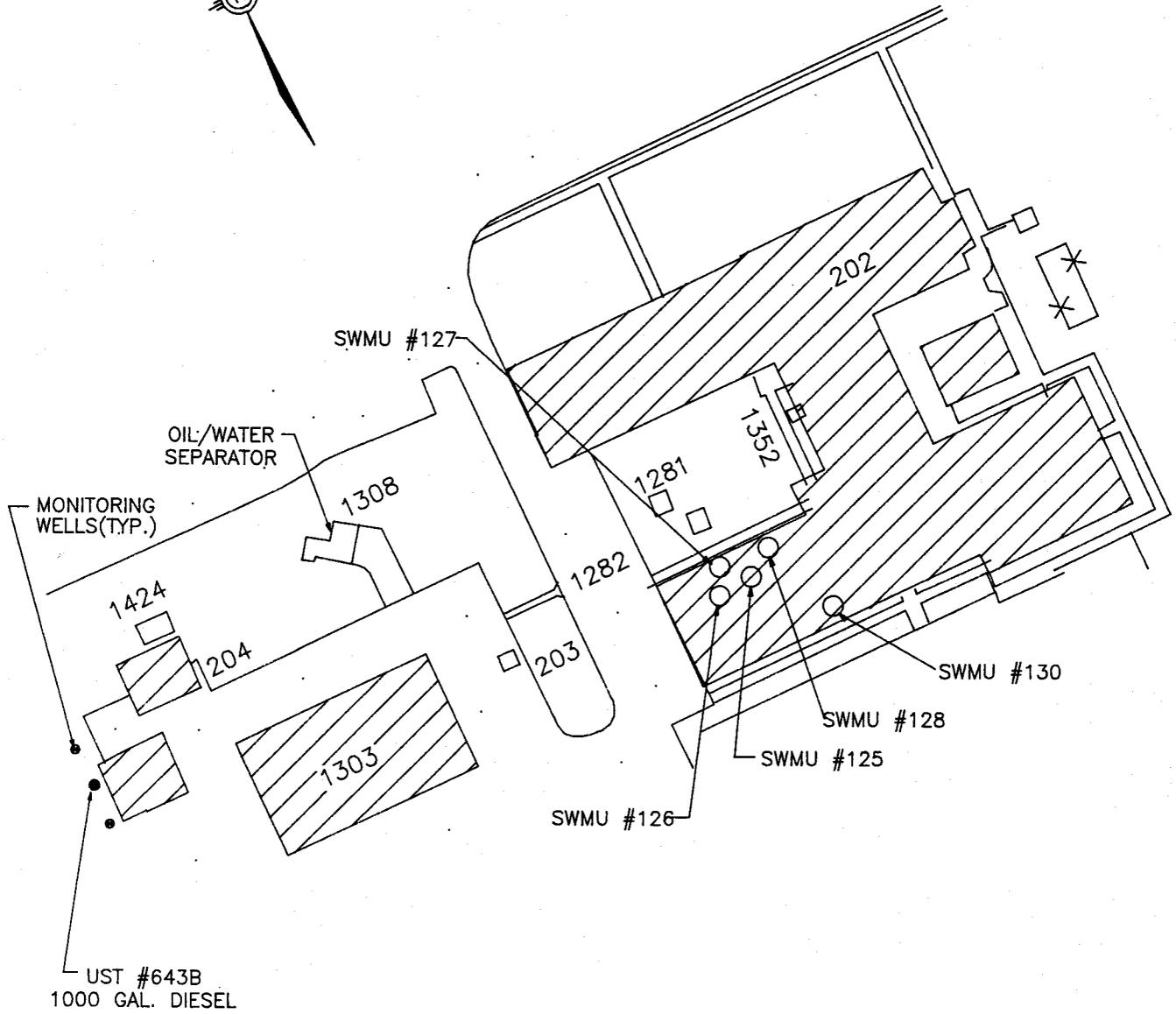
An unknown volume of mercuric nitrate waste is stored at this SAA.

4.76.3 Migration Pathways

Because this SAA is located inside Building 202, soil, groundwater, and surface water migration is unlikely. The concrete floor was free of cracks, protecting the underlying soil and groundwater.

4.76.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



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FIGURE 4-76
SWMU #127
BUILDING 202, SAA

DWG DATE: 05/19/94

DWG NAME: 29AOC55

4.76.5 Exposure Potential

This SWMU is not close to any residential areas or sensitive environments. The limited storage capacity and nature of waste limit the potential exposures to Naval Base employees.

4.76.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste, storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.77 SWMU #128 — Satellite Accumulation Area, Building 202

4.77.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 202 within the Naval Base.

Wastes are stored in closed 5-gallon plastic containers, which are in a drip pan. The floor surface is floor tile over concrete. Figure 4-77 locates the SAA in Building 202.

4.77.2 Waste Characteristics

Mercuric nitrate waste is stored.

4.77.3 Migration Pathways

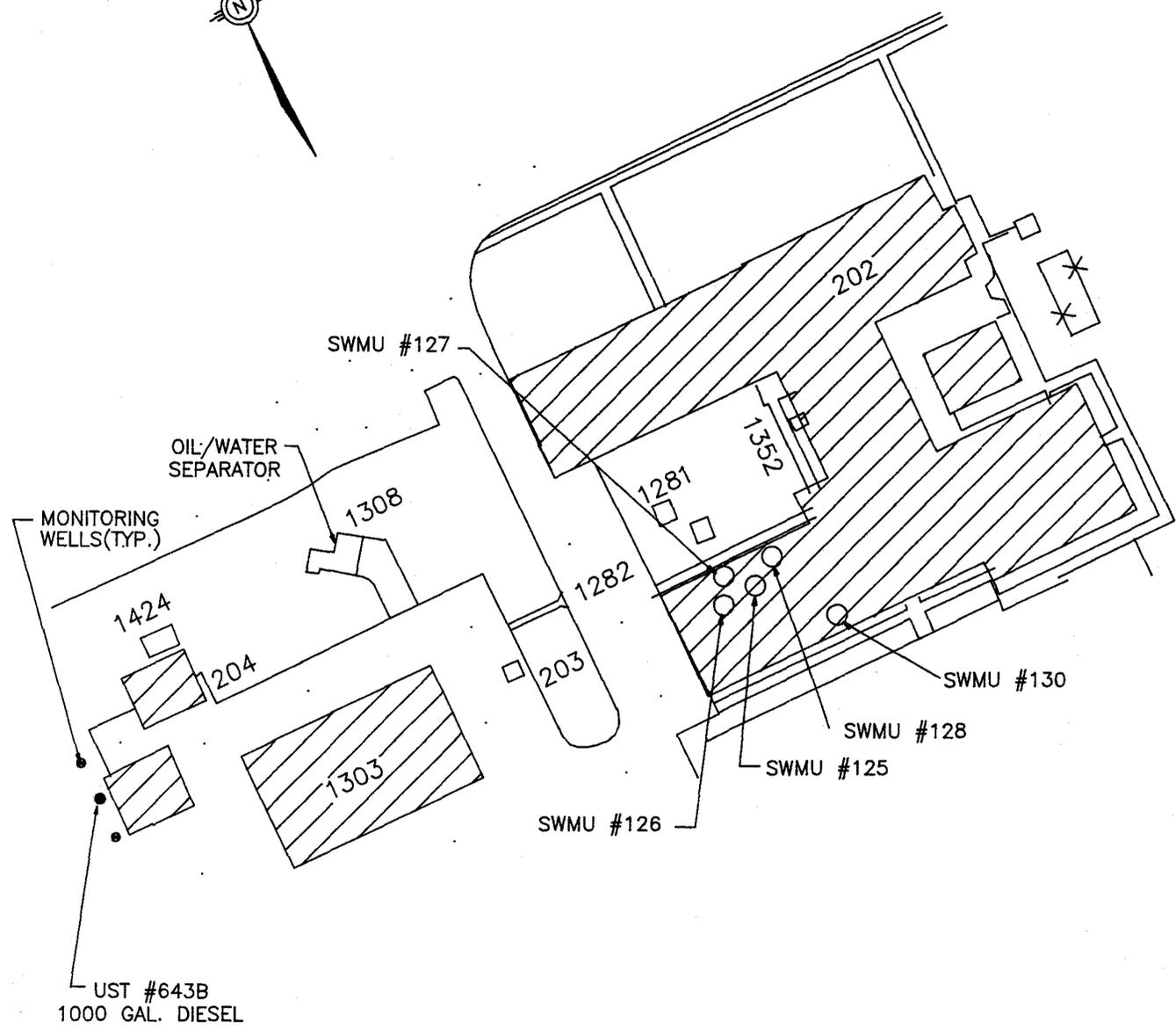
Because this SAA is located inside Building 202, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.77.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.77.5 Exposure Potential

This SAA is not close to any residential areas. The Cooper River is located approximately 1500 feet from Building 202. The design features of the unit and lack of evidence of a release minimize the likelihood of potential exposures to Naval Base employees.



NOT TO SCALE



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FIGURE 4-77
SWMU #128
BUILDING 202, SAA

4.77.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.78 SWMU #129 — Satellite Accumulation Area, Building 202

4.78.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 202 within the Naval Base.

Wastes are stored in a closed 55-gallon drum, which is on a pallet. The floor surface is asphalt. Figure 4-78 locates the SAA in Building 202.

4.78.2 Waste Characteristics

Spent oxygen breathing apparatus canisters are stored.

4.78.3 Migration Pathways

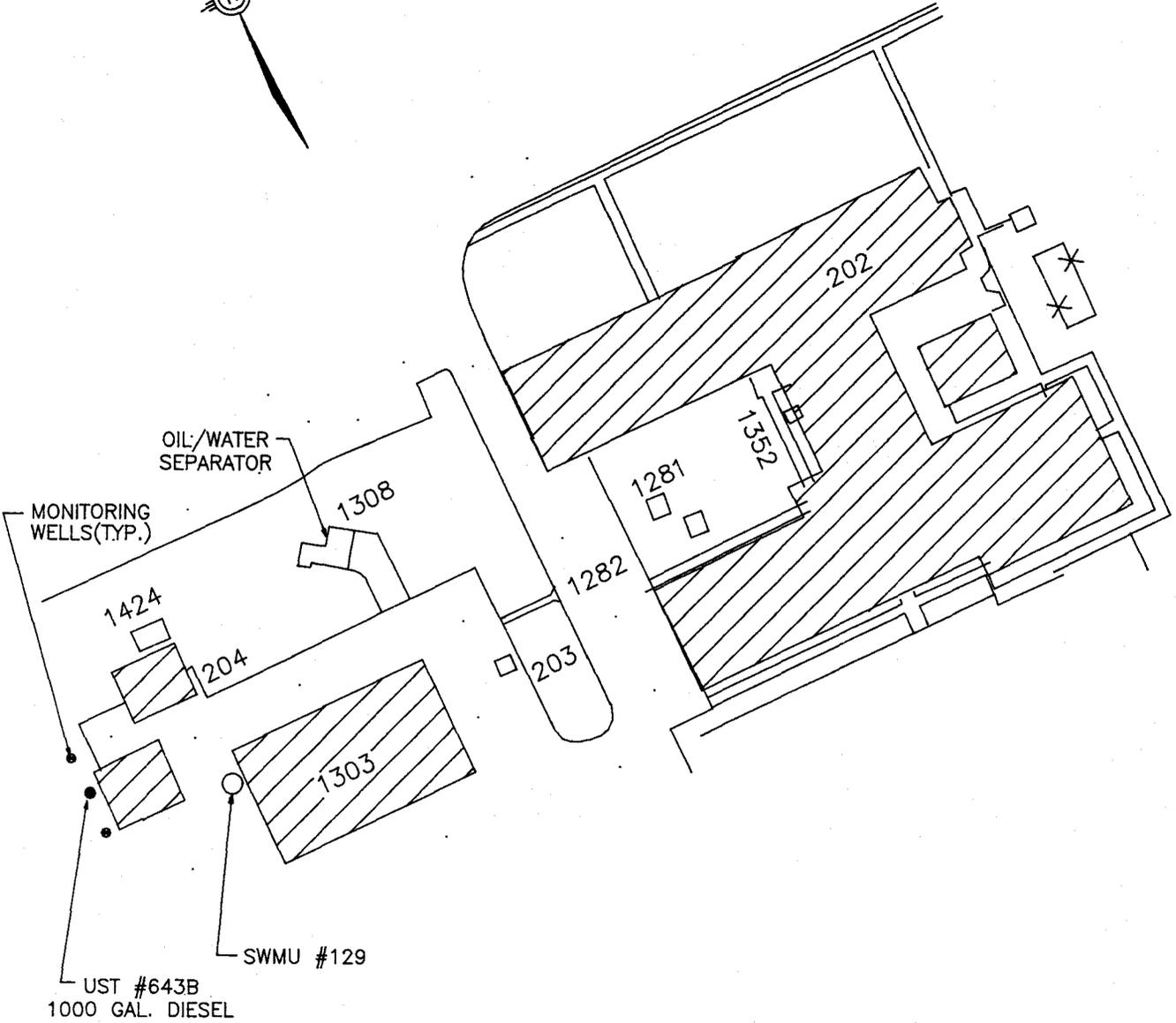
This SAA is located outside of Building 202; therefore, surface migration from surface runoff may occur. The floor in the vicinity of the SAA is free of cracks, protecting the underlying soil and groundwater.

4.78.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.78.5 Exposure Potential

This SAA is not close to any residential areas. The Cooper River is located approximately 1500 feet from Building 202. The design features of the unit and lack of evidence of a release minimize the likelihood of potential exposures to Naval Base employees.



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FIGURE 4-78
SWMU #129
BUILDING 1303, SAA

4.78.6 Recommended Action

No further investigation of this SAA is recommended due to the nature of the waste (i.e. canisters), storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.79 SWMU #130 — Satellite Accumulation Area, Building 202

4.79.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 202 within the Naval Base.

Wastes are stored in closed plastic containers, which are in a drip pan. The floor surface is floor tile over concrete. Figure 4-79 locates the SAA in Building 202.

4.79.2 Waste Characteristics

Waste oil from analyses is stored. The major constituents of concern are petroleum hydrocarbons.

4.79.3 Migration Pathways

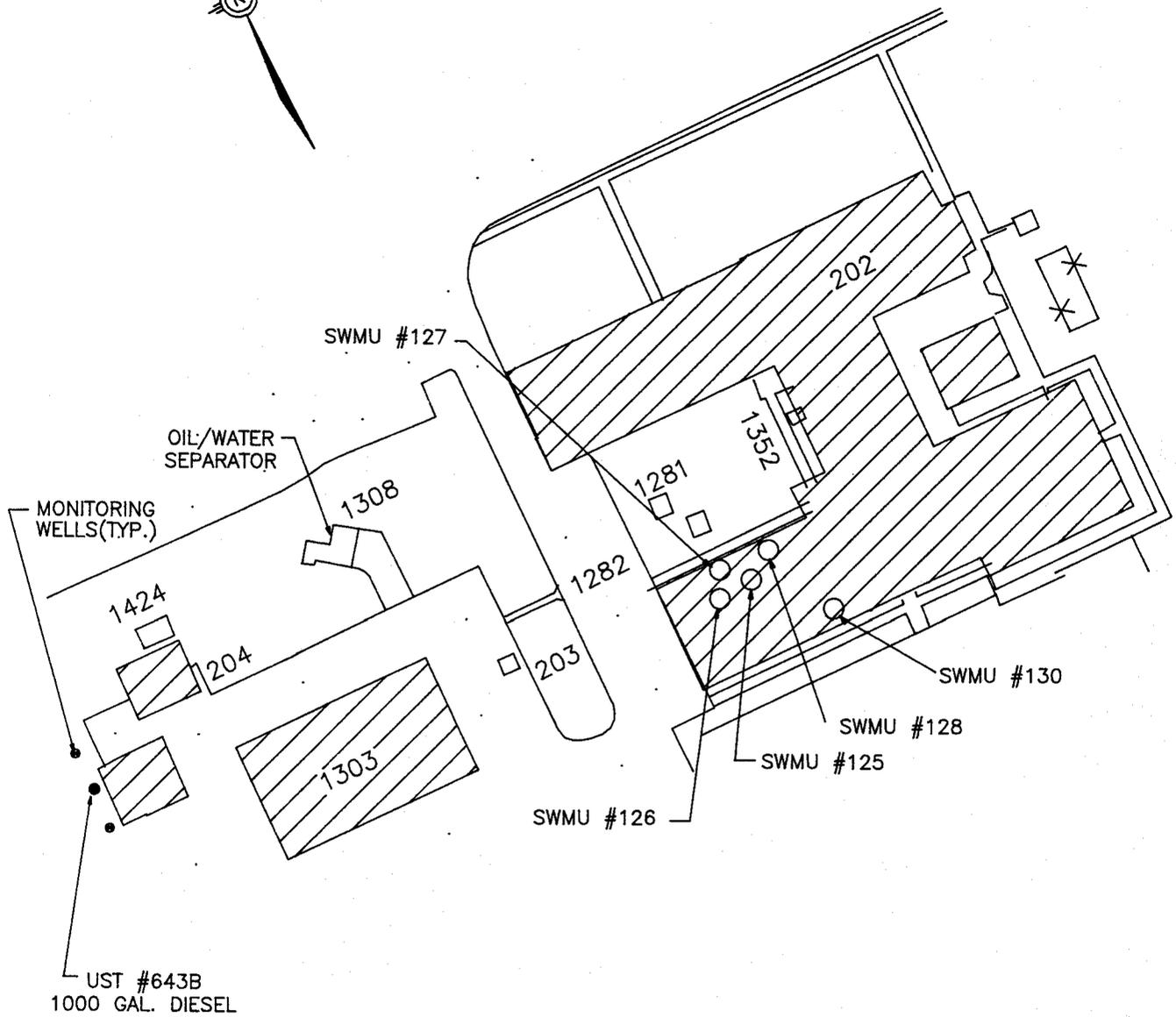
Because this SAA is located inside Building 202, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.79.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.79.5 Exposure Potential

This SAA is not close to any residential areas. The Cooper River is located approximately 1500 feet from Building 202. The design features of the unit and lack of evidence of a release minimize the likelihood of potential exposures to Naval Base employees.



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FIGURE 4-79
SWMU #130
BUILDING 202, SAA

DWG DATE: 05/19/94 | DWG NAME: 29AOC79

4.79.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.80 SWMU #131 — Satellite Accumulation Area, Building NS-67

4.80.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building NS-67 within the Naval Base.

Wastes are stored in plastic bags on concrete. The SAA was locked behind steel doors at the time of the visual site inspection. Figure 4-80 locates the SAA in Building NS-67.

4.80.2 Waste Characteristics

Dry paint waste is stored. The major constituents of concern are heavy metals.

4.80.3 Migration Pathways

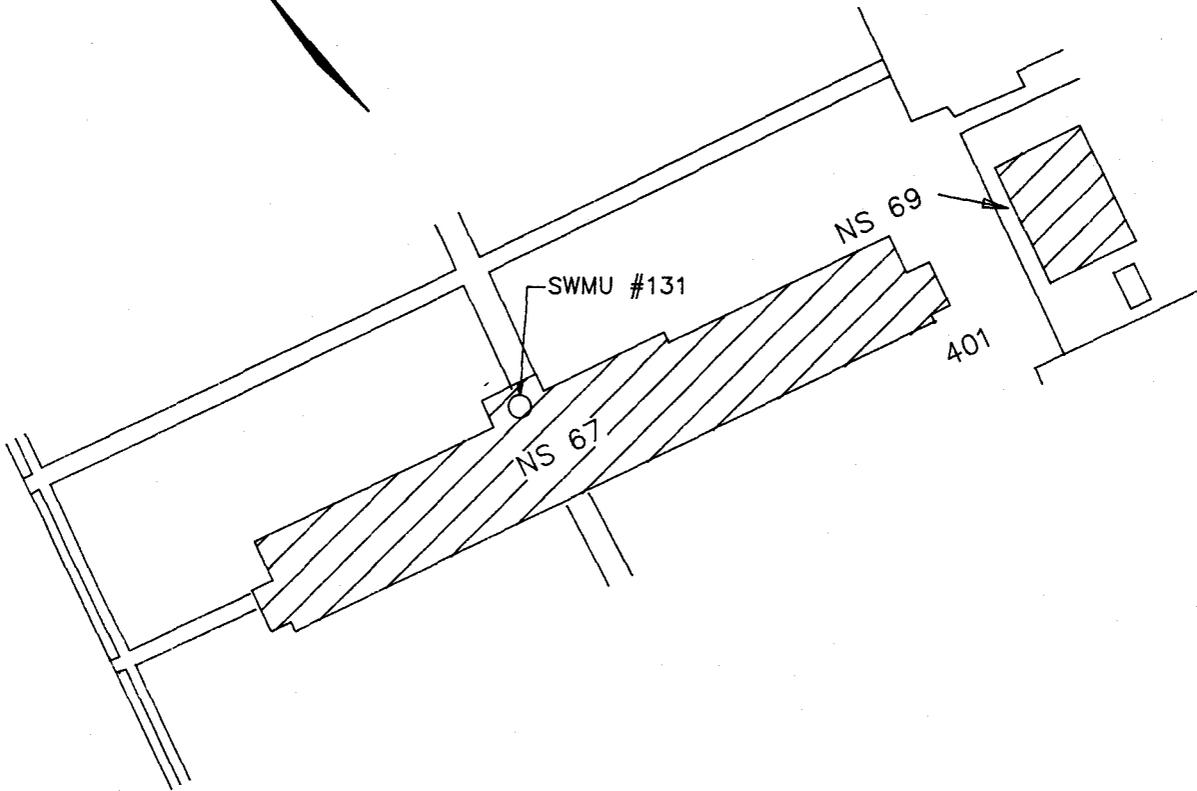
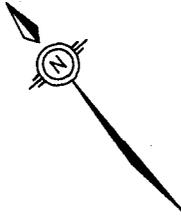
Because this SAA is located inside Building NS-67, soil, groundwater, and surface waters are unlikely pathways.

4.80.4 Evidence of Release

No spill reports, inspection reports, or employee interviews indicate spills at this SAA.

4.80.5 Exposure Potential

This SAA is not close to any residential areas. Wetlands exist approximately 1700 feet from Building NS-67. The design features of the unit and lack of evidence of a release minimize the likelihood of potential exposures to Naval Base employees.



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FIGURE 4-80
SWMU #131
BUILDING NS67, SAA

DWG DATE: 05/19/94

DWG NAME: 27SNS67

4.80.6 Recommended Action

No further investigation of this SAA is recommended due to the lack of evidence of a release from this unit and limited migration pathways.

4.81 SWMU #132 — Satellite Accumulation Area, Building FBM 61

4.81.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 61 within the Naval Base.

Wastes are stored in 5-gallon closed plastic containers, which are placed in a drip pan. The floor surface is floor tile overlying concrete. No containment berm exists. Figure 4-81 locates the SAA within Building FBM 61.

4.81.2 Waste Characteristics

Mercuric nitrate is stored.

4.81.3 Migration Pathways

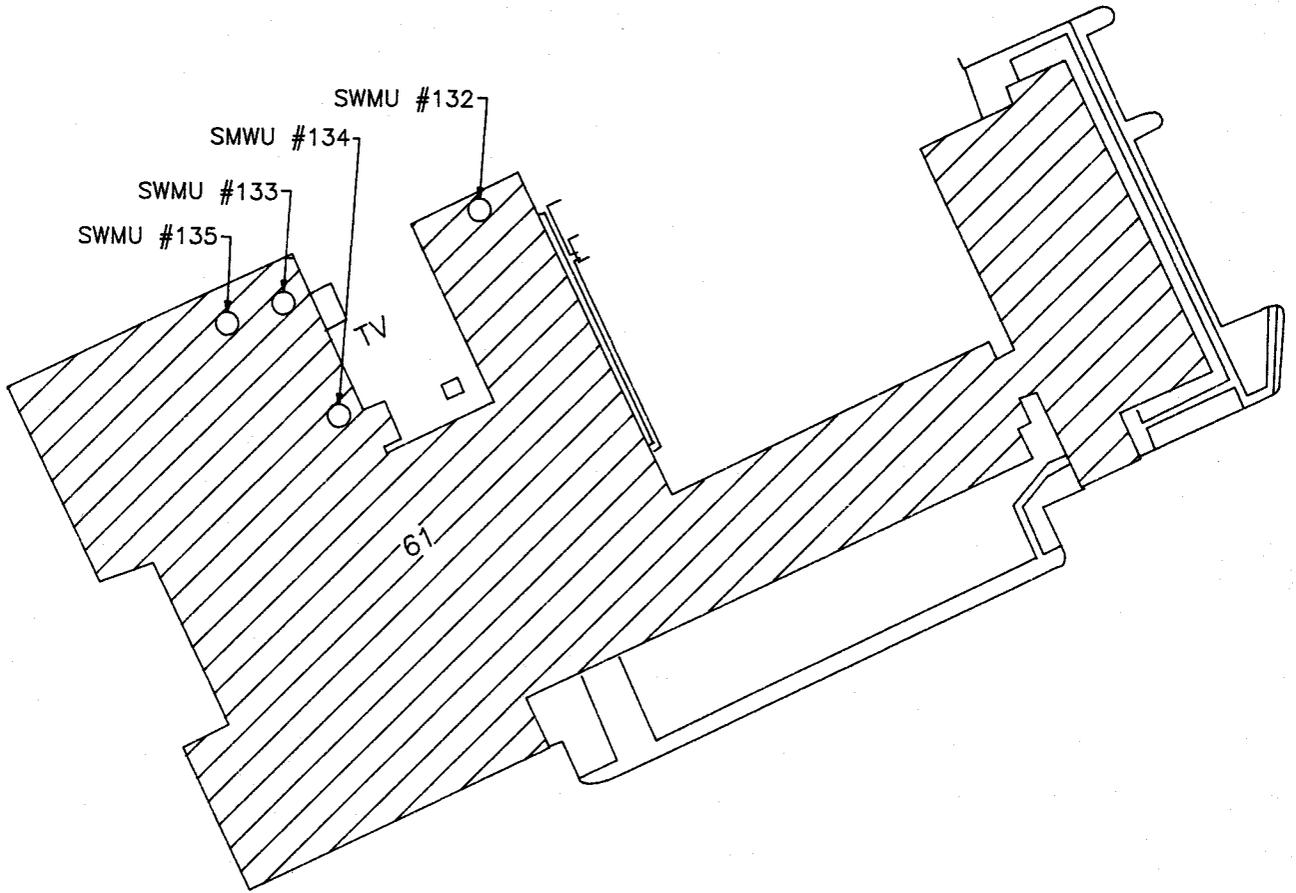
Because this SAA is located inside Building FBM 61, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.81.4 Evidence of Release

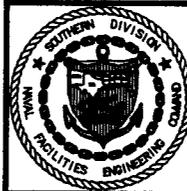
No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.81.5 Exposure Potential

This SAA is not in close proximity to any residential areas or sensitive environments. The Cooper River is approximately 2100 feet from Building FBM 61. The design features of the unit and lack of evidence of spills minimize the potential exposures to Naval Base employees.



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FIGURE 4-81
SWMU #132
BUILDING 61, SAA

4.81.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.82 SWMU #133 — Satellite Accumulation Area, Building FBM 61

4.82.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building FBM 61 within the Naval Base.

Wastes are stored in 5-gallon closed plastic containers, which are placed in a drip pan. The floor surface is floor tile overlying concrete. No containment berm exists. Figure 4-82 locates the SAA within Building FBM 61.

4.82.2 Waste Characteristics

Borate cupric sulfate solution, waste oil, and oily rags are stored.

4.82.3 Migration Pathways

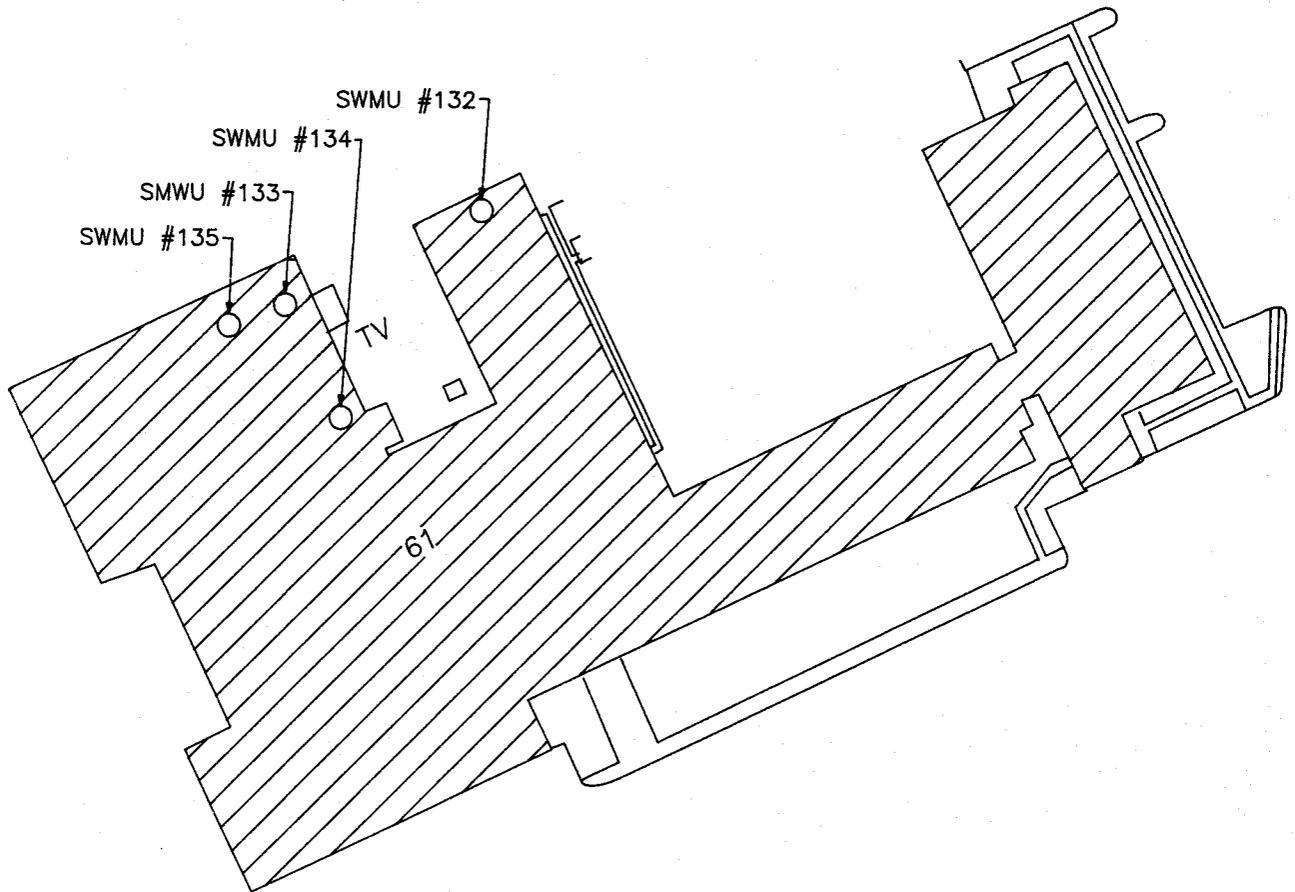
Because this SAA is located inside Building FBM 61, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.82.4 Evidence of Release

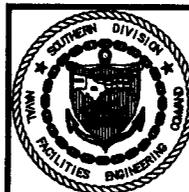
No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.82.5 Exposure Potential

Building FBM 61 is not close to residential areas. The Cooper River is approximately 2100 feet from Building FBM 61. The design features of the unit and lack of evidence of a spill minimizes the likelihood of potential exposures to Naval Base employees.



NOT TO SCALE



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FIGURE 4-82
SWMU #133
BUILDING 61, SAA

DWG DATE: 05/19/94 | DWG NAME: 27S61

4.82.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.83 SWMU #134 — Satellite Accumulation Area, Building FBM 61

4.83.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 61 within the Naval Base.

Wastes are stored in a 55-gallon closed drum, which is placed in a drip pan. The floor surface is floor tile over concrete. No containment berm exists. Figure 4-83 locates the SAA within Building FBM 61.

4.83.2 Waste Characteristics

Contaminated spill debris and lubricating oil are stored. The major constituents of concern are petroleum hydrocarbons.

4.83.3 Migration Pathways

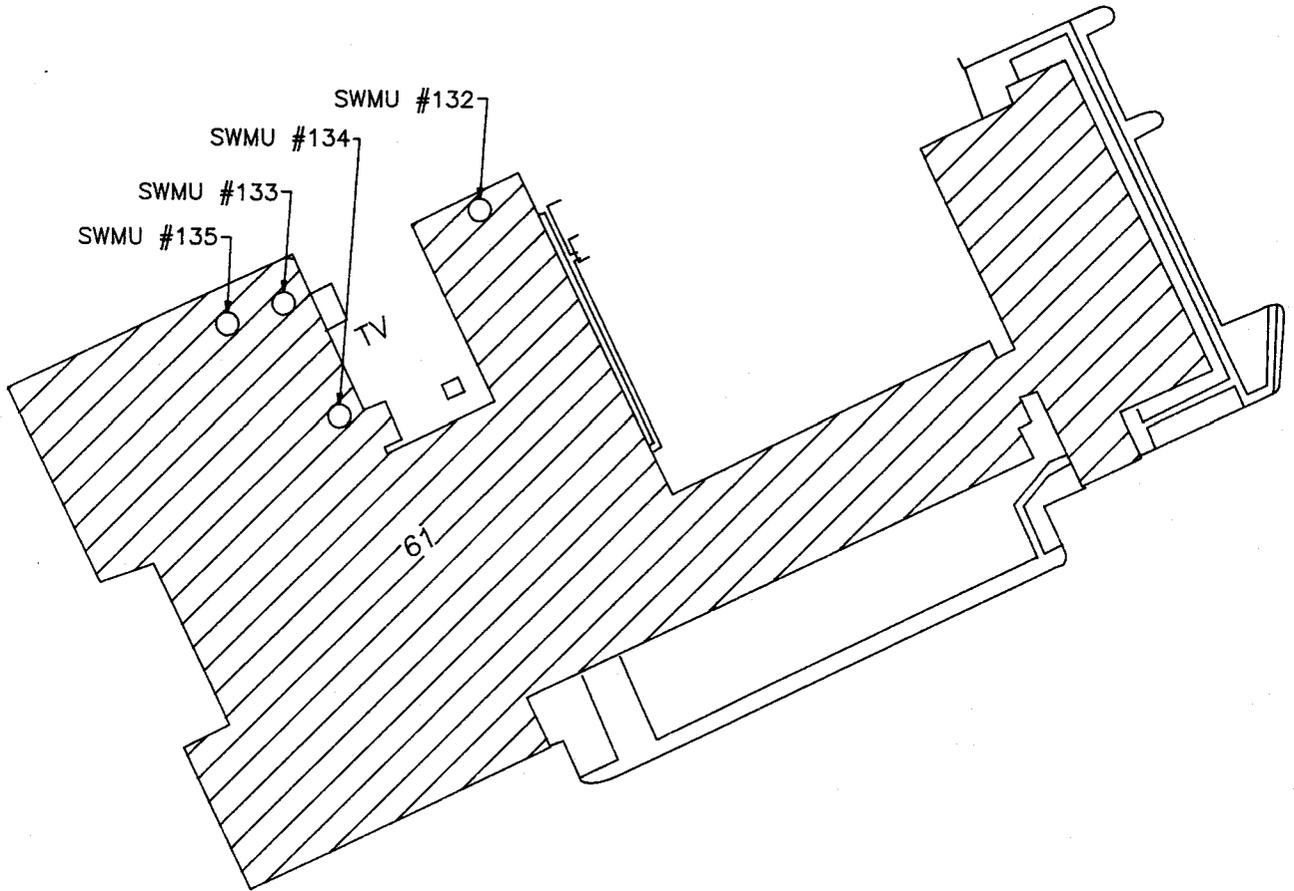
Because this SAA is located inside Building FBM 61, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.83.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.83.5 Exposure Potential

This SAA is not close to any residential areas. The Cooper River is approximately 1400 feet from Building 61. The design features of the unit and lack of spill evidence minimize the likelihood of potential exposures to Naval Base employees.



NOT TO SCALE



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FIGURE 4-83
SWMU #134
BUILDING 61, SAA

DWG DATE: 05/19/94 | DWG NAME: 29AOC105

4.83.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.84 SWMU #135 — Satellite Accumulation Area, Building FBM 61

4.84.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 61 within the Naval Base.

Wastes are stored in 2-gallon closed plastic containers. The floor surface is floor tile overlying concrete. No containment berm exists. Figure 4-84 locates the SAA within Building FBM 61.

4.84.2 Waste Characteristics

An oil/refrigerant mixture is stored.

4.84.3 Migration Pathways

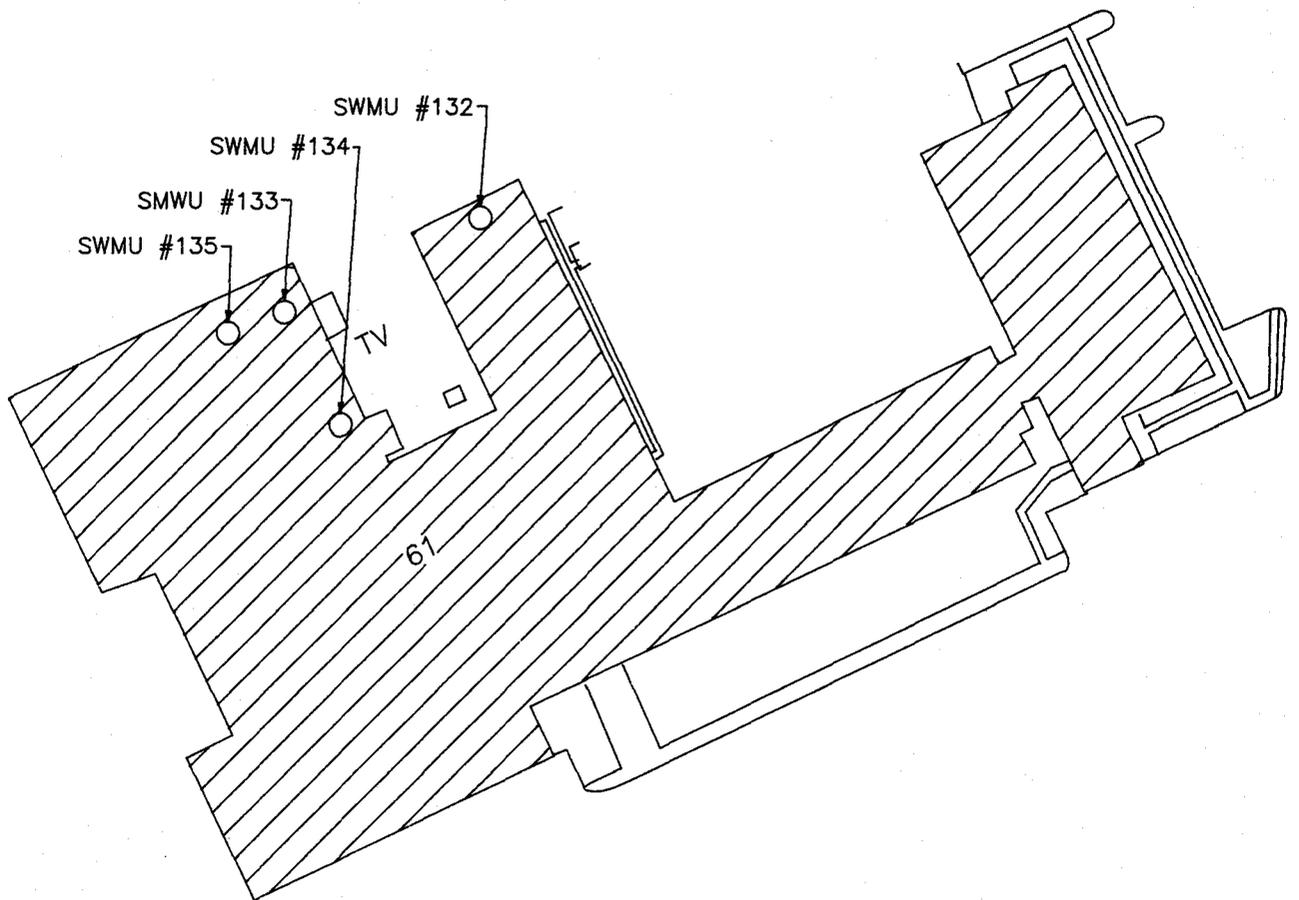
Because this SAA is located inside Building FBM 61, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.84.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.84.5 Exposure Potential

This SAA is not in close proximity to any residential areas or sensitive environments. The limited storage capacity and lack of spill evidence minimizes the potential exposures to Naval Base employees.



NOT TO SCALE



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FIGURE 4-84
SWMU #135
BUILDING 61, SAA

DWG DATE: 05/19/94

DWG NAME: 29AOC108

4.84.6 Recommended Action

No further investigation of this SAA is recommended due to the limited storage capacity, storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.85 SWMU #136 — Satellite Accumulation Area, Building NS-53

4.85.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. Wastes at this unit are stored in a 55-gallon closed drum, which is on a pallet above an unbermed, asphalt surface. The SWMU Site Location Map locates Building NS-53 within the Naval Base. Figure 4-85 locates the SAA in relation to Building NS-53.

4.85.2 Waste Characteristics

Empty paint cans and motor oil cans are stored. The major constituents of concern are volatile organic compounds, metals, and petroleum hydrocarbons.

4.85.3 Migration Pathways

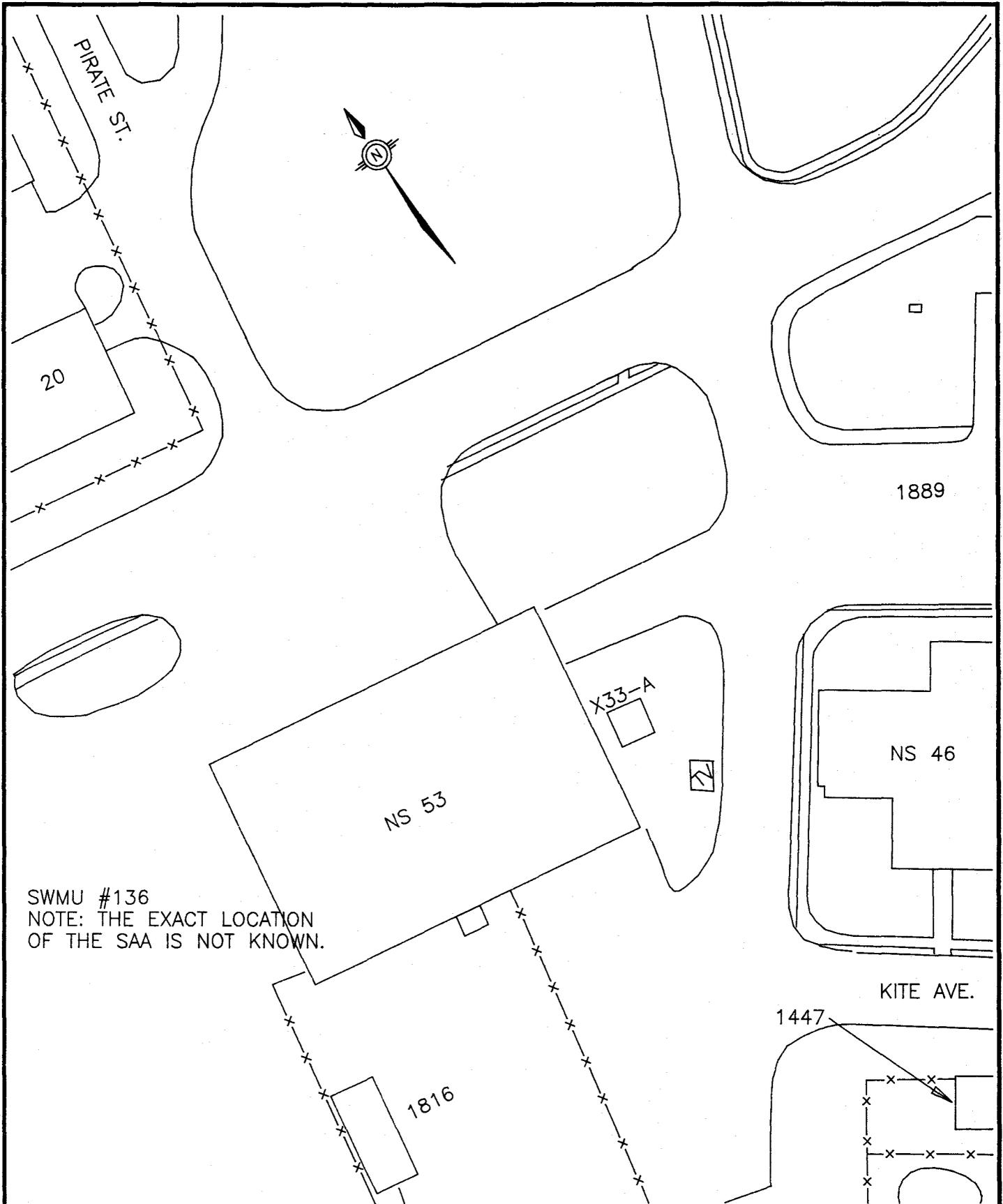
This SAA is located outside of Building NS-53; therefore, surface migration from surface runoff may occur. The asphalt in the vicinity of this SAA is free of cracks, but may still lack the integrity to protect the underlying soil and groundwater from a potential release.

4.85.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.85.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. The limited storage capacity, nature of waste, and lack of evidence of a major release limits potential exposures to Charleston Naval Base employees.



NOT TO SCALE



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FIGURE 4-85
SWMU #136
BUILDING NS53, SAA

DWG DATE: 05/19/94

DWG NAME: 29AOC56

4.85.6 Recommended Action

There is no evidence of a release from this unit. However, confirmation sampling is recommended due to the nature of wastes (oil cans) and the design features of the unit (located on asphalt) which may allow migration of any potential releases into underlying soil and groundwater.

4.86 SWMU #137 — Satellite Accumulation Area, Building 675

4.86.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 675 within the Naval Base. Building 675 is not highlighted on the SWMU site location map; it is located at coordinates H-14.

Wastes are stored in 5-gallon closed plastic containers. The floor surface is floor tile over concrete. No containment berm exists. The SAA is a 3 foot x 3 foot area. Figure 4-86 locates the SAA within Building 675.

4.86.2 Waste Characteristics

Silver-bearing fixer for x-ray photography is stored.

4.86.3 Migration Pathways

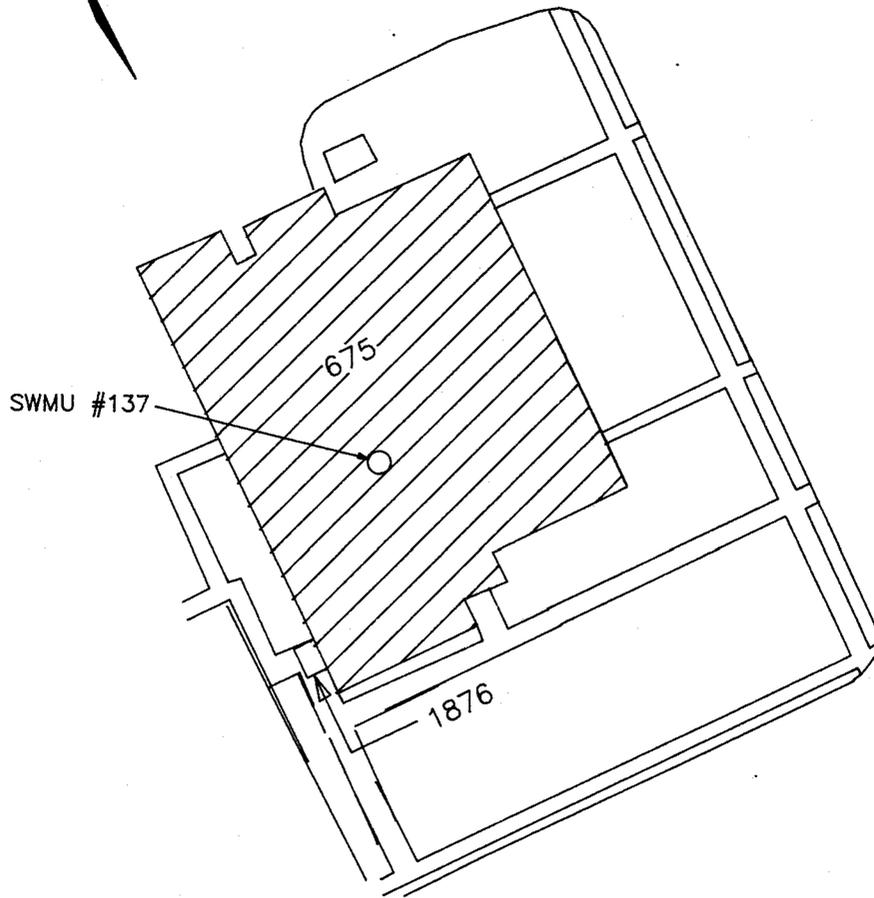
Because this SAA is located inside Building 675, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this SAA is free of cracks.

4.86.4 Evidence of Release

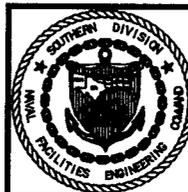
No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.

4.86.5 Exposure Potential

This SAA is not close to any residential areas. Wetlands exist approximately 1800 feet from Building 675. The design features of the unit and lack of evidence of a release minimize the likelihood of potential exposures to Naval Base employees.



NOT TO SCALE



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FIGURE 4-86
SWMU #137
BUILDING 675, SAA

DWG DATE: 05/19/94 DWG NAME: 29AOC72

4.86.6 Recommended Action

No further investigation of this SAA is recommended due to the storage practices, lack of evidence of a release from this unit, and limited migration pathways.

4.87 SWMU #138 — Satellite Accumulation Area, Building 1776

4.87.1 Unit Characteristics

This SAA is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 1776 within the Naval Base.

Wastes are stored in a closed 55-gallon drum housed in a metal shed (approximately 10 feet x 8 feet) with an asphalt floor. Figure 4-87 locates the SAA near Building 1776.

4.87.2 Waste Characteristics

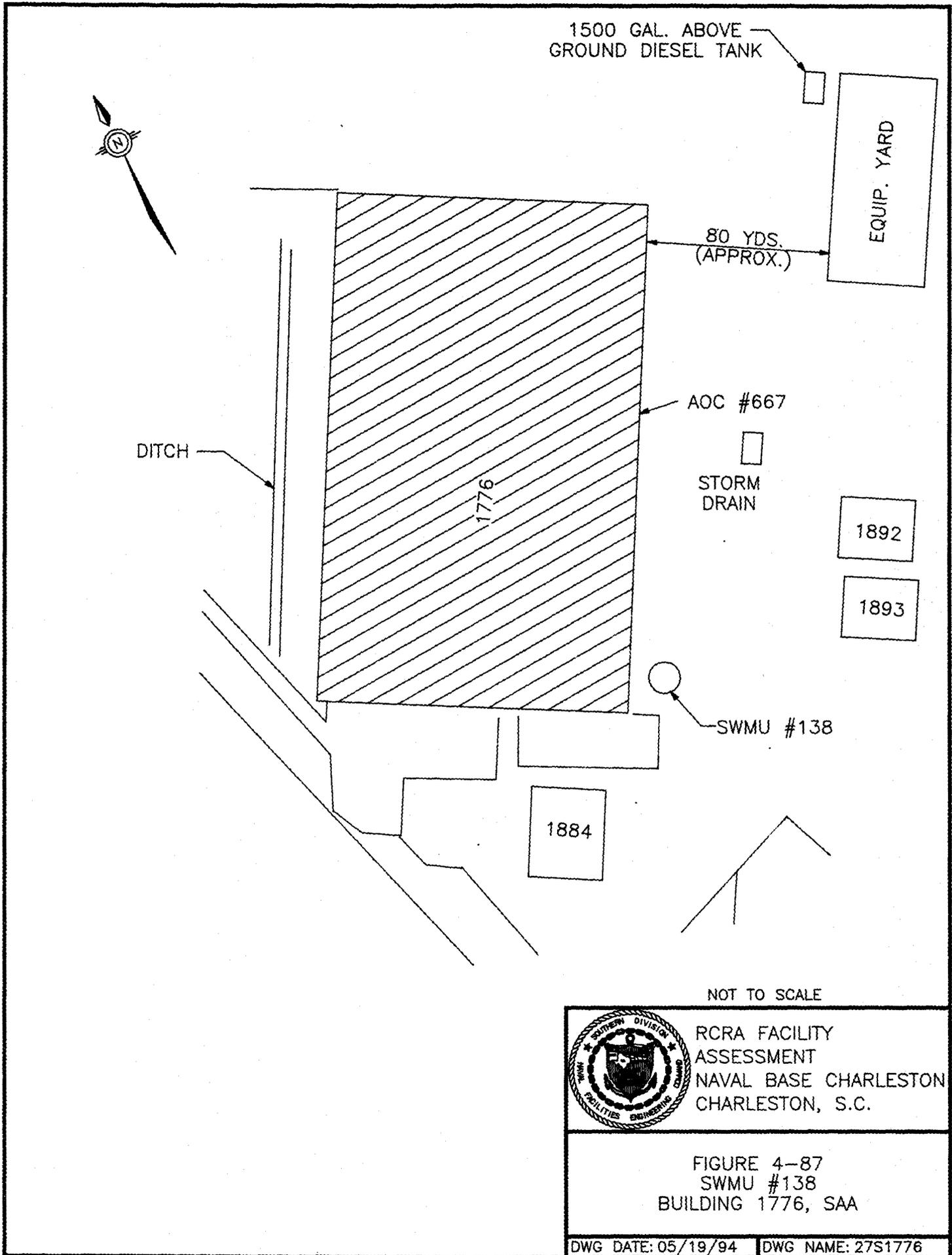
Waste oil, used anti-freeze, oily rags, oil spill residue, and empty anti-freeze containers are stored at this SAA. The major constituents of concern are volatile organic compounds and petroleum hydrocarbons.

4.87.3 Migration Pathways

Because this SAA is located outside Building 1776, soil, groundwater, and surface waters are likely pathways. Although the asphalt in the vicinity of this SAA is free of cracks, it may not have the integrity to protect the underlying soil and groundwater from potential releases from the unit.

4.87.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this SAA.



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FIGURE 4-87
SWMU #138
BUILDING 1776, SAA

DWG DATE: 05/19/94

DWG NAME: 27S1776

4.87.5 Exposure Potential

This SAA is not close to any residential areas or sensitive environments. The limited storage capacity, nature of waste, and lack of evidence of a major release limits potential exposures to Charleston Naval Base employees.

4.87.6 Recommended Action

There is no evidence of a release from this unit. However, confirmation sampling is recommended due to the nature of the waste (oil and antifreeze) and the design of the unit (on top of asphalt) which may allow migration of any potential releases.

4.88 SWMU #141 — Temporary Satellite Accumulation Area, Pier Q

4.88.1 Unit Characteristics

This SAA is an element of the Charleston Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an SAA until 55 gallons of waste are accumulated [in accordance with 40 CFR 262.34(c)], then immediately transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. This SAA is no longer operational. The SWMU Site Location Map locates Pier Q within the Naval Base. Figure 4-88 locates the former position of the SAA on the pier.

4.88.2 Waste Characteristics

Empty paint cans and liquid paint wastes are stored at this temporary SAA. The major constituents of concern are volatile organic compounds and metals.

4.88.3 Migration Pathways

Due to the proximity of the Cooper River, surface water may be a migration pathway.

4.88.4 Evidence of Release

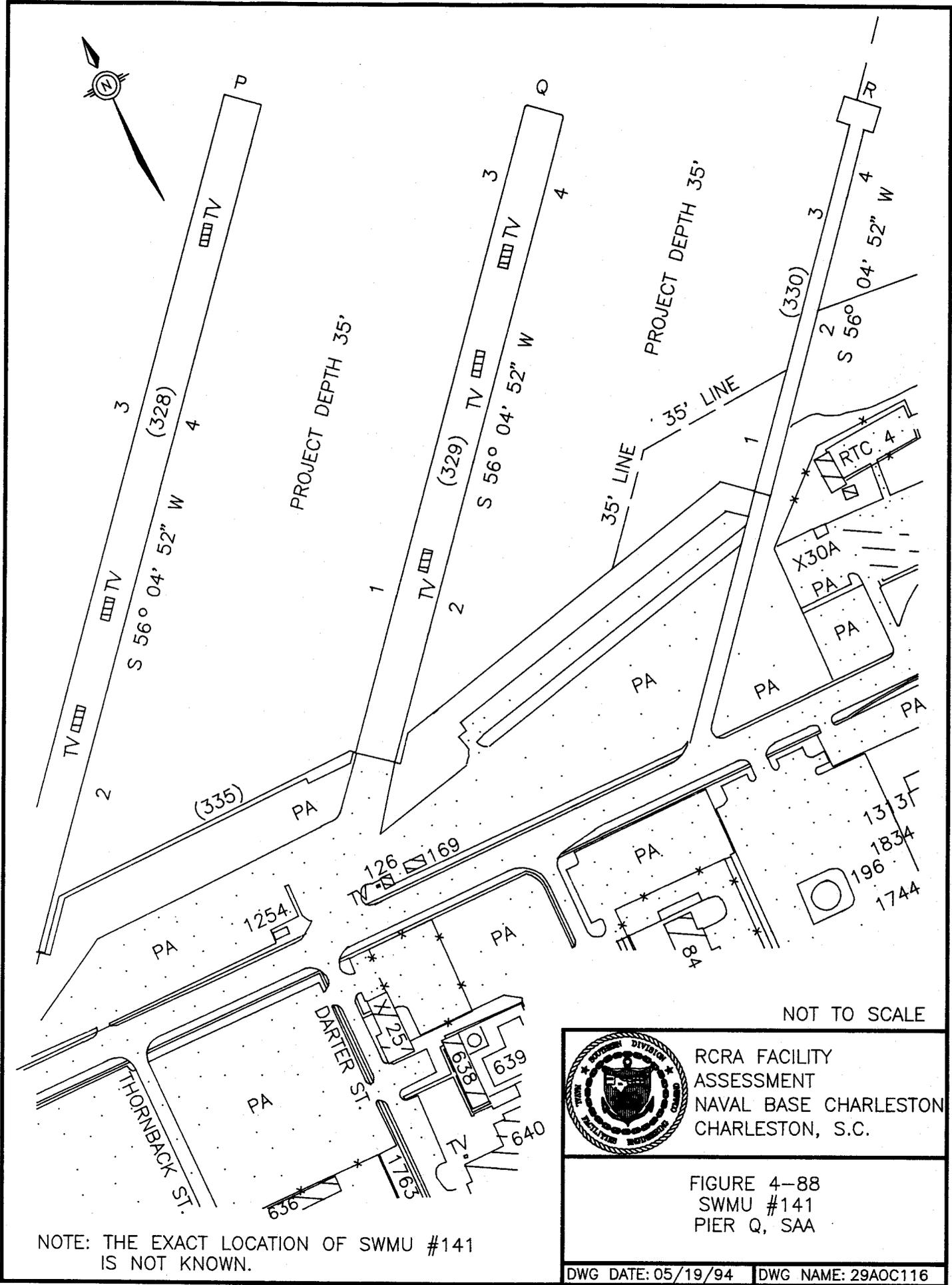
Sufficient information is not available to determine evidence of release.

4.88.5 Exposure Potential

This SAA is not in close proximity to any residential areas. The Cooper River, however, is in the immediate vicinity of the Pier, and may be impacted if a release occurs.

4.88.6 Recommended Action

This SAA is no longer operational. Per 40 CFR 262.34(a)(1), certification of closure is required in accordance with 40 CFR 265.111 and 114.



NOTE: THE EXACT LOCATION OF SWMU #141 IS NOT KNOWN.



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FIGURE 4-88
 SWMU #141
 PIER Q, SAA

4.89 SWMU #142 — Less-than-90-Day Accumulation Area, Building 681

4.89.1 Unit Characteristics

This SWMU is a less-than-90-day Accumulation Area (AA), which is an element of the Naval Shipyard hazardous waste management system. Hazardous wastes are accumulated at an AA for less than 90 days, then transferred to a permitted hazardous waste storage facility prior to transport outside Naval Base Charleston for ultimate treatment or disposal. The SWMU Site Location Map locates Building 681 within the Naval Base. Figure 4-89 locates the AA near Building 681.

Wastes are stored in closed 55-gallon drums and 5-gallon containers, which are on self-containing pallets on a concrete floor. No containment berm exists.

4.89.2 Waste Characteristics

Aerosol cans, empty paint cans, paint rags, paint debris, oily rags, and various paints are stored. The major constituents of concern are volatile organic compounds, metals, and petroleum hydrocarbons.

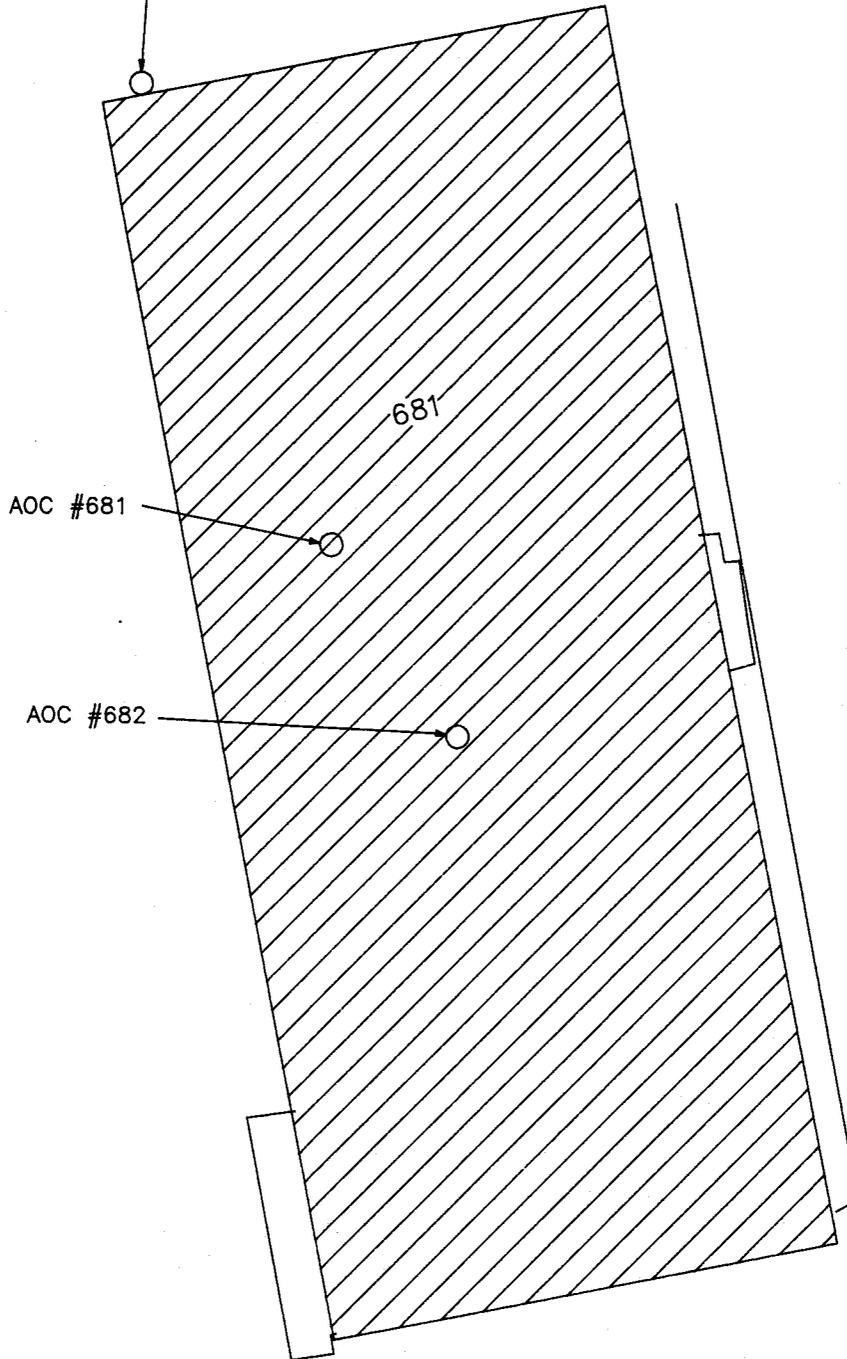
4.89.3 Migration Pathways

This AA is located outside of Building 681; therefore, surface migration from surface runoff may occur. The floor in the vicinity of the AA is free of cracks, protecting the underlying soil and groundwater.

4.89.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or physical evidence indicate spills at this AA.

SWMU #142



NOT TO SCALE



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FIGURE 4-89
SWMU #142
BUILDING 681, SAA

DWG DATE: 05/19/94 | DWG NAME: 29AOC87

4.89.5 Exposure Potential

This AA is not close to any residential areas or sensitive environments. The limited storage capacity, nature of waste, and lack of evidence of a major release limits potential exposures to Charleston Naval Base employees.

4.89.6 Recommended Action

No further investigation of this AA is recommended due to the nature of the waste (oily rags, empty paint cans), storage practices, lack of evidence of a release from this unit, and limited migration pathways.

5.0 AREAS OF CONCERN

5.1 AOC #500 — UXO Site Between Piers S and T

5.1.1 Unit Characteristics

AOC #500 is the site where two Mark 47 TORPEX Depth Bombs were dropped from a Naval vessel on January 28, 1945. Information pertaining to this site is non-existent beyond the approximate location denoted on base maps. The Depth Bombs are resting within the bottom sediments of the Cooper River beside Berthing Pier Tango (T). Figure 5-1 shows the location of AOC #500 within the Naval Base.

5.1.2 Waste Characteristics

Propellants, Explosives, and Pyrotechnics (PEP) are known to contain Class A and B explosive compounds and metals. Class A and B explosives are classified under RCRA as reactive hazardous wastes (Waste Number D003). Some igniters contain sufficient leachable concentrations of metals to classify them as hazardous waste under the toxicity characteristic.

5.1.3 Migration Pathways

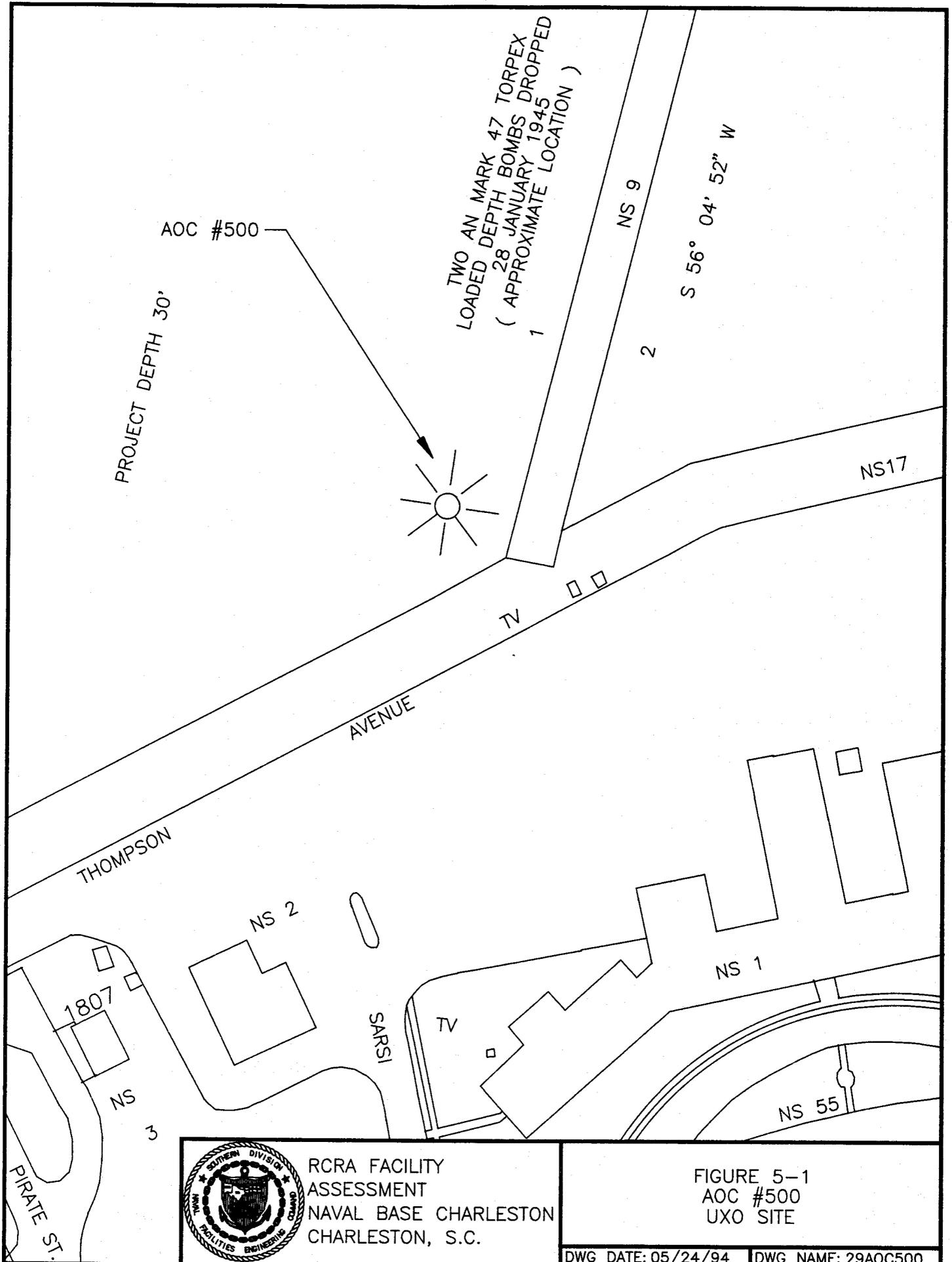
Migration of hazardous constituents is unlikely unless the depth bomb casings have been damaged or corroded. If damage or corrosion has occurred, groundwater, sediments, and surface water are all likely pathways considering the depth bombs are resting in river bottom sediments.

5.1.4 Evidence of Release

No spill reports, inspection reports, or employee interviews indicate a release to the environment beyond the location of this AOC on base maps.

5.1.5 Exposure Potential

The most severe threat posed by UXO is to human safety. That threat is substantially intensified by any attempt to remove the UXO from its present location. If the PEP contents escape the



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FIGURE 5-1
AOC #500
UXO SITE

submerged ordnance casings, dilution of the concentration in 30-40 feet of overlying water is expected to eliminate any chemical risks to humans or aquatic life.

5.1.6 Recommended Action

A Confirmation Sampling Investigation (CSI) is recommended for this AOC. The CSI should be coordinated with a Navy Explosive Ordnance Disposal (EOD) Team. If the two depth bombs are successfully located, the EOD team should be responsible for removing and disposing of the ordnance.

5.2 AOC #501 — UXO Site in Cooper River East of Buildings X-54 and X-55

5.2.1 Unit Characteristics

AOC #501 is the site where two Mark 47 TORPEX Depth Bombs were dropped from a Naval vessel on November 20, 1943. Information pertaining to this site is nonexistent beyond the approximate area denoted on base maps. The location is shown by an area directly east of Buildings X-54 and X-55. Figure 5-2 shows the location of AOC #501 in relation to the Naval Base.

5.2.2 Waste Characteristics

Propellants, Explosives, and Pyrotechnics (PEP) are known to contain Class A and B explosive compounds and metals. Class A and B explosives are classified under RCRA as reactive hazardous wastes (Waste Number D003). Some igniters contain sufficient leachable concentrations of metals to classify them as hazardous waste under the toxicity characteristic.

5.2.3 Migration Pathways

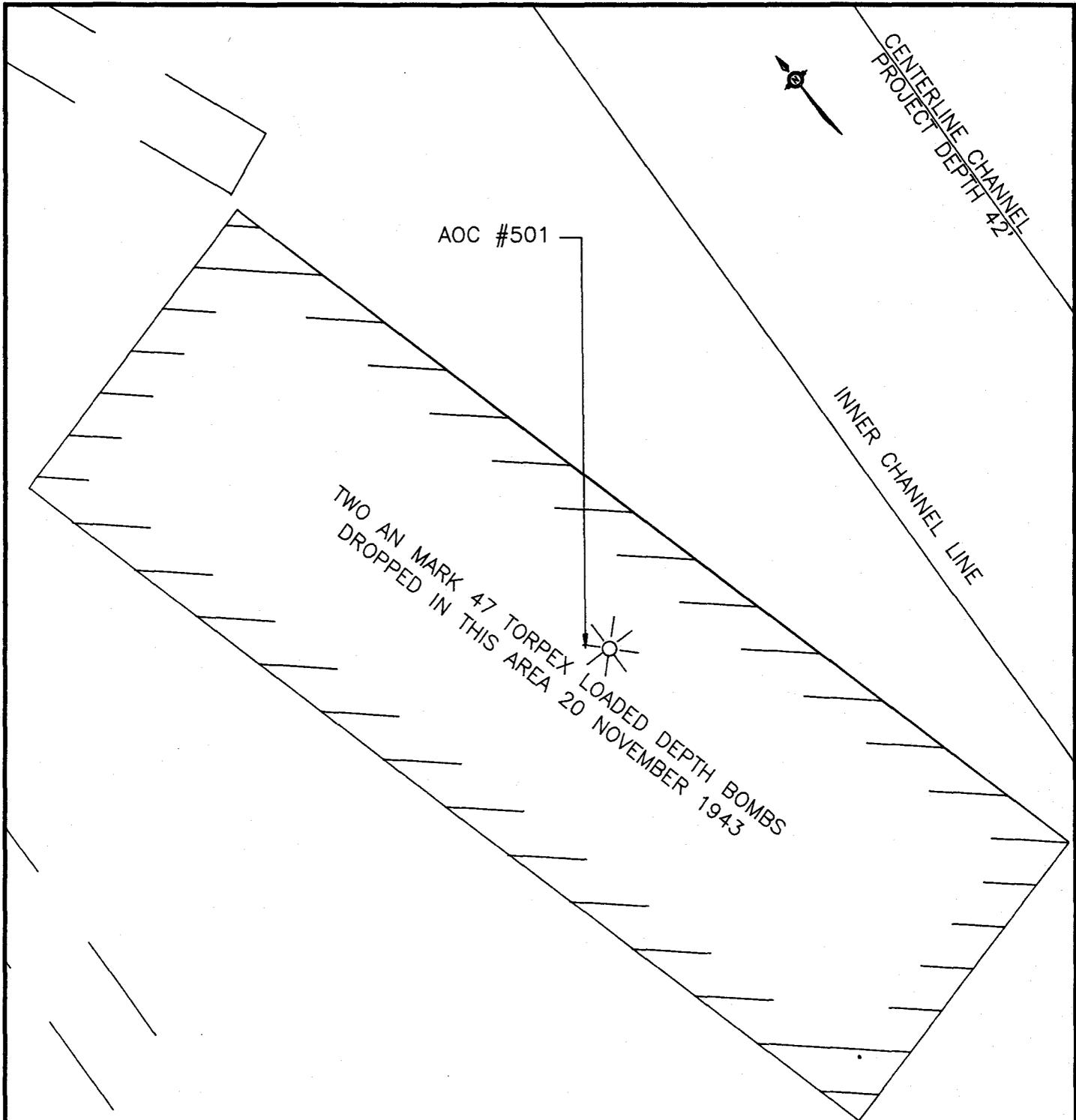
Migration of hazardous constituents is unlikely unless the depth bomb casings have been damaged or corroded. If damage or corrosion has occurred, groundwater, sediments, and surface water are all likely pathways considering the depth bombs are resting in river bottom sediments.

5.2.4 Evidence of Release

No spill reports, inspection reports, or employee interviews indicate a release to the environment beyond the location of this AOC on base maps.

5.2.5 Exposure Potential

The most severe threat posed by UXO is to human safety. That threat is substantially intensified by any attempt to remove the UXO from its present location. If the PEP contents escape the



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FIGURE 5-2
AOC #501
UXO SITE

submerged ordnance casings, dilution of the concentration in 30-40 feet of overlying water is expected to eliminate any chemical risks to humans or aquatic life.

5.2.6 Recommended Action

A Confirmation Sampling Investigation (CSI) is recommended for this AOC. The CSI should be coordinated with a Navy Explosive Ordnance Disposal (EOD) Team. If the two depth bombs are successfully located, the EOD team should be responsible for removing and disposing of the ordnance.

5.3 AOC #502 — UXO Site Between Piers G and H

5.3.1 Unit Characteristics

AOC #502 is the site where three 5-inch unexploded shells were dropped from a Naval vessel in September 1944. Information pertaining to this site is nonexistent beyond the approximate area denoted on base maps. Figure 5-3 shows the location of AOC #502 within the Naval Base.

5.3.2 Waste Characteristics

Propellants, Explosives, and Pyrotechnics (PEP) are known to contain Class A and B explosive compounds and metals. Class A and B explosives are classified under RCRA as reactive hazardous wastes (Waste Number D003). Some igniters contain sufficient leachable concentrations of metals to classify them as hazardous waste under the toxicity characteristic.

5.3.3 Migration Pathways

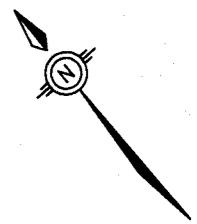
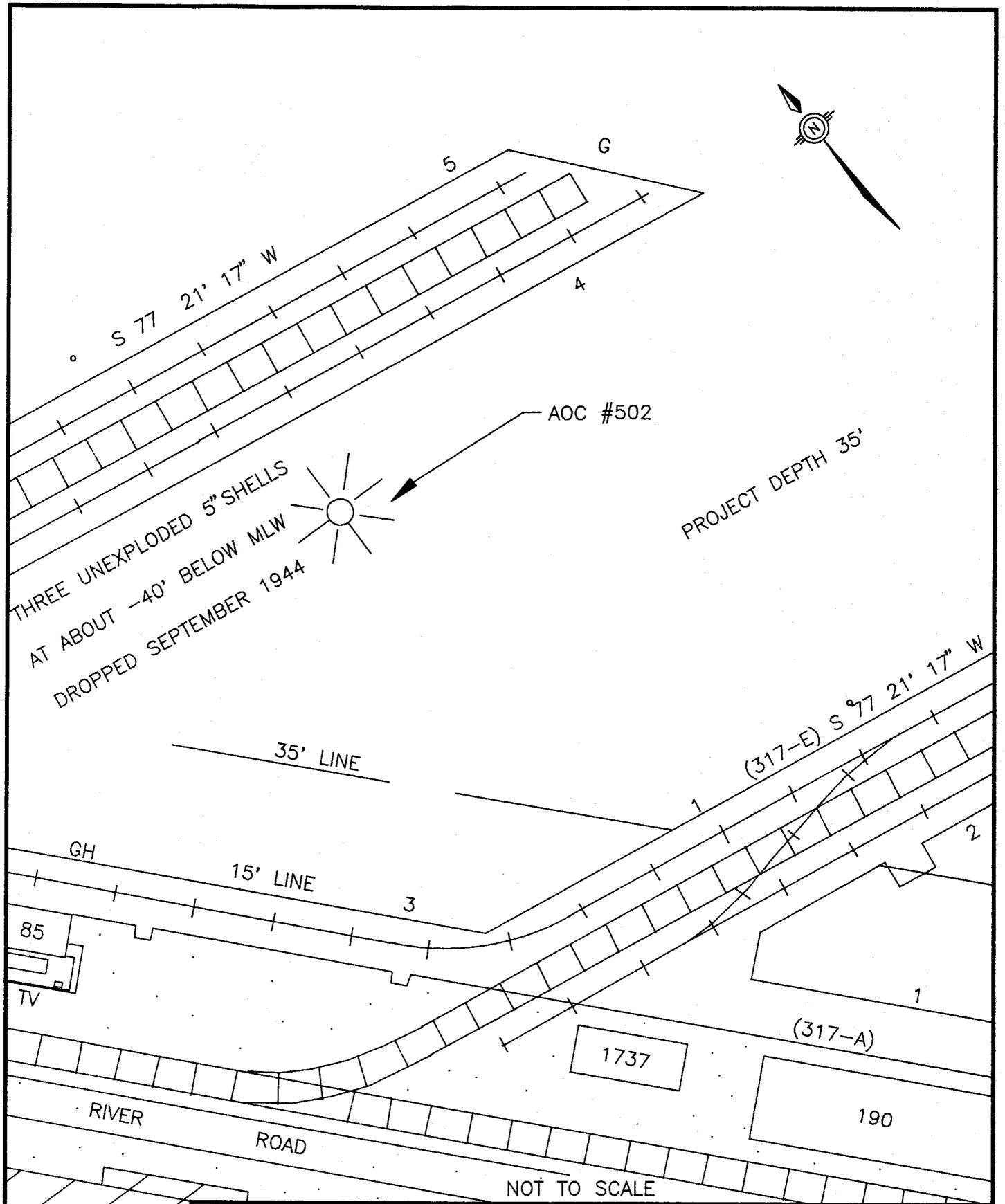
Migration of hazardous constituents is unlikely unless the shell casings have been damaged or corroded. If damage or corrosion has occurred, groundwater, sediments, and surface water are all likely pathways considering the shells are resting in river bottom sediments.

5.3.4 Evidence of Release

No spill reports, inspection reports, or employee interviews indicate a release to the environment beyond the location of this AOC on base maps.

5.3.5 Exposure Potential

The most severe threat posed by UXO is to human safety. That threat is substantially intensified by any attempt to remove the UXO from its present location. If the PEP contents escape the submerged ordnance casings, dilution of the concentration in 30-40 feet of overlying water is expected to eliminate any chemical risks to humans or aquatic life.



THREE UNEXPLODED 5" SHELLS
 AT ABOUT -40' BELOW MLW
 DROPPED SEPTEMBER 1944

AOC #502

PROJECT DEPTH 35'

35' LINE

15' LINE

RIVER

ROAD

NOT TO SCALE

85

TV

1737

(317-A)

190

79



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FIGURE 5-3
 AOC #502
 UXO SITE

DWG DATE: 05/24/94

DWG NAME: 29AOC502

5.3.6 Recommended Action

A Confirmation Sampling Investigation (CSI) is recommended for this AOC. The CSI should be coordinated with a Navy Explosive Ordnance Disposal (EOD) Team. If the two depth bombs are successfully located, the EOD team should be responsible for removing and disposing of the ordnance.

5.4 AOC #503 — UXO Site South of Building 665

5.4.1 Unit Characteristics

AOC #503 is the site where two Mark 17-Depth Bombs were reportedly jettisoned from a Naval vessel on October 8, 1943. Information pertaining to this site is nonexistent beyond the approximate location denoted on base maps. The current condition of the site is wooded wetlands approximately 300 feet from Shipyard Creek. Figure 5-4 shows the location of AOC #503 within the Naval Base.

5.4.2 Waste Characteristics

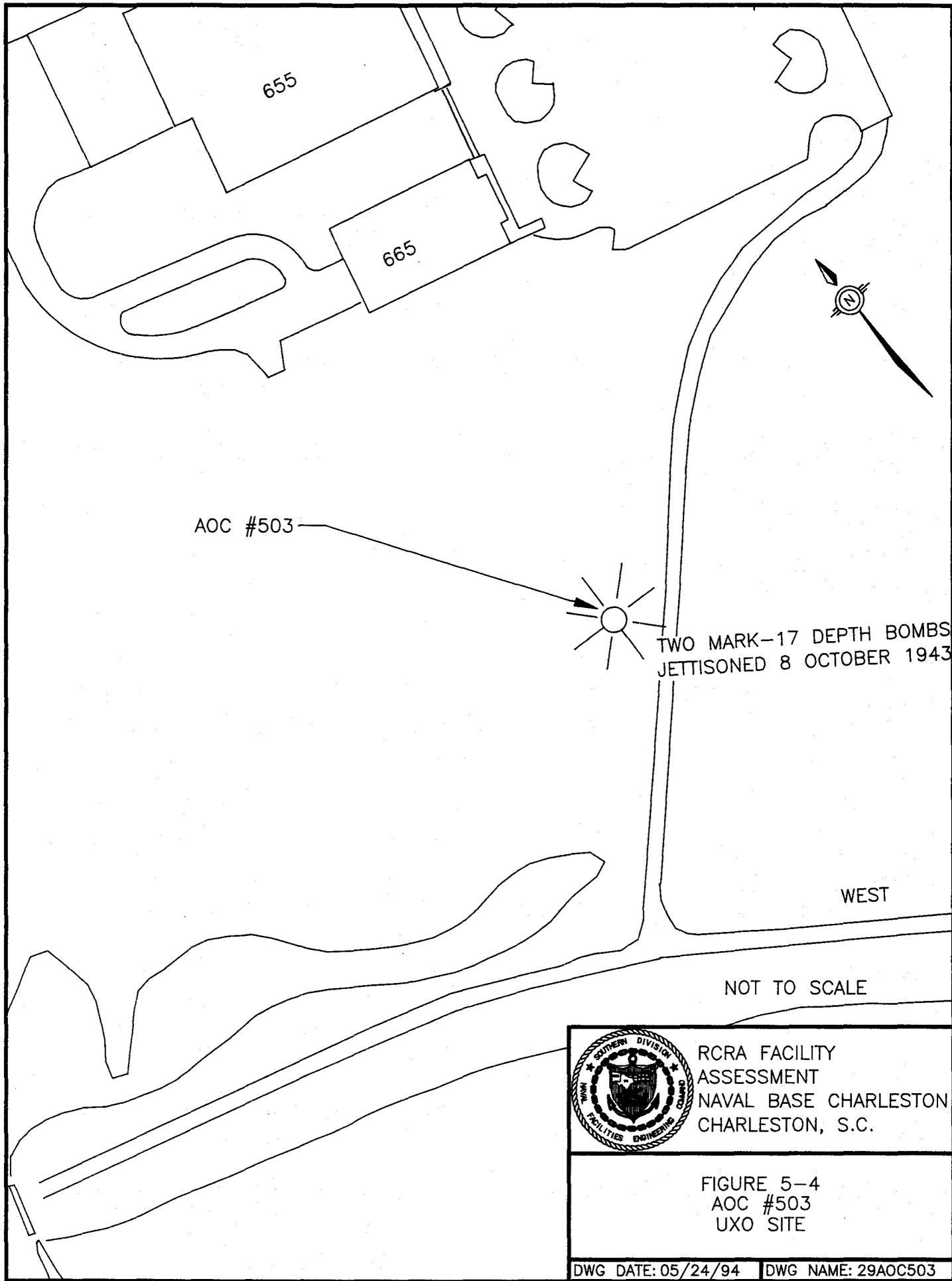
Propellants, Explosives, and Pyrotechnics (PEP) are known to contain Class A or B explosive compounds and metals. Class A and B explosives are classified under RCRA as reactive hazardous wastes (Waste Number D003). Some igniters contain sufficient leachable concentrations of metals to classify them as hazardous waste under the toxicity characteristic.

5.4.3 Migration Pathways

Migration of hazardous constituents is unlikely unless the depth bomb casings have been damaged or corroded. If damage or corrosion has occurred, groundwater, soil, and surface water are all likely pathways considering the depth bombs are resting in a wetland influenced by both surface runoff and tides.

5.4.4 Evidence of Release

No spill reports, inspection reports, or employee interviews indicate a release to the environment beyond the location of this AOC on base maps.



AOC #503

655

665

TWO MARK-17 DEPTH BOMBS
JETTISONED 8 OCTOBER 1943

WEST

NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 5-4
AOC #503
UXO SITE

DWG DATE: 05/24/94 DWG NAME: 29AOC503

5.4.5 Exposure Potential

The most severe threat posed by UXO is to human safety. That threat is substantially intensified by any attempt to remove the UXO from its present location. Escape of PEP constituents from the buried ordnance would impact deep soils or sediments, and possibly shallow groundwater.

Regarding reactivity, the location is approximately 1400 feet from the nearest residential area and is within the controlled Naval Base property. The depth bombs have been at rest, relatively undisturbed for 51 years. The location is in a protected migratory bird nesting area which receives very little or no traffic.

5.4.6 Recommended Action

A Confirmation Sampling Investigation (CSI) is recommended for this AOC. The CSI should be coordinated with a Navy Explosive Ordnance Disposal (EOD) Team. If the two depth bombs are successfully located, the EOD team should be responsible for removing and disposing of the ordnance.

5.5 AOC #516 — Wash Area, Building 233

5.5.1 Unit Characteristics

This AOC was previously used for spray washing of vehicles and equipment. It is now used as a lead-acid battery charging facility. Building 233 was constructed in 1972 with a concrete block structure and a metal frame and roof. The building is enclosed on three sides, with an open side facing east. A large drain is in the area where runoff from wash area activities occurred. The AOC Site Location Map locates Building 233 within the Naval Base. Figure 5-5 locates AOC 516 within Building 233.

5.5.2 Waste Characteristics

It is suspected that petroleum, acid, and metal wastes may have been generated.

5.5.3 Migration Pathways

Soil, groundwater, and surface runoff are potential migration pathways.

5.5.4 Evidence of Release

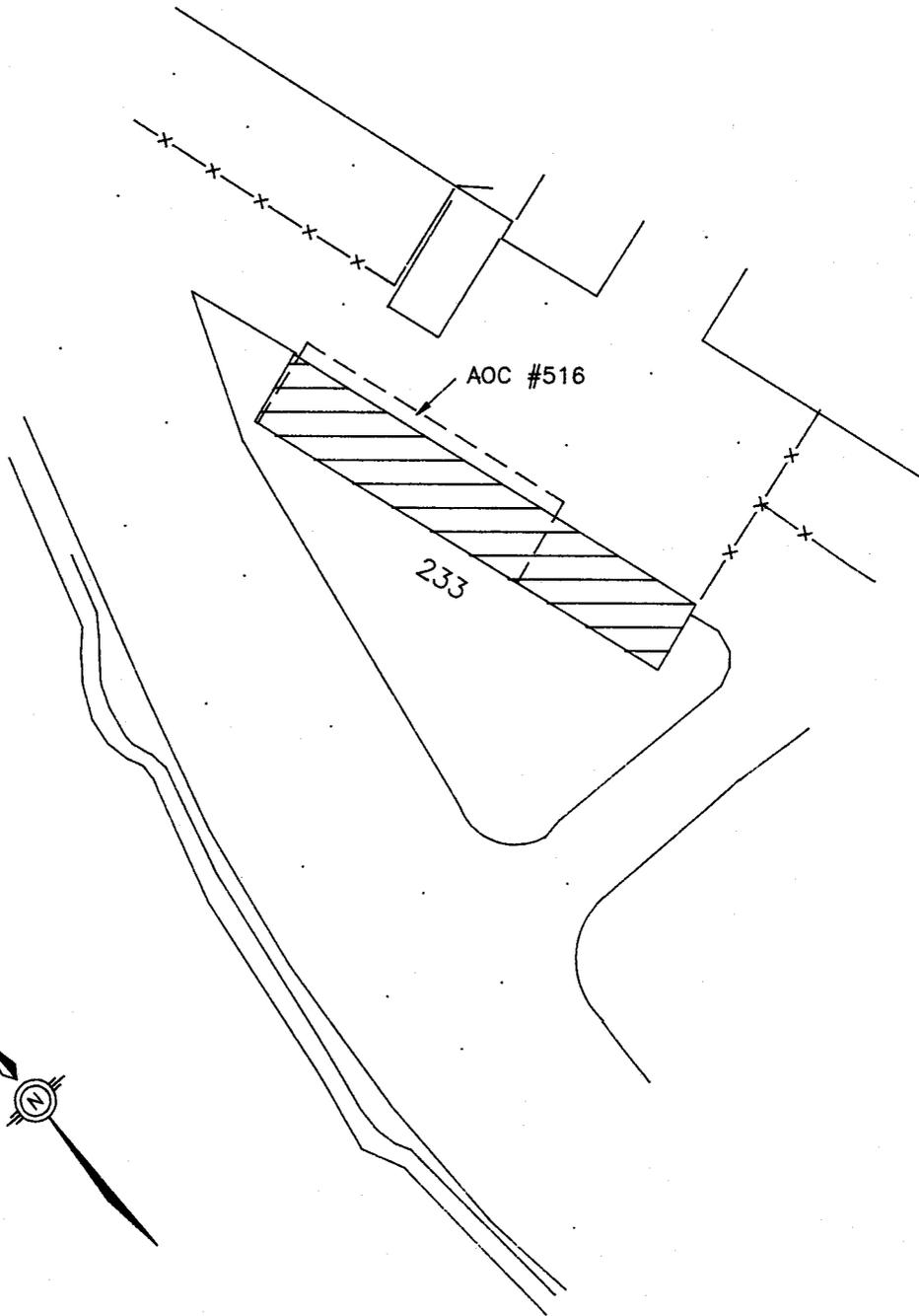
The asphalt and concrete in the vicinity of the wash area and beneath a 55-gallon drum storage rack appear stained with either petroleum or acid.

5.5.5 Exposure Potential

This AOC is not in close proximity to any residential areas or sensitive environments. The nature of the wastes and the limited storage capacity at this unit limit the potential for exposure.

5.5.6 Recommended Action

Due to the evidence of past releases and lack of a thorough assessment of the potential hazards associated with these releases, a RFI is recommended.



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FIGURE 5-5
AOC #516
BUILDING 233, WASH AREA

5.6 AOC #525 — Paint Shop, Building 223

5.6.1 Unit Characteristics

AOC #525 is made up of five dry filter type paint booths inside Building 223. The five booths are included in the Bureau of Air Quality Control Permit Number 0560-0002 and are designated as company point ID Numbers 35, 36 (located side-by-side; used primarily to paint miscellaneous parts), 37 (used to coat metal parts with "plastisol" material), 38 (used to paint fiberglass or plastic hard hats), and 63 (Teflon Coating Booth). The AOC Site Location Map locates Building 223 within Naval Base Charleston. Figure 5-6 locates each paint booth within Building 223.

Booth 35 (20' x 20' x 15') has a 15-foot high, 3-foot diameter stack. Booth 36 (32' x 20' x 15') has a 62-foot high, 3.75-foot diameter stack. Booth 38 (8' x 10' x 7') has a 12-foot high, 3-foot diameter stack. The exhaust from Booth 63 is 4 feet above ground.

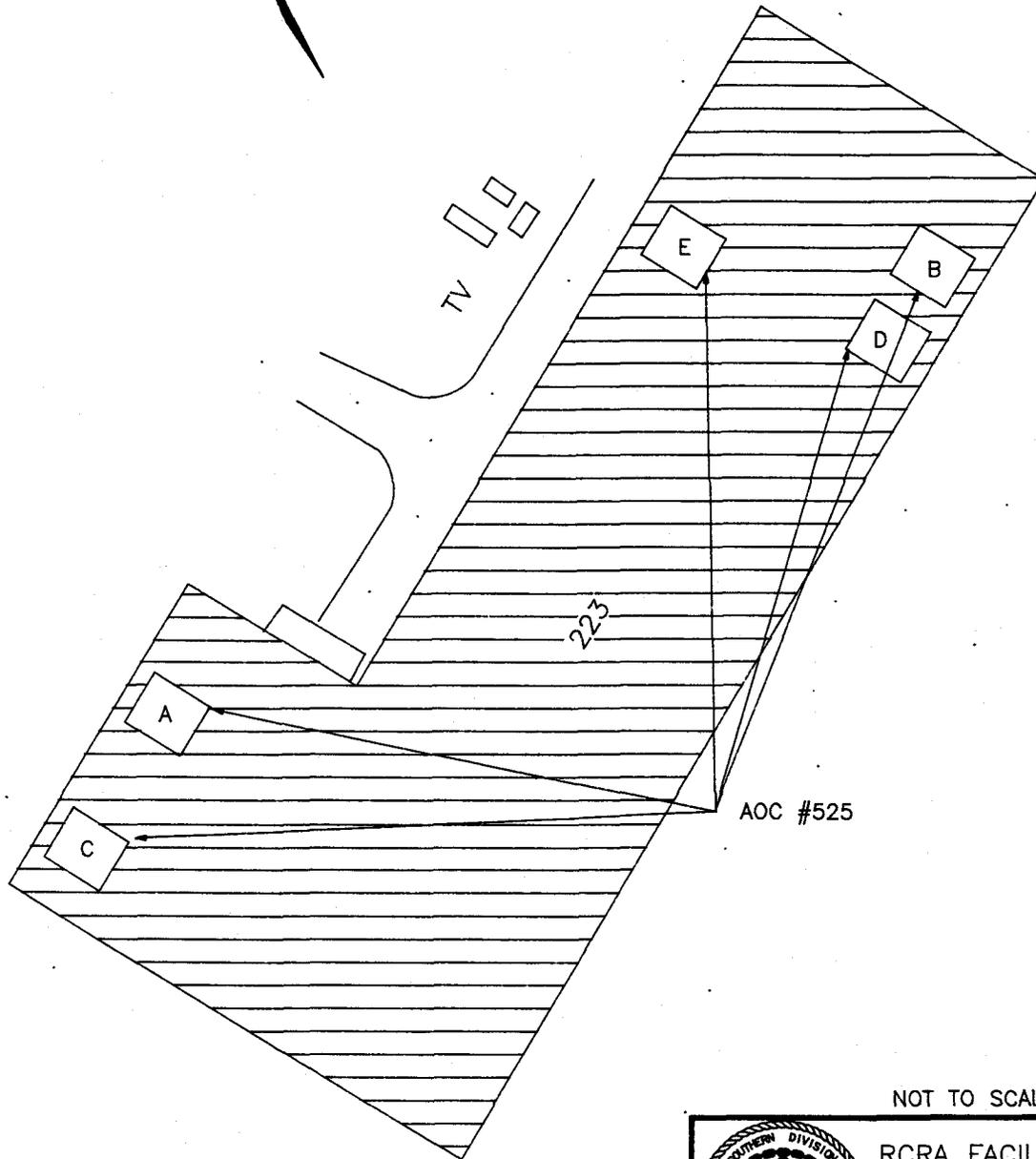
The normal operating schedule of the booths varies from 2-6 hours/day, 1-5 days/week, and 52 weeks/year. Four of the spray booths are still operational. Spray booth 37 is no longer operational.

5.6.2 Waste Characteristics

Booths 35 and 36 use enamel, primer, epoxy, butyl alcohol, naphtha, thinner, vinyl antifouling, and methyl isobutyl ketone. Booth 37 used primer and methyl isobutyl ketone. Booth 38 uses enamel, epoxy, butyl alcohol, naphtha, and thinner. Booth 63 uses Teflon, enamel, epoxy, butyl alcohol, and naphtha.

5.6.3 Migration Pathways

Prior to the installation of the sanitary/industrial wastewater sewer system in 1972, water used to capture paint dust from the paint spray booths was discharged directly into the Cooper



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PAINT BOOTH IDENTIFICATION
BUREAU OF AIR QUALITY CONTROL
PERMIT NO. 0560-002

A-COMPANY POINT ID. NO. 35
B-COMPANY POINT ID. NO. 36
C-COMPANY POINT ID. NO. 37
D-COMPANY POINT ID. NO. 38
E-COMPANY POINT ID. NO. 63

FIGURE 5-6
AOC #525
BUILDING 223, PAINT SHOP

DWG DATE: 05/31/94 | DWG NAME: 29AOC13

River. All five spray booths are sources of air emissions. Combined emissions for the five booths are tabulated below:

TOTAL ACTUAL EMISSIONS AOC #525			
Material Type	VOC (lb/hr; tpy)	PM (lb/hr; tpy)	HAP (lb/hr; tpy)
Enamel 3	2.48/1.04	0.219/0.053	0.0000/0.0000
Primer 1	6.06/2.94	0.032/0.016	6.0765/2.9418
Epoxy 5A	2.97/1.36	0.094/0.045	0.0000/0.0000
Epoxy 5B	2.25/1.04	0.087/0.041	0.1112/0.0514
Butyl Alcohol	2.63/1.16	0.000/0.000	0.0000/0.0000
Naphtha	2.62/1.18	0.000/0.000	0.0000/0.0000
Thinner 4	2.54/1.23	0.000/0.000	0.2535/0.1232
Vinyl Antifouling	2.72/1.28	0.208/0.100	2.7165/1.2815
Methyl Isobutyl Ketone	5.71/2.91	0.000/0.000	5.7122/2.9012
Teflon	0.04/0.01	0.000/0.000	0.0000/0.0000

Notes:

- VOC — Volatile Organic Compound
- PM — Particulate Matter
- HAP — Hazardous Air Pollutant
- tpy — ton per year

5.6.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or physical evidence indicate the incidence of spills at this AOC. However, discharges were made to the Cooper River.

5.6.5 Exposure Potential

Building 223 is adjacent to military housing. The Cooper River is approximately 800 feet from Building 223. Naval Base employees may be exposed to air emissions from the spray booth activities.

5.6.6 Recommended Action

No further investigation of this AOC is recommended due to the limited exposure potential and limited migration pathways. Discharges to the Cooper River will be investigated as a separate unit.

5.7 AOC #526 — Paint Area, Building 212

5.7.1 Unit Characteristics

AOC #526, located in Building 212, was previously used for open spraying of ship components, primarily using epoxy and anti-fouling applications. The AOC Site Location Map locates Building 212 within Naval Base Charleston. Figure 5-7 locates the AOC within Building 212.

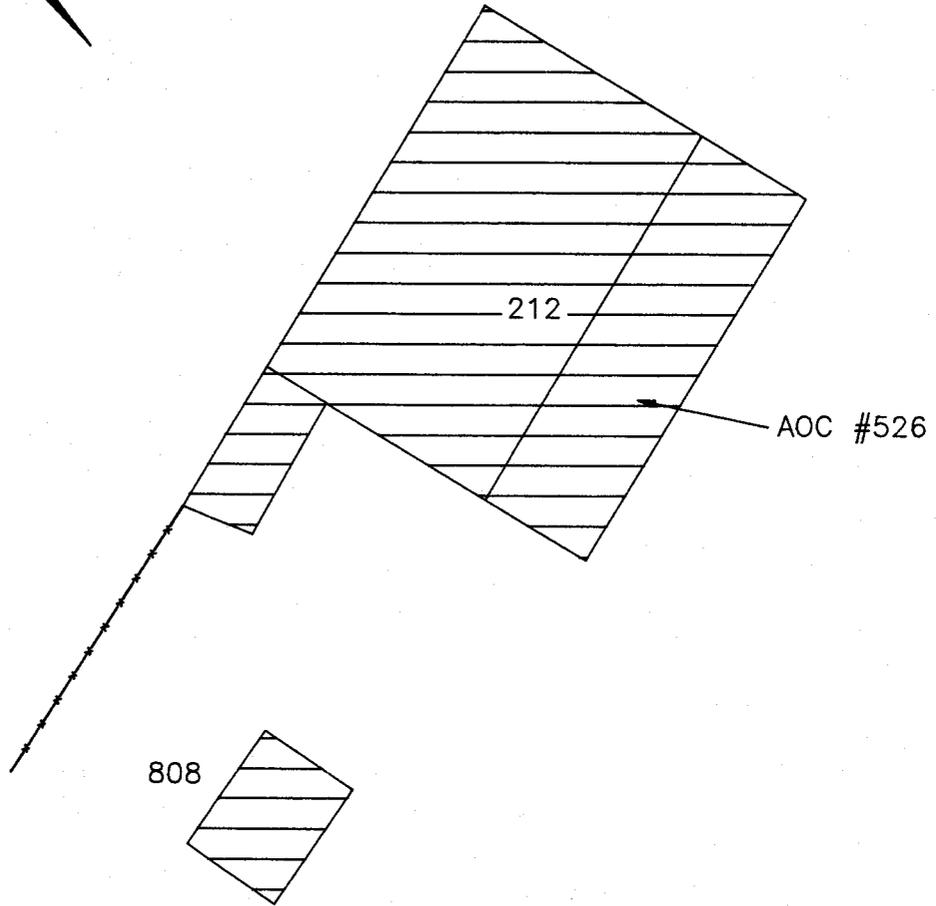
AOC #526 has been associated with the paint shop since 1974 and was operational until at least 1993. Two types of metallic paint were used: a lead-based primer and a copper-containing bottom paint, which are typical of paints used as steel primers and bottom paints. A total of 3,000 gallons of paint was used each month in paint shop operations. Two water curtain spray booths were also operated at the paint shop.

The open spray area probably began operation in 1974 when the paint shop moved into Building 212. The area, however, is no longer in use and the date of its decommission is unknown.

No record of process closure procedures were found.

5.7.2 Waste Characteristics

Approximately 226 tons of paint wastes and solvents reportedly were generated annually by the paint shop. In a 1986 inventory of hazardous wastes, the paint shop reportedly generated 8 to 10 British Barrels/year of waste paint and approximately 900 British Barrels/year of paint-related wastes. Anti-fouling operations may have involved the use of organotin- and tributyltin-containing paints. These substances are both biocides and are considered toxic to the environment. Since the late 1960s, a private contractor disposed of all paint wastes, including paints, solvents, and paint sludge. When the water curtain apparatus was cleaned, approximately 1,000 pounds of paint sludge from the booth was collected and disposed of by a private



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FIGURE 5-7
AOC #526
BUILDING 212, PAINT AREA

DWG DATE: 05/20/94 | DWG NAME: 27N212

contractor; the wastewater was discharged to the sanitary sewer. Prior to the 1960s, the paint sludge was disposed of in the base landfill. The wastewater was discharged into the Cooper River before the installation of the sanitary sewer. The primary constituents of concern are volatile organic compounds, metals, and biocides.

5.7.3 Migration Pathways

Discharges have occurred to the Cooper River; therefore, soil, groundwater, and surface water are migration pathways. According to the 1992 Air Emissions Compliance Audit Report, actual VOC emissions from the surface coating operations were listed as: 0.85 tons/year Epoxy 5A, 0.65 tons/year Epoxy 5B, 0.05 tons/year anti-fouling material, 0.15 tons/year methyl isobutyl ketone, 1.24 tons/year naphtha, and 1.18 tons/year butyl alcohol.

5.7.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this AOC. Dried paint and abrasive blasting residue were observed to be caked on the surrounding asphalt. Wastewater was discharged from this facility directly to the Cooper River before the installation of the sanitary sewer system.

5.7.5 Exposure Potential

Building 212 is located adjacent to military housing. The Cooper River is approximately 900 feet from Building 212. Discharges have occurred to the Cooper River.

5.7.6 Recommended Action

Due to past disposal practices and lack of a thorough assessment of the potential hazards associated with these releases, a RFI is recommended. Discharges to the Cooper River will be investigated as a separate unit.

5.8 AOC #529 — Coating and Spray System, Building 2A

5.8.1 Unit Characteristics

AOC #529 is the coating and spray system located in Building 2A. The Binks Waterwash coating booth is used for aluminum coating through a flame spray painting system. The exhaust stack is 58 feet high and 3 feet in diameter. The AOC Site Location Map locates Building 2A within Naval Base Charleston. Figure 5-8 locates the AOC in Building 2A.

The coating system was installed in 1989 and is seldom used (two or three times/year). The spray booth operates under Bureau of Air Quality Control Permit number 0560-0002, point ID number 62. Materials and usage information was unavailable. During a February 1, 1994 site survey, small amounts of aluminum debris were observed in the area.

5.8.2 Waste Characteristics

Information specific to the wastes generated by this AOC was unavailable.

5.8.3 Migration Pathways

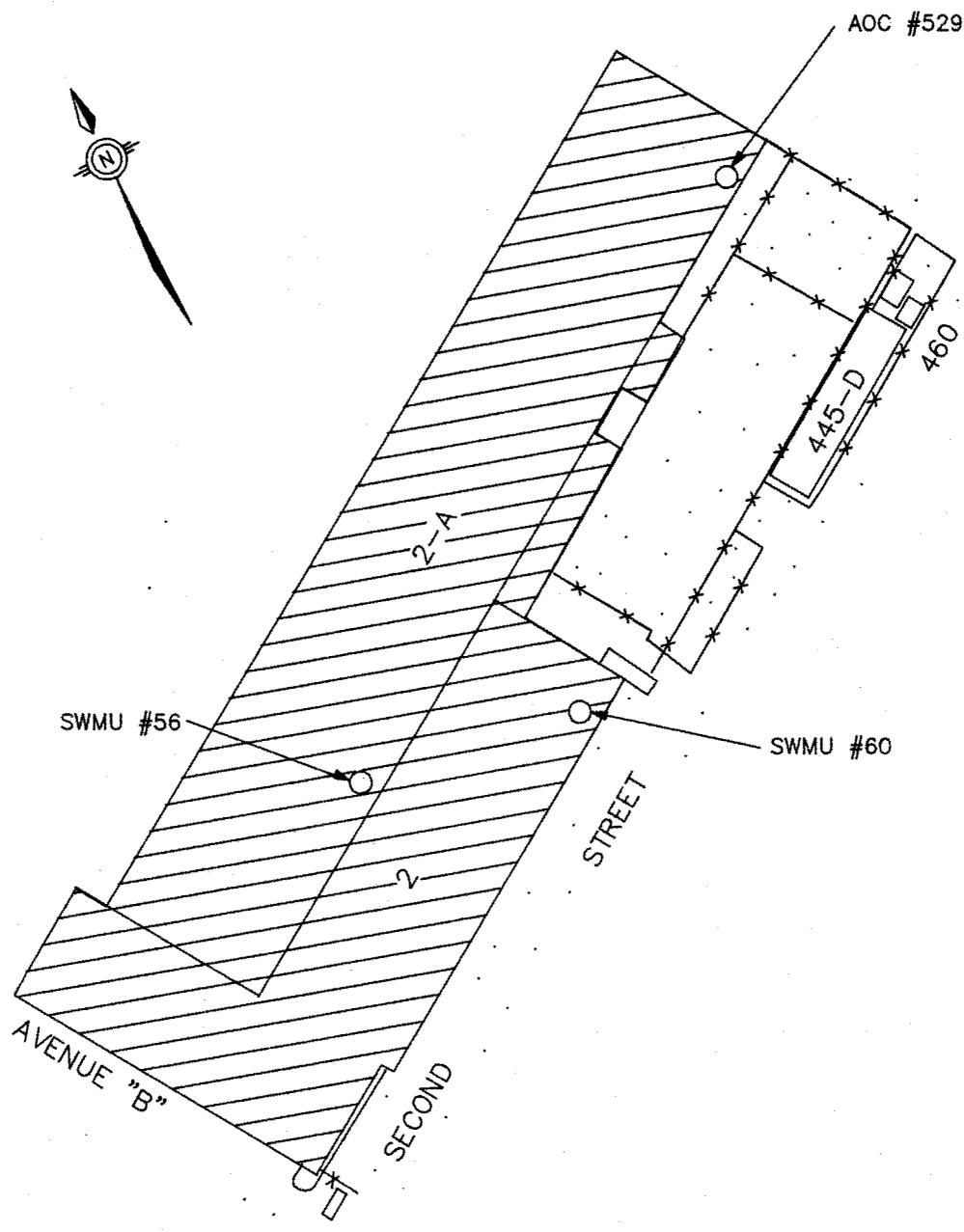
Because AOC #529 is located inside Building 2A, soil, groundwater, and surface water migration is unlikely. This AOC is a source of air emissions.

5.8.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observation indicate the incidence of spills at this AOC.

5.8.5 Exposure Potential

This AOC is not close to any residential areas but is approximately 500 feet west of the Cooper River. The nature of operations at AOC #529 minimizes potential exposures to Naval Base employees.



NOT TO SCALE



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FIGURE 5-8
AOC #529
BUILDING 2, COATING AND SPRAY SYS

5.8.6 Recommended Action

Due to the lack of a thorough assessment of the potential hazards associated with this AOC, a RFI is recommended.

5.9 AOC #538 — Forge Shop, Building 6

5.9.1 Unit Characteristics

The foundry was constructed in 1906 and a pump, valve, and propeller repair shop was added between 1963 and 1967. Various metal-working processes are conducted in the Forge shop. The AOC Site Location Map locates Building 6 within Naval Base Charleston. Figure 5-9 locates the AOC within Building 6.

5.9.2 Waste Characteristics

Materials used at the forge shop include lead, zinc, babbitt, oil, ceramic fiber on furnaces, galvanizing flux (zinc ammonium chloride), charcoal coke, and salt.

5.9.3 Migration Pathways

Because cracks are evident in the block floor, soil and groundwater are potential migration pathways. Air emissions may be generated by the various metal working processes.

5.9.4 Evidence of Release

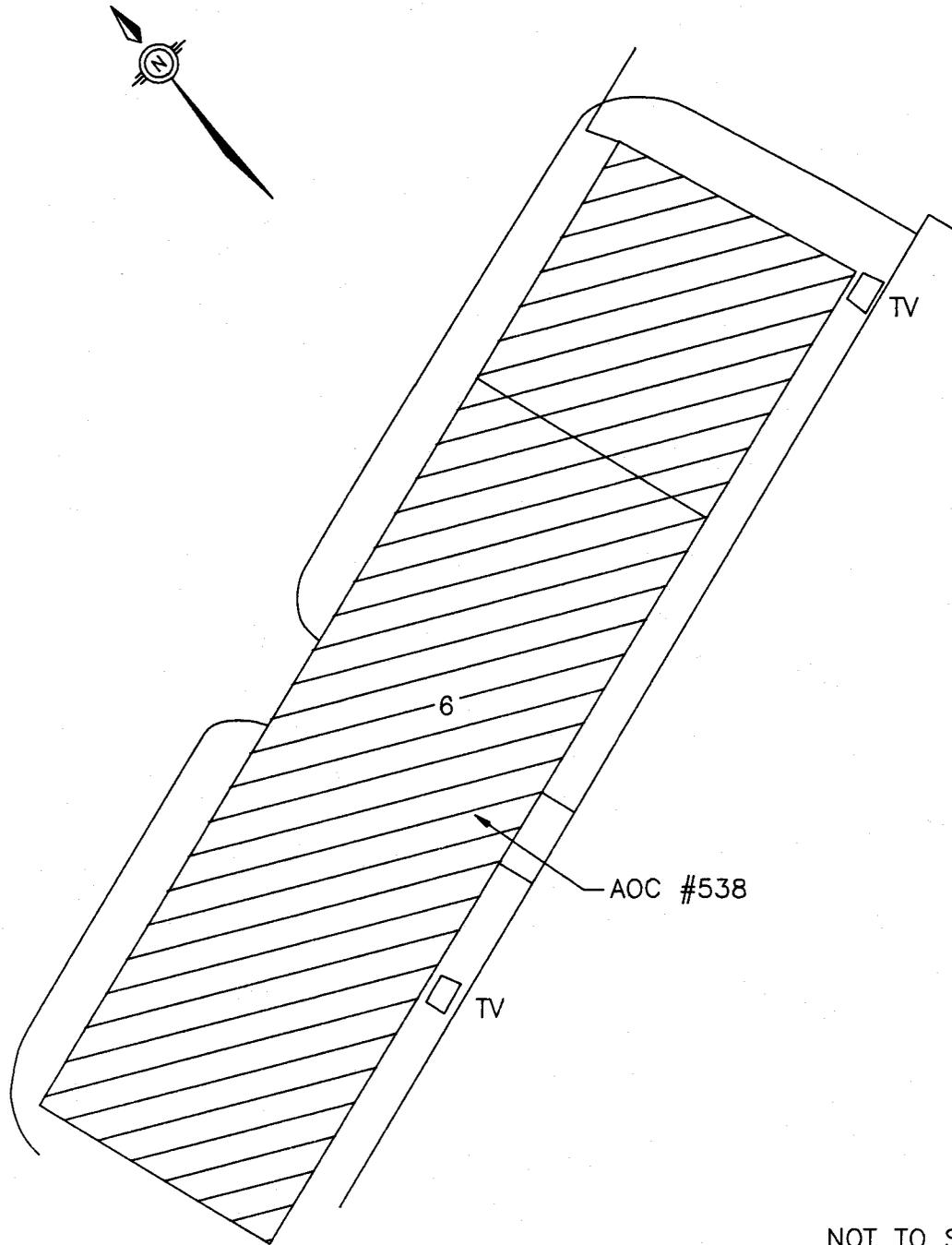
No spill reports, inspection reports, or employee interviews indicate spills at this site. However, heavy stains are evident on the floors in several areas.

5.9.5 Exposure Potential

This AOC is not in close proximity to any residential areas or sensitive environments. Naval Base employees may be exposed to potential air emissions.

5.9.6 Recommended Action

Due to the evidence of past releases and lack of a thorough assessment of the potential hazards associated with these releases, a RFI is recommended.



NOT TO SCALE



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FIGURE 5-9
AOC #538
BUILDING 6, FORGE SHOP

DWG DATE: 05/20/94 | DWG NAME: 27N6

5.10 AOC #544 — Former Pickling Plant, Building 221

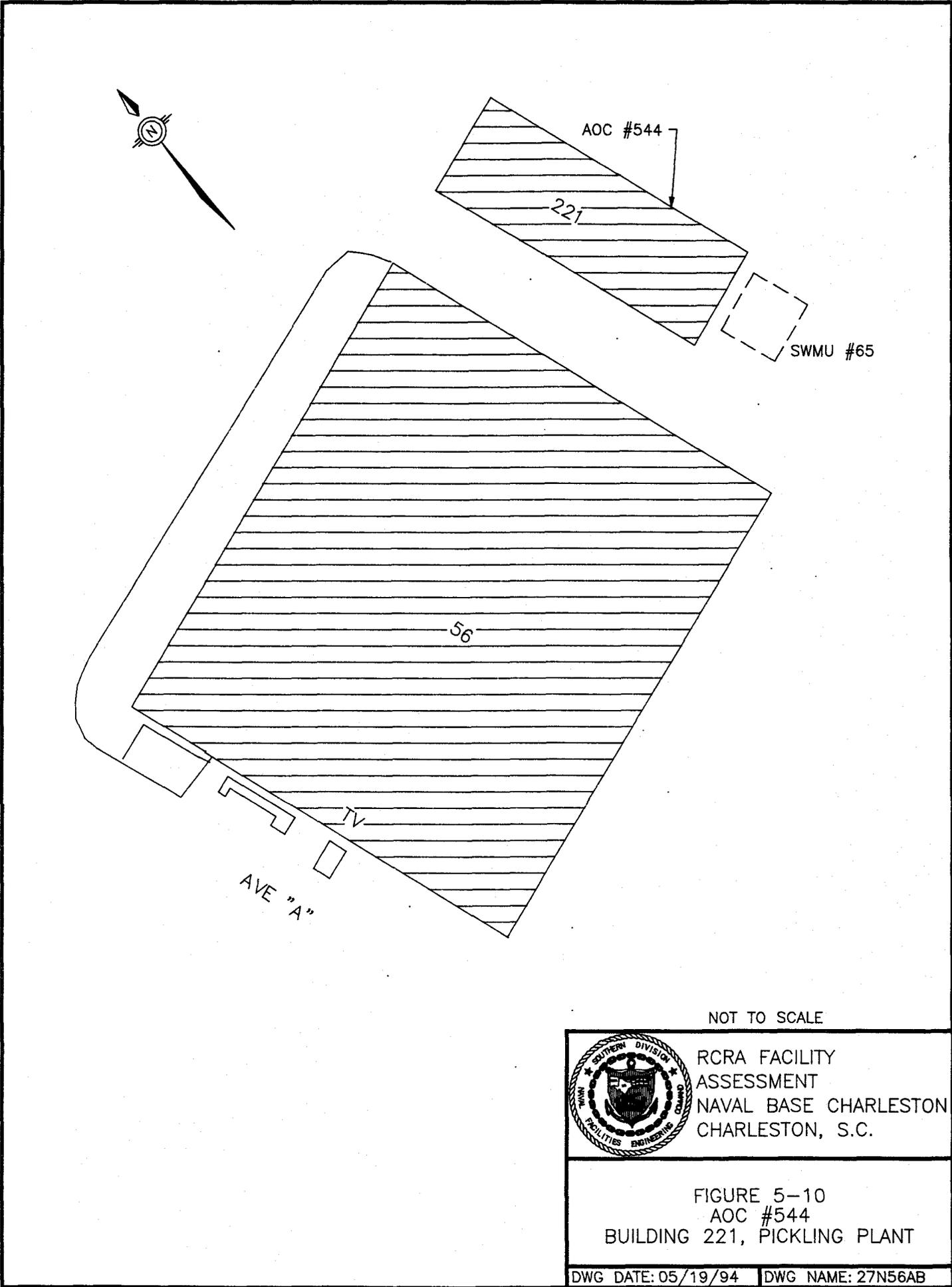
5.10.1 Unit Characteristics

AOC #544 is a former pickling plant. The process equipment and tanks have been removed and the area is currently used for lead storage (SWMU #65). The building was cleaned when the process was dismantled in 1984; however, this cleanup may have not been adequate based on current standards. The AOC Site Location Map locates Building 221 within the Naval Base. Figure 5-10 locates AOC within Building 221.

From 1940 to 1970, the pickling plant was an open-air facility with only the pickling tanks covered by a roof. A one-story structure of approximately 4,370 square feet was built in 1970 to house the pickling operations. In 1983/1984, all pickling process equipment was removed from the building. No plans or designs were available for the operation, but it is likely that the process required a series of chemical baths and water rinses. The chemical vats in the former pickling plant were reportedly prepared by diluting the chemical solutions with potable water via hoses. Spent solution from tanks was discharged via storm drainage system into the Cooper River until 1974 when a contractor was hired to transfer waste offsite for disposal.

A June 30, 1983, memorandum noted the absence of backflow prevention on the hoses and water line feeding the facility. It was recommended that a hose-bibb vacuum breaker be attached to the hoses used for mixing chemicals. No record of the installation of such devices was found.

Past operations included degreasing with "dry cleaning fluid" (Stoddard solvent), hydrochloric acid bath, iridite bath, nitric acid bath, paint stripper bath, bright dip (sodium dichromate), sulfuric acid bath, trisodium phosphate bath, and deoxyisoprop bath. The tanks used for these baths ranged in capacity from approximately 1,500 gallons to 2,400 gallons. The baths were changed every 3 to 6 months, depending on the amount of use, and after 1974, the spent pickling baths were contract hauled. The quantities of waste generated in the pickling shop on



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FIGURE 5-10
AOC #544
BUILDING 221, PICKLING PLANT

an annual basis were as follows: spent pickling acids and other corrosives (1,375 gallons), bright dip (275 gallons), and trisodium phosphate (1,210 gallons). Since 1974, Public Works at the Naval Shipyard has arranged for a private contractor to dispose of spent pickling waste. Prior to that time, the contents of spent pickling baths were discharged into the Cooper River (150 feet south) via the storm drainage system. The process was dismantled circa 1983/1984.

Presently, the facility is used as a lead storage area and is described in Section 4.22.

5.10.2 Waste Characteristics

A 1986 Inventory of Hazardous Waste Minimization Program listed alcohol and sodium nitrate as generated wastes. A Hazardous Materials and Waste Survey (1980) listed the following wastestreams and quantities/year for the pickling operation at Building 221: spent sulfuric and hydrochloric acid and other corrosives with lead, chromium, etc. mixed in (25 bbl); brass DIP waste (Na_2 $[\text{CRO}_7]$ and chromium) (56 bbl); trisodium phosphate sludge (TSP) (20-23 bbl); alkaline arrestor and rust remover; paint stripper (solvent) (3-35 bbl); and a waste sump picked up by Shop 99 (hazardous because of oil and metal content - 70 drums).

5.10.3 Migration Pathways

Spent solution from tanks was discharged via the storm drainage system into the Cooper River. Therefore, surface water is a migration pathway. Soil and groundwater may also be migration pathways.

5.10.4 Evidence of Release

An Incident Report from July 26, 1983, documents a leak of approximately 300 gallons of 30 percent sulfuric acid from a dip tank which ran unchecked into a sanitary sewer for 24 hours. It was verified (method was not noted) that acid had not reached the Cooper River via storm sewer system and the tank was repaired. No followup actions were taken since the amount spilled was not a reportable quantity.

Hazardous waste characterization samples were collected from the former pickling shop in November 1984 and submitted for laboratory analysis. The following table represents those sources and parameters which exceeded the 40 CFR 261.22 and 261.24 allowable limits and are therefore considered hazardous wastes.

Waste ID (Matrix)	Corrosivity	Cadmium	Chromium	Lead	Arsenic
Paint stripper (sludge)	X	X			
Iridite (solid)	X		X		
Nitric acid sludge tank (sludge)	X	X	X	X	
Alkaline deruster (sludge)	X	X			X

One disposal sample was also collected from the nitric acid dip tank according to a November 13, 1984, draft memorandum. Analytical results were as follows:

pH	—	0 ppm
Copper	—	1,520 ppm
Chromium	—	10 ppm
Lead	—	72 ppm
Nickel	—	20 ppm
Zinc	—	240 ppm

5.10.5 Exposure Potential

Building 221 is located approximately 800 feet from military housing. Building 221 is adjacent to Pier C.

5.10.6 Recommended Action

Due to the evidence of past releases and lack of a thorough assessment of potential hazards associated with the former pickling plant, a RFI is recommended. Discharges made to the Cooper River and sanitary sewer will be investigated as separate units.

5.11 AOC #545 — Surface Coating Operations, Building 3

5.11.1 Unit Characteristics

AOC #545 comprises three small surface coating operations primarily used for valves and components. Two of the booths are dry filter type operations while the third is an electrostatic epoxy spray booth used with a curing oven fueled by natural gas. The systems are reportedly not in service at this time. The AOC Site Location Map locates Building 3 within Naval Base Charleston. Figure 5-11 locates the AOC within Building 3.

According to a March, 1992 report, only one of the dry filter type booths had been installed with the dimensions of 15 feet x 20 feet x 7 feet. Of the three listed, only the epoxy booth was operational. The epoxy booth had apparently been operational since 1990, indicated by the date the system's curing/paint bake oven was installed. Based on the 1992 report, the remaining two paint spray booths have operated less than 3 years.

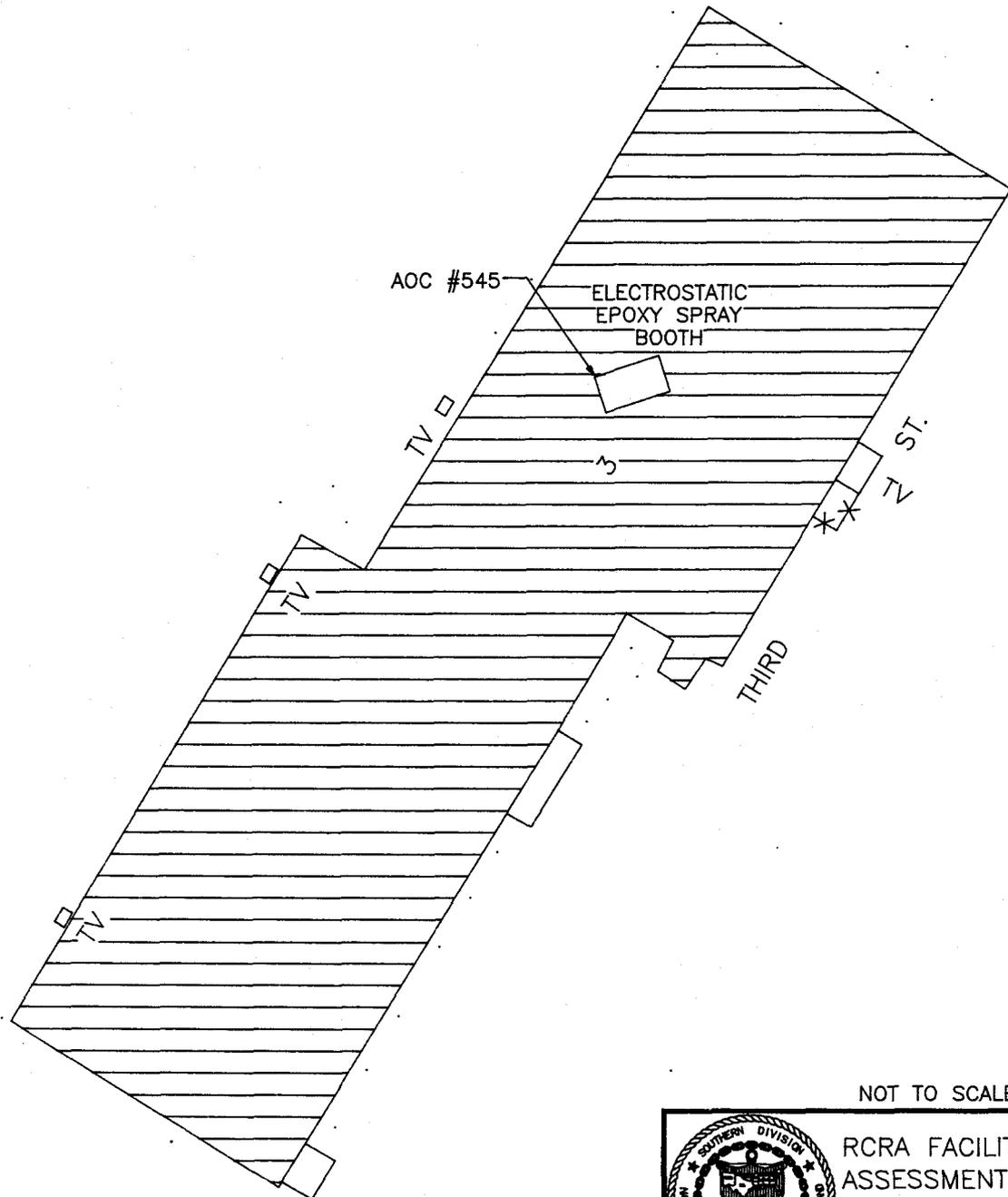
Review of a September 2, 1983 memorandum suggests the presence of an earlier paint spray booth in Building 3. Particulate matter in this spray booth was controlled by a water-spray curtain. Reportedly, the maximum amount of paint sprayed per day, including thinner and primer, was 5 gallons. No further information regarding this booth could be found.

5.11.2 Waste Characteristics

Review of historic hazardous materials inventories suggests that paint waste was generated by the two paint spray booths at AOC #545. No other information was available.

5.11.3 Migration Pathways

Because AOC #545 is located inside Building 3, soil, groundwater, and surface water migration is unlikely.



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FIGURE 5-11
AOC #545
BUILDING 3, SURFACE COATING

DWG DATE: 05/19/94

DWG NAME: 27N3

5.11.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this AOC.

5.11.5 Exposure Potential

This AOC is not close to any residential areas or sensitive environments. The limited storage capacity and migration pathways restrict the potential exposures to Naval Base employees.

5.11.6 Recommended Action

No further investigation of this AOC is recommended due to lack of evidence of a release from this unit and limited migration pathways.

5.12 AOC #556 — Drydock Discharges

5.12.1 Unit Characteristics

NSY has five drydocks: DD1, built in 1907; DD2, built in 1942; DD3 and DD4, built in 1943; and DD5, built in 1964. The areas of concern for AOC #556 are the drydock drains and the areas around the mouth of the drydocks. Figure 5-12 locates the drydocks within Naval Base Charleston.

The drydocks are constructed of reinforced concrete with a portable caisson (located at the mouth of the drydock) constructed of creosote-treated wood that serves as a dam during docking and maintenance operations. A large grated drain is located along the middle of the entire length of the drydocks. Underground pumps remove the water collected in the drain and direct it to the North Charleston Sewer System. Drydocks 1 and 2 (outfall number 009 on the NPDES permit application dated 3-3-92) have a common drainage system and outfall point, as do drydocks 3 and 4 (outfall number 010 on the NPDES permit application dated 3-3-92). The outfall for drydock 5 is number 011 on the NPDES permit application dated 3-3-92.

The drydocks are used to service Naval vessels. Operations include refueling, defueling, welding, painting, mechanical work, and light industrial work. According to the NPDES permit application, operations contributing wastewater to outfall number's 009, 010, and 011 effluent include stormwater runoff, cooling water, caisson leakage, and groundwater.

5.12.2 Waste Characteristics

Wastes reportedly discharged to the drydock drains and Cooper River include fuel oil, lube oil, waste soapy water, raw sewage, oil with dispersant, diesel fuel, ethylenediamine, non-PCB mineral oil, antifreeze, mercury, paint, muriatic acid (HCL and water combination), number 5 fuel oil, an unknown white milky liquid, abrasive blasting grit, waste oil, caustic soda, Freon, ammonium hydroxide, cleaning compound, powdered HCL, sodium bicarbonate, Gamlen cold wash, PCBs, hydraulic fluid, possible lead, an unknown green liquid, and grease.

5.12.3 Migration Pathways

Surface water (Cooper River), sediments, and air are all migration pathways. Soil and groundwater may also be migration pathways.

5.12.4 Evidence of Release

There have been numerous Environmental Incident Reports, Hazardous Material Incident Reports, Zone Inspection deficiencies, and miscellaneous reports of releases at the drydocks.

DD1: Between 2-79 and 11-25-92, there have been reported releases of oil (up to 100 gallons), lube oil (25 gallons), waste soapy water, raw sewage (250 gallons), diesel fuel (<1 gallon), ethylenediamine (200 ml), non-PCB mineral oil (135 gallons), discolored discharge water, antifreeze (2 gallons), mercury (1 teaspoon), paint, muriatic acid (up to 3000 gallons), an unknown white milky liquid, and abrasive blasting grit.

DD2: Between 8-8-79 and 9-16-93, there have been reported releases of oil (up to 100 gallons), raw sewage, caustic soda, Freon, mercury (2 ounces), ammonium hydroxide (up to 25 gallons), cleaning compound, powdered HCL (3 pounds), sodium bicarbonate, paint, grease, sodium hydroxide, PCBs, and abrasive blasting grit.

DD3: Between 4-29-81 and 1-13-93, there have been reported release of oil (up to 30 gallons), transformer oil (<50 ppm PCB oil), non-PCB transmission fluid, paint, fuel, hydraulic fluid, PCBs, possible lead, and abrasive sandblasting grit.

DD4: Environmental Incident Report Number 87-66 (dated 7-30-87) states that 7,000 gallons of oil was released to the Cooper River from DD4 to Pier M.

DD5: Between 6-11-82 and 9-21-93, there have been reported releases of oil (up to 100 gallons), raw sewage (up to 100 gallons), paint, Gamlen cold wash, mercury, an unknown green liquid, grease, and abrasive blast grit.

A sample of sludge from the bottom of DD2 was analyzed in 4-93 for silver (<0.1 ppm), arsenic (65 ppm), barium (6500 ppm), cadmium (7 ppm), copper (1000 ppm), chromium (1500 ppm), nickel (97 ppm), lead (4500 ppm), selenium (<0.1 ppm), and zinc (11000 ppm). A sample of paint chips was also analyzed from DD2 for lead (0.25%).

The outfalls from DD1 and DD2, DD3 and DD4, and DD5 were sampled on 12-19-91 and analyzed for BOD - 5 day (<3.00 ppm, <3.00 ppm, and 19.0 ppm, respectively), COD (632 ppm, 662 ppm, and 632 ppm, respectively), nitrogen - ammonia (<0.100 ppm for all), oil and grease (31.0 ppm, 23.0 ppm, and 29.0 ppm, respectively), TOC (<2.000 for all), TSS (9.00 ppm, 3.00 ppm, and 160 ppm, respectively), and pH (8.00@23°C, 8.16@23°C, and 7.96@23°C, respectively).

Currently, the drydocks have numerous stains from oil, paint, and unknown origins.

5.12.5 Exposure Potential

The site is not close to any residential areas. Exposure to shipyard workers may occur in the area. The stormwater drainage system may transport contaminants further from the drydocks.

The Cooper River, which is in the immediate vicinity of the drydocks, is an important tributary to Charleston Harbor and provides most of the freshwater inflow. Additionally, it is a significant migratory pathway for anadromous fish species.

5.12.6 Recommended Action

A RFI is recommended for AOC #556. Since the discharges are similar at each of the drydocks, the investigative approach for each discharge point will likewise be similar. All discharge points will be investigated under the same AOC. The drydock discharge investigations will also support the ecological impact study of the Cooper River.

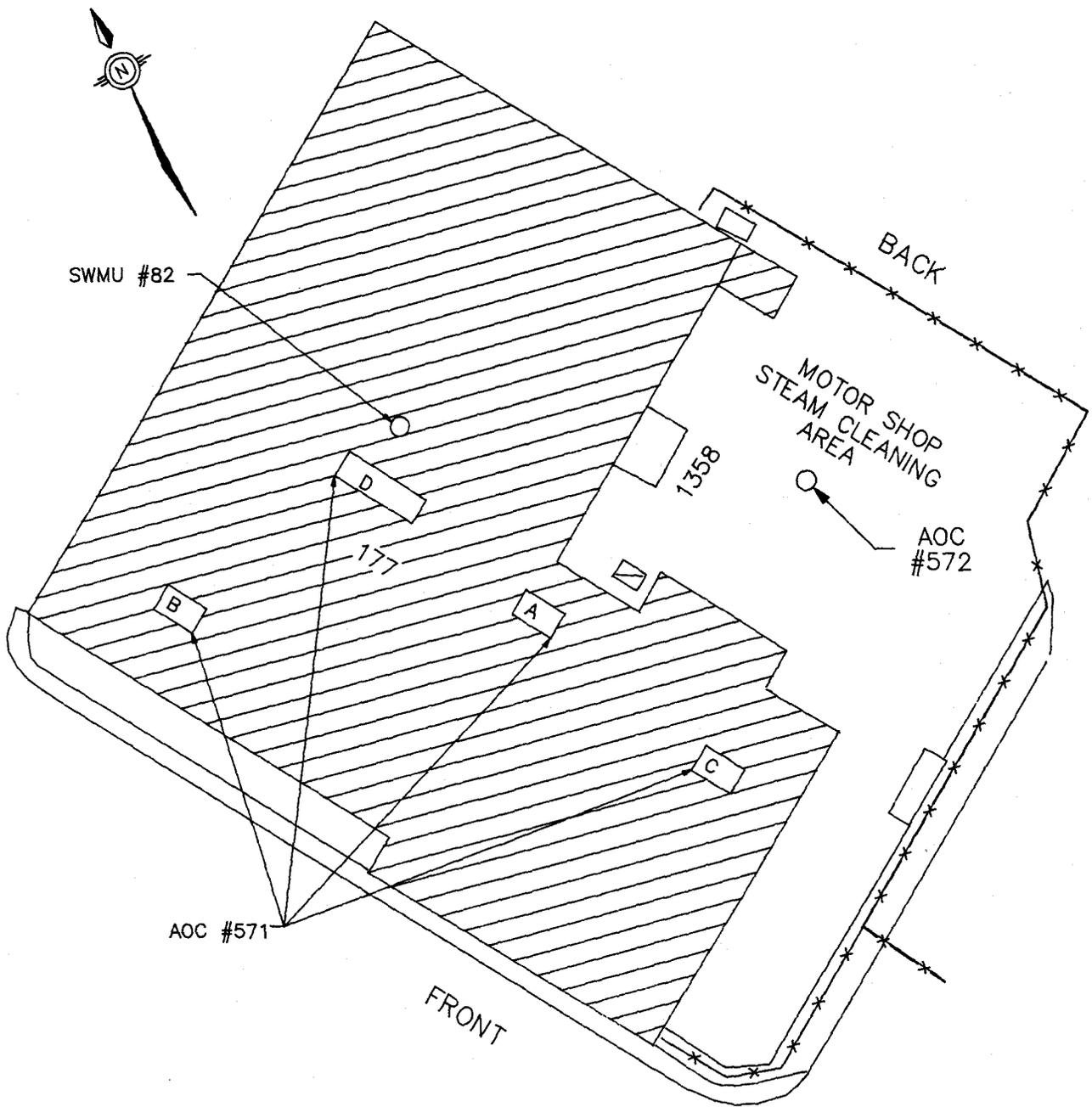
5.13 AOC #571 — Paint Shop, Building 177

5.13.1 Unit Characteristics

AOC #571 is the Building 177 paint shop which is made up of four small paint booths. The four booths are included in the Bureau of Air Quality Control Permit Number 0560-0002, and are designated as company point ID numbers 31 (dry filter type booth used to paint electrical motors), 32 (dry filter type booth located on the second floor in the switchboard section; only aerosol paint cans are used), 33 (wet filter type booth located on the third floor used to paint miscellaneous metal parts), and 34 (wet filter type booth used to spray ship antennae). The AOC Site Location Map locates Building 177 within Naval Base Charleston. Figure 5-13 locates each paint booth within Building 177.

Booth 31 (20'x 9'x 10') has a 41-foot high stack with a 3-foot diameter. Booth 32 (5'x 3'x 4') has a 34-foot high stack with a 2-foot diameter. Booth 33 (12'x 14'x 8') has a 15-foot high stack with a 3.5-foot diameter and a water curtain used to capture paint particles. Booth 34 (23'x 27'x 20') has a 50-foot high stack with a 2-foot diameter. None of the stacks are equipped with continuous emission monitors. Each booth is the only emissions-generating point that exhausts from its own.

Booth 31 has a normal operating schedule of 5 hours/day, 5 days/week, and 52 weeks/year (1300 hours/year); Booth 32 has a normal operating schedule of 4 hours/day, 5 days/week, and 52 weeks/year (1040 hours/year); Booth 33 has a normal operating schedule of 3 hours/day, 5 days/week, and 52 weeks/year (780 hours/year); and Booth 34 has a normal operating schedule of 4 hours/day, 5 days/week, and 52 weeks/year (1040 hours/year).



PAINT BOOTH IDENTIFICATION
 BUREAU OF AIR QUALITY CONTROL
 PERMIT NO. 0560-002

- A-COMPANY POINT ID. NO. 31
- B-COMPANY POINT ID. NO. 32
- C-COMPANY POINT ID. NO. 33
- D-COMPANY POINT ID. NO. 34

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FIGURE 5-13
 AOC #571
 BUILDING 177, PAINT SHOP

5.13.2 Waste Characteristics

Booth 31 uses enamel, primer, and thinner. Booth 32 uses spray lacquer, spray enamel, and spray primer. Booth 33 uses enamel, primer, and thinner. All types of paints (i.e. lead, zinc chromate, etc.) are used at Booth 33. Booth 34 uses enamel, primer, and thinner. The major constituents of concern are volatile organic compounds and metals. The water curtain at Booth 33 is drained periodically to the sanitary sewer system, and the sludge is removed and disposed of as hazardous waste according to 40 CFR 260.

5.13.3 Migration Pathways

Because AOC #571 is located inside Building 177, soil and groundwater are unlikely pathways. Surface water is a potential pathway since the water curtain system at Booth 33 is drained periodically to the sanitary sewer system. The four spray booths are also sources of air emissions. The following are air emission data for the four booths:

TOTAL ACTUAL EMISSIONS AOC #571			
Material Type	VOC (lbs/hr; tpy)	PM (lbs/hr; tpy)	HAP (lbs/hr; tpy)
Booth 31			
Enamel	0.420/0.060	0.024/0.004	0.0000/0.0000
Primer	0.240/0.040	0.001/0.000	0.2385/0.0358
Thinner	0.790/0.120	0.000/0.000	0.0793/0.0119
Booth 32			
Spray Lacquer	0.960/0.500	0.000/0.000	0.4327/0.2250
Spray Enamel	1.380/0.720	0.002/0.001	0.6154/0.3200
Spray Primer	1.370/0.710	0.001/0.001	0.2885/0.1500

TOTAL ACTUAL EMISSIONS AOC #571			
Material Type	VOC (lbs/hr; tpy)	PM (lbs/hr; tpy)	HAP (lbs/hr; tpy)
Booth 33			
Enamel	1.160/0.140	0.057/0.007	0.0000/0.0000
Primer	0.110/0.010	0.012/0.001	0.0000/0.0000
Thinner	0.920/0.110	0.006/0.001	0.0000/0.0000
Booth 34			
Enamel	0.930/0.300	0.046/0.015	0.0000/0.0000
Primer	0.110/0.040	0.012/0.004	0.0000/0.0000
Thinner	0.450/0.150	0.003/0.001	0.0000/0.0000

- Notes:
- VOC — Volatile Organic Compound
 - PM — Particulate Matter
 - HAP — Hazardous Air Pollutant
 - tpy — ton per year

5.13.4 Evidence of Release

No spill reports, inspection reports, or employee interviews indicate spills at this AOC. Prior to the installation of the sanitary/industrial wastewater sewer system in 1972, however, the water used to capture paint dust from the paint spray booths was discharged directly to the Cooper River. During the site survey, paint fumes and approximately 1/2 inch of dried paint coating the walls and floor were also evident at Booth 33.

5.13.5 Exposure Potential

This AOC is not close to any residential areas or sensitive environments. The lack of evidence of a release and the restricted migration pathways limit the potential exposures to Charleston Naval Base employees.

5.13.6 Recommended Action

No further investigation of this AOC is recommended for paint booths 31, 32, and 34, due to operating practices, lack of evidence of a release from this unit, and limited migration pathways. Paint booth 33 should be included in the RFI due to the amount of paint outside the booth area.

5.14 AOC #572 — Motor Area, Building 177

5.14.1 Unit Characteristics

AOC #572 is a paved area adjacent to Building 177 which was previously used for steam cleaning electrical motors and equipment. The AOC Site Location Map depicts the location of Building 177 within Naval Base Charleston and Figure 5-14 illustrates the location of AOC #572 in relation to the building. The pavement at the edge of the building is receding from the foundation. Cracks in the asphalt surface where the steam cleaning occurred have been noted.

5.14.2 Waste Characteristics

Grease, varnish, and graphite have been used at this AOC. The major constituents of concern are volatile organic compounds and petroleum hydrocarbons.

5.14.3 Migration Pathways

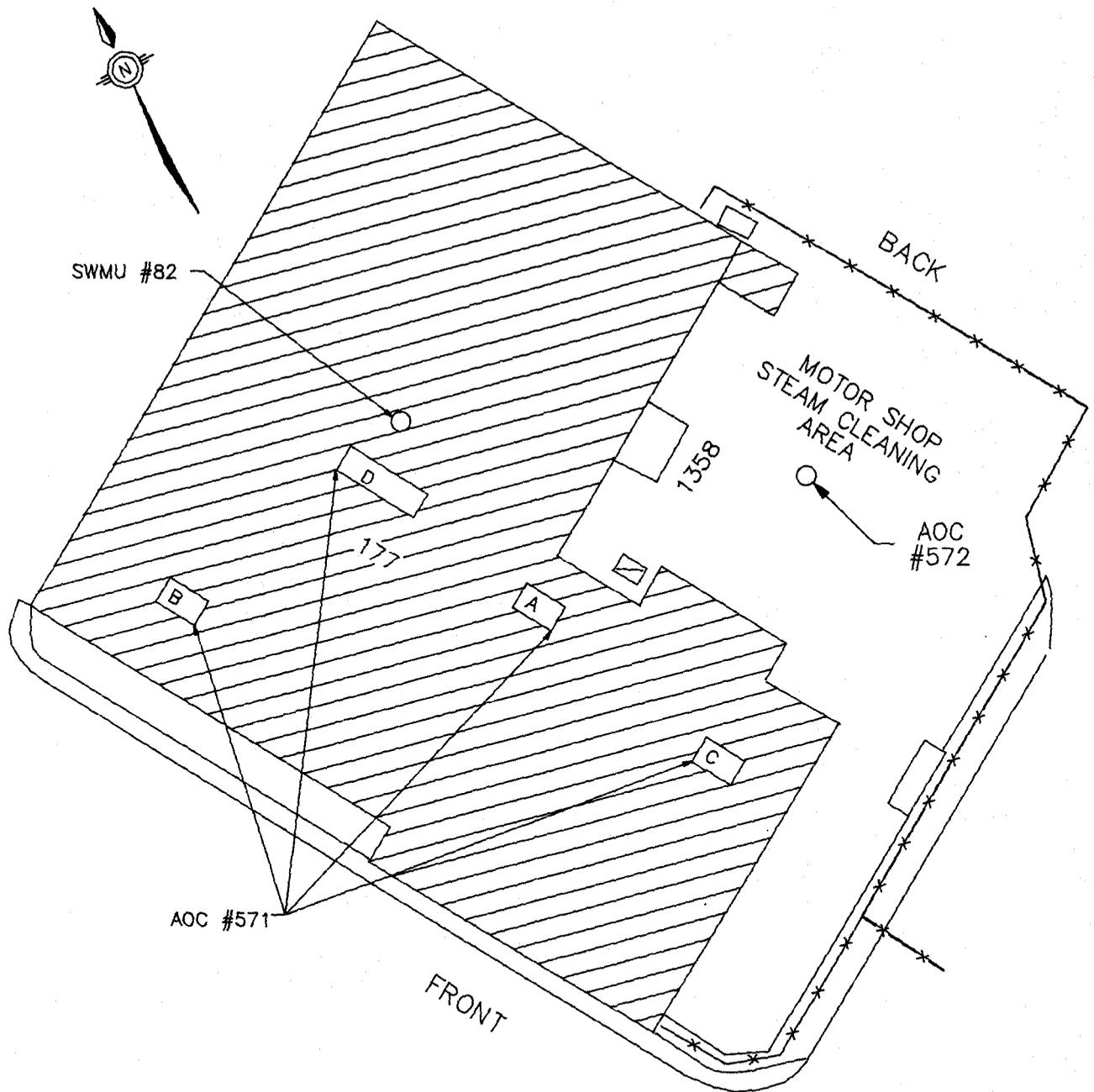
The potential for soil and groundwater impact is likely at this AOC due to the types of contaminants likely to be present in this area, the nature of the operations conducted there, and the condition of the asphalt surface. Documentation exists that water from operations conducted in this area was discharged to a nearby storm drain which could possibly lead to a release into the Cooper River.

5.14.4 Evidence of Release

A Zone Inspection Report dated 7-11-91 states that water and pollutants generated from the pressure washing of machinery being conducted behind Building 177 were allowed to flow into storm drains. Staining is evident in several places on the asphalt.

5.14.5 Exposure Potential

This AOC is not in close proximity to any residential areas. The risk of exposure of site workers to hazardous materials is not expected to be great; however, the potential does exist.



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FIGURE 5-14
AOC #572
BUILDING 177, SAA, MOTOR AREA

DWG DATE: 05/19/94 | DWG NAME: 29AOC33

Exposure of sensitive environments to releases from this area are likely to be limited to discharges to the Cooper River via the storm drains.

5.14.6 Recommended Action

Due to evidence of past releases and lack of a thorough assessment of the potential hazards associated with these releases, a RFI is recommended.

5.15 AOC #574 — Building 9 Fuel Tank

5.15.1 Unit Characteristics

AOC #574 is a 3,700 gallon above ground fuel tank located in an area adjacent (east) to Building 9. The fuel tank is no longer in use. At one time, this tank served the foundry's furnaces and torches, and contained number 2 fuel oil. The period of operation of the tank is not known. Heavy corrosion/rust stains are evident on the unpainted exterior of the tank. No secondary containment is provided for release protection and bare ground is exposed beneath the tank. The AOC Site Location Map depicts the location of Building 9 within Naval Base Charleston. Figure 5-15 illustrates the approximate location of the fuel tank in relation to Building 9.

5.15.2 Waste Characteristics

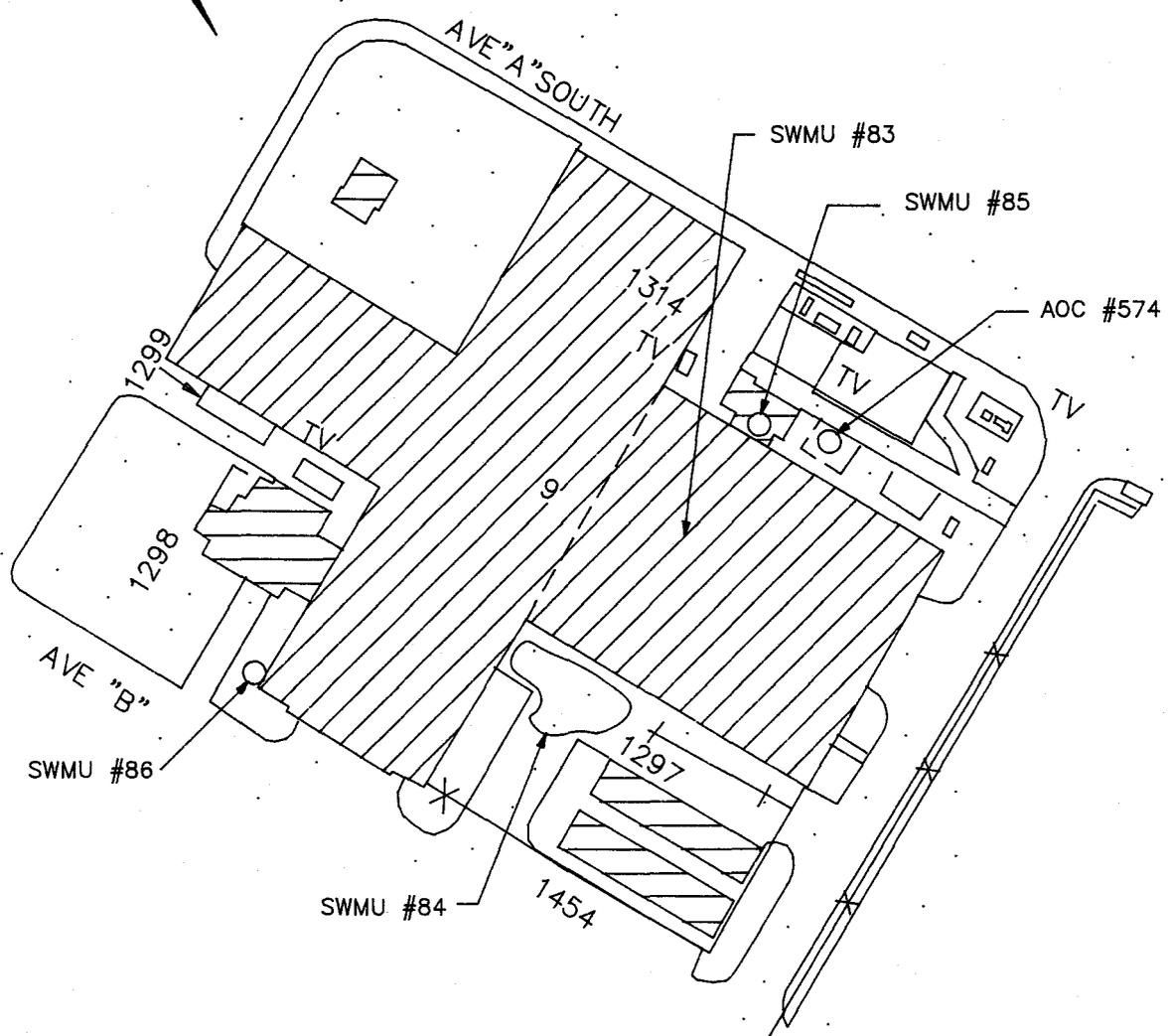
Number 2 fuel oil was reportedly stored in the tank.

5.15.3 Migration Pathways

Due to the nature of the contents of the tank, soil and groundwater would be viable migration pathways should a release occur. Air would not be considered a significant migration pathway unless a substantial amount of the tank contents was released. Soil gas migration or volatile constituents could occur given the location of the tank in close proximity to structures and paved surfaces which could trap subsurface gases. Releases from this unit to surface water bodies are not expected given the location of the site.

5.15.4 Evidence of Release

Zone Inspection Reports dated April 5, 1991, August 6, 1991, June 26, 1992, and September 30, 1993, and Environmental Incident Report 90-146, report oil residue under the tank. The September 30, 1993 report also states that dirt along the edge of the street in the vicinity was very oily. Oil residue is still currently evident under the tank.



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FIGURE 5-15
AOC #574
BUILDING 9, SAA

5.15.5 Exposure Potential

The AOC is not close to any residential areas or sensitive environments. Exposure to releases from the fuel tank is most likely to be limited to site workers.

5.15.6 Recommended Action

Due to the evidence of past releases and lack of a thorough assessment of the potential hazards associated with these releases, a RFI is recommended.

5.16 AOC #577 — Paint Booth, Building 25

5.16.1 Unit Characteristics

AOC #577 is a small, dry filter type paint booth located within Building 25. The AOC Site Location Map locates Building 25 within Naval Base Charleston. Figure 5-16 locates the AOC within Building 25.

This unit is used primarily for furniture refinishing, using enamel paint and thinners. An emissions inventory indicates that approximately 80 percent of the coatings performed at AOC #577 are applied by brush and the remainder is applied by spray. AOC #577 is located on a concrete surface and was observed to be in good condition.

5.16.2 Waste Characteristics

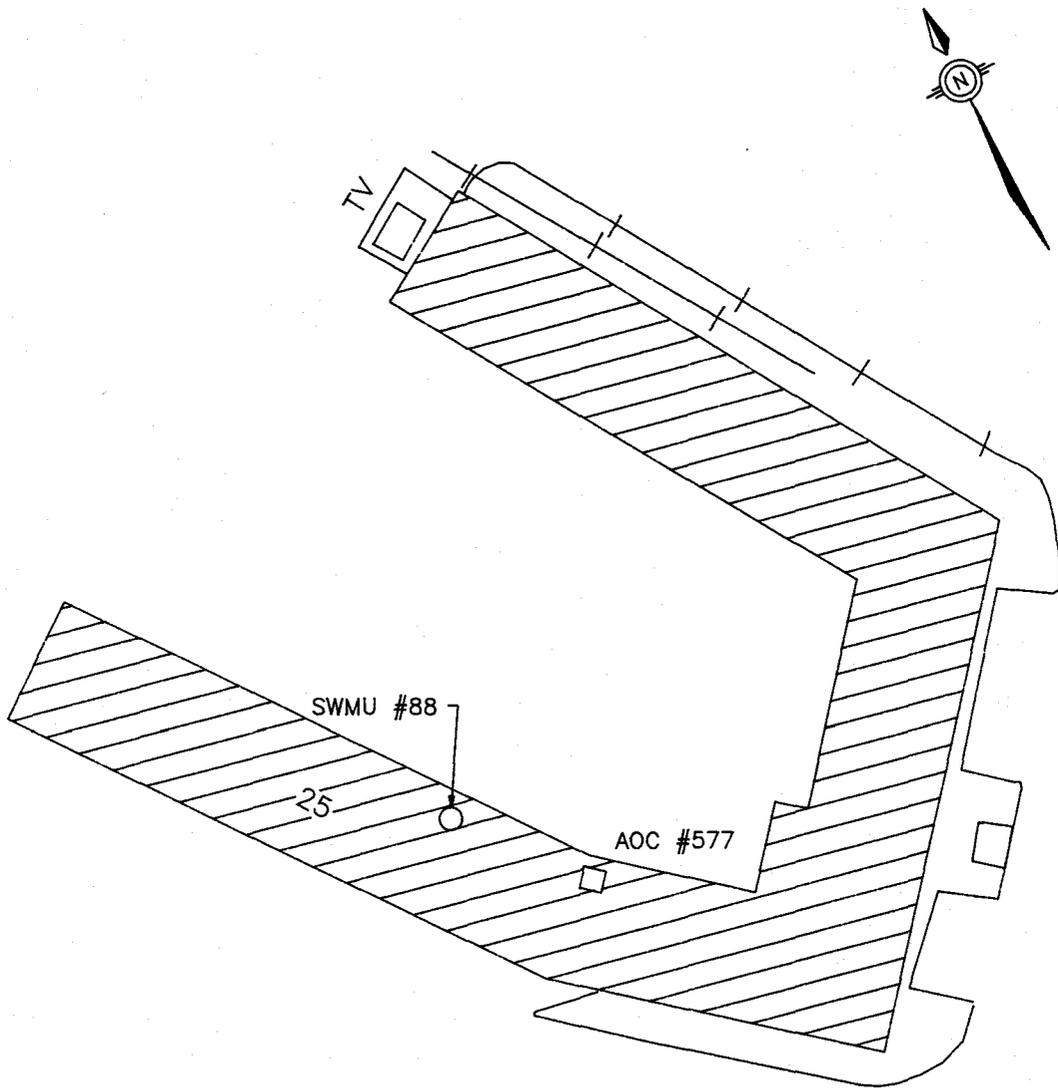
According to the site survey performed on January 25, 1994, no waste is stored at AOC #577. Although brush application is primarily utilized, some amount of overspray is likely to occur during paint/thinner spraying activities.

5.16.3 Migration Pathways

Since AOC #577 is an indoor paint booth, soil and groundwater migration is not expected. Although airborne constituents are also produced from this process, it is expected that the filter, if properly maintained, significantly reduces the amount of paint material released to the environment. Also, 80 percent of the material applied at this location is applied using a brush, thereby significantly reducing the potential for paint and paint products becoming airborne. Therefore, the potential for airborne migration of contaminants is limited.

5.16.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observation indicate the incidence of spills at this AOC.



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FIGURE 5-16
AOC #577
BUILDING 25, PAINT SHOP

DWG DATE: 05-19-94 | DWG NAME: 29AOC109

5.16.5 Exposure Potential

This AOC is not close to any residential areas or sensitive environments. The nature of the spraying operations limits the potential exposure to Naval Base employees.

5.16.6 Recommended Action

Based on available information, no further investigation of this AOC is recommended due to the lack of evidence of a release from this unit and limited migration pathways.

5.17 AOC #588 — Paint Booth, Building 218

5.17.1 Unit Characteristics

AOC #588 is a dry filter type paint booth used to apply epoxy paints. This unit is included in the Bureau of Air Quality Control Permit Number 0560-0002 and designated as company point ID S17. The AOC Site Location Map locates Building 218 within Naval Base Charleston. Figure 5-17 locates the AOC within Building 218.

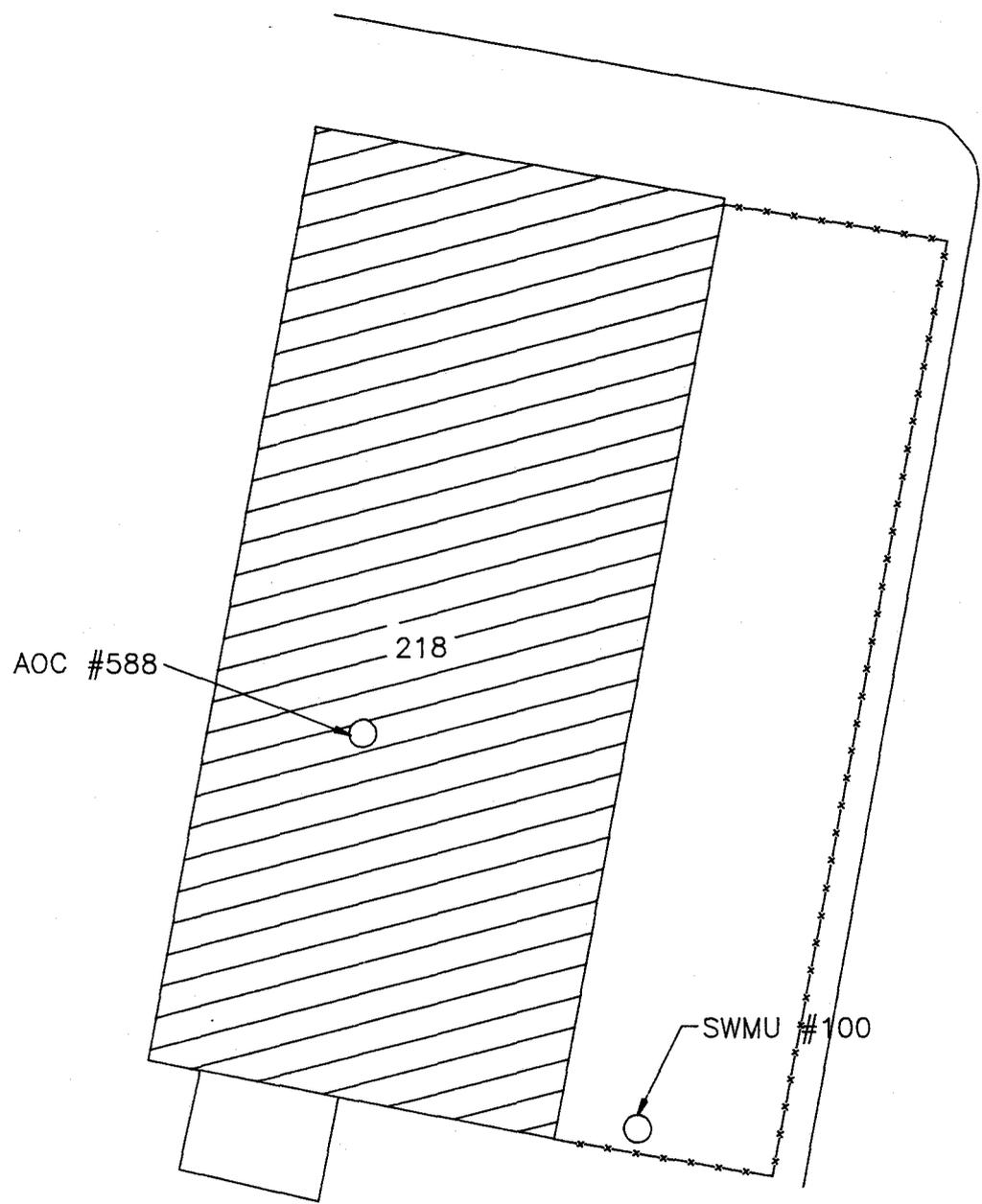
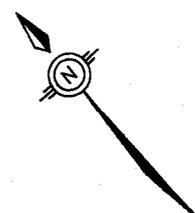
The paint booth is located on a concrete surface in good condition. The 25' x 8' x 15' paint booth is reported to operate 1000 hours per year. No break-down of the operating schedule was available. During a visual site inspection on February 4, 1994, paint residue was noted in the paint booth area.

5.17.2 Waste Characteristics

Materials used include Epoxy 5A and 5B, methyl ethyl ketone, butyl alcohol, naphtha, and Primer 3.

5.17.3 Migration Pathways

Because AOC #588 is located inside Building 218, soil, groundwater, and surface water migration is unlikely. This paint booth is a source of air emissions, summarized below:



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FIGURE 5-17
AOC #588
BUILDING 218, PAINT BOOTH

TOTAL ACTUAL EMISSIONS AOC #588			
Material Type	VOC (lbs/hr; tpy)	PM (lbs/hr; tpy)	HAP (lbs/hr; tpy)
Epoxy 5A	0.41; 0.20	0.012; 0.006	0.0000; 0.0000
Epoxy 5B	0.31; 0.15	0.011; 0.006	0.0126; 0.0063
methyl ethyl ketone	0.02; 0.01	0.000; 0.000	0.0202; 0.0101
butyl alcohol	0.10; 0.05	0.000; 0.000	0.0000; 0.0000
naphtha	0.46; 0.23	0.000; 0.000	0.0000; 0.0000
Primer 3	0.07; 0.03	0.000; 0.000	0.0404; 0.0202

Notes:

- VOC — Volatile Organic Compound
- PM — Particulate Matter
- HAP — Hazardous Air Pollutant
- tpy — ton per year

5.17.4 Evidence of Release

No spill reports, inspection reports, or employee interviews indicate spills at this AOC. There is paint residue in the paint booth area.

5.17.5 Exposure Potential

Building 212 is not close to any residential areas. Building 218 is approximately 1200 feet from the Cooper River. Naval Base employees may be exposed to air emissions from the paint spray booth activities.

5.17.6 Recommended Action

No further investigation of this AOC is recommended due to limited exposure potential and limited migration pathways.

5.18 AOC #599 — Pump House, Pier J

5.18.1 Unit Characteristics

This is the location of a hurricane-damaged transfer station or pump house formerly used for the distribution of diesel fuel. The AOC Site Location Map locates Pier J within Naval Base Charleston. Figure 5-18 locates the AOC in relation to the pier.

The floor of the structure is situated below grade and rainwater has accumulated within the structure which was badly damaged by a hurricane in 1989. The structure is slated for demolition. During a visual site inspection on February 2, 1994, no wastes were observed.

5.18.2 Waste Characteristics

This location was formerly used for the distribution of diesel fuel; therefore, POL waste may have been generated.

5.18.3 Migration Pathways

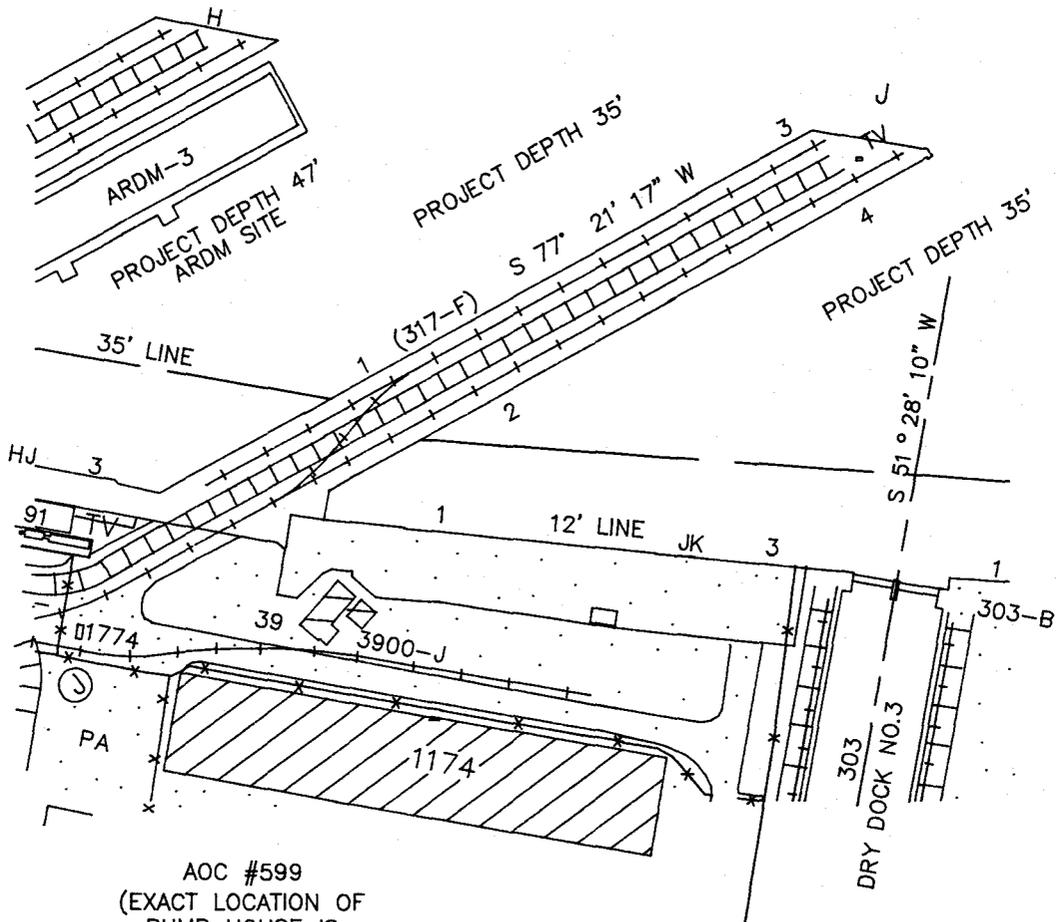
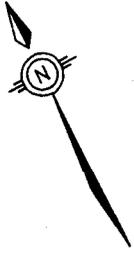
AOC #599 is a potential source of soil, groundwater, surface water, and soil-gas contamination.

5.18.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or physical evidence indicate spills at this AOC.

5.18.5 Exposure Potential

This AOC is not in close proximity to any residential areas but is near the Cooper River, a sensitive environment. Exposures from this unit are limited to Naval Base employees and organisms in the Cooper River.



AOC #599
(EXACT LOCATION OF
PUMP HOUSE IS
UNKNOWN)

NOT TO SCALE



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NAVAL BASE CHARLESTON
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FIGURE 5-18
AOC #599
PIER J, PUMP HOUSE

DWG DATE: 05/19/94 | DWG NAME: 29AOC24

5.18.6 Recommended Action

Due to the evidence of past releases and lack of a thorough assessment of the potential hazards associated with these releases, a RFI is recommended.

5.19 AOC #606 — Paint Booth, Building 187

5.19.1 Unit Characteristics

AOC #606 is a small dry filter type paint booth within Building 187. It is included in Bureau of Air Quality Control Permit Number 0560-0002. The paint booth has a concrete floor. Enamel paint is primarily used by the paint booth. The booth receives minimal use, predominantly brush applications. The AOC Site Location Map locates Building 187 within Naval Base Charleston. Figure 5-19 locates the AOC within Building 187.

5.19.2 Waste Characteristics

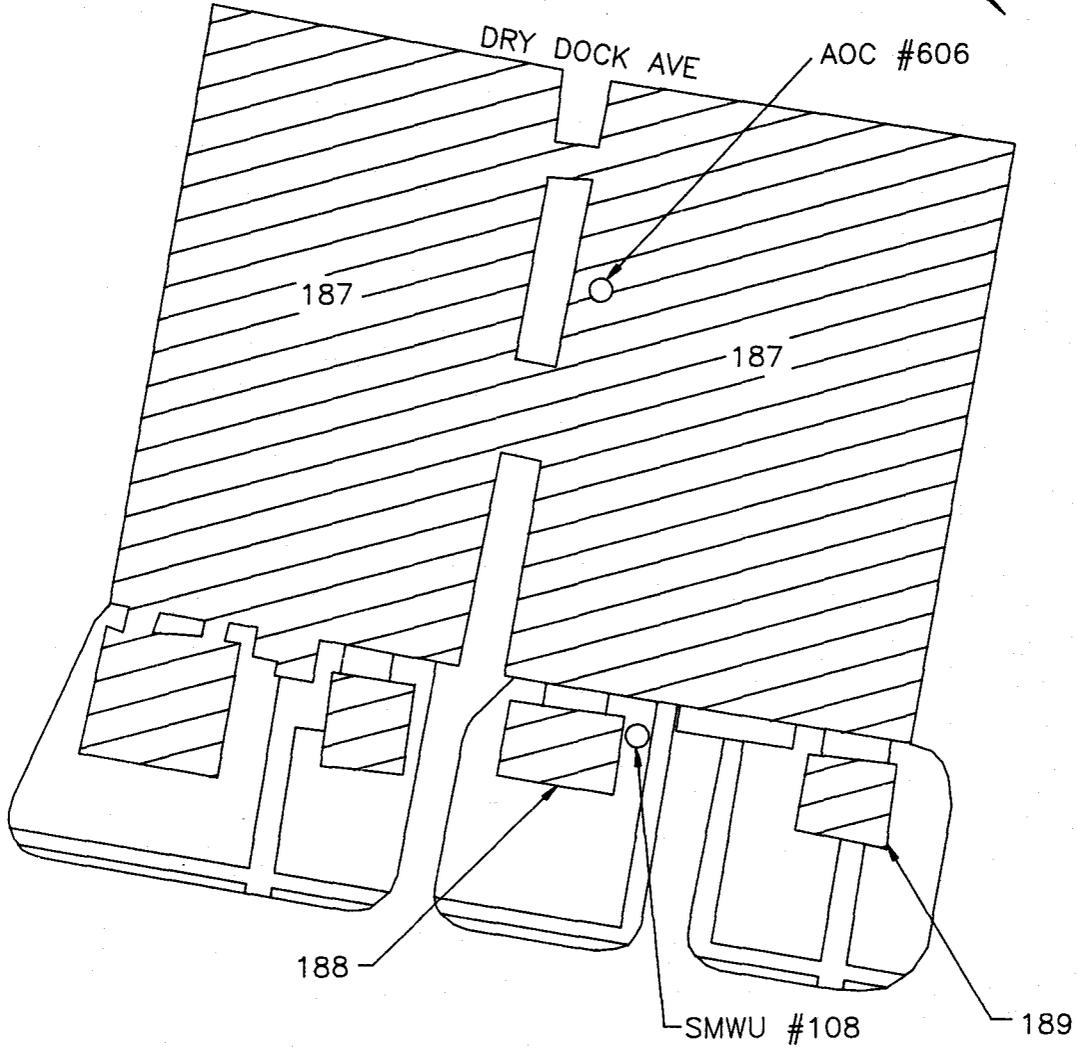
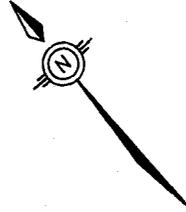
Paints used at AOC #606 include enamel 5, gray enamel aerosol, lacquer white aerosol, yellow enamel aerosol, blue enamel aerosol, gray 26187 TT-E-490, gray 26373 TT-E-529F, enamel, formula 150 epoxy, lacquer, latex, and vinyl. All of these paints are RCRA Hazardous Waste Number D001 except for latex, which is RCRA Hazardous Waste Number 6666. Solvents/thinners used at AOC #606 include methyl ethyl ketone and naphtha (RCRA Hazardous Waste Number F005), and methyl isobutyl ketone (RCRA Hazardous Waste Number F003).

5.19.3 Migration Pathways

Because this AOC is located inside Building 187, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this AOC is free of cracks. The primary migration potential is by evaporation of solvents. Although the volume of air emissions has not been quantified, it is expected to be minimal due to limited use of the paint booth.

5.19.4 Evidence of Release

No spill reports, inspection reports, or employee interviews indicate spills at this AOC.



NOT TO SCALE



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5-19
AOC #606
BUILDING 187, PAINT BOOTH

DWG DATE: 05/20/94 | DWG NAME: 27N187

5.19.5 Exposure Potential

This AOC is not close to any residential areas or sensitive environments. Because this AOC is inside and there is lack of evidence of a major release, the potential exposures are limited to Naval Base employees.

5.19.6 Recommended Action

No further investigation of this AOC is recommended due to the lack of evidence of a release from this unit and limited migration pathways.

5.20 AOC #607 — Dry Cleaning, Building 1189

5.20.1 Unit Characteristics

AOC #607 (Building 1189) is the former location of a dry cleaning operation which was in operation from 1942 to 1986. Property records indicate improvements (primarily the removal of dry cleaning equipment) were made in 1986. Since 1986, this facility has been a laundry with two industrial washers and dryers which are operated by the Morale, Welfare and Recreation Division. This building also provided offices for the Fire Prevention and Inspection Division (recently vacated) and space for miscellaneous storage. Based on a 1984 NAPSIS report, this facility operated 8 hrs/day, 5 days/week, 50 weeks/year. The AOC Site Location Map locates Building 1189 within Naval Base Charleston. Figure 5-20 locates the AOC in Building 1189.

5.20.2 Waste Characteristics

Perchloroethylene (PCE) was used in the dry cleaning operations.

5.20.3 Migration Pathways

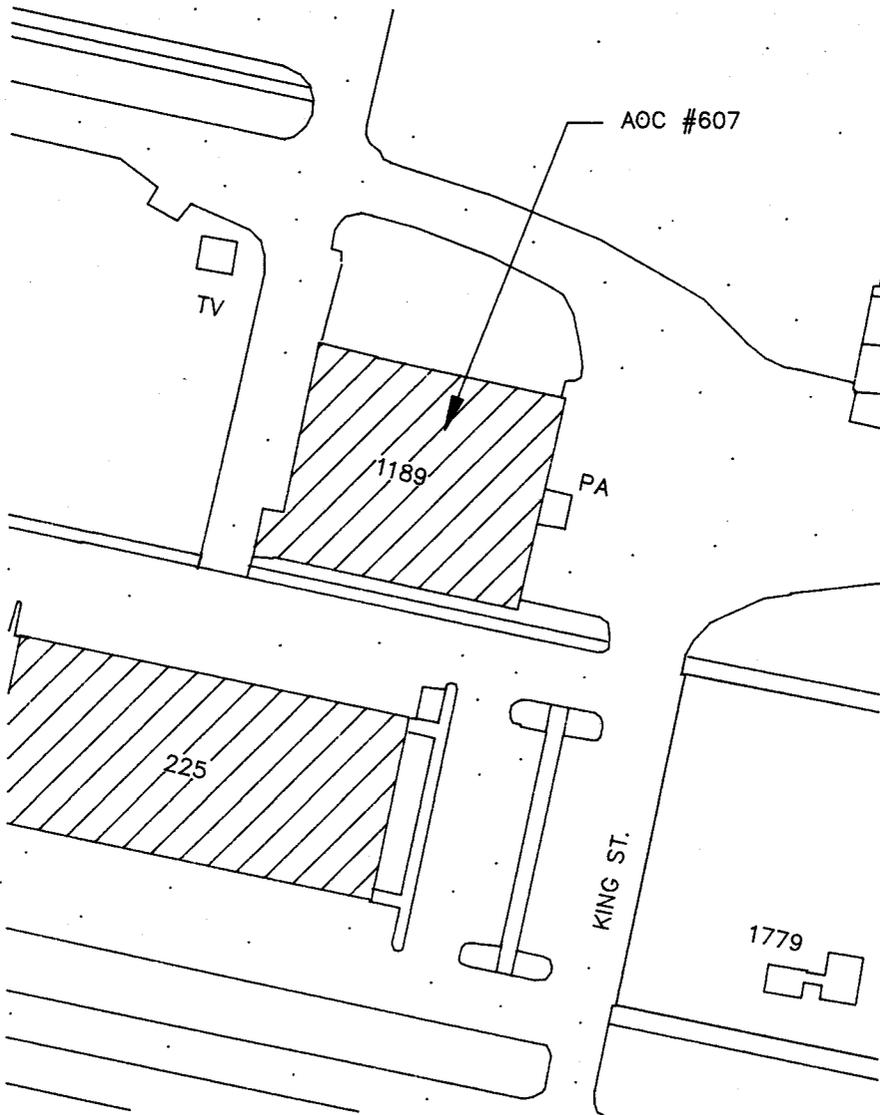
According to a 1984 NAPSIS report, the dry cleaning facility was classified as a minor emitter with documented air emissions of 78.8 tons/year of total hydrocarbons (THCs). All emissions ceased when the dry cleaning operation was dismantled in 1986.

5.20.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observations indicate spills at this AOC.

5.20.5 Exposure Potential

Building 1189 is located approximately 250 feet from the Naval Base boundary. There are residences on the other side of this boundary. Current potential exposures to Naval Base



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FIGURE 5-20
AOC #607
BUILDING 1189, DRY CLEANING

DWG DATE: 05/19/94 | DWG NAME: 29AOC20

employees are minimal. Soil and groundwater are potential migration pathways if releases have occurred.

5.20.6 Recommended Action

A RFI is recommended due to the hazardous characteristics of PCE, the amount of hazardous materials used, and the lack of spill documentation.

5.21 AOC #609 — Service Station, Building 1346

5.21.1 Unit Characteristics

This unit was constructed in 1962 operates as a gasoline station and automotive repair and maintenance shop; and was served by nine steel USTs. Three of the original nine USTs were replaced with fiberglass USTs in 1992. A waste oil UST located at this facility was to have been removed, but there is no record of its removal. The AOC Site Location Map locates Building 1346 within Naval Base Charleston. Figure 5-21 locates the features of Building 1346/AOC #609.

5.21.2 Waste Characteristics

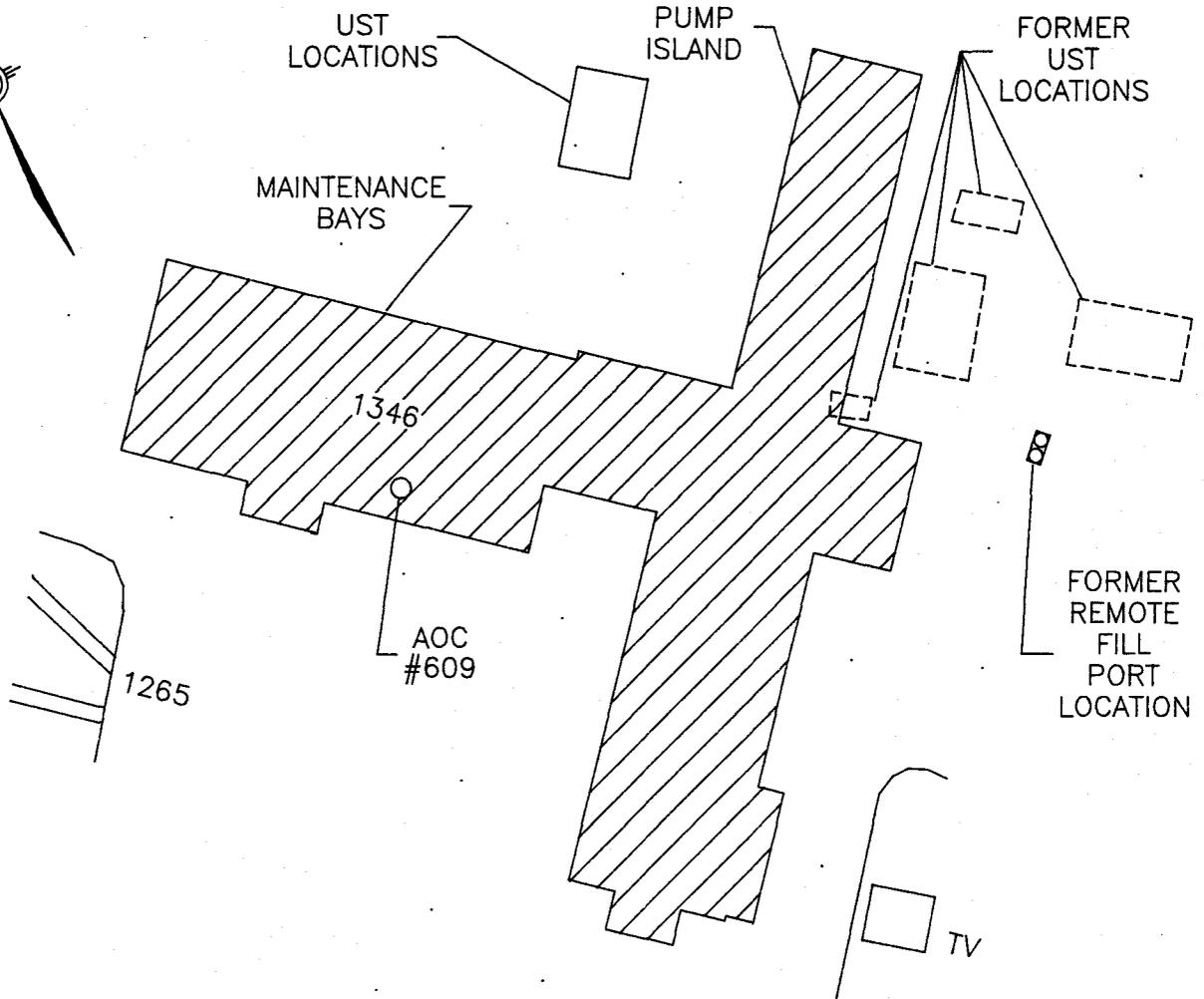
BTEX, heavy fraction petroleum hydrocarbons, and solvents are the primary constituents of concern at this facility.

5.21.3 Migration Pathways

Soil and groundwater are the contaminant migration pathways associated with the leaking USTs. Percolation of petroleum hydrocarbons through the soil may have resulted in impact of the shallow groundwater. Recent soil-gas analyses show presence of contamination, indicating subsurface gas as a likely migration pathway.

5.21.4 Evidence of Release

In 1992, it was determined through hydrostatic testing that three of the service station's USTs were leaking and an undetermined amount of fuel had been released. These tanks and approximately 200 cubic yards of soil were subsequently removed. During the removal of USTs from this facility, workers reported the presence of a strong petroleum odor. The excavated soil was analyzed for total petroleum hydrocarbons (TPH), benzene, toluene, ethyl benzene, xylenes (BTEX), and lead. Analyses indicated the presence of both TPH and BTEX, but lead concentrations were below detection limits.



NOT TO SCALE



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FIGURE 5-21
AOC #609
BUILDING 1346, GAS STATION

DWG DATE: 05/19/94 | DWG NAME: 29AOC22

An organic vapor survey of the area around the tanks identified several samples containing high concentrations of organic vapor and strong odors. These samples were collected and analyzed at 2-foot intervals to a depth of 6 feet. Indications of downgradient impact in excess of 1000 ppm were recorded at each interval. On July 13, 1987, a sheen on the water in a nearby manhole was also noted by workers.

CNSY Fire Inspector Boyd stated that an undetermined amount of fuel was released from the USTs (no date specified) which impacted the surrounding soil, remarking that vegetation as much as 200 feet away "turned yellow." The surrounding vegetation is primarily grasses, which have a shallow root system and would therefore indicate surface migration of contaminants. Additional cleanup procedures were reportedly initiated but do not appear to have been completed.

5.21.5 Exposure Potential

This site is not close to any residential areas or sensitive environments, although service station/minimart employees may have been exposed.

5.21.6 Recommended Action

Due to the evidence of past releases and lack of a thorough assessment of the potential hazards associated with these releases, a RFI is recommended.

5.22 AOC #610 — Paint Booth, Building 241

5.22.1 Unit Characteristics

AOC #610 is a wet filter type spray booth used for spraying all types of material-handling equipment. The spray booth is included on the Bureau of Air Quality Control Permit 0560-0002 and is designated as company point 29. AOC #610 was constructed in 1987. The AOC Site Location Map locates the AOC within Naval Base Charleston. Figure 5-22 locates the AOC in Building 241.

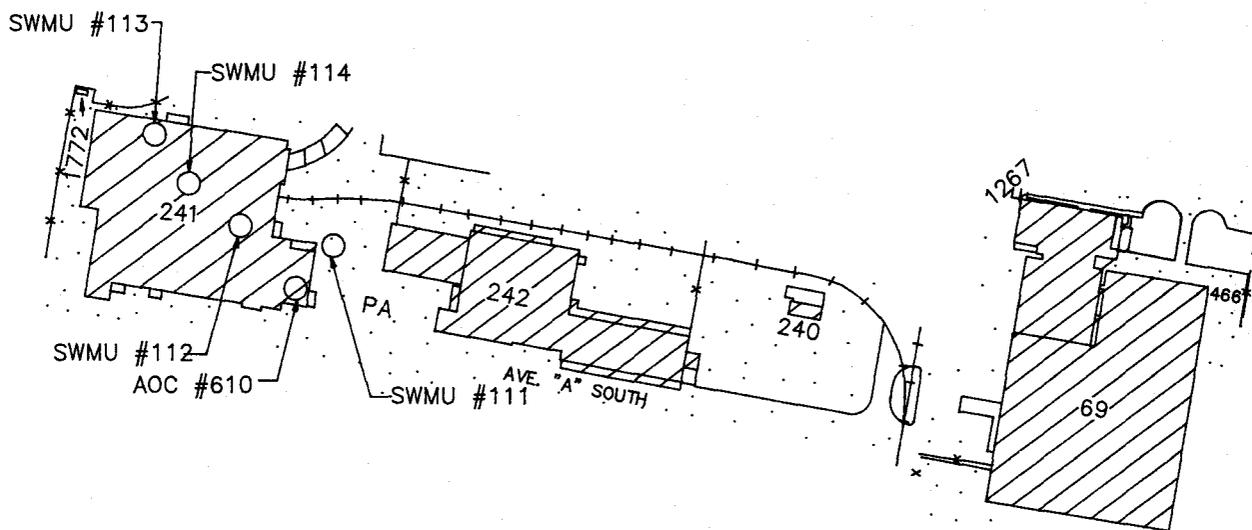
The approximate size of the spray booth is 30'x 16'x 16'. The spray booth has a 22-foot high stack with a 6 x 4 foot diameter. The stack is not equipped with continuous emission monitors. The spray booth is the only emissions generating point that exhausts from this stack. The normal operating schedule is 4 hours/day, 1 day/week, and 52 weeks/year (208 hours/year).

5.22.2 Waste Characteristics

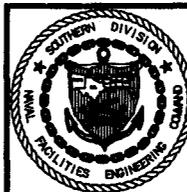
Enamel alkyd gloss, epoxy 5A, epoxy 5B, butyl alcohol, and naphtha are used at this AOC. The major constituents of concern are volatile organic compounds and metals.

5.22.3 Migration Pathways

Because AOC #610 is located inside Building 241, soil, groundwater, and surface waters are unlikely pathways. The paint spray booth is a source of air emissions. The following are air emission data for the materials used:



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 5-22
AOC #610
BUILDING 241, PAINT BOOTH

DWG DATE: 05/19/94 | DWG NAME: 29AOC14

TOTAL ACTUAL EMISSIONS AOC #610			
Material Type	VOC (lbs/hr; tpy)	PM (lbs/hr; tpy)	HAP (lbs/hr; tpy)
Enamel Alkyd	3.73/0.39	0.21/0.02	0.00/0.00
Epoxy 5A	0.78/0.08	0.06/0.01	0.00/0.00
Epoxy 5B	0.59/0.06	0.06/0.01	0.02/0.003
Butyl Alcohol	0.97/0.10	0.00/0.00	0.00/0.00
Naphtha	1.02/0.11	0.00/0.00	0.00/0.00

Notes:

- VOC — Volatile Organic Compound
- HAP — Hazardous Air Pollutant
- PM — Particulate Matter
- tpy — ton per year

5.22.4 Evidence of Release

No spill reports, inspection reports, or employee interviews indicate spills at this AOC. However, paint residue was present in the spray booth area inside Building 241.

5.22.5 Exposure Potential

Building 241 is not close to any residential areas. The Cooper River is approximately 1200 feet from Building 241. Naval Base employees may be exposed to air emissions from the spray booth activities.

5.22.6 Recommended Action

No further investigation of this AOC is recommended due to limited exposure potential and limited migration pathways.

5.23 AOC #614 — Paint Booth, Building 242

5.23.1 Unit Characteristics

AOC #614 is a wet filter type paint spray booth used for automotive refinishing. The unit is no longer operational. The spray booth has a 48-foot high stack with a 42-inch diameter. The stack is not equipped with continuous emission monitors. The spray booth is the only emissions-generating point that exhausts from the stack. When in operation, the normal operating schedule was 8 hours/day, 1 day/week, and 52 weeks/year (416 hours/year). The area is currently used for storage of non-hazardous items. Figure 5-23 locates the AOC within Building 242.

5.23.2 Waste Characteristics

It is not known what paints and solvents were used. The major constituents of concern are expected to be volatile organic compounds and metals.

5.23.3 Migration Pathways

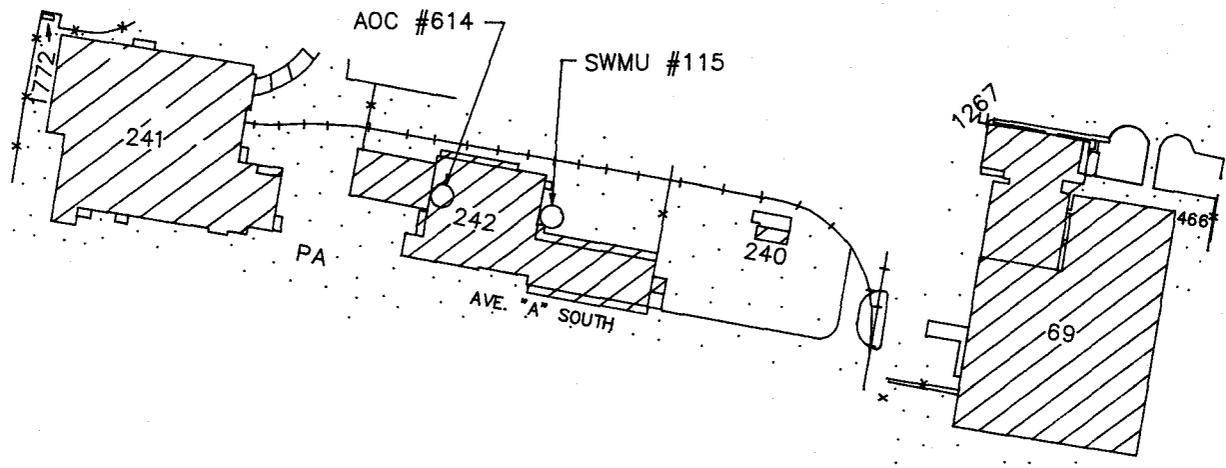
Because AOC #614 is located inside Building 242, soil, groundwater, and surface waters are unlikely pathways. The spray booth was a source of air emissions when in operation; however, air emission data are unavailable.

5.23.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or visual observation indicate spills at this AOC.

5.23.5 Exposure Potential

Building 242 is not close to any residential areas. The Cooper River is approximately 1200 feet from Building 242. Because the unit is no longer operational and there is no evidence of a release, potential exposure to Naval Base employees is minimal.



NOT TO SCALE



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FIGURE 5-23
AOC #614
BUILDING 242, PAINT BOOTH

5.23.6 Recommended Action

No further investigation of this AOC is recommended due to limited exposure potential and limited migration pathways.

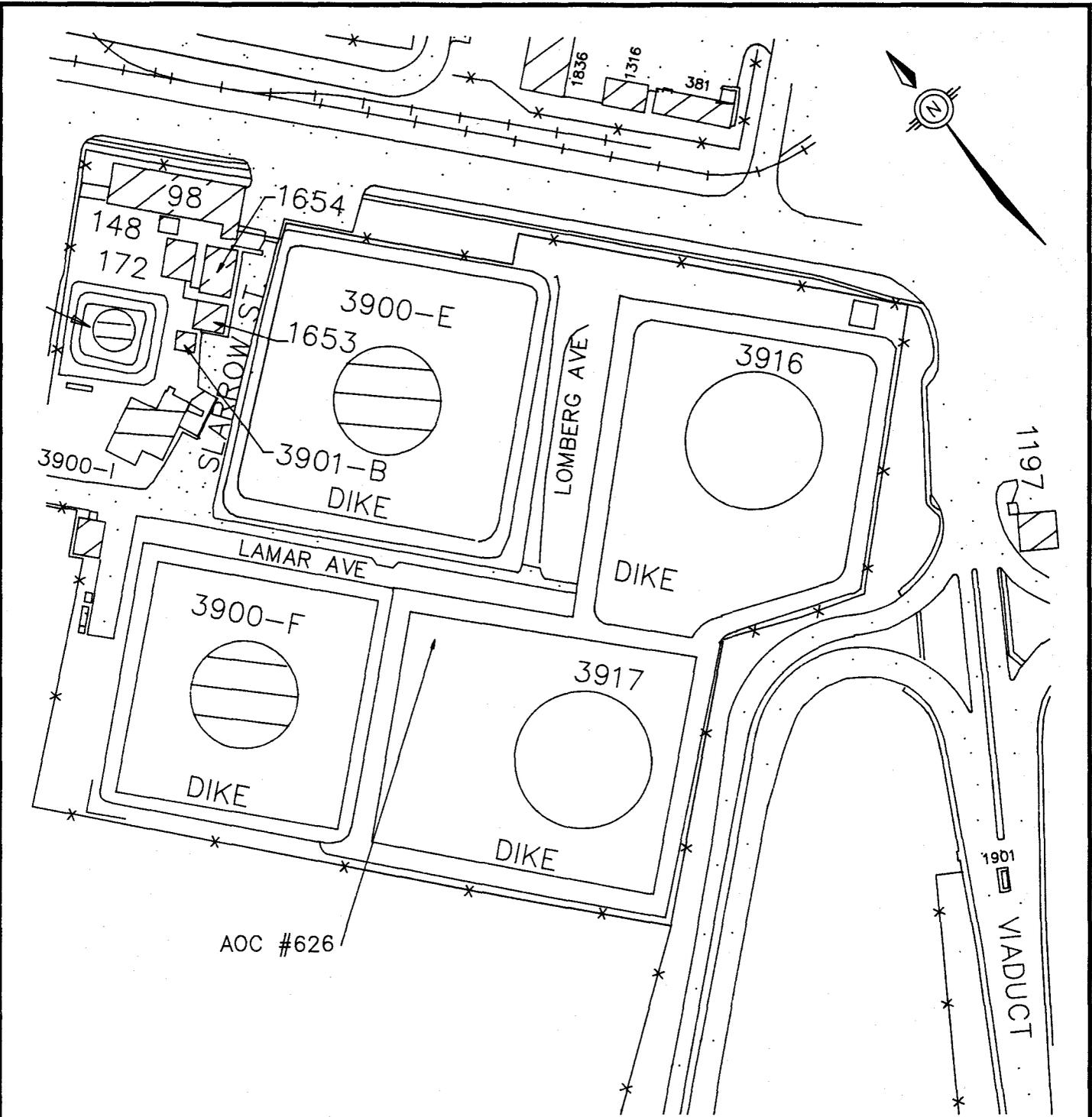
5.24 AOC #626 — Charleston Naval Supply Center Fuel Farm

5.24.1 Unit Characteristics

This AOC is the on-base fuel farm and is made up of several units designed for the storage and transfer of both virgin and waste petroleum products: Building #98 is a fuel oil booster pump house, Building Numbers 133 and 172 are operational storage buildings, Facility Numbers 3900E and 3900F are 2,350,000-gallon diesel oil tanks, Facility #3901A is a 103,000-gallon waste oil tank, Facility #3901B is the waste oil pumphouse, and Facility Numbers 3616 and 3917 are 4,200,000-gallon diesel oil tanks installed around 1992, replacing former 3900G and 3900H, respectively. Storage tanks 3900F and 3917 are currently empty. The AOC Site Location Map locates the unit within Naval Base Charleston. Figure 5-24 locates the facilities within the AOC. The unit was designed to store large quantities of petroleum products and the tanks are situated inside earthen secondary containment dikes. Also associated with this unit, but used very infrequently, are Facility Numbers 148 (stripper tank, capacity unknown), 39L (steel, 6500-gallon above-ground tank, contents unknown), and 39M (diesel fuel pump house). The capacity of the containment dikes was not substantiated during the document search.

Also addressed as part of this unit is the underground fuel line used to transfer product between the storage tanks and Piers Kilo and Lima. The fuel line is approximately 800 feet long and terminates on both ends into above-ground valve assemblies.

PCBs are another concern of this unit. At least one PCB-containing transformer is located near Building #98. Several reports document regular inspections of this transformer and no mention is made of any releases. A document dated 9 November, 1987, states that the transformer near Building #98 was to be replaced by a non-PCB transformer by 1 October, 1990. No record was found to establish that this action was completed.



BOUNDARY LINE

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FIGURE 5-24
AOC #626
NSC FUEL FARM

5.24.2 Waste Characteristics

The primary concern for this unit is petroleum hydrocarbon wastes. Numerous Environmental Incident Reports were uncovered with accounts of spills ranging from a few gallons to several thousand gallons. Bioremediation efforts were undertaken by KEMRON Environmental Services, Inc. at the earthen containment dikes in approximately 1990. These efforts involved oxygenating subsurface soil using a plow to accelerate microbial decomposition of subsurface petroleum products.

5.24.3 Migration Pathways

Soil is a viable migration pathway due to past releases, as is groundwater migration caused by the saturation of soil with petroleum products and break-through to the water table. Subsurface gas offers another potential migration pathway.

5.24.4 Evidence of Release

There have been numerous reports of releases at this site ranging in size from a few gallons to several thousand gallons. It is reported that during demolition of the concrete pads for the former diesel tanks 3900G and 3900H, free-product was encountered and thought to be the result of spills and long-term leaching of petroleum hydrocarbons at the containments. Certificates of Analysis were located stating that samples were taken at the containment dikes for 3900F and 3917/3900H and analyzed for oil and grease. These assays indicated the presence of oil and grease in both of the containments at concentrations of 1.60 mg/L at 3900F containment dike and 1.90 mg/L at 3917/3900H containment dike. The depth at which the samples were collected was unspecified.

S & ME, Inc., an environmental consulting firm, conducted a study to determine the existence of petroleum impact along the underground fuel line between the fuel farm and Piers Kilo and Lima. Samples were collected at 2-foot intervals to the soil/groundwater interface (approximately 6 feet below grade) and assayed using an organic vapor analyzer for preliminary

indication of petroleum impact. Samples were collected approximately 10 feet apart and those with positive readings were submitted to a laboratory for quantitative analysis. These results indicate petroleum impact in the following areas:

- From the above-ground valve assembly at the fuel farm and approximately 200 feet along the fuel line.
- The area from the above-ground valve assembly at Piers Kilo and Lima approximately 100 feet along the fuel line.
- An approximate 125-foot length beginning approximately 200 feet from the above-ground valve assembly at Piers Kilo and Lima along the fuel line toward the fuel farm.

5.24.5 Exposure Potential

Exposure to airborne constituents at this unit can occur during procedures in which subsurface petroleum is exposed at this site (e.g., removal of concrete pads, monitoring well installation). Dermal contact may also occur to workers at this unit.

5.24.6 Recommended Action

Due to the evidence of past releases and lack of a thorough assessment of the potential hazards associated with these releases, a RFI is recommended.

5.25 AOC #652 — Paint Booth, Building 636

5.25.1 Unit Characteristics

AOC #652 is a dry filter type paint spray booth used for automotive refinishing. The spray booth is included on the Bureau of Air Quality Permit Number 0560-0002, and is designated as company point ID Number 20. The spray booth was constructed in September of 1984.

There is a 22-foot high stack associated with the spray booth. The stack inside diameter is 3 feet. The stack exit gas velocity is 27,750 cfm. The spray booth is the only emissions generating point that exhausts from this stack. The stack is not equipped with continuous emission monitors; however, there is emission control equipment consisting of filters and tight seal. The particulate matter removal efficiency is 98 percent.

The normal operating schedule is 3 hours/day, 3 days/week, and 50 weeks/year (450 hours/year). All materials used are stored in 1-gallon containers.

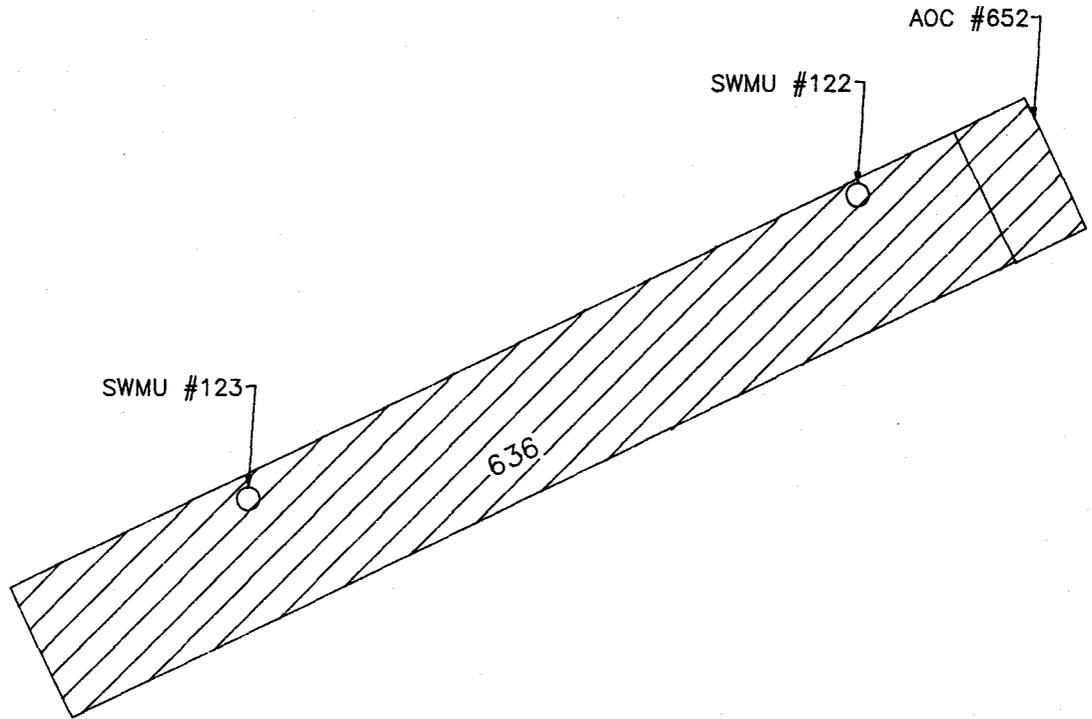
The AOC Site Location Map locates Building 636 within Naval Base Charleston. Figure 5-25 locates the AOC within Building 636.

5.25.2 Waste Characteristics

The following VOC-containing materials are used: lacquer thinner, all purpose thinner, reducer, reactive reducer, acrylic enamel reducer, and acrylic enamel.

5.25.3 Migration Pathways

Because this AOC is located inside Building 636, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this AOC is free of cracks. The spray booth is a source of air emissions.



NOT TO SCALE



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CHARLESTON, S.C.

FIGURE 5-25
AOC #652
BUILDING 636, PAINT BOOTH

DWG DATE: 05/19/94 | DWG NAME: 27S636A

5.25.4 Evidence of Release

No spill reports, inspection reports, or employee interviews indicate spills at this AOC. However, paint overspray in the vicinity of the spray booth is evident. Paint stripper odors are also noticeable near the spray booth. The following air emission data are available for the spray booth:

TOTAL ACTUAL EMISSIONS AOC #652			
Material Type	VOC (lbs/hr; tpy)	PM (lbs/hr; tpy)	HAP (lbs/hr; tpy)
Thinner 1	3.19; 0.72	0.00; 0.00	1.60; 0.34
Thinner 2	2.60; 0.58	0.00; 0.00	1.12; 0.26
Reducer 1	1.60; 0.36	0.00; 0.00	0.64; 0.14
Reducer 2	2.12; 0.48	0.08; 0.00	1.12; 0.25
Reducer 3	4.19; 0.94	0.00; 0.00	0.63; 0.14
Enamel 1	4.22; 0.95	0.02; 0.004	2.87; 0.65

- Notes:**
 VOC — Volatile Organic Compound
 PM — Particulate Matter
 HAP — Hazardous Air Pollutant
 tpy — ton per year

5.25.5 Exposure Potential

This AOC is not close to any residential areas or sensitive environments. The lack of evidence of a release and restricted migration pathways limits potential exposures to Naval Base employees.

5.25.6 Recommended Action

No further investigation of this AOC is recommended due to the lack of evidence of a release from this unit, and limited migration pathways.

5.26 AOC #653 — Hobby Shop, Building 1508

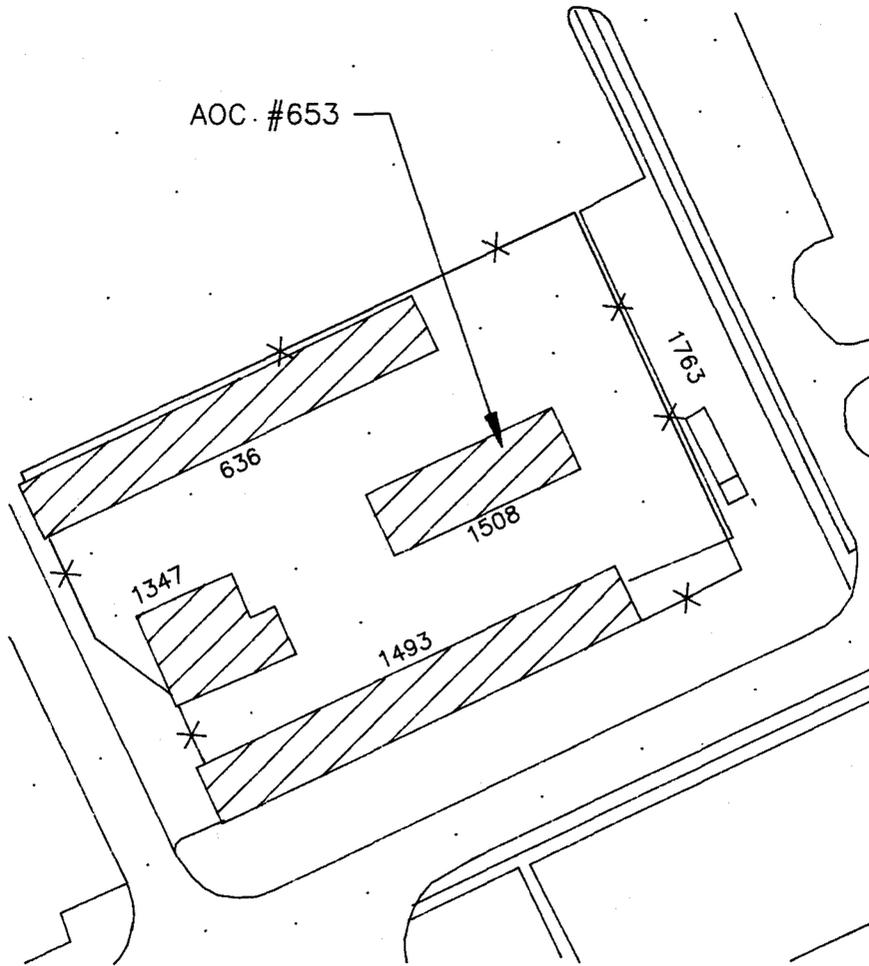
5.26.1 Unit Characteristics

AOC #653 is the Morale, Welfare, and Recreation Department hobby shop. The hobby shop was constructed in 1972. It is used for both civilian and military personnel to perform maintenance on their vehicles. The hobby shop has also been used for steam cleaning, painting, and miscellaneous automotive repairs. The AOC Site Location Map locates Building 1508 within Naval Base Charleston. Figure 5-26 locates the AOC within Building 1508.

Building 1508 is constructed of cinder block walls, a metal roof, and a concrete floor. The paint on the building is in poor condition. There are two hydraulic lifts inside the building, and one outside. A two-bay car wash is attached to the building. Three steel 40-gallon hydraulic fluid storage tanks (approximately 22 years old) are present at the facility. These tanks operate the hydraulic jack located at the north end of the facility. One of the tanks is underground. According to Bubba Gusta, the facility manager, this tank leaks severely. He estimated that 100 gallons of hydraulic fluid may have leaked from this tank in the past year (1993). Use of this tank has been discontinued (date unknown), and is still onsite. No floor drains or sumps are known to be present or to have been present on the property. Potable water for Building 1508 is supplied by the Charleston Commission of Public Works. According to the 1983 Initial Assessment Study of Naval Base Charleston, Charleston, South Carolina by Environmental Science and Engineering, Inc., Building 1508 was constructed on fill material.

5.26.2 Waste Characteristics

Materials used at Building 1508 include CC92 Parts Cleaner, CC13 Liquid H-Press Wash Compound Carwash, Spray Wax KO Number 303, Hi-Foam, CC18 Hot Tank Cleaner, Freon, glass cleaner regular, and detergent-general purpose. Other materials stored include oily rags, empty oil cans, and oil-dry compound. The major constituents of concern are volatile organic compounds and petroleum hydrocarbons.



NOT TO SCALE



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FIGURE 5-26
AOC #653
BUILDING 1508
MWR HOBBY SHOP

DWG DATE: 05/19/94 | DWG NAME: 29AOC30

5.26.3 Migration Pathways

Soil, groundwater, and surface runoff are migration pathways. Wastewater and sanitary wastes from Building 1508 are discharged to the North Charleston Sewer District sanitary sewer system.

5.26.4 Evidence of Release

According to a Zone Inspection Report for Zone 22, dated 7-31-91, excessive oil residue was present on the pavement in the vicinity of the hydraulic lifts and the spray wash areas. Oil residue had soaked into the asphalt and could not be cleaned by absorbent material. Oil stains, in general, are present in and around Building 1508. Petroleum odors are evident.

5.26.5 Exposure Potential

This AOC is not in close proximity to any residential areas or sensitive environments. Workers who frequent this area may be exposed.

5.26.6 Recommended Action

Due to the evidence of past releases and lack of a thorough assessment of the potential hazards associated with these releases, a RFI is recommended.

5.27 AOC #662 — Former Gasoline Station, Building NS-54

5.27.1 Unit Characteristics

AOC #662 is a former service station and is currently being used as a non-hazardous material storage area. The AOC Site Location Map locates Building NS-54 within Naval Base Charleston. Figure 5-27 depicts a larger scale drawing of the AOC.

The facility served as a gas station from its construction in 1958 until it was converted to storage space. The date of this conversion is unknown. Communications with the point-of-contact suggested the presence of two unregistered steel USTs. The size, containment, corrosion protection, and removal/closure details are unknown. Records also indicate that this area was once the site of a billeting office; date and description of this structure are unknown.

5.27.2 Waste Characteristics

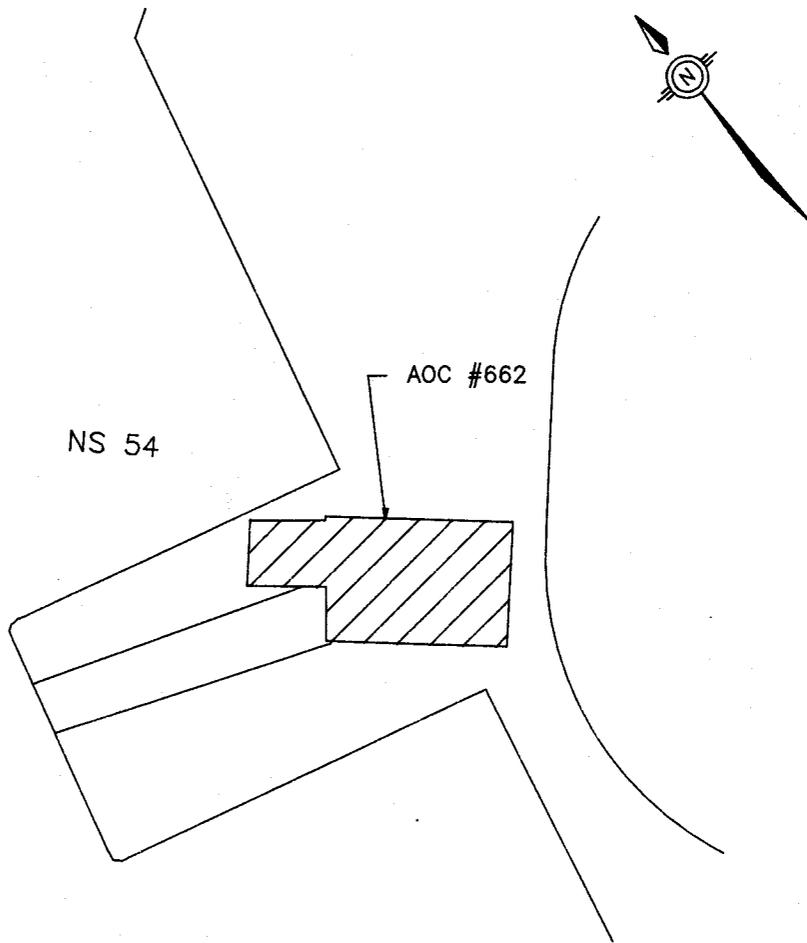
AOC #662 is the location of two potential USTs reportedly used for the storage of gasoline. Contaminants associated with this AOC would include petroleum hydrocarbons and possibly lead.

5.27.3 Migration Pathways

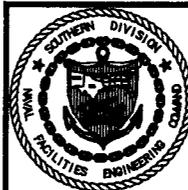
If contamination is present as a result of leaking USTs or associated piping, soil and groundwater would likely be the primary routes of contaminant migration. Petroleum hydrocarbons present in the vapor phase would be a distinct possibility, especially if the gas were to become trapped under a relatively impermeable cap such as asphalt or a building foundation.

5.27.4 Evidence of Release

No spill reports, inspection reports, employee interviews, or physical evidence confirmed that a release had occurred at this AOC.



NOT TO SCALE



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FIGURE 5-27
AOC #662
BUILDING NS-54
FORMER GAS STATION

DWG DATE: 05/19/94 | DWG NAME: 27SNS54

5.27.5 Exposure Potential

This AOC is not in close proximity to any residential areas or sensitive environments. If contamination is present, the greatest risk posed would be to site workers whose job may require excavating in the area.

5.27.6 Recommended Action

There is no evidence of a release from this AOC; however, a RFI is recommended due to the nature of the materials stored and the manner in which the materials were stored.

5.28 AOC #667 — CBU-412 Vehicle Maintenance Area

5.28.1 Unit Characteristics

AOC #667 is an area associated with Building 1776 used for the routine maintenance of automotive and heavy equipment. The maintenance includes oil changes and repair of hydraulic parts from the equipment. The AOC Site Location Map locates Building 1776 within Naval Base Charleston. Figure 5-28 depicts the location of AOC #667 in relation to Building 1776.

AOC #667 is a two-story brick structure. On the east side of Building 1776 is an oil/water separator. There is a 550-gallon portable storage tank that is used to store waste oil. Building 1776 was built in 1971; however, the date of initial operation of AOC #667 is unknown.

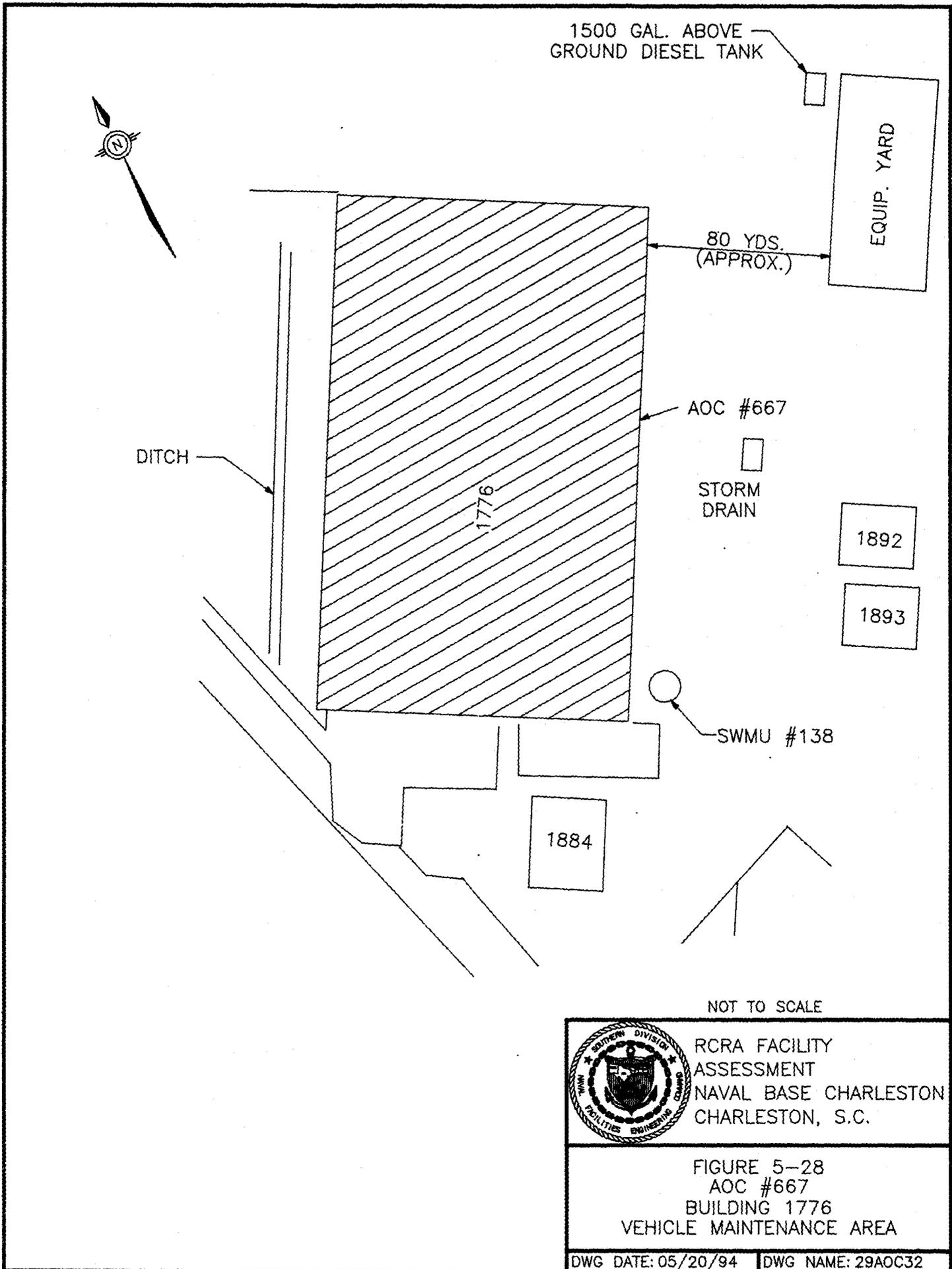
The routine maintenance of automotive and heavy equipment is the only activity that has occurred. When necessary, the oil/water separator is pumped dry and steam cleaned. When the 550-gallon portable storage tank is full, the used oil is transferred to the DRMO for reuse.

5.28.2 Waste Characteristics

Transmission fluid, anti-freeze, and engine oil are used in AOC #667 (all stored in 65-gallon metal dispensers). Other hazardous materials used at this facility that could enter the waste stream include starting fluid, isopropyl alcohol, corrosion inhibitor, windshield solvent, silicone brake fluid, diesel fuel conditioner, grease, degreaser, and propane. A Zone Inspection Report dated 7-2-91 reports that used automobile batteries were stored outside the building exposed to the elements.

5.28.3 Migration Pathways

The ground surface surrounding AOC #667 is covered with asphalt. No cracks were observed in the asphalt and it is possible that the asphalt would inhibit the migration of contaminants to the underlying soil and groundwater should a release occur. The asphalt is not a totally



impermeable barrier however, and the possibility exists that media under the asphalt surface could be affected. A storm drain located immediately to the north of the maintenance area does receive runoff from the AOC which could potentially impact the Cooper River.

5.28.4 Evidence of Release

Oil and paint stains were noticed in and around Building 1776. Stormwater flows to the north into a storm drain in the paved area of the CBU-412 compound. A Zone Inspection Report (7-9-93) reports that several oil spills have been left unattended.

Waste oil from the 300-gallon waste oil tank was sampled on 6-30-88 and analyzed for flash point (failed at 80°F) and chromium (39 ppm). The waste oil was also sampled on 11-9-89 and analyzed for flash point (>140°F), total halogens (0.05 wt%), pH (7.00 @ 19 C), arsenic (<1.00 ppm), cadmium (0.58 ppm), chromium (1.98 ppm), and lead (6.65 ppm).

5.28.5 Exposure Potential

This AOC is not in close proximity to any residential areas. Releases from this AOC could affect site workers and potentially impact the Cooper River if allowed to enter the storm drain system.

5.28.6 Recommended Action

Due to evidence of past releases and a lack of thorough assessment of the potential hazards associated with these release, a RFI is recommended.

5.29 AOC #677 — Grounds, Building NS-2

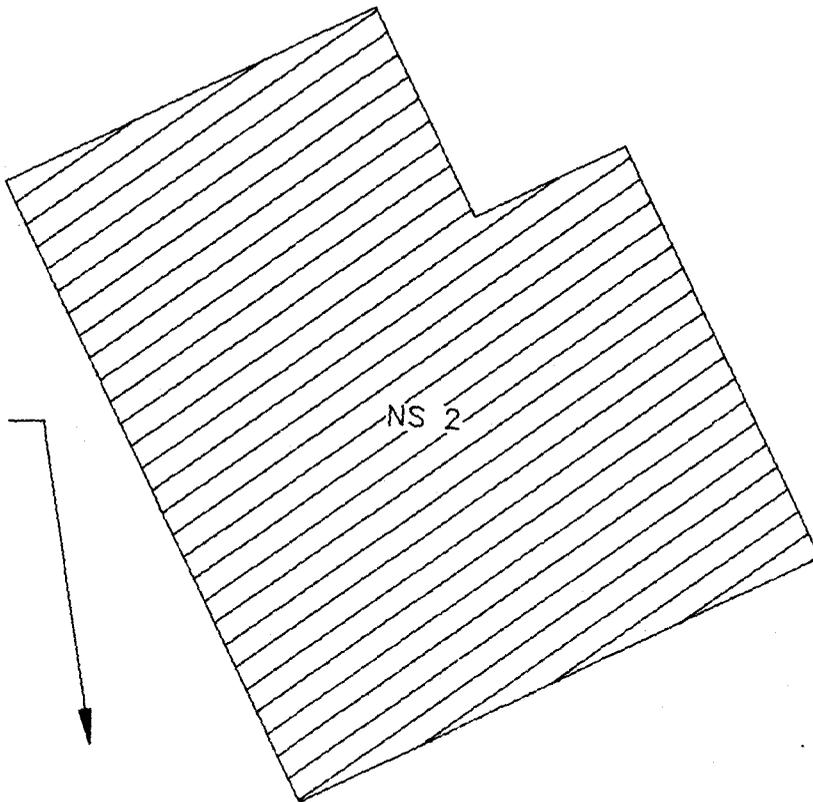
5.29.1 Unit Characteristics

AOC #677 is the ground surrounding Building NS-2, a former electrical (boiler) substation with an adjacent 25,000-gallon fuel underground storage tank. This facility operated from 1958 until 1992. The AOC Site Location Map locates Building NS-2 within Naval Base Charleston. Figure 5-29 locates the AOC within Building NS-2.

NS-2 originally housed a pair of Superior brand boilers. Two larger York-Shipley boilers were installed in 1977. The new boilers were fueled by an adjacent number 5 fuel oil UST and each have an exhaust stack approximately 28 feet high and 28 inches in diameter. In 1979, the boilers' sump pump discharge was diverted to the sanitary sewer system through an oil/water separator.

To provide back up power/support, the boiler house was connected to the base's main steamline in 1990, thus connecting the central powerplant with several other facilities. In 1991, the boilers were converted to operate using number 2 fuel oil instead of number 5 in an effort to meet environmental regulations and reduce emissions.

AOC #677 operated under emissions permit 0560-0002, point ID numbers SY023, SY024. The normal operating schedule was 24 hours/day, 7 days/week, 13-28 weeks/year (primarily December through February). The quantity of fuel consumed per year is approximately 261,254 gallons. In 1990, the boilers reportedly operated only 150 hours and were therefore recommended for conversion to the cleaner-burning number 2 fuel oil. The conversion was made in July 1991. In 1992, the building was abandoned and the boilers were classified as being in "dry lay-up", signifying their ability to be easily reactivated if necessary. Details regarding the integrity of the boiler and its systems are unknown.



AOC #677



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FIGURE 5-29
AOC #677
BUILDING NS 2 GROUNDS

NOT TO SCALE

DWG DATE: 05/19/94 DWG NAME: 29AOC23

It is reported that a sea plane refueling operation was once located in the area of AOC #677 many years ago. Details and period of operation are unavailable.

5.29.2 Waste Characteristics

Wastes associated with AOC #677 are petroleum-based products potentially originating from either past sea plane refueling activities in the vicinity of NS-2 or the adjacent 25,000-gallon fuel oil UST or both.

5.29.3 Migration Pathways

Both number 5 and number 2 fuel oils have been utilized at this facility and are potential sources of soil contamination. Any liquid escaping the indoor boiler units would flow into existing floor drains and into the sanitary sewer system. Spills occurring from any overfilling or leakage of the UST would flow into a stormwater catch basin and then into the Cooper River or percolate into the soil, possibly into the shallow groundwater.

Unless reactivated, the boilers offer no airborne migration potential. Detailed emission records from past operations are available in the facility file for Building NS-2.

5.29.4 Evidence of Release

Numerous reports of fuel oil spills (ranging from 3 to 500 gallons) were documented, the earliest being in 1977. Each spill was cleaned up with the application of oil-absorbent material which was then containerized and disposed of as hazardous waste. Spills occurred primarily during tank re-filling by contractor. One spill was the result of a leaking oil line between an oil pump and a boiler.

Waste oils from the boiler house's oil/water separator have been sampled bi-annually and all samples "passed" standard criteria for flash point, pH, total halogens, arsenic, cadmium, chromium, and lead.

Stained soil was observed around the UST fill pots. Subsurface oil or petroleum-based product was also observed during the installation of an electrical duct bank in the immediate vicinity of NS-2. Sources indicate that routine level checks in the adjacent UST do not indicate any loss of product. It is assumed, therefore, that the observed subsurface petroleum is associated with the former sea plane refueling operations.

5.29.5 Exposure Potential

The potential exists for organisms in the Cooper River ecosystem to have been impacted.

5.29.6 Recommended Action

Due to the evidence of past releases and lack of a thorough assessment of the potential hazards associated with these releases, a RFI is recommended.

5.30 AOC #681 — Abrasive Blast Booth, Building 681

5.30.1 Unit Characteristics

AOC #681, which is owned and operated by SIMA, is an abrasive blast booth in Building 681. It is used to blast miscellaneous ship and boiler components. The blast booth is included on the Bureau of Air Quality Control Permit Number 0560-0002, and is designated as company point ID Number 17.

The sandblast unit has a maximum design capacity of 600 lbs. and a normal operating rate of 120 psi. The normal operating schedule is 7 hours/day, 6 days/week, and 52 weeks/year (2184 hours/year). The sandblast unit uses 10,000 to 15,000 lbs. of number 20 grit per year. A cyclone vacuum separator, used to control particulate emissions, is 99.5% effective. It uses approximately 300 dry filters to separate dust from the blasting grit. The dust is directed into a hopper outside of the facility, then emptied into 55-gallon drums and removed as hazardous waste. Aluminum oxide, used as a blasting agent, is recycled through a turbo separator and replaced yearly. The AOC Site Location Map locates Building 681 within Naval Base Charleston. Figure 5-30 locates the AOC within Building 681.

5.30.2 Waste Characteristics

Aluminum oxide is used as the blasting agent. Lead and metal-based paint components could also be potential wastes.

5.30.3 Migration Pathways

Because this AOC is located inside Building 681, soil, groundwater, and surface waters are unlikely pathways. The floor in the vicinity of this AOC is free of cracks. The sandblast unit is a source of particulate matter air emissions. There are 0.0004 lbs/hour and 0.00175 tons/year of particulate matter actual emissions.

SWMU #142

AOC #681

AOC #682

681



NOT TO SCALE



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NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 5-30
AOC #681
BUILDING 681, BLAST BOOTH

DWG DATE: 05/19/94 | DWG NAME: 27S681A

5.30.4 Evidence of Release

No spill reports, inspection reports, or employee interviews indicate the incidence of spills at this AOC. However, some blast residue is evident in the area of the booth. SIMA safety personnel have indicated that the blasting booth and surrounding areas may be lead-contaminated as a result of paint removal operations.

5.30.5 Exposure Potential

This AOC is not close to any residential areas or sensitive environments. The lack of evidence of a release and restricted migration pathways limits potential exposures to Naval Base employees.

5.30.6 Recommended Action

There is no evidence of a release from this unit. However, a RFI is recommended due to the nature of the waste and the design of the unit which may allow migration of any potential releases.

5.31 AOC #682 — Spray Booth, Building 681

5.31.1 Unit Characteristics

AOC #682 is a Devil Bliss Water Wash wet spray booth used by SIMA. The spray booth, installed in 1992, is included on the Bureau of Air Quality Control Permit Number 0560-0002, and is identified as company point ID Number 16. The AOC Site Location Map locates Building 681 within Naval Base Charleston. Figure 5-31 locates the AOC within Building 681.

The spray booth has a maximum design rate of 125 cubic feet/minute air flow, and a normal operating rate of not more than 25% vapor. Dry filters are used to remove particulate matter from the air before being discharged through a ventilation stack.

The normal operating schedule is 6 hours/day, 5 days/week, and 52 weeks/year (1560 hours/year). The dry filters are replaced on a yearly or as-needed basis, and are disposed of as hazardous waste. On 1-26-94, AOC #682 was observed to be in good condition, although some minor paint spills were present.

5.31.2 Waste Characteristics

According to Permit Number 0560-0002, the following VOC-containing materials are associated with AOC #682: epoxy 150, 151, and 152; enamel white, gray, and deck gray; epoxy 1, 2, and 3; enamel 1; naphtha; and butyl alcohol.

5.31.3 Migration Pathways

Because this AOC is located inside a building, no migration potential is expected. The spray booth is, however, a source of air emissions.

SWMU #142

AOC #681

AOC #682

681



NOT TO SCALE



RCRA FACILITY
ASSESSMENT
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 5-31
AOC #682
BUILDING 681, SPRAY BOOTH

DWG DATE: 05/19/94 | DWG NAME: 27S681

5.31.4 Evidence of Release

No spill reports, inspection reports, or employee interviews indicate the incidence of spills at this AOC. The booth area, however, has overspray on the floor, walls, and ceiling. There are minor paint spills (less than one gallon) in the mixing area.

A liquid sample was collected from the spray booth in April 1991 and analyzed for pH (6.64 @ 21°C) and total organic halogen (194 ppb).

5.31.5 Exposure Potential

This AOC is not close to any residential areas or sensitive environments. The lack of evidence of a release and the restricted migration pathways (air emissions) limit the potential exposures to Naval Base employees.

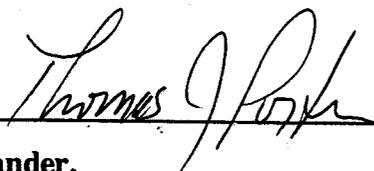
5.31.6 Recommended Action

No further investigation of this AOC is recommended due to the lack of evidence of a release from this unit and limited migration pathways.

6.0 SIGNATORY REQUIREMENT

Condition I.E. of the HSWA portion of RCRA Part B Permit (EPA SCO 170 022 560) states that "All applications, reports, or information submitted to the Regional Administrator shall be signed and certified in accordance with 40 CFR §270.11." The certification reads as follows:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to be the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

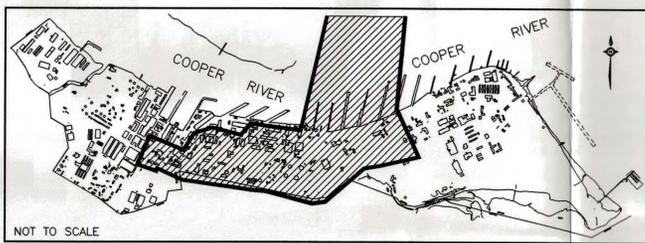


Commander,
Charleston Naval Shipyard

5/31/94

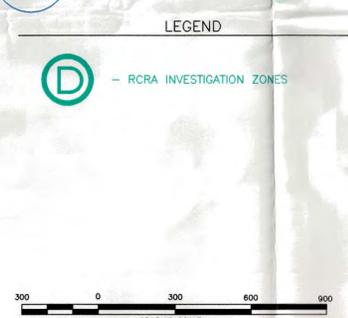
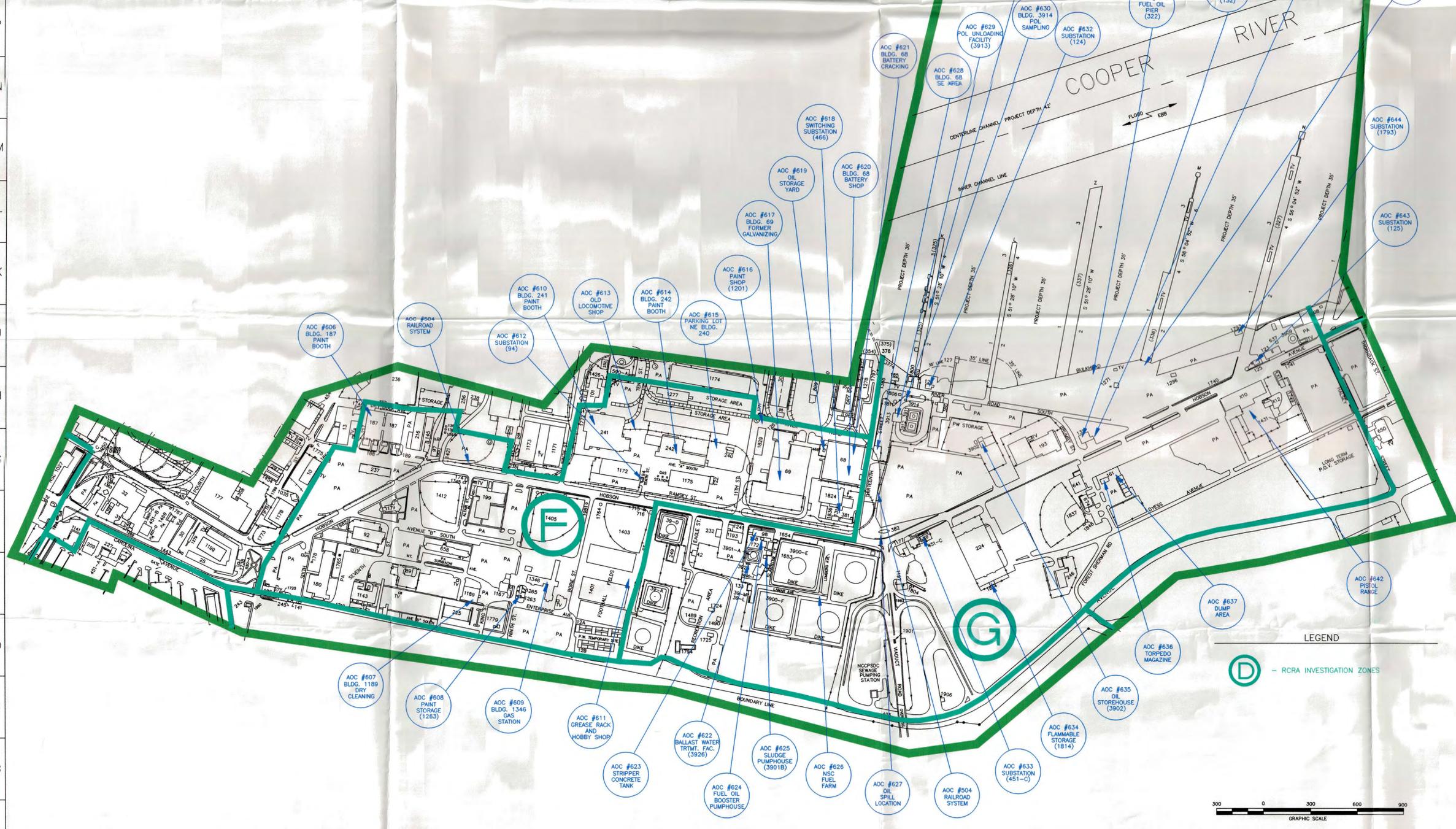
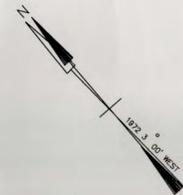
Date

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NAVAL BASE CHARLESTON FACILITY LOCATION MAP

J WATER BODIES

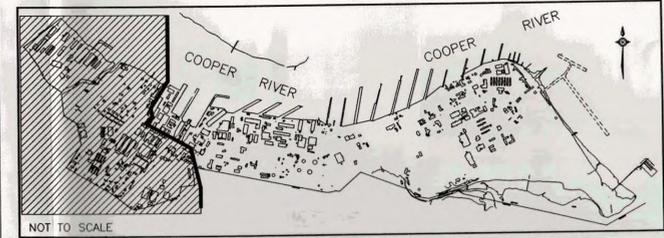
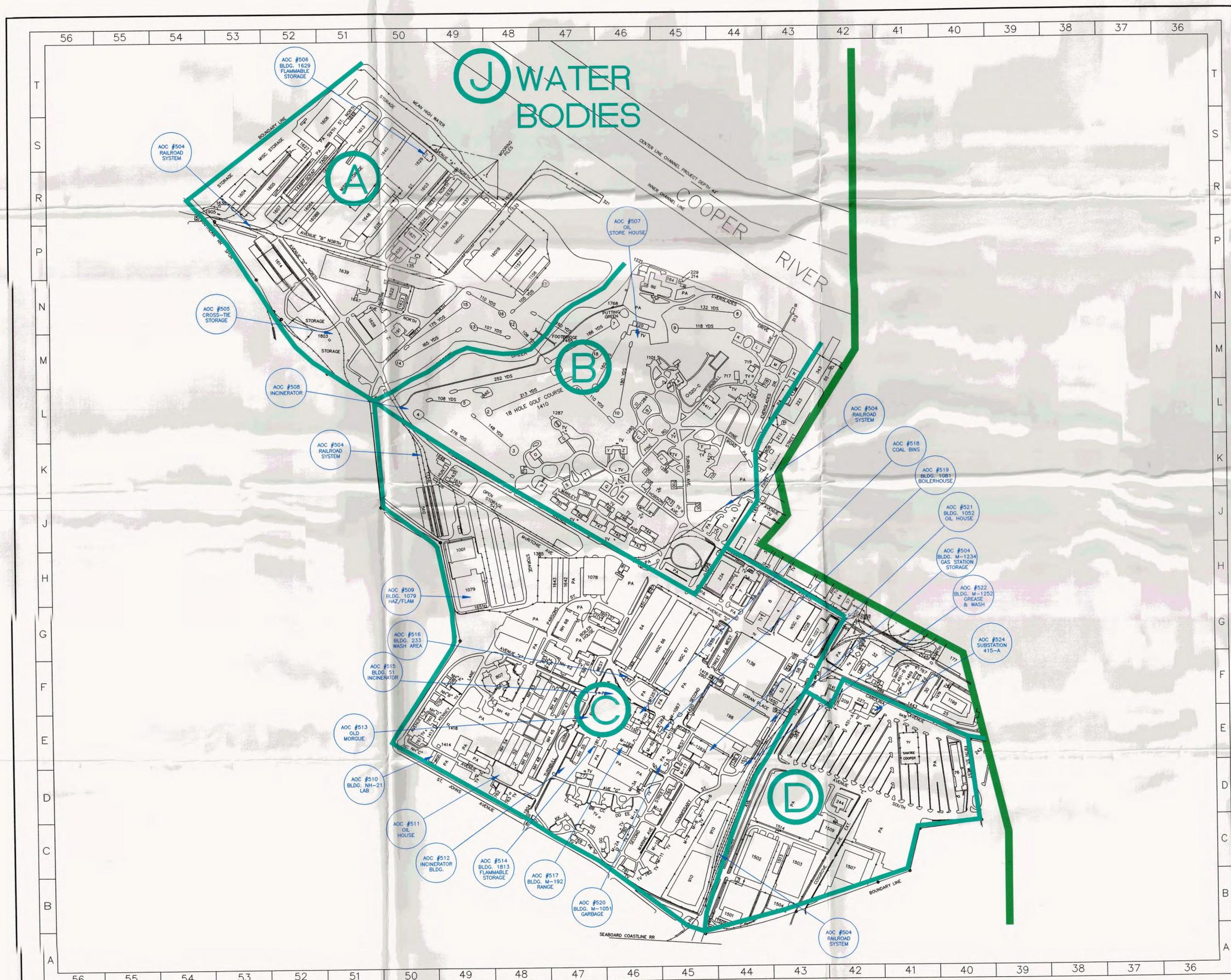


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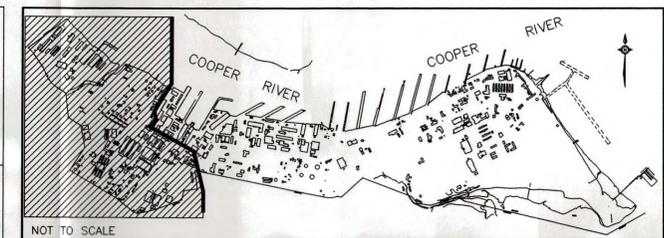


REA WORKPLAN
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

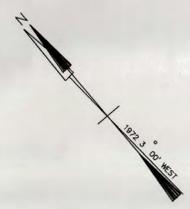
AREA OF CONCERN
SITE LOCATION MAP
ZONES F-G



RF3 WORKPLAN NAVAL BASE CHARLESTON CHARLESTON, S.C.	
AREA OF CONCERN SITE LOCATION MAP ZONES A-D	
Dr by: E.GRIGGS	Tr by: E.GRIGGS
Ck by: E.GRIGGS	App by: E.GRIGGS
Date: 05/17/94	DWG Name: 760SROV1
Sheet 1	Of 1

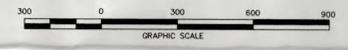


NAVAL BASE CHARLESTON FACILITY LOCATION MAP



LEGEND

D - RCRA INVESTIGATION ZONES



 RFA WORKPLAN NAVAL BASE CHARLESTON CHARLESTON, S.C.	
SOLID WASTE MANAGEMENT UNIT SITE LOCATION MAP ZONES A-D	
Dr. by: E.GRIGGS	Tr. by: E.GRIGGS
Ck. by: E.GRIGGS	App. by: E.GRIGGS
Date: 05/25/94	DWG Name: 760SROV5
Sheet 1	Of 1