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NAVSTA NEWPORT RI
5090.3a

Site Ranking Data Compilation

Naval Education Training Center

Newport, Rhode Island

Northern Division

Naval Facilities Engineering Command

Contract No. N62472-90-D-1298-0136

Contract Task Order 25

May 1994

Halliburton NUS
CORPORATION

INDEX

SITE 01	McAllister Point Landfill
SITE 02	Melville North Landfill
SITE 04	Coddington Cove Rubble Fill
SITE 07	Tank Farm No. 1
SITE 08	NUSC Disposal Area
SITE 09	Old Fire Fighting Training Area
SITE 10	Tank Farm No. 2
SITE 11	Tank Farm No. 3
SITE 12	Tank Farm No. 4
SITE 13	Tank Farm No. 5
SITE 17	Gould Island Electroplating Shop

RISK-BASED PRIORITIZATION OF CLEANUP SITE WORK

SITE: NETC-Newport CERCLA SITE Site 1 McAllister Point Landfill

ANALYTICAL DATA

Pathway	Reference
Groundwater	- See Attached Data Summary Tables - See Phase II RI Data Summary Tables 4-11
Surface Soil	- See Attached Data Summary Tables Sample 1-17 - See Phase II RI Data Summary Tables 4-2
Surface Water	No Samples
Sediment	No Samples
Notes	

QUALITATIVE QUESTIONS

Circle Choice	**Migration Pathway Factor**
1.	Physical evidence and/or analytical data indicate off-site migration.
(2.) G.W.	No current indication of off-site migration, but potential exists.
3.	Present engineering structures and/or physical/chemical properties of detected constituents greatly restrict potential for migration.
Reference	- Phase II RI Data Summary Tables 4-11
Notes	No off site samples Taken

SITE: NETC-Newport CERCLA SITE Site 1

Receptor Factor

Circle Choice	**Groundwater**
1.	Groundwater is currently used for human activities (i.e., drinking, agriculture, recreation).
2.	Groundwater not currently used for human activities (i.e., drinking, agriculture, recreation), but potential exists.
3.	No future potential for groundwater to be used for human activities (i.e., drinking, agriculture, recreation).
Reference	Draft Vol 1 Old Fire Fighting, training Area RI TRC Report March 1994
Notes	Trailer Park wells located south east of base Fig 3-9

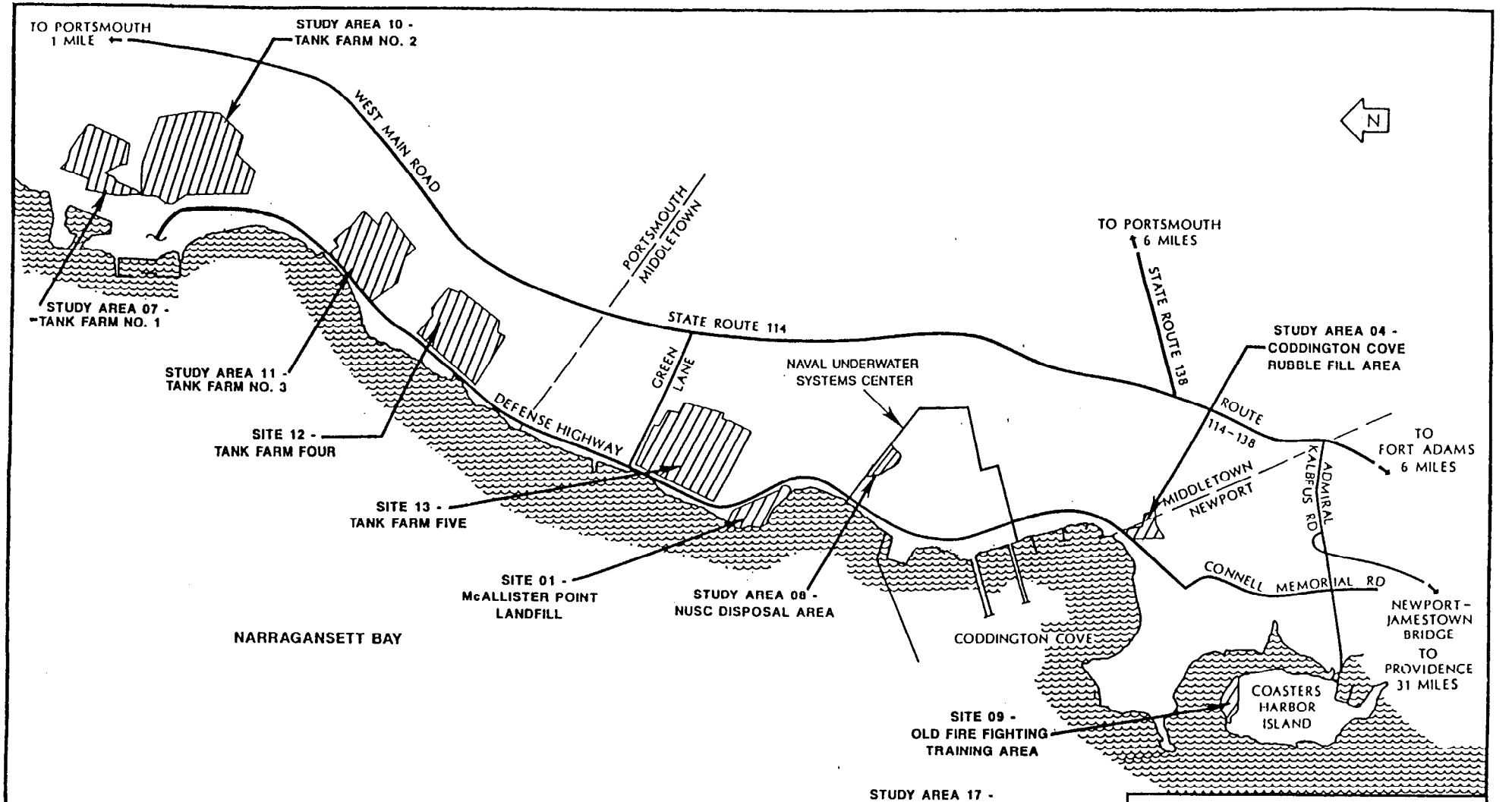
Circle Choice	**Surface Soil** (0 to 6 inches in depth)
1.	Sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) present and/or area routinely used by non-sensitive receptor (i.e., working, training).
2.	Potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area occasionally used by non-sensitive receptors (i.e., working, training)
3.	No potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area not used by non-sensitive receptor (i.e., working, training)
Reference	TRC Report March 1994
Notes	

SITE: NETC-Newport CERCLA SITE Site 1

Circle Choice	**Surface Water**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	Wetland species found at NETC TRC March 1994 p 3-3
Notes	

SITE: NETC-Newport CERCLA SITE Site 1

Circle Choice	**Sediment**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
(2.)	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	See Surface Water
Notes	



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NAVAL EDUCATION AND TRAINING CENTER — NEWPORT RHODE ISLAND

FIGURE 1-2.
NETC RI SITES AND STUDY AREA LOCUS PLAN

Date: 2/94 | Drawing No. 01043-0060

of many species. As a result, the present regional fauna consist primarily of species of wide distribution and ecological tolerances, high adaptability, and nonrestrictive habitat requirements.

No large animals such as deer, turkey, or cougar are known within the boundaries of NETC. However, red fox, raccoon, rabbit, and gray squirrel are present in the woodlands.

Mammalian forms expected to be found on base include: the Eastern chipmunk, New England cottontail rabbit, white-footed mouse, short tailed shrew, gray squirrel, and red squirrel. Several of these species inhabit the few remaining wooded areas on base slated to be excessed.

Various herptiles occupy NETC habitats. Common ones include the red backed salamander, American toad, wood frog, eastern gartersnake, northern black racer and the wood turtle.

Common herptiles of the wet areas include the American toad, spring peeper, bullfrog and northern watersnake (Natrix sipedon), along with the snapping turtle.

Avian species which may be found within the NETC upland habitats include the bobolink, meadowlark, chimney swift, kingbird, eastern phoebe (Sayorius phoebe), barn shallow, red-tailed hawk and kestrel.

In addition, game birds, such as the ring-necked pheasant, bobwhite quail and the mourning dove, are highly dependent on the plant communities on the base.

(IAS, pp. 5-37 to 5-39)

3.1.3 Marine Features

The Narragansett Bay marine features are presented below. Much of the marine features information was obtained from the IAS report, and is referenced as such with page numbers which follow excerpts.

Narragansett Bay occupies three former river valleys which have been drowned by the advance of the Atlantic Ocean. Narragansett Bay is 20 miles long and 11 miles wide. The bay has a surface area of 102 square miles. The shape of the former river valleys has changed little since the last glaciation. The bay is divided into an eastern and western passage by Conanicut Island. The average depth of the bay is 30 feet. In the western passage, the average depth is 25 feet, while in the eastern passage, the average depth is 50 feet. The eastern passage, which NETC fronts, allows deep water access up to the south end of Prudence Island. Channel depth exceeds 80 feet in the eastern

on-site during periods of heavy rainfall. The site shoreline is at an elevation slightly higher than the beach along the bay.

3.3.4 Regional Ground Water Hydrogeology

The regional ground water hydrology for NETC Newport is presented below. Much of the regional information was obtained from the IAS report, and is referenced as such with page numbers which follow the excerpts.

Many areas on Aquidneck Island, on which NETC is located, obtain their water supply from wells. Areas relying on ground water are mostly north of the Middletown area, but there are wells throughout the entire island. Most ground water is used for domestic needs, although some is used by small industries and businesses.

Ground water on Aquidneck Island is obtained from the unconsolidated glacial deposits of till and outwash and from the underlying Pennsylvanian bedrock. Throughout the area, depth to ground water ranges from less than one foot to about 30 feet, depending upon the topographic location, time of year, and character of subsurface deposits. The average depth to the ground water is around 14 feet on Aquidneck Island and moves from areas of high elevations to Narragansett Bay or the Sakonnet River.

Seasonal water level fluctuations are common in the area. These fluctuations range from less than 5 feet to as much as 20 feet on the hills. In the valleys and lowland areas, the fluctuations are generally less than 5 feet. During the late spring and summer, the water table usually declines as a result of evaporation and the uptake of water by plants, and rises during autumn and following winter thaws.

The unconsolidated glacial deposits range in thickness from less than one foot near the rock exposures to about 50 feet throughout Aquidneck Island. Most of the glacial deposits are till, but isolated outwash areas occur. In the NETC area, the glacial deposits are till with a thickness of less than 20 feet. Wells completed in the till are usually dug and range in depth from less than 10 feet to as much as 75 feet. The average depth for these wells is about 20 feet. These dug wells are usually 2 to 3 feet in diameter and are usually dug down to the top of the bedrock.

The yield of till wells varies considerably depending upon the type and thickness of the water-bearing deposits penetrated. Yields range from less than one to as much as 120 gallons per minute. Under normal weather conditions, till wells yield a few hundred gallons of water per day and are adequate for domestic supplies. The large diameter of dug wells also provides substantial water storage area between periods of use. Each foot of water in a 3-foot diameter well represents storage of 53 gallons. However, these wells are subject to going dry during seasonal or unusual droughts.

3.3.7 Area Water Use

Public water in the City of Newport and Town of Middletown is supplied and managed by the Newport Water Department. The Town of Portsmouth purchases water from the Newport Water Department but operates its own distribution system. Approximately two thirds of Portsmouth is serviced by public water with the remaining one third supplied water from private water wells. While no specific records exist as to private well use in the information reviewed, in general, the majority of private wells are reportedly located on the eastern portion of Aquidneck Island (Personal Communication, Town of Portsmouth, 1992).

The Newport Water Department receives its water supply from a series of seven surface water reservoirs located on Aquidneck Island and two surface water reservoirs (Tiverton and Fall River) on the mainland. The seven surface water reservoirs on Aquidneck Island are:

1. Lawton Valley Reservoir,
2. St. Marys Pond,
3. Sisson Pond,
4. Easton North Pond,
5. Easton South Pond,
6. Paradise or Nelsons Pond, and
7. Gardners Pond.

Each of these reservoirs is supplied water via rainfall and runoff and is not augmented by ground water supply wells. The Newport Water Department stated that the safe yield of the reservoir system is approximately 11 to 13 million gallons per day (MGD). Water use in 1991 was 7.07 MGD, and adequate capacity reportedly exists for projected water usage on Aquidneck Island for the next ten to twenty years, or more (Personal Communication, Newport Water Department, 1992). Figure 3-9 indicates the location of surface water reservoirs (Lawton Valley, Sisson Pond, St. Marys Pond, and the Easton North Pond) in the vicinity of the Newport Naval Base.

The Prudence Island Utilities Company supplies ground water to approximately 800 people on Prudence Island, Portsmouth, located east and off-shore of the Melville area.

The locations of known public ground water supply wells and surface water reservoirs within the NETC Newport vicinity are shown on Figure 3-9. The locations of ground water

supply wells were obtained from the February, 1992 RIDEM Ground Water Section Facilities Inventory map for the Prudence Island quadrangle (USGS). The map shows the locations of known public ground water supply wells, in addition to known or suspected sources of ground water contamination. RIDEM Ground Water Section personnel indicated that the location of the supply wells within the Prudence Island Quadrangle had been field verified by RIDEM personnel.

Private wells are reported to withdraw water from till, bedrock, and stratified-drift aquifers. Of these aquifers, bedrock is considered the most reliable source of ground water, and well yields are commonly sufficient for domestic supplies (Johnston, U.S.G.S., undated).

The location, depth, and yield of private bedrock wells in the Newport and Prudence Island Quadrangles are shown on Figures 3-12 and 3-13 as obtained from the IAS report. The IAS report indicated that bedrock wells in the area range from approximately 14 to 1,300 feet deep. Well yields from 55 gallons per minute (GPM) to less than 1 GPM are reported in the IAS report.

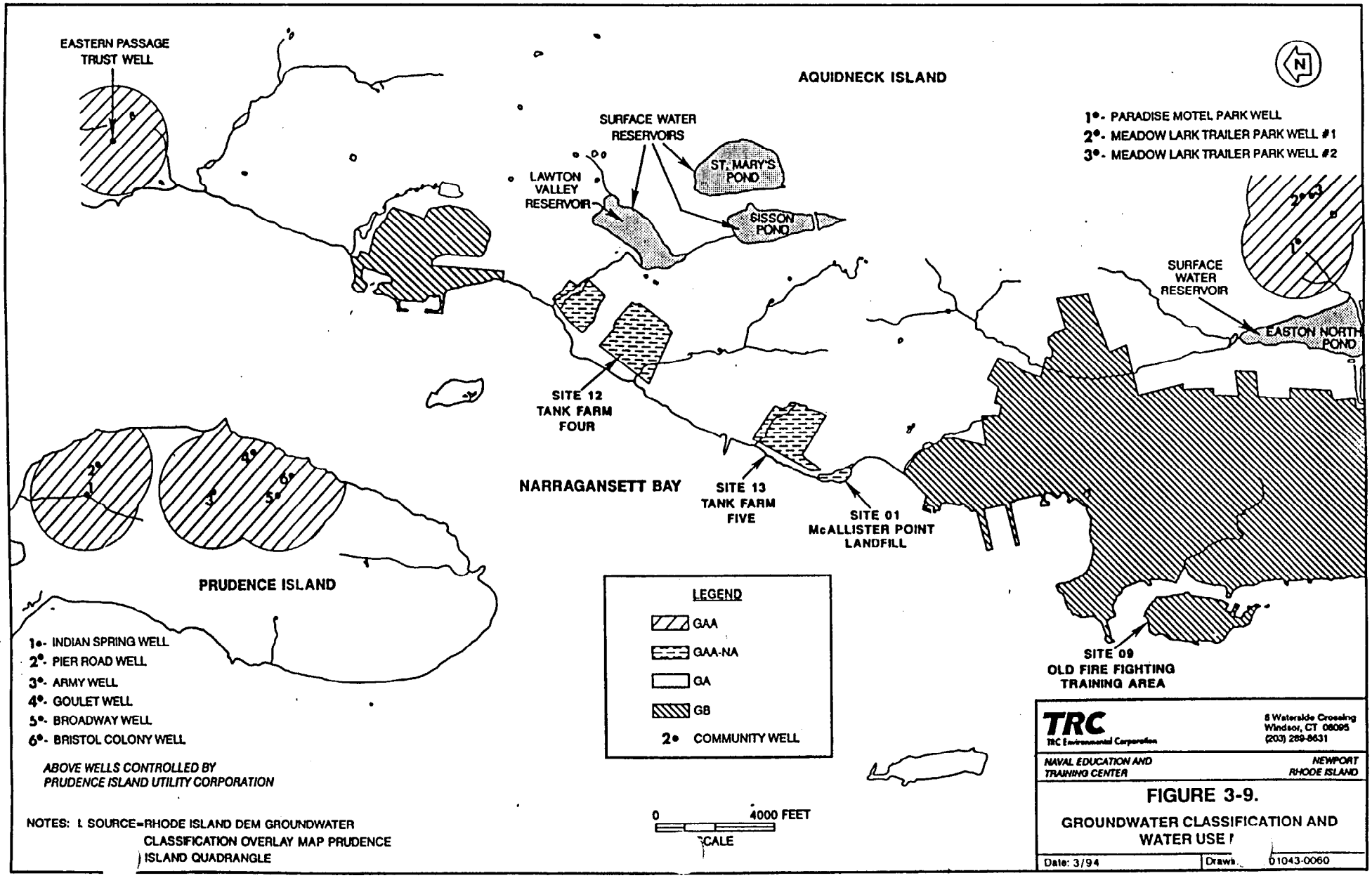
EASTERN PASSAGE TRUST WELL
AQUIDNECK ISLAND
N
1•- PARADISE MOTEL PARK WELL
2•- MEADOW LARK TRAILER PARK WELL #1
3•- MEADOW LARK TRAILER PARK WELL #2
SURFACE WATER RESERVOIRS
ST. MARY'S POND
LAWTON VALLEY RESERVOIR
SISSON POND
SURFACE WATER RESERVOIR
EASTON NORTH POND
SITE 12 TANK FARM FOUR
NARRAGANSETT BAY
SITE 13 TANK FARM FIVE
SITE 01 McALLISTER POINT LANDFILL
SITE 09 OLD FIRE FIGHTING TRAINING AREA
PRUDENCE ISLAND
1•- INDIAN SPRING WELL
2•- PIER ROAD WELL
3•- ARMY WELL
4•- GOULET WELL
5•- BROADWAY WELL
6•- BRISTOL COLONY WELL
ABOVE WELLS CONTROLLED BY PRUDENCE ISLAND UTILITY CORPORATION
LEGEND
GAA
GAA-NA
GA
GB
2• COMMUNITY WELL
0 4000 FEET
SCALE
NOTES: 1. SOURCE=RHODE ISLAND DEM GROUNDWATER CLASSIFICATION OVERLAY MAP PRUDENCE ISLAND QUADRANGLE
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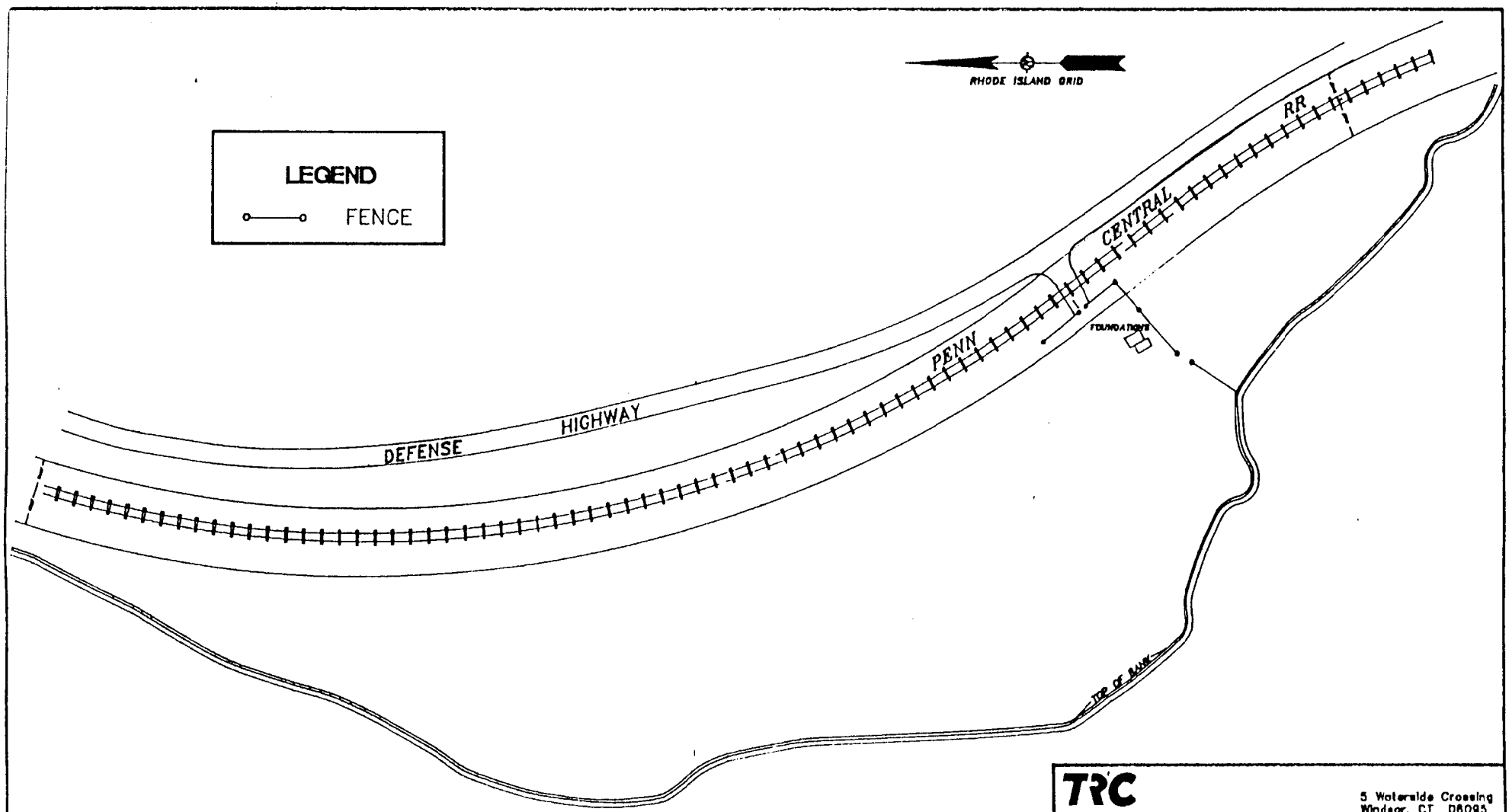
FIGURE 3-9.
GROUNDWATER CLASSIFICATION AND WATER USE
Date: 3/94
Drawn
01043-0060



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SITE 01 - McALLISTER POINT LANDFILL

FIGURE 1-4.

SITE MAP

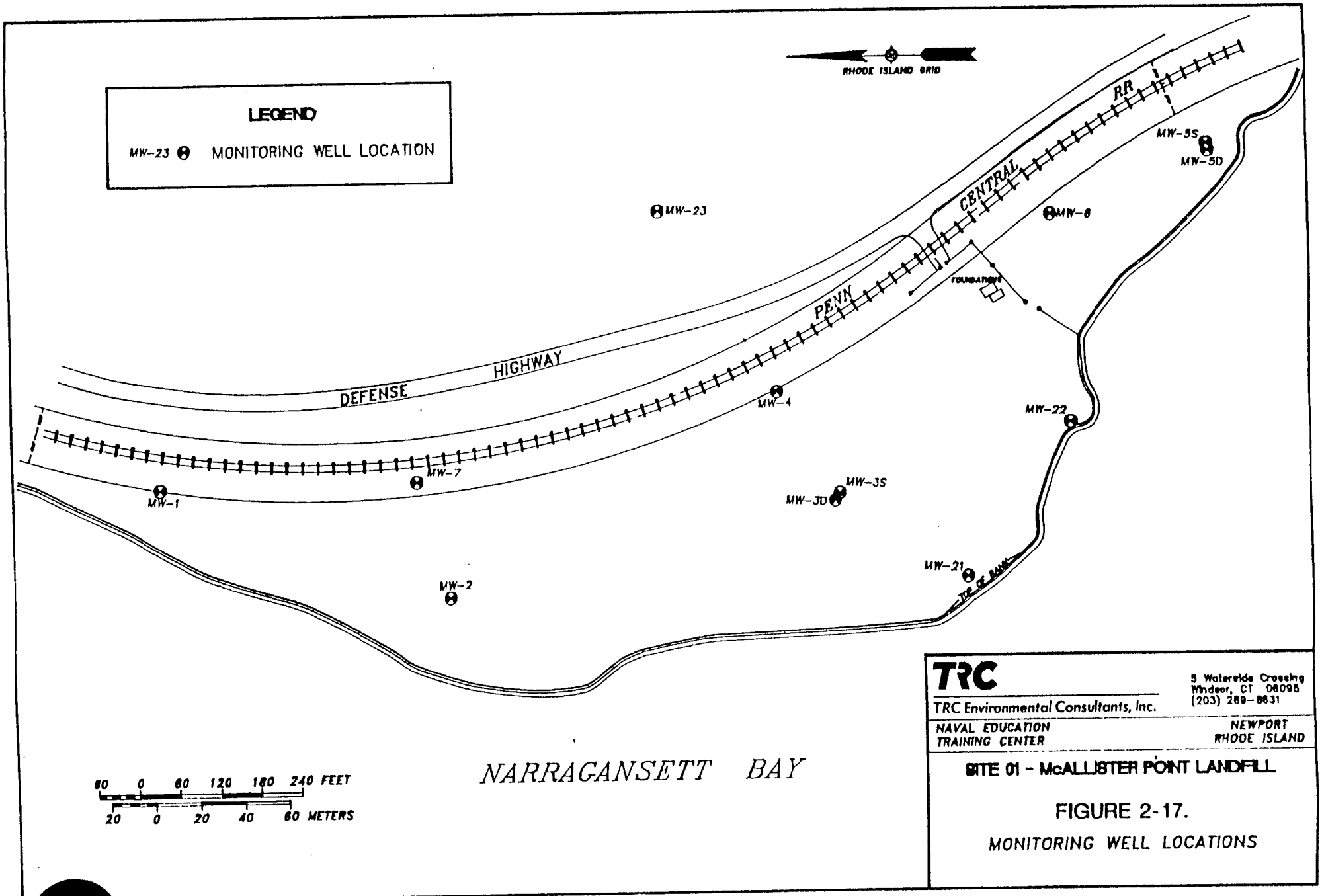
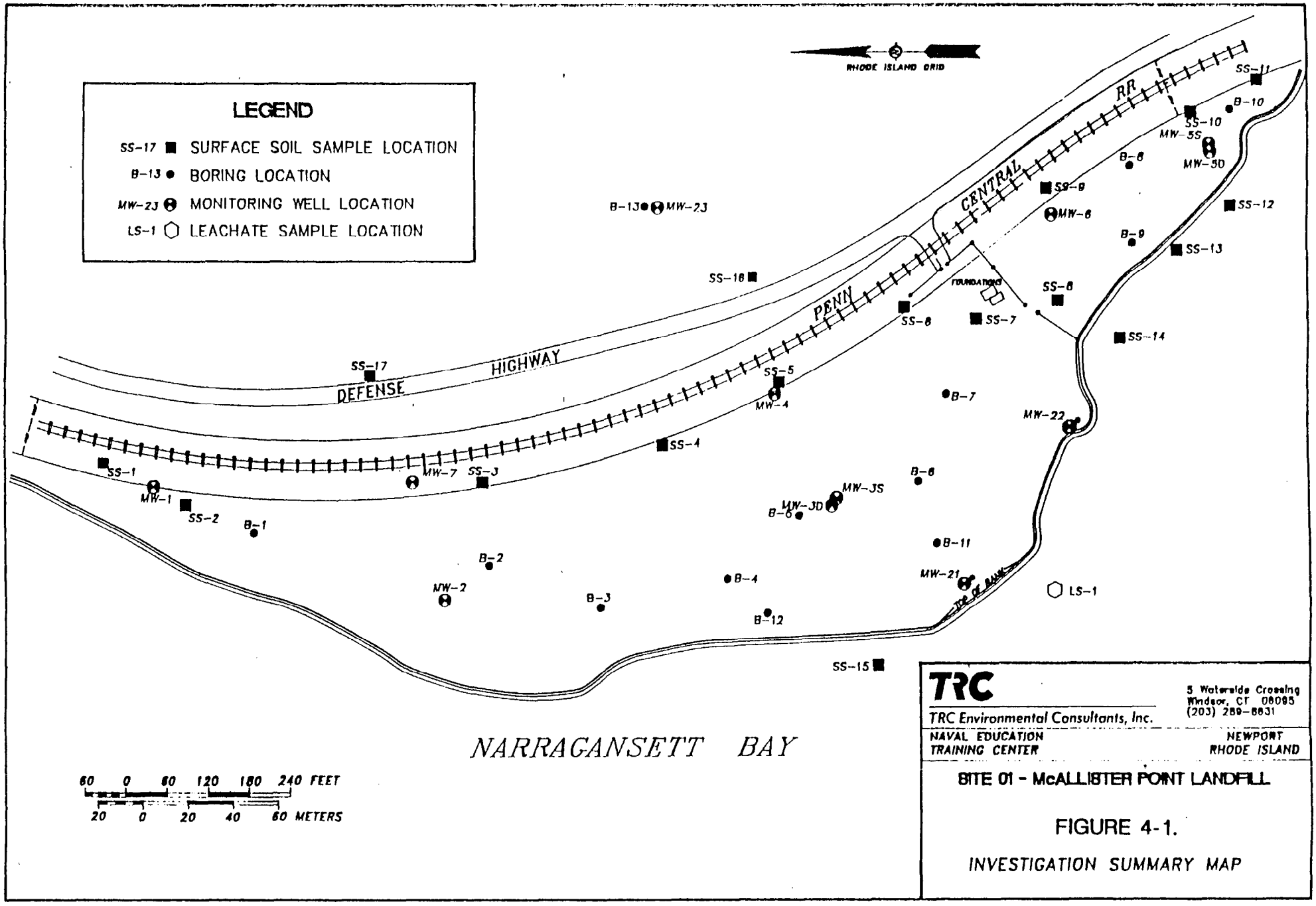


FIGURE 2-17.

MONITORING WELL LOCATIONS


LEGEND
SS-17 SURFACE SOIL SAMPLE LOCATION
B-13 BORING LOCATION
MW-23 MONITORING WELL LOCATION
LS-1 LEACHATE SAMPLE LOCATION
RHODE ISLAND GRID
DEFENSE HIGHWAY
PENN CENTRAL RR
FOUNDATIONS
NARRAGANSETT BAY
60 0 60 120 180 240 FEET
20 0 20 40 60 METERS
SS-1
SS-2
SS-3
SS-4
SS-5
SS-6
SS-7
SS-8
SS-9
SS-10
SS-11
SS-12
SS-13
SS-14
SS-15
SS-16
SS-17
MW-1
MW-2
MW-4
MW-5S
MW-5D
MW-6
MW-7
MW-21
MW-22
MW-23
MW-3S
MW-3D
B-1
B-2
B-3
B-4
B-6
B-7
B-8
B-9
B-10
B-11
B-12
B-13
LS-1
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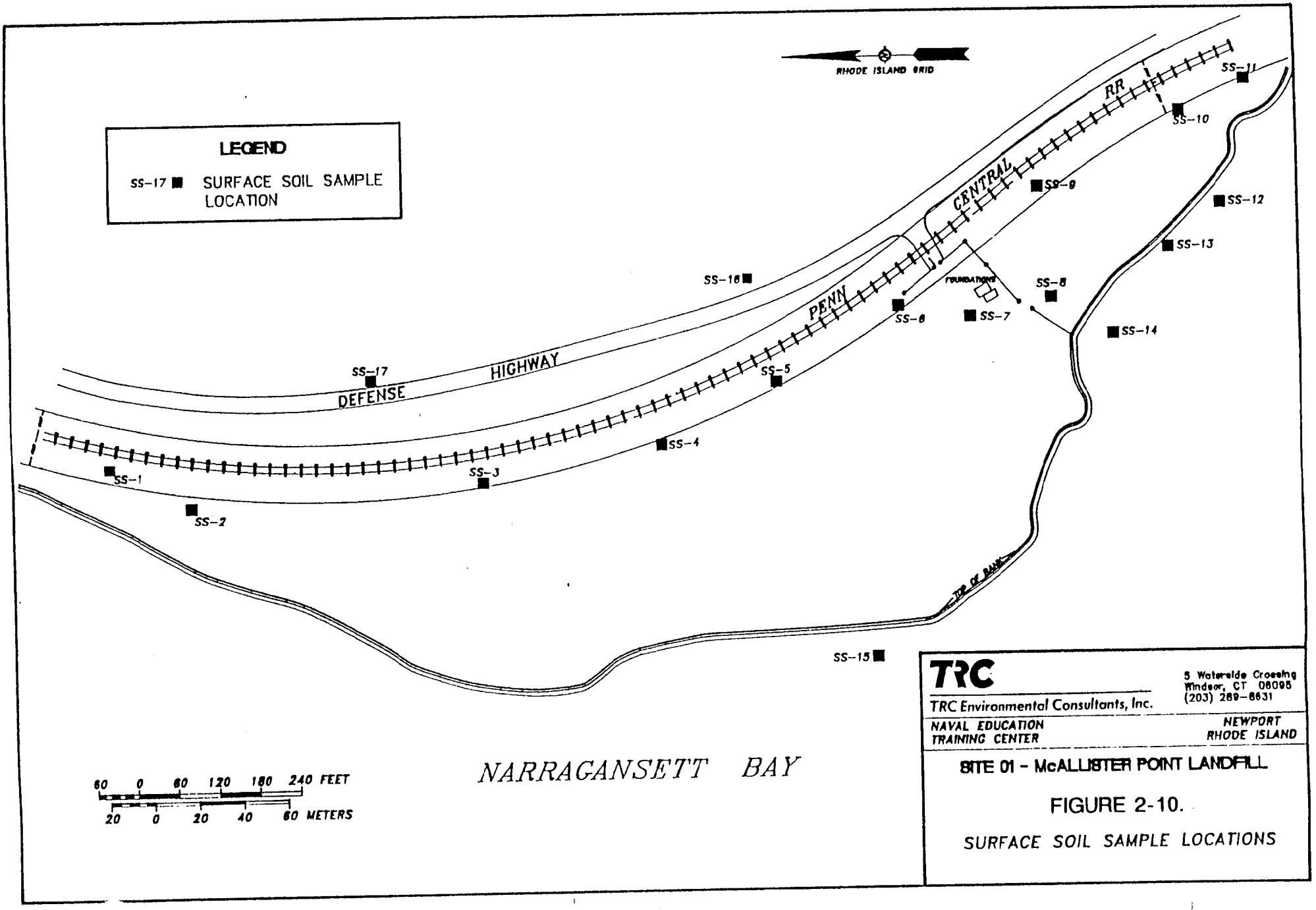
SITE 01 - McALLISTER POINT LANDFILL
FIGURE 4-1.
INVESTIGATION SUMMARY MAP


LEGEND
SS-17 SURFACE SOIL SAMPLE LOCATION
RHODE ISLAND GRID
DEFENSE HIGHWAY
PENN CENTRAL RR
FOUNDATIONS
TOP OF BANK
SS-1
SS-2
SS-3
SS-4
SS-5
SS-6
SS-7
SS-8
SS-9
SS-10
SS-11
SS-12
SS-13
SS-14
SS-15
SS-16
SS-17
NARRAGANSETT BAY
60 0 60 120 180 240 FEET
20 0 20 40 60 METERS
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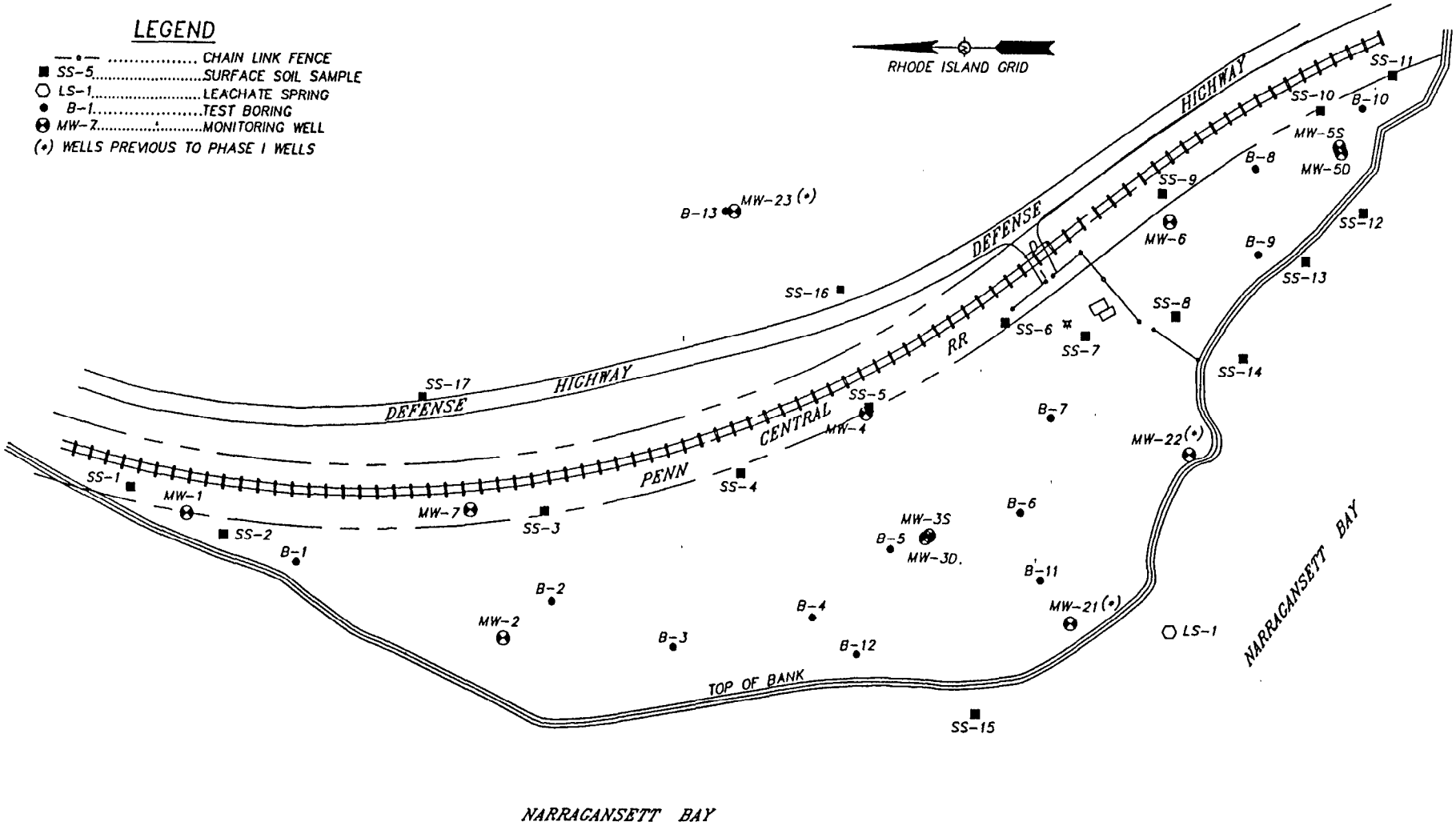
SITE 01 - McALLISTER POINT LANDFILL
FIGURE 2-10.
SURFACE SOIL SAMPLE LOCATIONS



GRAPHIC SCALE

200 0 100 200 400

(IN FEET)
1 inch = 200 ft.

C:\10430060\FIG1-5M

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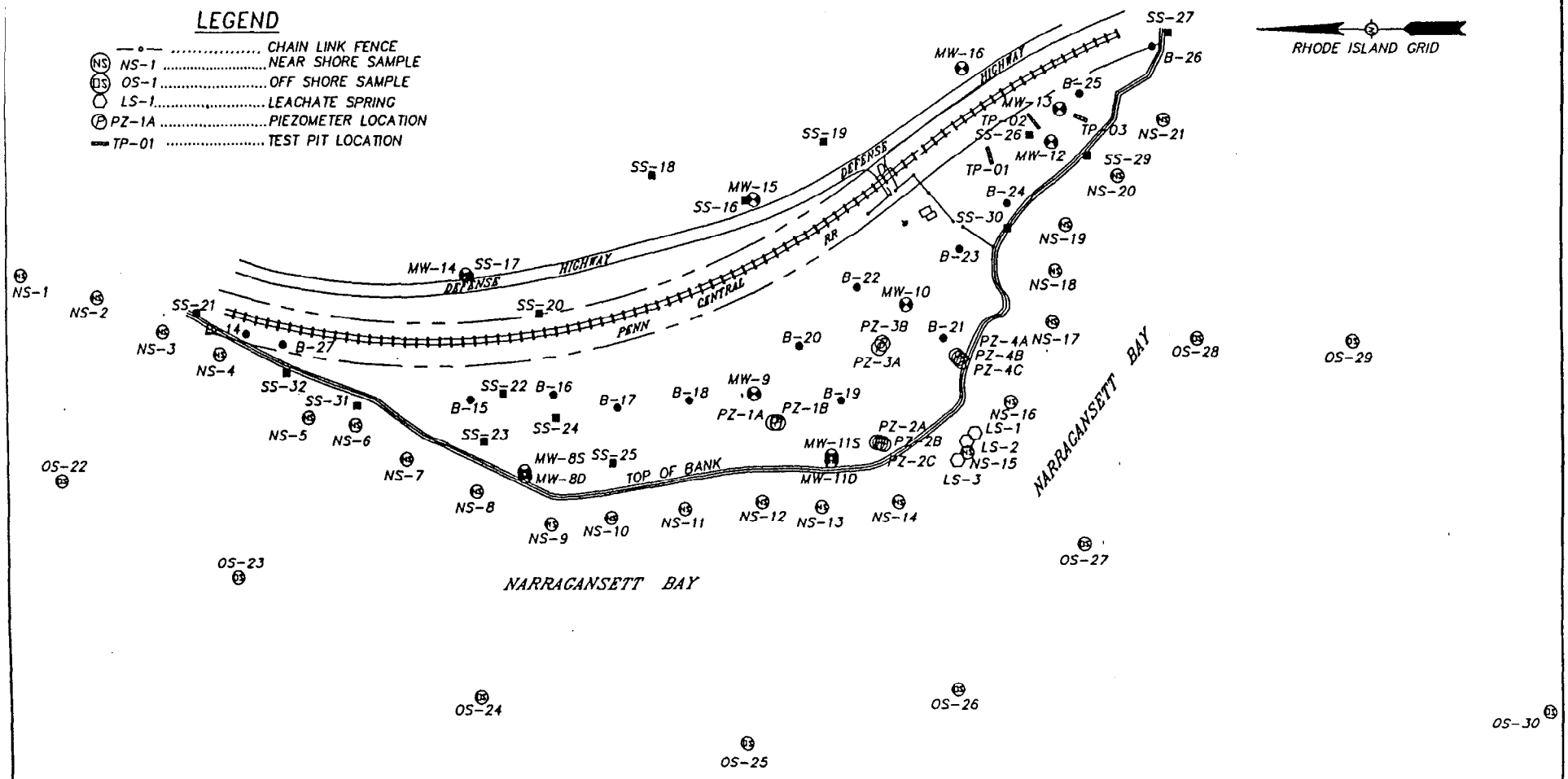
SITE 01 – McALLISTER POINT LANDFILL

FIGURE 1-5
PHASE I
INVESTIGATION SUMMARY

Date: 2/94 | Drawing No. 01043-0060-0040



GRAPHIC SCALE

300 0 150 300 600

(IN FEET)
1 inch = 300 ft.

C:\10430060\FIG2

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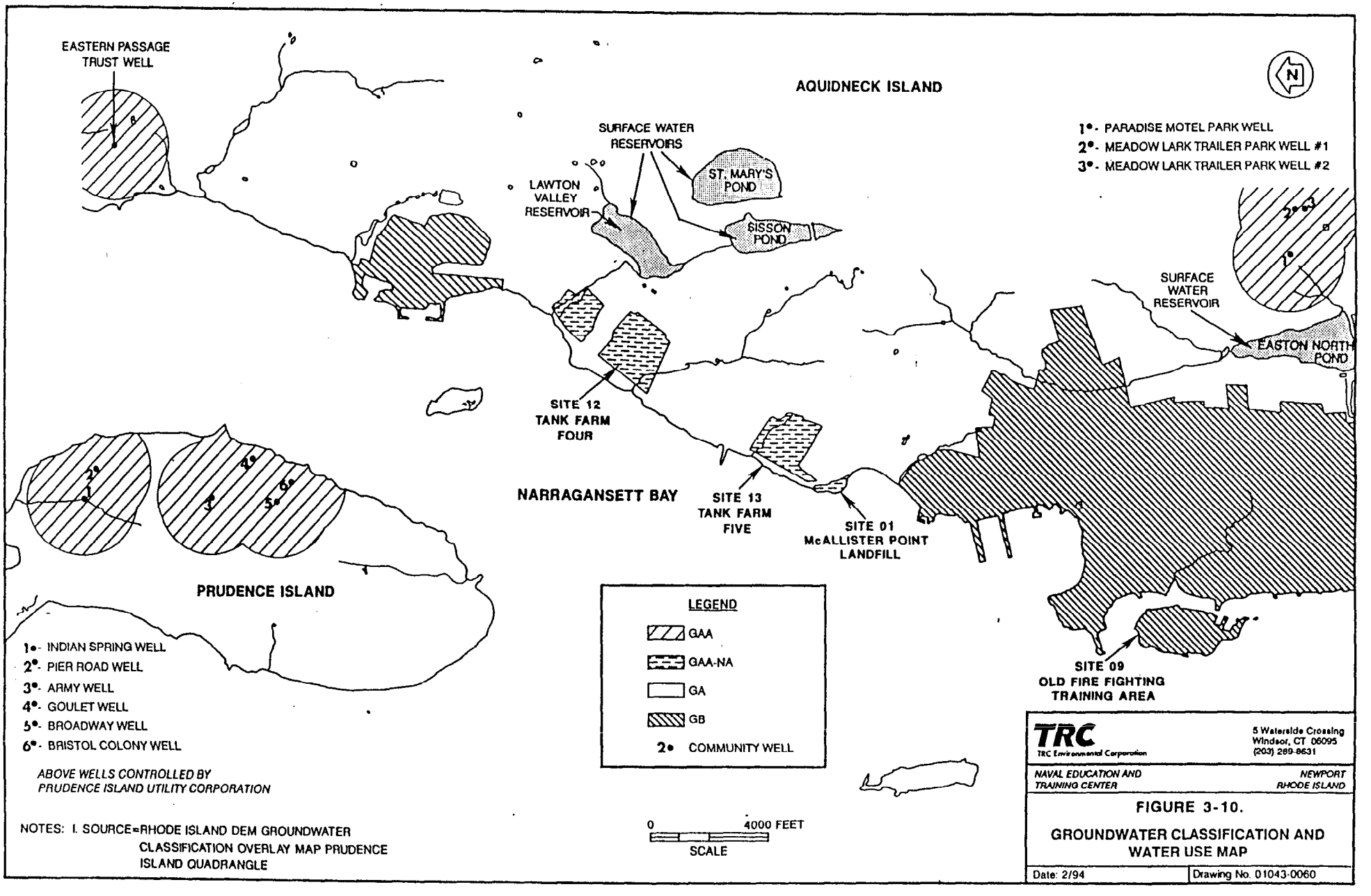
SITE 01 – McALLISTER POINT LANDFILL

FIGURE 2-1
PHASE II
INVESTIGATION SUMMARY

Date: 2/94 | Drawing No. 01043-00[illegible]0040


EASTERN PASSAGE TRUST WELL
AQUIDNECK ISLAND
N
SURFACE WATER RESERVOIRS
ST. MARY'S POND
LAWTON VALLEY RESERVOIR
SISSON POND
1•- PARADISE MOTEL PARK WELL
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SURFACE WATER RESERVOIR
EASTON NORTH POND
SITE 12 TANK FARM FOUR
NARRAGANSETT BAY
SITE 13 TANK FARM FIVE
SITE 01 McALLISTER POINT LANDFILL
PRUDENCE ISLAND
SITE 09 OLD FIRE FIGHTING TRAINING AREA
LEGEND
GAA
GAA-NA
GA
GB
2• COMMUNITY WELL
1•- INDIAN SPRING WELL
2•- PIER ROAD WELL
3•- ARMY WELL
4•- GOULET WELL
5•- BROADWAY WELL
6•- BRISTOL COLONY WELL
ABOVE WELLS CONTROLLED BY PRUDENCE ISLAND UTILITY CORPORATION
0 4000 FEET
SCALE
NOTES: I. SOURCE=RHODE ISLAND DEM GROUNDWATER CLASSIFICATION OVERLAY MAP PRUDENCE ISLAND QUADRANGLE
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FIGURE 3-10.
GROUNDWATER CLASSIFICATION AND WATER USE MAP
Date: 2/94
Drawing No. 01043-0060

SITE 01 - MCALLISTER POINT LANDFILL
CONSTITUENTS DETECTED IN GROUND WATER SAMPLES

SAMPLE IDENTIFICATION:	MW-1D	MW-3S	MW-3D	MW-4S	MW-5S	MW-5D	MW-6S	MW-7S
**** VOLATILE ORGANICS (PPB) ****								
METHYLENE CHLORIDE.....							18 U*	15 U*
ACETONE.....								
BENZENE.....		6	1 J	5				
TOLUENE.....		1 J		1 J				
CHLOROBENZENE.....				11				
ETHYLBENZENE.....		2 J		12	3 J			
XYLENE.....		6 J*		44 J*	160 J*			
TOTAL VOLATILE ORGANICS.....	0	15	1	73	163	0	0	0
** BASE NEUTRAL / ACIDS (PPB) ***								
1,4-DICHLOROBENZENE.....				6 J				
4-METHYLPHENOL.....				5 J				
2,4-DIMETHYLPHENOL.....		7 J		1 J	5 J			
BENZOIC ACID.....				7 J				
NAPHTHALENE.....@		240 J**		3 J	15			
4-CHLORO-3-METHYLPENOL.....				4 J	2 J			
2-METHYLNAPHTHALENE.....@		43		1 J	25			
ACENAPHTHENE.....@		45			3 J			
DIBENZOFURAN.....		19						
DIETHYLPHTHALATE.....		1 J		4 J	3 J			
FLUORENE.....@		25			3 J			
PHENANTHRENE.....@		21			3 J			
ANTHRACENE.....@		3 J						
DI-n-BUTYLPHTHALATE.....	10 U**	10 U**	10 U**	10 U**	10 U**	10 U**		
FLUORANTHENE.....@		2 J						
PYRENE.....@		1 J						
BIS(2-ETHYLHEXYL)PHTHALATE....	10 U**	10 U**	10 U**	10 U**	10 U**	10 U**		
TOTAL BNA	0	407	0	31	59	0	0	0
TOTAL PAH'S.....	0	380	0	4	49	0	0	0
TOTAL CARCINOGENIC PAH'S.....	0	0	0	0	0	0	0	0
***** PESTICIDES/PCB (PPB) *****								
AROCLOR-1254.....					0.73 J			
****** INORGANICS (PPB) ******								
SILVER.....		126					26.6 J*	22.5 U*
ALUMINUM.....	130000 J*	205000 J*	6890 J*	69500 J*	284000 J*	412 J*	112000 J*	176000 J*
ARSENIC.....	18 J*	85.8 J*	6.4 J*	26.9 J*	71.4 J*	2.1 J*	15 J*	84.4 J*
BARIUM.....	153 J*	1770 J*	200 U**	212 J*	895 J*		245	305
BERYLLIUM.....	3 B	9.5		2	12.8		4.9	7.1
CALCIUM.....	22400 J*	139000 J*	40000 J*	76000 J*	49600 J*	9030 J*	23200	65200
CADMIUM.....		57.1 J*		4.9 J*	5.6 J*		8 J*	3.7 J*
COBALT.....	(160)	243	29.9	(130)	(339)		426 J*	737 J*
CHROMIUM.....	(224)	(446)	16.9 J*	(121)	(348)	10 U**	136 J*	248 J*
COPPER.....	(269)	3160 J*	47.6 U*	(333)	(599)	25 U**	880 J*	429 J*
IRON.....	327000 J*	500000 J**	40300 J*	339000 J*	537000 J*	702 J*	399000	374000
MERCURY.....		8.4		0.79	1.3		1.3	
POTASSIUM.....	5180 J*	22700 J*	1600 J*	11300 J*	25600 J*	2060 J*	4640 J*	9060 J*
MAGNESIUM.....	54300 J*	89200 J*	17500 J*	33500 J*	70300 J*	4890 J*	39700	70800
MANGANESE.....	2910 J*	13500 J*	2090	6550 J*	4760 J*	57.8	13700 J*	21000 J*
SODIUM.....	34000	74500	42900	13100	29500	9750	10600 J*	26800
NICKEL.....	306	517	70.6	190	658	16.7	524	678
LEAD.....	60 J*	4800 J*	25.7 J*	197 J*	4.3 J*		1000 J*	260 J*
ANTIMONY.....	41.3 J*	259 J*		64.2 J*	101 J*		30.4 U*	
SELENIUM.....		2.5 J*						
VANADIUM.....	(259)	(1330)	50 U**	(270)	(689)	50 U**	109 J*	102 U*
ZINC.....	588 J*	12100 J*	200 J*	1260 J*	2100 J*	20.5 U*	1630	1140
CYANIDE.....					10			

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANDED ACCORDING TO DATA VALIDATION.
**- INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION.
() - INDICATES THAT THE SAMPLE RESULTS HAVE BEEN REJECTED ACCORDING TO SAMPLE VALIDATION.
@ - INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH).

SITE 01 - MCALLISTER POINT LANDFILL
CONSTITUENTS DETECTED IN GROUND WATER SAMPLES
(EXISTING WELLS)

SAMPLE IDENTIFICATION:	MP-MW21	MP-MW25 DUP MW21	MP-MW22	MP-MW23
**** VOLATILE ORGANICS (PPB) ****				
METHYLENE CHLORIDE.....				
ACETONE.....				
BENZENE.....				
TOLUENE.....				
CHLOROBENZENE.....				
ETHYLBENZENE.....				
XYLENE.....	2 J*	3 J*		
TOTAL VOLATILE ORGANICS.....	2	3	0	0
** BASE NEUTRAL / ACIDS (PPB) ***				
1,4-DICHLOROBENZENE.....				
4-METHYLPHENOL.....				
2,4-DIMETHYLPHENOL.....				
BENZOIC ACID.....				
NAPHTHALENE.....@				
4-CHLORO-3-METHYLPENOL.....				
2-METHYLNAPHTHALENE.....@				
ACENAPHTHENE.....@				
DIBENZOFURAN.....				
DIETHYLPHTHALATE.....	2 J	1 J		
FLUORENE.....@				
PHENANTHRENE.....@				
ANTHRACENE.....@				
DI-n-BUTYLPHTHALATE.....	10 U**	10 U**	10 U**	10 U**
FLUORANTHENE.....@				
PYRENE.....@				
BIS(2-ETHYLHEXYL)PHTHALATE.....	10 U**	10 U**	10 U**	10 U**
TOTAL BNA	2	1	0	0
TOTAL PAH'S.....	0	0	0	0
TOTAL CARCINOGENIC PAH'S.....	0	0	0	0
***** PESTICIDES/PCB (PPB) *****				
AROCLOR-1254.....				
******* INORGANICS (PPB) ********				
SILVER.....				
ALUMINUM.....	4340 J*	1880 J*	3270 J*	4030 J*
ARSENIC.....	89.4 J*	64.8 J*	54.2 J*	97.2 J*
BARIUM.....	200 U**	200 U**	200 U**	200 U**
BERYLLIUM.....			1	
CALCIUM.....	147000 J*	31400 J*	10100 J*	162000 J*
CADMIUM.....				
COBALT.....	22.3	25.2	44.2	20
CHROMIUM.....	21.6 J*	10 U**	10 U**	15.9 J*
COPPER.....	64.7	49.9 U*	31.4 U*	64.7
IRON.....	16000 J*	34100 J*	58800 J*	14900 J*
MERCURY.....		0.44		23100 J*
POTASSIUM.....	31700 J*	6270 J*	1070 J*	65900 J*
MAGNESIUM.....	63900 J*	14100 J*	9420	970 J*
MANGANESE.....	906 J*	5190	1140	230000
SODIUM.....	238000	41800	14900	34
NICKEL.....	30.6	12	40	45.2
LEAD.....	53.6 J*	44.4 J*	42.8 J*	
ANTIMONY.....	36.7 J*			
SELENIUM.....				
VANADIUM.....	50 U**	50 U**	50 U*	50 U**
ZINC.....	275 J*	110 J*	105 J*	226 J*
CYANIDE.....				

* - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
** - INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION.
@ - INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH).
N/A - INDICATES THAT THE COMPOUND WAS NOT ANALYZE FOR.

TABLE 4-11
NETC NEWPORT – PHASE II RI
SITE 01 – MCALLISTER POINT LANDFILL
GROUND WATER SAMPLE SUMMARY

Sample Location= Sample Collection Date=	MP-MW-1D 20 DEC 93	MP-MW-2S 22 DEC 93	MP-MW-3S 21 DEC 93	MP-MW-3D 21 DEC 93	MP-MW-4S 21 DEC 93	MP-MW-5S 20 DEC 93	MP-MW-5D 20 DEC 93	MP-MW-6S 20 DEC 93
Volatile Organic Compound (µg/l)								
1,2-Dichloroethene (total)	--	--	--	--	--	--	--	--
Benzene	--	--	2 J	--	2 J	--	--	--
Toluene	--	--	--	--	--	--	--	--
Chlorobenzene	--	--	--	--	--	--	--	--
Ethylbenzene	--	3 J	--	--	6 J	--	--	--
Xylene (total)	--	15	--	--	7 J	--	--	--
Semivolatile Organic Compound (µg/l)								
1,3-Dichlorobenzene	--	N/A	--	--	--	--	--	--
1,4-Dichlorobenzene	--	N/A	--	--	12	--	--	--
2-Methylphenol	--	N/A	3 J	--	--	--	--	--
4-Methylphenol	--	N/A	--	--	11	--	--	--
2,4-Dimethylphenol	--	N/A	1 J	--	--	--	--	--
Naphthalene	--	N/A	98	--	3 J	--	--	--
2-Methylnaphthalene	--	N/A	9 J	--	1 J	--	--	--
Acenaphthene	--	N/A	28	--	--	--	--	--
Dibenzofuran	--	N/A	15	--	--	--	--	--
Diethylphthalate	--	N/A	--	--	1 J	--	--	--
Fluorene	--	N/A	20	--	--	--	--	--
Phenanthrene	--	N/A	23	1 J	--	--	--	--
Anthracene	--	N/A	3 J	--	--	--	--	--
Carbazole	--	N/A	24	--	--	--	--	--
Di-n-butylphthalate	--	N/A	1 J	1 J	4 J	--	--	--
Fluoranthene	--	N/A	5 J	1 J	--	--	--	--
Pyrene	--	N/A	4 J	.9 J	--	--	--	--
Benzo(a)anthracene	--	N/A	--	.7 J	--	--	--	--
bis(2-Ethylhexyl)phthalate	--	N/A	--	--	--	--	--	--
Pesticides/PCBs (µg/l)								
4,4'-DDD	N/A	N/A	N/A	N/A	N/A	--	--	N/A
Aroclor-1254	N/A	N/A	N/A	N/A	N/A	0.72 J	--	N/A

-- = Non-Detect
J = Estimated Concentration
N/A = Not Analyzed

TABLE 4-11
NETC NEWPORT – PHASE II RI
SITE 01 – MCALLISTER POINT LANDFILL
GROUND WATER SAMPLE SUMMARY

Sample Location=	MP-MW-1D		MP-MW-2S		MP-MW-3S		MP-MW-3D		MP-MW-4S		MP-MW-5S		MP-MW-5D		MP-MW-6S	
Sample Collection Date=	20 DEC 93		22 DEC 93		21 DEC 93		21 DEC 93		21 DEC 93		20 DEC 93		20 DEC 93		20 DEC 93	
Inorganics (µg/l)																
Chloride (mg/l)	52.8		N/A		136		79		15.1		18.2		21.4		43.8	
Cyanide, Total	--		N/A		--		23.3		--		--		--		--	
Silver, Total	0.40		N/A		25	J	.5	J	0.40		--		--		1.8	J
Aluminum, Total	114000	J	N/A		127000	J	6070	J	1370	J	211	J	4420	J	71600	J
Arsenic, Total	27.9	J	N/A		176	J	34.4	J	11.7	J	12.0	J	19.2	J	24.3	J
Barium, Total	114		N/A		969	J	34.1		67.6		23.9		17.6		134	
Beryllium, Total	4.1		N/A		5.9		1.1		--		--		1.1		4.1	
Calcium, Total	26300	J	N/A		78700	J	35400	J	39800	J	12900	J	14400	J	19300	J
Cadmium, Total	1.2	J	N/A		28	J	3.6	J	6.2	J	--		--		1.4	J
Cobalt, Total	129	J	N/A		205	J	44.5	J	21.0		4.7	J	43.5	J	174	J
Chromium, Total	176	J	N/A		256	J	--		5.4	J	--		--		97.2	J
Copper, Total	189	J	N/A		1730	J	58.6	J	59.6	J	3.8	J	6.7	J	283	J
Iron, Total	262000	J	N/A		341000	J	42400	J	69100	J	19300	J	25600	J	246000	J
Mercury, Total	--		N/A		4.51		.12		0.19		0.14		0.17		0.46	
Potassium, Total	5250		N/A		25900		5890		6290		6060		2340		5450	
Magnesium, Total	45700	J	N/A		57000	J	15800	J	4580	J	5060	J	8520	J	28400	J
Manganese, Total	2540	J	N/A		7990	J	2400	J	2180	J	679	J	1200	J	5300	J
Sodium, Total	27300		N/A		91600	J	46200	J	8920	J	15900	J	9340	J	15700	J
Nickel, Total	256		N/A		386		106		48.0		10.7		61.2		234	
Lead, Total	275	J	N/A		4060		91.2		42.3	J	--		--		440	J
Antimony, Total	--		N/A		176	J	--		--		--		--		--	
Vanadium, Total	14.3	J	N/A		432		15.8	J	--		--		7.7	J	31.8	J
Zinc, Total	550	J	N/A		6800	J	1000	J	1030	J	50.3	J	39.9	J	623	J

-- = Non-Detect
J = Estimated Concentration
N/A = Not Analyzed

TABLE 4-11
NETC NEWPORT – PHASE II RI
SITE 01 – MCALLISTER POINT LANDFILL
GROUND WATER SAMPLE SUMMARY

Sample Location=	MP-MW-7S	MP-MW-8R	MP-MW-MP-MW-10R		MP-MW-12S	MP-MW-17S	MP-MW-11R	MP-MW-13S
Sample Collection Date=	20 DEC 93	21 DEC 93	22 DEC & 21 DEC 93		21 DEC 93	Dup of MW-12S	21 DEC 93	21 DEC 93
Volatile Organic Compound (µg/l)								
1,2-Dichloroethene (total)	--	--	1	J	--	--	--	--
Benzene	--	--	--		--	--	--	--
Toluene	--	--	--		--	--	--	--
Chlorobenzene	--	--	--		29	29	--	3 J
Ethylbenzene	--	--	--		4 J	5 J	--	--
Xylene (total)	--	--	--		14	16	--	--
Semivolatile Organic Compound (µg/l)								
1,3-Dichlorobenzene	--	--	--		2 J	3 J	--	0.5 J
1,4-Dichlorobenzene	--	--	--		13	21	--	2 J
2-Methylphenol	--	--	--		--	--	--	--
4-Methylphenol	--	--	--		--	3 J	--	1 J
2,4-Dimethylphenol	--	--	--		--	--	--	--
Naphthalene	--	--	--		3 J	9 J	8 J	0.9 J
2-Methylnaphthalene	--	--	--		1 J	7 J	1 J	1 J
Acenaphthene	--	--	--		--	--	2 J	--
Dibenzofuran	--	--	--		--	--	2 J	--
Diethylphthalate	--	--	0.5	J	--	--	--	--
Fluorene	--	--	--		--	--	2 J	--
Phenanthrene	--	--	--		--	5 J	5 J	--
Anthracene	--	--	--		--	--	1 J	--
Carbazole	--	--	--		--	--	--	--
Di-n-butylphthalate	--	--	--		1 J	--	1 J	--
Fluoranthene	--	--	--		--	0.8 J	2 J	--
Pyrene	--	--	--		1 J	2 J	1 J	--
Benzo(a)anthracene	--	--	--		--	--	--	--
bis(2-Ethylhexyl)phthalate	--	--	--		--	--	--	--
Pesticides/PCBs (µg/l)								
4,4'-DDD	N/A	N/A	N/A		N/A	0.18 J	0.20 J	N/A	--
Aroclor-1254	N/A	N/A	N/A		N/A	0.76 J	0.76 J	N/A	1.8

-- = Non-Detect
J = Estimated Concentration
N/A = [illegible]nalyzed

TABLE 4-11
NETC NEWPORT – PHASE II RI
SITE 01 – MCALLISTER POINT LANDFILL
GROUND WATER SAMPLE SUMMARY

Sample Location=	MP-MW-7S		MP-MW-8R		MP-MW-9R	MP-MW-10R		MP-MW-12S		MP-MW-17S		MP-MW-11R		MP-MW-13S
Sample Collection Date=	20 DEC 93		21 DEC 93		22 DEC 93	21 DEC 93		21 DEC 93		Dup of MW-12S		21 DEC 93		21 DEC 93
Inorganics (µg/l)														
Chloride (mg/l)	16.7		1110		47.4	56.1		23.4		23.8		134		73.0
Cyanide, Total	--		--		--	--		--		--		--		--
Silver, Total	--		--		--	1.1		11.6		17.7	J	1.3	J	2.0
Aluminum, Total	93600	J	18100	J	92600	18300	J	20300	J	44600	J	47800	J	104000
Arsenic, Total	114	J	24.4	J	84.3	22.1	J	51.6	J	41.6	J	22.5	J	117
Barium, Total	131		179		115	31.1		112		231		154		228
Beryllium, Total	4.3		1.8		3.3	--		1.0		2.1		2		4.9
Calcium, Total	57100	J	65400	J	69100	17500	J	16100	J	32400	J	76800	J	14800
Cadmium, Total	2.8	J	1.4	J	1.2	2.0	J	10.0	J	10.0	J	1.8	J	9.9
Cobalt, Total	743	J	258	J	287	31.7		43.8		92.3		116	J	127
Chromium, Total	153	J	24.1	J	163	29.4	J	67.9	J	143	J	82.8	J	146
Copper, Total	285	J	91.8	J	129	67.1	J	97.2	J	210	J	267	J	241
Iron, Total	216000	J	38900	J	262000	43400	J	87300	J	182000	J	128000	J	227000
Mercury, Total	0.12		--		--	0.15		1.7		1.8		.33		0.23
Potassium, Total	7310		110000		14700	1510		3070		6230		33500		8840
Magnesium, Total	39400	J	118000	J	52700	12100	J	10000	J	21200	J	53100	J	32700
Manganese, Total	17400	J	6330	J	24200	2380	J	2730	J	5410	J	15900	J	4020
Sodium, Total	14600	J	721000	J	38100	12700	J	7590	J	14200	J	76800	J	11600
Nickel, Total	501		235		267	56.5		97.0		197		122		250
Lead, Total	190	J	26.9		58.0	65.5	J	375	J	381	J	548		1860
Antimony, Total	--		--		--	--		26.5	J	42.3	J	--		34.1
Vanadium, Total	37.2	J	28.7	J	36.8	22.7		189		391		45.8	J	107
Zinc, Total	679	J	156	J	469	172	J	1440	J	2790	J	1060	J	856

-- = Non-Detect
J = Estimated Concentration
N/A = Not Analyzed

TABLE 4-11
NETC NEWPORT – PHASE II RI
SITE 01 – MCALLISTER POINT LANDFILL
GROUND WATER SAMPLE SUMMARY

Sample Location=	MP-MW-14R	MP-MW-18	MP-MW-15R	MP-MW-16R	MP-MW-21	MP-MW-22	MP-MW-23
Sample Collection Date=	22 DEC 93	Dup of MW-14R	21 DEC 93	21 DEC 93	20 DEC 93	20 DEC 93	20 DEC 93
Volatile Organic Compound (µg/l)							
1,2-Dichloroethene (total)	--	--	--	--	--	--	--
Benzene	--	--	--	--	--	--	--
Toluene	--	--	--	--	24	--	--
Chlorobenzene	--	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--	--
Xylene (total)	--	--	--	--	--	--	--
Semivolatile Organic Compound (µg/l)							
1,3-Dichlorobenzene	--	--	--	--	--	--	--
1,4-Dichlorobenzene	--	--	--	--	0.5 J	--	--
2-Methylphenol	--	--	--	--	2 J	--	--
4-Methylphenol	--	--	--	--	--	--	--
2,4-Dimethylphenol	--	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--
Acenaphthene	--	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--
Diethylphthalate	--	--	--	--	2 J	--	--
Fluorene	--	--	--	--	--	--	--
Phenanthrene	--	--	--	0.7 J	--	--	--
Anthracene	--	--	--	--	--	--	--
Carbazole	--	--	--	--	--	--	--
Di-n-butylphthalate	--	--	1 J	--	--	--	--
Fluoranthene	--	--	--	--	--	--	--
Pyrene	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	--	--	--	--	--	--	--
Pesticides/PCBs (µg/l)							
4,4'-DDD	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aroclor-1254	N/A	N/A	N/A	N/A	N/A	N/A	N/A

-- = Non-Detect
J = Estimated Concentration
N/A = N[illegible]lyzed

TABLE 4-11
NETC NEWPORT – PHASE II RI
SITE 01 – MCALLISTER POINT LANDFILL
GROUND WATER SAMPLE SUMMARY

Sample Location=	MP-MW-14R	MP-MW-18	MP-MW-15R	MP-MW-16R	MP-MW-21	MP-MW-22	MP-MW-23
Sample Collection Date=	22 DEC 93	Dup of MW-14R	21 DEC 93	21 DEC 93	20 DEC 93	20 DEC 93	20 DEC 93
Inorganics (µg/l)							
Chloride (mg/l)	15.7	15.1	24.4	13.4	383	56.4	15.1
Cyanide, Total	--	--	--	--	--	54.8	10.4
Silver, Total	--	--	--	0.40	--	--	--
Aluminum, Total	8640	21500	46000	31600 J	5190 J	878 J	3960 J
Arsenic, Total	--	--	--	64.8 J	129 J	34.8 J	45.8 J
Barium, Total	27.8	48.1	112	166	59.1	43.3	15.1
Beryllium, Total	--	1.6	1.5	1.6	--	--	1.0
Calcium, Total	18800	19300	21700	30800 J	136000 J	33600 J	9480 J
Cadmium, Total	--	0.6	0.8	12.0 J	1.2 J	0.70 J	--
Cobalt, Total	15.7	33	82.8	103	21.1 J	17.1 J	39.9 J
Chromium, Total	16.7	47.9	76.5	50.8 J	--	--	--
Copper, Total	38.4	60.7	83.9	82.6 J	81.7 J	19.5 J	12.1 J
Iron, Total	23400	55400	141000	96500 J	19400 J	42100 J	58100 J
Mercury, Total	--	--	--	--	0.20	0.41	--
Potassium, Total	3220	3670	5030	3140	19600	7000	1030
Magnesium, Total	13000	18200	26600	16600 J	56800 J	11700 J	8670 J
Manganese, Total	1280	1690	4490	3970 J	908 J	4200 J	1130 J
Sodium, Total	9900	9960	11600	6050 J	201000 J	36000 J	13500 J
Nickel, Total	35.7	79.7	175	148	33.6	--	44.8
Lead, Total	3.9	--	21.9	144 J	56.6 J	34.1 J	12.6 J
Antimony, Total	--	--	--	19.0 J	--	--	--
Vanadium, Total	11	10.5	56.3	32.5	29.5 J	--	--
Zinc, Total	217	201	326	206 J	526 J	53.7 J	115 J

-- = Non-Detect
J = Estimated Concentration
N/A = Not Analyzed

SITE 01 - MCALLISTER POINT LANDFILL
CONSTITUENTS DETECTED IN SURFACE SOIL SAMPLES
SAMPLES 1-6

SAMPLE IDENTIFICATION:		SS-01	SS-02	SS-03	SS-04	SS-18 DUP SS-04	SS-05	SS-06
**** VOLATILE ORGANICS (PPB) ****								
CHLOROETHANE								
METHYLENE CHLORIDE		22 U*	17 U*		14 U*	28 U*	24 U*	18 U*
ACETONE			10 U*	10 UJ*				
CARBON DISULFIDE								
1,2-DICHLOROETHENE (TOTAL)								
CHLOROFORM								
1,2-DICHLOROETHANE								
2-BUTANONE								
1,1,1-TRICHLOROETHANE								
BROMODICHLOROMETHANE								
TRICHLOROETHENE								
BENZENE								
4-METHYL-2-PENTANONE								
2-HEXANONE								
TETRACHLOROETHENE								
TOLUENE								
CHLOROBENZENE								
ETHYLBENZENE								
XYLENE								
TOTAL VOLATILE ORGANICS		0	0	0	0	0	0	0
** BASE NUETRAL / ACIDS (PPB) ***								
PHENOL								
1,4-DICHLOROBENZENE							180 U*	
1,2-DICHLOROBENZENE								
4-METHYLPHENOL								
BENZOIC ACID		380 J						
2,4-DICHLOROPHENOL								
1,2,4-TRICHLOROBENZENE								
NAPHTHALENE	@	63 J						3000
4-CHLORO-3-METHYLPHENOL								
2-METHYLNAPHTHALENE	@	99 J						1100 J
2,4,5-TRICHLOROPHENOL								
ACENAPHTHYLENE	@							
ACENAPHTHENE	@		840 J					3800
DIBENZOFURAN			310 J					2800
DIETHYLPHTHALATE								
FLUORENE	@		740 J					4700
N-NITROSODIPHENYLAMINE								
PHENANTHRENE	@	350 J	7400	110 J	170 J	130 J	72 J	26000
ANTHRACENE	@		1500 J					6800
DI-n-BUTYLPHTHALATE		2400 U*		2900 U*	270 U*	2200 U*	410 U*	270 U*
FLUORANTHENE	@	710	11000	180 J	260 J	210 J	170 J	27000
PYRENE	@	710	11000	180 J	240 J	210 J	220 J	26000
BUTYLBENZYLPHTHALATE		490 U*			65 U*	54 U*	170 U*	
BENZO(a)ANTHRACENE	@@	380 J	6000	94 J	120 J	120 J	68 J	18000
CHRYSENE	@@	550 J	6200	110 J	140 J	120 J	130 J	16000
BIS(2-ETHYLHEXYL)PHTHALATE		800 U*			120 U*	120 U*	970	
BENZO(b)FLUORANTHENE	@@	540 J	6000		120 J	120 J	380 J*	15000
BENZO(k)FLUORANTHENE	@@	370 J	5100		140 J	98 J	140 J	14000
BENZO(a)PYRENE	@@	300 J	6000		120 J	97 J	140 J	16000
INDENO(1,2,3-cd)PYRENE	@@	220 J	3600					8900
DIBENZO(a,h)ANTHRACENE	@@		1500 J					4000
BENZO(g,h,i)PERYLENE	@	200 J	4000					8400
TOTAL BNA		4872	71190	674	1310	1105	2290	201500
TOTAL PAH'S		4492	70880	674	1310	985	1320	198700
TOTAL CARCINOGENIC PAH'S		2360	34400	204	640	555	858	91900

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
@ - INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH).
@@ - INDICATES THAT THE COMPOUND IS A CARCINOGENIC POLYNUCLEAR AROMATIC HYDROCARBON.

SITE 01 - MCALLISTER POINT LANDFILL
CONSTITUENTS DETECTED IN SURFACE SOIL SAMPLES
SAMPLES 1-6

SAMPLE IDENTIFICATION:	SS-01	SS-02	SS-03	SS-04	SS-18 DUP SS-4	SS-05	SS-06
***** PESTICIDES/PCB (PPB) *****							
BETA-BHC							
ALDRIN							
DIELDRIN							
4,4'-DDE							
4,4'-DDD							
4,4'-DDT		27 J*	9.5 J	12 J	9.8 J	23 J*	47 J
ALPHA-CHLORDANE							
AROCLOR-1242							
AROCLOR-1248							
AROCLOR-1254							
AROCLOR-1260							
******* INORGANICS (PPM) ********							
SILVER							
ALUMINUM	4280	6730	6360	4250	4180	7090	8210
ARSENIC	5.7		1.9	3.2	2.7	5.7	8.7
BARIUM	40.6 J*	12.5 J*	18.8 J*	12.1 J*	15.1 J*	24.3 J*	19.6 J*
BERYLLIUM	0.5	0.29	0.35	0.33	0.33	0.33	0.47
CALCIUM	568 J*	923 J*	1000 J*	980 J*	1260 J*	926 J*	1250 J*
CADMIUM						2 J*	
COBALT	3.6	7.4	6.9	5.9	6.8	8.3	9.2 U*
CHROMIUM	5.2 J*	10.2	8.5	7	6.3	32.3	14.8
COPPER	202	20.9	13.4 J*	13.6 J*	16.1	61.7 J*	35.9
IRON	5510	15700	12800	9540	8740	20700	21400
MERCURY	0.35					0.14	
POTASSIUM	318 U*	325 U*	697 U*	856 U*	681 U*	290 U*	216 U*
MAGNESIUM	311 J*	2500 J*	2410 J*	1700 J*	1630 J*	2680 J*	2790 J*
MANGANESE	574	301	289	240	277	248 J*	364
SODIUM	102 U*	61.9 U*	54 U*	92.3 U*	92.7 U*	77.3 U*	70 U*
NICKEL	3.4	11.3	9.6	8.3	7.2	18.7	19.3
LEAD	86	7.3	9.2	14.1	14	155	46
ANTIMONY							
SELENIUM							
VANADIUM	36.7	15.4	14	10.5	11	27.3 J*	32.4
ZINC	51	60.2	38.1	52	64.1	191	112
CYANIDE (PPM)							

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.

SITE 01 - MCALLISTER POINT LANDFILL
CONSITUENTS DETECTED IN SURFACE SOIL SAMPLES
SAMPLES 7-12

SAMPLE IDENTIFICATION:	SS-07	SS-19	SS-08	SS-09	SS-10	SS-11	SS-12
		DUP SS-07					
**** VOLATILE ORGANICS (PPB) ****							
CHLOROETHANE.....							
METHYLENE CHLORIDE.....	25 U*	21 U*	15 U*	21 U*	32 U*	14 U*	8 U*
ACETONE.....		19 J*		10 UJ	10 UJ	10 UJ	11 U**
CARBON DISULFIDE.....							
1,2-DICHLOROETHENE (TOTAL).....							
CHLOROFORM.....							
1,2-DICHLOROETHANE.....							
2-BUTANONE.....							
1,1,1-TRICHLOROETHANE.....							
BROMODICHLOROMETHANE.....							
TRICHLOROETHENE.....							
BENZENE.....							
4-METHYL-2-PENTANONE.....							
2-HEXANONE.....							
TETRACHLOROETHENE.....							
TOLUENE.....							
CHLOROBENZENE.....							
ETHYLBENZENE.....							
XYLENE.....							
TOTAL VOLATILE ORGANICS.....	0	0	0	0	0	0	0
** BASE NEUTRAL / ACIDS (PPB) ***							
PHENOL.....							
1,4-DICHLOROBENZENE.....							
1,2-DICHLOROBENZENE.....							
4-METHYLPHENOL.....							
BENZOIC ACID.....							1800 U*
2,4-DICHLOROPHENOL.....							
1,2,4-TRICHLOROBENZENE.....							
NAPHTHALENE.....@							
4-CHLORO-3-METHYLPHENOL.....							
2-METHYLNAPHTHALENE.....@							
2,4,5-TRICHLOROPHENOL.....							
ACENAPHTHYLENE.....@							
ACENAPHTHENE.....@	160 J	150 J	940 J	110 J		840 J	
DIBENZOFURAN.....	54 J	46 J	310 J				
DIETHYLPHTHALATE.....		100 J					380 U**
FLUORENE.....@	150 J	130 J	720 J	90 J		2200 J	
N-NITROSODIPHENYLAMINE.....							
PHENANTHRENE.....@	1500	1400	8500	1200	220 J	24000	310 J
ANTHRACENE.....@	320 J	270 J	1800 J	200 J	48 J	6600 J	67 J
DI-n-BUTYLPHTHALATE.....	1700 U*	660 U*	1500 U*	3200 U*	480 U*	910 U*	380 U**
FLUORANTHENE.....@	2000	1800	16000	2400	500	46000	520
PYRENE.....@	2000	2000	16000	2100	390 J	27000 J*	410
BUTYLBENZYLPHTHALATE.....				59 U*			
BENZO(a)ANTHRACENE.....@@	1100	1000	8900	1100 J*	190 J	19000 J*	240 J
CHRYSENE.....@@	1000	1000	9500	1300	310 J	18000 J*	310 J
BIS(2-ETHYLHEXYL)PHTHALATE.....	500 U*	120 U*		150 U*			380 U**
BENZO(b)FLUORANTHENE.....@@	900	880	11000	2800	240 J	11000 J*	270 J
BENZO(k)FLUORANTHENE.....@@	1100			2000	240 J	14000 J*	210 J
BENZO(a)PYRENE.....@@	1100			1700	210 J	13000 J*	210 J
INDENO(1,2,3-cd)PYRENE.....@@	640			1800	160 J	6400 J	170 J
DIBENZO(a,h)ANTHRACENE.....@@	250 J						84 J
BENZO(g,h,i)PERYLENE.....@	680			2700	200 J	5700 J	220 J
TOTAL BNA	15154	9556	73670	19500	2708	193740	3021
TOTAL PAH'S.....	12900	8630	73360	19500	2708	193740	3021
TOTAL CARCINOGENIC PAH'S.....	6090	2880	29400	10700	1350	81400	1494

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
** - INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCARDING TO DATA VALIDATION.
@ - INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH).
@@ - INDICATES THAT THE COMPOUND IS A CARCINOGENIC POLYNUCLEAR AROMATIC HYDROCARBON.

SITE 01 - MCALLISTER POINT LANDFILL
CONSITUENTS DETECTED IN SURFACE SOIL SAMPLES
SAMPLES 7-12

SAMPLE IDENTIFICATION:	SS-07	SS-19 DUP SS-07	SS-08	SS-09	SS-10	SS-11	SS-12
***** PESTICIDES/PCB (PPB) *****							
BETA-BHC							
ALDRIN							
DIELDRIN							
4,4'-DDE	3.3 J		17 J			24 J	
4,4'-DDD			40 J			190	
4,4'-DDT	5.7 J	8.3 J	130 J*	55 J*	28 J*	1800 J*	
ALPHA-CHLORDANE							
AROCLOR-1242							
AROCLOR-1248							
AROCLOR-1254							330 J
AROCLOR-1260							
******* INORGANICS (PPM) ********							
SILVER							
ALUMINUM	9510	9220	18900	12500	10800	4840	5410
ARSENIC	8.4	5.4	15.8	14.2	20	5.3	6.5 J*
BARIUM	14.1 J*	13.3 J*	53.6 J*	24.2 J*	23 J*	12 J*	11.6 U*
BERYLLIUM	0.42	0.45	1	0.59	0.52	0.37	0.5 J*
CALCIUM	1310 J*	1250 J*	3950	2280 J*	1420 J*	1880 J*	10300 J*
CADMIUM			0.98 J*				1.2
COBALT	12.7	10.1	20.2	14.6	11.4	5.6	13.2 J*
CHROMIUM	14.7	14.5	65	30.5	21.1	9.4	31.1 J*
COPPER	28.1 J*	29.2 J*	176 J*	122 J*	71.3 J*	24.5	824 J*
IRON	25400	23100	47300	34500	34100	11500	78000
MERCURY			1.6				(0.6)
POTASSIUM	217 U*	170 U*	415 U*	300 U*	523 U*	271 U*	
MAGNESIUM	3270	3080	5800	4110	3480	2440 J*	2330
MANGANESE	446 J*	289	545 J*	579 J*	452 J*	217	370 J*
SODIUM	63.1 U*	63.6 U*	128 U*	71.5 U*	175 U*	61.9 U*	179 U*
NICKEL	23.3	22	49.1	34	29.2	10.6	67.5 J*
LEAD	49.8	36	362	156	56.8	49.7	474 J*
ANTIMONY			8.9 U*				(42.2)
SELENIUM						2	
VANADIUM	28.6 J*	28.3 J*	119 J*	55.4 J*	35.3 J*	22	76.7 J*
ZINC	88.1	93.8	662	216	141	92.5	722
CYANIDE (PPM)							

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
() - INDICATES THAT THE SAMPLE RESULTS HAVE BEEN REJECTED ACCORDING TO SAMPLE VALIDATION.

SITE 01 - MCALLISTER POINT LANDFILL
SURFACE SOIL SAMPLES
SAMPLES 13-17

SAMPLE IDENTIFICATION:	SS-13	SS-14	SS-15	SS-16	SS-17
**** VOLATILE ORGANICS (PPB) ****				NA	NA
CHLOROETHANE.....					
METHYLENE CHLORIDE.....	8 U*	8 U*	17 U*		
ACETONE.....	11 U**	10 U**	14 U*		
CARBON DISULFIDE.....					
1,2-DICHLOROETHENE (TOTAL).....					
CHLOROFORM.....					
1,2-DICHLOROETHANE.....					
2-BUTANONE.....					
1,1,1-TRICHLOROETHANE.....					
BROMODICHLOROMETHANE.....					
TRICHLOROETHENE.....					
BENZENE.....					
4-METHYL-2-PENTANONE.....					
2-HEXANONE.....					
TETRACHLOROETHENE.....					
TOLUENE.....		5 U**			
CHLOROBENZENE.....					
ETHYLBENZENE.....					
XYLENE.....					
TOTAL VOLATILE ORGANICS.....	0	0	0		
** BASE NEUTRAL / ACIDS (PPB) ***				NA	NA
PHENOL.....		390 U**	450 U**		
1,4-DICHLOROBENZENE.....					
1,2-DICHLOROBENZENE.....					
4-METHYLPHENOL.....					
BENZOIC ACID.....		390 U**	450 U**		
2,4-DICHLOROPHENOL.....					
1,2,4-TRICHLOROBENZENE.....					
NAPHTHALENE.....@	99 J		47 J		
4-CHLORO-3-METHYLPHENOL.....					
2-METHYLNAPHTHALENE.....@					
2,4,5-TRICHLOROPHENOL.....					
ACENAPHTHYLENE.....@		52 J			
ACENAPHTHENE.....@	260 J		130 J		
DIBENZOFURAN.....	120 J		77 J		
DIETHYLPHTHALATE.....	400 U**	390 U**	450 U**		
FLUORENE.....@	210 J		150 J		
N-NITROSODIPHENYLAMINE.....					
PHENANTHRENE.....@	1600 J*	280 J	1400		
ANTHRACENE.....@	410 J*	57 J	370 J		
DI-n-BUTYLPHTHALATE.....		390 U**	450 U**		
FLUORANTHENE.....@	1900 J*	370 J	2000		
PYRENE.....@	1200 J*	440	1500		
BUTYLBENZYLPHTHALATE.....			200 J		
BENZO(a)ANTHRACENE.....@@	810 J*	230 J	1100		
CHRYSENE.....@@	820 J*	280 J	1200		
BIS(2-ETHYLHEXYL)PHTHALATE.....	400 U**	390 U**	450 U**		
BENZO(b)FLUORANTHENE.....@@	540 J*	170 J	930		
BENZO(k)FLUORANTHENE.....@@	560 J*	210 J	1000		
BENZO(a)PYRENE.....@@	600 J*	200 J	1000		
INDENO(1,2,3-cd)PYRENE.....@@	450 J*	160 J	800		
DIBENZO(a,h)ANTHRACENE.....@@	220 J	74 J	310 J		
BENZO(g,h,i)PERYLENE.....@	470 J*	220 J	950		
TOTAL BNA	10269	2743	13164		
TOTAL PAH'S.....	10149	2743	12887		
TOTAL CARCINOGENIC PAH'S.....	4000	1324	6340		

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANDED ACCORDING TO DATA VALIDATION.
**- INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION.

SITE 01 - MCALLISTER POINT LANDFILL
SURFACE SOIL SAMPLES
SAMPLES 13-17

SAMPLE IDENTIFICATION:	SS-13	SS-14	SS-15	SS-16	SS-17
***** PESTICIDES/PCB (PPB) *****				NA	NA
BETA-BHC					
ALDRIN					
DIELDRIN					
4,4'-DDE					
4,4'-DDD					
4,4'-DDT					
ALPHA-CHLORDANE					
AROCLOR-1242					
AROCLOR-1248					
AROCLOR-1254	180 J	130 J	610 J		
AROCLOL-1260					
******* INORGANICS (PPM) ********					
SILVER			32.3 J*		
ALUMINUM	6670	5150	11100	8810	15300
ARSENIC	6.1 J*	4.1 J*	6.2 J*	5	12.2
BARIUM	12.6 U*	13.3 U*	126	19.2 J*	62.1 J*
BERYLLIUM	0.41 J*		1.7 J*	0.45	0.81
CALCIUM	10400 J*	45500 J*	14100 J*	667 J*	1860 J*
CADMIUM	21.8	1.3	8.1		0.9 J*
COBALT	13.4	9.9	15.8 J*	8.8	13.8
CHROMIUM	27 J*	25.9 J*	69.2 J*	11.4	26.2
COPPER	278	6070	804 J*	27.2	64 J*
IRON	58100	53500	50900	18700	29400
MERCURY	(0.73)	(3.6)	(2.2)		
POTASSIUM	231 *	148 *	486 *		1030 U*
MAGNESIUM	2900	2900	2930	2270 J*	4440
MANGANESE	416 J*	281 J*	678 J*	365	578
SODIUM	192 U*	425 *	460 *	69.3 U*	228 U*
NICKEL	56.9 J*	29.9 J*	105 J*	14.4	31.6
LEAD	384 J*	447 J*	1980 J*	283	314
ANTIMONY	15.4	16.8	91.4 J*		
SELENIUM					0.63 J*
VANADIUM	61.9 J*	51.5 J*	269 J*	24.7	42.4 J*
ZINC	19200	2040	1820	174	276
CYANIDE (PPM)			0.67		

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANDED ACCORDING TO DATA VALIDATION.
()- INDICATES THAT THE SAMPLE RESULTS HAVE BEEN REJECTED ACCORDING TO SAMPLE VALIDATION.

SITE 01 - MCALLISTER POINT LANDFILL
SURFACE SOIL RESUBMITTAL

SAMPLE IDENTIFICATION:	SS-01	SS-04	SS-18	SS-06	SS-08	FB-011890	TB-011890
SAMPLE ANALYSIS:	TCL VOA	TCL VOA	DUP SS-04	TCL VOA	TCL VOA	TCL VOA	TCL VOA
**** VOLATILE ORGANICS (PPB) ****							
CHLOROETHANE.....							
METHYLENE CHLORIDE.....	33 U*	23 U*	26 U*	13 U*	23 U*		
ACETONE.....	62 U*	19 U*	19 U*	15 U*	47 U*		
CARBON DISULFIDE.....							
1,2-DICHLOROETHENE (TOTAL).....							
CHLOROFORM.....							
1,2-DICHLOROETHANE.....							
2-BUTANONE.....							
1,1,1-TRICHLOROETHANE.....	8 J*	3 J	4 J	2 J			
BROMODICHLOROMETHANE.....							
TRICHLOROETHENE.....							
BENZENE.....							
4-METHYL-2-PENTANONE.....							
2-HEXANONE.....							
TETRACHLOROETHENE.....	2 J		1 J				
TOLUENE.....	2 J						
CHLOROBENZENE.....							
ETHYLBENZENE.....							
XYLENE.....							
TOTAL VOLATILE ORGANICS.....	12	3	5	2	0	0	0

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANDED ACCORDING TO DATA VALIDATION.

TABLE 4-2
NETC NEWPORT – PHASE II RI
SITE 01 – McALLISTER POINT LANDFILL
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location:	MP-SS18	MP-SS19	MP-SS20	MP-SS21	MP-SS22	MP-SS23
Sample Collection Date:	03 NOV 93	03 NOV 93	02 NOV 93	02 NOV 93	02 NOV 93	02 NOV 93
Volatile Organic Compounds (µg/kg)						
Methylene chloride	--	--	1 J	2 J	--	2 J
Acetone	--	--	--	--	--	--
2-Butanone	--	--	1 J	--	--	--
1,1,1-Trichloroethane	5 J	--	--	--	--	--
4-Methyl-2-Pentanone	--	--	--	--	--	--
Tetrachloroethene	2 J	--	--	--	--	--
Toluene	--	--	--	--	--	--
Xylenes (total)	--	--	--	--	--	--
Total VOCs	7	0	2	2	0	2
Semivolatile Organic Compounds (µg/kg)						
Acenaphthene*	--	93 J	--	--	--	--
Acenaphthylene*	--	--	--	--	--	--
Anthracene*	45 J	150 J	--	--	--	--
9H-Carbazole	--	130 J	--	--	--	--
Benzo(a)anthracene**	230 J	780	120 J	--	--	51 J
Benzo(a)pyrene**	200 J	630	100 J	--	57 J	50 J
Benzo(b)fluoranthene**	440	1300	280 J	110 J	100 J	100 J
Benzo(g,h,i)perylene**	150 J	350 J	60 J	--	55 J	--
Chrysene**	290 J	770	160 J	60 J	--	57 J
Di-n-butyl phthalate	--	--	--	--	--	150 J
Dibenz(a,h)anthracene**	47 J	180 J	--	--	--	--
Dibenzofuran	--	--	--	--	--	--
1,4-Dichlorobenzene	--	--	--	--	--	--
3,3'-Dichlorobenzidine	--	--	--	--	--	--
Diethyl phthalate	--	--	--	--	--	--
bis(2-Ethylhexyl) phthalate	82 BJ	92 BJ	--	--	--	--
Fluoranthene*	560	1600	280 J	120 J	67 J	89 J
Fluorene*	--	81 J	--	--	--	--
Indeno(1,2,3-cd)pyrene**	140 J	370	69 J	--	--	--
2-Methylnaphthalene*	--	--	--	--	--	--
Naphthalene*	--	--	--	--	--	--
N-Nitrosodiphenylamine	--	--	--	--	--	--
Phenanthrene*	290 J	850	170 J	56 J	--	41 J
Pyrene*	440	1300	210 J	85 J	60 J	85 J
Total SVOCs	2914	8676	1449	431	339	623
* Total PAHs	2832	8454	1449	431	339	473
** Total Carcinogenic PAHs	1497	4380	789	170	212	258

"--" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ – Presumptive evidence for the presence of the material at an estimated value.

TABLE 4-2
NETC NEWPORT – PHASE II RI
SITE 01 – McALLISTER POINT LANDFILL
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location=	MP-SS18		MP-SS19		MP-SS20		MP-SS21		MP-SS22		MP-SS23	
Sample Collection Date=	03 NOV 93		03 NOV 93		02 NOV 93		02 NOV 93		02 NOV 93		02 NOV 93	
Pesticides/PCBs (µg/kg)												
alpha-BHC	--		--		--		--		0.26	NJ	--	
beta-BHC	--		--		--		--		--		1.7	J
gamma-BHC (Lindane)	--		--		0.48	J	--		--		--	
Heptachlor	--		--		--		0.99	J	--		--	
Heptachlor epoxide	0.17	J	0.57	J	0.78	J	0.19	J	--		1.0	J
Endosulfan I	--		--		--		--		1.6	J	--	
Dieldrin	--		--		--		1.4	NJ	3.3	J	--	
4,4'-DDE	2.5	J	21	J	4.7	J	--		1.1	J	5.4	J
Endrin	3.5	J	7.5	NJ	5.9	J	2.1	J	3.6	J	6.3	
Endosulfan II	0.43	J	2.3	J	1.2	J	0.57	J	0.80	J	1.6	J
4,4'-DDD	2.7	J	11	J	1.3	J	--		4.7	J	4.1	J
Endosulfan sulfate	--		--		1.8	J	1.1	J	--		1.6	J
4,4'-DDT	2.5	J	34	J	7.1	J	3.5	J	5.9	J	15	
Methoxychlor	--		--		--		--		--		2.1	NJ
Endrin ketone	--		--		--		--		--		--	
Endrin aldehyde	--		--		--		--		--		--	
alpha-Chlordane	--		--		0.47	J	0.74	J	1.7	J	5.2	
gamma-Chlordane	--		--		--		--		1.7	J	3.1	
Aroclor 1016	--		--		--		--		--		--	
Aroclor 1254	--		--		--		--		--		--	
Aroclor 1260	--		--		--		--		--		--	
Inorganics (mg/kg)												
Aluminum	8840		9410		9360		9210		7770		5520	
Antimony	--		--		--		--		--		--	
Arsenic	5.8	J	9.5	J	3.8	J	2.6	J	2.2	J	3.0	J
Barium	28.5		23.3		47.0		12.8		20.9		18.0	
Beryllium	0.41		0.41		0.44		0.27		0.28		0.28	
Cadmium	--		--		--		--		--		--	
Calcium	434		346		1160		405		765		907	
Chromium	8.1		10.2		9.9		12.6		9.6		8.2	
Cobalt	3.7		4.4		6.0		9.4		5.4		5.1	
Copper	15.8	J	21.9	J	24.7	J	46.8	J	13.0	J	10.6	J
Iron	10600		14000		19000		20000		14100		12200	
Lead	28.6		68.8		54.8		22.4		17.8		29.8	
Magnesium	1110		1410		1410		2840		2850		1940	
Manganese	318		240		678		267		185		248	
Mercury	0.22		0.26		0.25		0.10		--		--	
Nickel	10.4		13.7		15.0		22.3		12.6		9.5	
Potassium	247		194		179		--		581		418	
Selenium	0.54		0.57		0.61		--		--		--	
Silver	--		--		--		--		--		--	
Sodium	--		--		--		--		--		--	
Vanadium	33.7		44.5		25.7		22.5		12.8		10.0	
Zinc	41.1		45.2		109		56.1		40.8		64.5	

"--" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ – Presumptive evidence for the presence of the material at an estimated value.

TABLE 4-2
NETC NEWPORT – PHASE II RI
SITE 01 – McALLISTER POINT LANDFILL
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location=	MP-SS24	MP-SS25	MP-SS40	MP-SS26	MP-SS27	MP-SS29
Sample Collection Date=	02 NOV 93	02 NOV 93	(Dup of SS-25)	02 NOV 93	02 NOV 93	04 NOV 93
Volatile Organic Compounds (µg/kg)						
Methylene chloride	--	1900	--	3 J	2 J	3 J
Acetone	--	39000 D	33000 D	--	--	--
2-Butanone	--	--	110 B	--	--	--
1,1,1-Trichloroethane	--	--	--	--	--	--
4-Methyl-2-Pentanone	--	--	3 J	--	--	--
Tetrachloroethene	--	--	--	--	--	--
Toluene	--	--	1 J	--	--	--
Xylenes (total)	--	--	--	--	--	--
Total VOCs	0	40900	33114	3	2	3
Semivolatile Organic Compounds (µg/kg)						
Acenaphthene*	580 J	--	--	46 J	--	140 J
Acenaphthylene*	--	--	--	--	--	--
Anthracene*	570 J	--	--	89 J	70 J	280 J
9H-Carbazole	390 J	--	--	78 J	--	170 J
Benzo(a)anthracene**	1800 J	--	--	460	220 J	880
Benzo(a)pyrene**	1200 J	--	--	420	220 J	790
Benzo(b)fluoranthene**	2500 J	--	--	950	480 J	1500
Benzo(g,h,i)perylene**	300 J	--	--	210 J	140 J	240 J
Chrysene**	1500 J	--	--	550	300 J	830
Di-n-butyl phthalate	47 J	--	--	--	--	--
Dibenz(a,h)anthracene**	330 J	--	--	85 J	52 J	110 J
Dibenzofuran	180 J	--	--	--	--	51 J
1,4-Dichlorobenzene	--	79 J	64 J	--	--	--
3,3'-Dichlorobenzidine	--	--	--	--	--	--
Diethyl phthalate	--	--	--	--	--	--
bis(2-Ethylhexyl) phthalate	--	--	--	--	--	--
Fluoranthene*	2900 J	63 J	--	1100	470 J	1700
Fluorene*	400 J	--	--	--	--	120 J
Indeno(1,2,3-cd)pyrene**	560 J	--	--	250 J	150 J	340 J
2-Methylnaphthalene*	60 J	--	--	--	--	--
Naphthalene*	80 J	--	--	--	--	--
N-Nitrosodiphenylamine	--	--	--	--	--	--
Phenanthrene*	2100 J	--	--	520	220 J	1100
Pyrene*	2300 J	--	--	870	390 J	1500
Total SVOCs	17797	142	64	5628	2712	9751
* Total PAHs	17180	63	0	5550	2712	9530
** Total Carcinogenic PAHs	8190	0	0	2925	1562	4690

"--" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ – Presumptive evidence for the presence of the material at an estimated value.

TABLE 4-2
NETC NEWPORT – PHASE II RI
SITE 01 – McALLISTER POINT LANDFILL
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location=	MP-SS24	MP-SS25	MP-SS40	MP-SS26	MP-SS27	MP-SS29
Sample Collection Date=	02 NOV 93	02 NOV 93	(Dup of SS-25)	02 NOV 93	02 NOV 93	04 NOV 93
Pesticides/PCBs (µg/kg)						
alpha-BHC	1.4	--	--	--	--	0.79 J
beta-BHC	--	--	--	--	--	--
gamma-BHC (Lindane)	--	--	--	--	--	--
Heptachlor	--	--	--	--	--	0.78 NJ
Heptachlor epoxide	--	--	--	0.41 J	--	1.6 J
Endosulfan I	--	--	--	--	--	--
Dieldrin	--	--	1.2 J	--	3.2 J	--
4,4'-DDE	0.70 J	0.20 J	0.42 J	8.2 J	23 J	6.6 J
Endrin	--	1.0 J	5.4 J	6.5 NJ	7.2 J	10 NJ
Endosulfan II	0.29 J	0.56 J	--	1.5 J	2.2 J	--
4,4'-DDD	0.64 J	0.81 J	1.3 NJ	4.0 J	5.1 NJ	8.6 J
Endosulfan sulfate	--	--	2.3 J	--	--	--
4,4'-DDT	1.3 J	--	--	35 J	46 J	22 J
Methoxychlor	--	--	--	--	--	--
Endrin ketone	--	--	--	--	--	--
Endrin aldehyde	0.10 J	--	--	--	--	--
alpha-Chlordane	--	0.25 J	--	0.64 J	--	--
gamma-Chlordane	--	--	--	--	--	1.1 J
Aroclor 1016	--	34 J	--	--	--	--
Aroclor 1254	--	--	--	--	--	--
Aroclor 1260	--	--	--	--	--	--
Inorganics (mg/kg)						
Aluminum	9520	4730	5420	14600	8900	6510
Antimony	--	--	--	--	--	--
Arsenic	2.7 J	2.2 J	2.5 J	16.4 J	12.8 J	5.7 J
Barium	29.6	13.9	16.6	13.1	45.0	20.3
Beryllium	0.30	--	--	0.34	0.37	0.25
Cadmium	--	--	--	--	0.92	--
Calcium	727	1080	1150	1020	4630	6850 J
Chromium	12.7	7.1	7.7	26.6	15.5	10.6
Cobalt	7.3	5.2	5.4	19.1	11.1	--
Copper	12.3 J	10.0 J	11.0 J	44.2 J	145 J	15.9
Iron	17300	10500	12800	45800	22300	15700
Lead	10.3	6.4	6.8	32.1	103	10.8 J
Magnesium	3610	1960	2160	5130	2990	2440
Manganese	304	277	233	529	355	236
Mercury	--	--	--	0.16	0.40	0.26
Nickel	15.6	9.1	9.7	38.9	24.2	14.0
Potassium	806	627	599	265	267	394
Selenium	--	--	--	--	--	--
Silver	--	--	--	--	--	--
Sodium	436	--	--	--	--	--
Vanadium	13.7	8.4	10.0	31.5	35.1	21.2
Zinc	49.6	25.9	28.8	337	171	67.0

"--" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ – Presumptive evidence for the presence of the material at an estimated value.

TABLE 4-2
NETC NEWPORT – PHASE II RI
SITE 01 – McALLISTER POINT LANDFILL
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location=	MP-SS30	MP-SS31	MP-SS41	MP-SS32	MP-B141	MP-B151
Sample Collection Date=	04 NOV 93	04 NOV 93	(Dup of SS-31)	04 NOV 93	22 NOV 93	10 NOV 93
Volatile Organic Compounds (µg/kg)						
Methylene chloride	5 J	4 J	4 J	4 J	--	--
Acetone	31	--	--	--	--	--
2-Butanone	--	--	--	--	3 J	--
1,1,1-Trichloroethane	--	--	--	--	--	--
4-Methyl-2-Pentanone	--	--	--	--	--	--
Tetrachloroethene	--	--	--	--	--	--
Toluene	--	--	--	--	3 J	--
Xylenes (total)	--	--	--	--	--	--
Total VOCs	36	4	4	4	6	0
Semivolatile Organic Compounds (µg/kg)						
Acenaphthene*	91 J	--	--	--	--	--
Acenaphthylene*	--	--	--	--	--	--
Anthracene*	140 J	--	--	--	--	110 J
9H-Carbazole	85 J	--	--	--	--	53 J
Benzo(a)anthracene**	500	--	--	--	--	350 J
Benzo(a)pyrene**	410	--	--	--	--	300 J
Benzo(b)fluoranthene**	790	--	--	--	--	590
Benzo(g,h,i)perylene**	180 J	--	--	--	--	120 J
Chrysene**	480	--	--	--	--	330 J
Di-n-butyl phthalate	--	--	--	--	--	--
Dibenz(a,h)anthracene**	75 J	--	--	--	--	59 J
Dibenzofuran	--	--	--	--	--	--
1,4-Dichlorobenzene	--	--	--	--	--	--
3,3'-Dichlorobenzidine	--	--	--	--	--	--
Diethyl phthalate	--	--	--	--	--	--
bis(2-Ethylhexyl) phthalate	--	--	--	--	--	360 J
Fluoranthene*	1100	--	--	--	--	600
Fluorene*	74 J	--	--	--	--	--
Indeno(1,2,3-cd)pyrene**	230 J	--	--	--	--	140 J
2-Methylnaphthalene*	--	--	--	--	--	--
Naphthalene*	--	--	--	--	--	--
N-Nitrosodiphenylamine	--	--	--	--	--	--
Phenanthrene*	740	--	--	--	--	320 J
Pyrene*	860	--	--	--	--	470
Total SVOCs	5755	0	0	0	0	3802
* Total PAHs	5670	0	0	0	0	3389
** Total Carcinogenic PAHs	2665	0	0	0	0	1889

"--" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ – Presumptive evidence for the presence of the material at an estimated value.

TABLE 4-2
NETC NEWPORT – PHASE II RI
SITE 01 – McALLISTER POINT LANDFILL
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location=	MP-SS30	MP-SS31	MP-SS41	MP-SS32	MP-B141	MP-B151
Sample Collection Date=	04 NOV 93	04 NOV 93	(Dup of SS-31)	04 NOV 93	22 NOV 93	10 NOV 93
Pesticides/PCBs (µg/kg)						
alpha-BHC	2.7 J	--	0.026 J	--	--	15 J
beta-BHC	--	--	--	--	--	--
gamma-BHC (Lindane)	0.29 J	0.19 J	0.12 J	0.096 J	--	--
Heptachlor	1.0 NJ	0.23 NJ	0.21 J	0.25 J	--	--
Heptachlor epoxide	0.91 J	--	--	--	--	--
Endosulfan I	--	--	--	--	--	--
Dieldrin	--	0.038 NJ	0.058 J	--	--	--
4,4'-DDE	16 J	0.096 J	0.098 J	0.14 J	--	--
Endrin	14 J	--	--	--	--	9.1 J
Endosulfan II	--	--	--	--	--	--
4,4'-DDD	28 J	0.11 NJ	0.46 J	--	--	--
Endosulfan sulfate	--	0.27 J	0.34 J	--	--	--
4,4'-DDT	120 J	0.33 J	0.55 J	0.30 J	--	--
Methoxychlor	110 J	--	--	--	--	8.6 NJ
Endrin ketone	--	--	--	--	--	--
Endrin aldehyde	--	0.38 NJ	0.26 NJ	--	--	--
alpha-Chlordane	3.9 J	--	--	--	--	1.6 J
gamma-Chlordane	1.8 J	--	--	--	--	--
Aroclor 1016	--	--	--	--	--	--
Aroclor 1254	--	--	--	--	--	210 J
Aroclor 1260	--	--	--	--	--	--
Inorganics (mg/kg)						
Aluminum	8910	13700	15200	16500	12400	7170
Antimony	--	--	--	--	--	--
Arsenic	11.4 J	23.8 J	23.8 J	13.2 J	1.9	3.0 J
Barium	23.4	3.1	4.0	4.1	21	30.2
Beryllium	0.31	0.28	0.33	0.43	0.39	0.42
Cadmium	--	--	--	--	--	--
Calcium	1030 J	1210 J	1230 J	1240 J	348	836 J
Chromium	12.9	20.0	20.9	22.8	12.4	11.5
Cobalt	9.8	16.6	18.7	24.9	10.2	5.8
Copper	25.9	29.4	32.9	35.7	11.6	64.5
Iron	20700	36400	40000	43900	19300	13000
Lead	50.8 J	40.4 J	31.7 J	9.6 J	8.1	62.8 J
Magnesium	2570	4810	5370	6830	2680	2410
Manganese	296	334	393	517	416	173
Mercury	0.24	--	--	--	--	0.16
Nickel	19.8	27.2	31.1	41.3	21.4	19.9
Potassium	284	--	--	--	251	638
Selenium	--	--	--	--	--	--
Silver	--	--	--	--	--	--
Sodium	--	--	--	--	--	--
Vanadium	24.0	23.8	25.6	21.7	15.9	12.2
Zinc	97.3	60.2	65.1	86.2	49.3	131

"--" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ – Presumptive evidence for the presence of the material at an estimated value.

TABLE 4-2
NETC NEWPORT – PHASE II RI
SITE 01 – McALLISTER POINT LANDFILL
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location=	MP-SS30	MP-SS31	MP-SS41	MP-SS32	MP-B141	MP-B151
Sample Collection Date=	04 NOV 93	04 NOV 93	(Dup of SS-31)	04 NOV 93	22 NOV 93	10 NOV 93
Volatile Organic Compounds (µg/kg)						
Methylene chloride	5 J	4 J	4 J	4 J	--	--
Acetone	31	--	--	--	--	--
2-Butanone	--	--	--	--	3 J	--
1,1,1-Trichloroethane	--	--	--	--	--	--
4-Methyl-2-Pentanone	--	--	--	--	--	--
Tetrachloroethene	--	--	--	--	--	--
Toluene	--	--	--	--	3 J	--
Xylenes (total)	--	--	--	--	--	--
Total VOCs	36	4	4	4	6	0
Semivolatile Organic Compounds (µg/kg)						
Acenaphthene*	91 J	--	--	--	--	--
Acenaphthylene*	--	--	--	--	--	--
Anthracene*	140 J	--	--	--	--	110 J
9H-Carbazole	85 J	--	--	--	--	53 J
Benzo(a)anthracene**	500	--	--	--	--	350 J
Benzo(a)pyrene**	410	--	--	--	--	300 J
Benzo(b)fluoranthene**	790	--	--	--	--	590
Benzo(g,h,i)perylene**	180 J	--	--	--	--	120 J
Chrysene**	480	--	--	--	--	330 J
Di-n-butyl phthalate	--	--	--	--	--	--
Dibenz(a,h)anthracene**	75 J	--	--	--	--	59 J
Dibenzofuran	--	--	--	--	--	--
1,4-Dichlorobenzene	--	--	--	--	--	--
3,3'-Dichlorobenzidine	--	--	--	--	--	--
Diethyl phthalate	--	--	--	--	--	--
bis(2-Ethylhexyl) phthalate	--	--	--	--	--	360 J
Fluoranthene*	1100	--	--	--	--	600
Fluorene*	74 J	--	--	--	--	--
Indeno(1,2,3-cd)pyrene**	230 J	--	--	--	--	140 J
2-Methylnaphthalene*	--	--	--	--	--	--
Naphthalene*	--	--	--	--	--	--
N-Nitrosodiphenylamine	--	--	--	--	--	--
Phenanthrene*	740	--	--	--	--	320 J
Pyrene*	860	--	--	--	--	470
Total SVOCs	5755	0	0	0	0	3802
* Total PAHs	5670	0	0	0	0	3389
** Total Carcinogenic PAHs	2665	0	0	0	0	1889

"--" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ – Presumptive evidence for the presence of the material at an estimated value.

TABLE 4-2
NETC NEWPORT – PHASE II RI
SITE 01 – McALLISTER POINT LANDFILL
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location=	MP-SS30		MP-SS31		MP-SS41		MP-SS32		MP-B141		MP-B151	
Sample Collection Date=	04 NOV 93		04 NOV 93		(Dup of SS-31)		04 NOV 93		22 NOV 93		10 NOV 93	
Pesticides/PCBs (µg/kg)												
alpha-BHC	2.7	J	--		0.026	J	--		--		15	J
beta-BHC	--		--		--		--		--		--	
gamma-BHC (Lindane)	0.29	J	0.19	J	0.12	J	0.096	J	--		--	
Heptachlor	1.0	NJ	0.23	NJ	0.21	J	0.25	J	--		--	
Heptachlor epoxide	0.91	J	--		--		--		--		--	
Endosulfan I	--		--		--		--		--		--	
Dieldrin	--		0.038	NJ	0.058	J	--		--		--	
4,4'-DDE	16	J	0.096	J	0.098	J	0.14	J	--		--	
Endrin	14	J	--		--		--		--		9.1	J
Endosulfan II	--		--		--		--		--		--	
4,4'-DDD	28	J	0.11	NJ	0.46	J	--		--		--	
Endosulfan sulfate	--		0.27	J	0.34	J	--		--		--	
4,4'-DDT	120	J	0.33	J	0.55	J	0.30	J	--		--	
Methoxychlor	110	J	--		--		--		--		8.6	NJ
Endrin ketone	--		--		--		--		--		--	
Endrin aldehyde	--		0.38	NJ	0.26	NJ	--		--		--	
alpha-Chlordane	3.9	J	--		--		--		--		1.6	J
gamma-Chlordane	1.8	J	--		--		--		--		--	
Aroclor 1016	--		--		--		--		--		--	
Aroclor 1254	--		--		--		--		--		210	J
Aroclor 1260	--		--		--		--		--		--	
Inorganics (mg/kg)												
Aluminum	8910		13700		15200		16500		12400		7170	
Antimony	--		--		--		--		--		--	
Arsenic	11.4	J	23.8	J	23.8	J	13.2	J	1.9		3.0	J
Barium	23.4		3.1		4.0		4.1		21		30.2	
Beryllium	0.31		0.28		0.33		0.43		0.39		0.42	
Cadmium	--		--		--		--		--		--	
Calcium	1030	J	1210	J	1230	J	1240	J	348		836	J
Chromium	12.9		20.0		20.9		22.8		12.4		11.5	
Cobalt	9.8		16.6		18.7		24.9		10.2		5.8	
Copper	25.9		29.4		32.9		35.7		11.6		64.5	
Iron	20700		36400		40000		43900		19300		13000	
Lead	50.8	J	40.4	J	31.7	J	9.6	J	8.1		62.8	J
Magnesium	2570		4810		5370		6830		2680		2410	
Manganese	296		334		393		517		416		173	
Mercury	0.24		--		--		--		--		0.16	
Nickel	19.8		27.2		31.1		41.3		21.4		19.9	
Potassium	284		--		--		--		251		638	
Selenium	--		--		--		--		--		--	
Silver	--		--		--		--		--		--	
Sodium	--		--		--		--		--		--	
Vanadium	24.0		23.8		25.6		21.7		15.9		12.2	
Zinc	97.3		60.2		65.1		86.2		49.3		131	

"--" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ – Presumptive evidence for the presence of the material at an estimated value.

TABLE 4-2
NETC NEWPORT – PHASE II RI
SITE 01 – McALLISTER POINT LANDFILL
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location=	MP-B161	MP-B181	MP-B183	MP-B231	MP-B233	MP-B241
Sample Collection Date=	11 NOV 93	11 NOV 93	11 NOV 93	10 NOV 93	10 NOV 93	08 NOV 93
Volatile Organic Compounds (µg/kg)						
Methylene chloride	--	--	--	--	--	3 J
Acetone	--	--	--	--	--	--
2-Butanone	1 J	--	--	--	--	--
1,1,1-Trichloroethane	--	--	--	--	--	--
4-Methyl-2-Pentanone	--	--	--	--	--	--
Tetrachloroethene	--	--	--	--	--	--
Toluene	--	--	--	--	--	--
Xylenes (total)	--	--	--	--	--	--
Total VOCs	1	0	0	0	0	3
Semivolatile Organic Compounds (µg/kg)						
Acenaphthene*	180 J	--	--	--	--	830
Acenaphthylene*	--	--	--	--	--	110 J
Anthracene*	310 J	--	--	42 J	51 J	1500
9H-Carbazole	210 J	--	--	--	--	1200
Benzo(a)anthracene**	1300	--	48 J	150 J	130 J	8400 D
Benzo(a)pyrene**	1100	--	--	130 J	120 J	6500 D
Benzo(b)fluoranthene**	1800	--	59 J	230 J	200 J	11000 D
Benzo(g,h,i)perylene**	480	--	--	60 J	59 J	900
Chrysene**	1000	--	58 J	130 J	130 J	6500 D
Di-n-butyl phthalate	--	--	--	--	--	--
Dibenz(a,h)anthracene**	290 J	--	--	--	--	890
Dibenzofuran	67 J	--	--	--	--	300 J
1,4-Dichlorobenzene	--	--	--	--	--	--
3,3'-Dichlorobenzidine	--	--	--	--	--	--
Diethyl phthalate	--	--	--	--	--	--
bis(2-Ethylhexyl) phthalate	48 J	--	--	38 J	52 J	140 J
Fluoranthene*	1900	--	84 J	280 J	220 J	12000 D
Fluorene*	150 J	--	--	--	--	680
Indeno(1,2,3-cd)pyrene**	530	--	--	57 J	50 J	1900
2-Methylnaphthalene*	--	--	--	--	--	83 J
Naphthalene*	--	--	--	--	--	100 J
N-Nitrosodiphenylamine	--	--	--	--	--	--
Phenanthrene*	1200	--	51 J	170 J	150 J	7400 D
Pyrene*	1700	--	75 J	230 J	190 J	11000 D
Total SVOCs	12265	0	375	1517	1352	71433
* Total PAHs	11940	0	375	1479	1300	69683
** Total Carcinogenic PAHs	6500	0	165	757	689	36090

"--" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ – Presumptive evidence for the presence of the material at an estimated value.

TABLE 4–2
NETC NEWPORT – PHASE II RI
SITE 01 – McALLISTER POINT LANDFILL
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location:	MP–B161		MP–B181		MP–B183		MP–B231		MP–B233		MP–B241	
Sample Collection Date:	11 NOV 93		11 NOV 93		11 NOV 93		10 NOV 93		10 NOV 93		08 NOV 93	
Pesticides/PCBs (µg/kg)												
alpha–BHC	--		0.099	J	--		--		--		--	
beta–BHC	--		--		--		--		--		--	
gamma–BHC (Lindane)	--		--		--		--		--		--	
Heptachlor	--		--		0.43	J	--		--		--	
Heptachlor epoxide	--		--		--		--		--		7.8	J
Endosulfan I	--		--		--		--		--		--	
Dieldrin	--		--		--		--		--		--	
4,4'–DDE	1.5	J	2.9	J	3.2	J	--		9.9	J	45	J
Endrin	--		--		--		--		--		60	NJ
Endosulfan II	--		--		--		--		--		--	
4,4'–DDD	1.4	J	2.3	J	2.9	J	--		94	J	97	J
Endosulfan sulfate	--		--		--		--		--		--	
4,4'–DDT	--		--		--		--		--		250	J
Methoxychlor	--		--		--		--		--		--	
Endrin ketone	--		--		--		3.0	J	--		39	J
Endrin aldehyde	2.3	J	1.2	J	2.1	J	--		--		--	
alpha–Chlordane	--		--		--		--		--		16	J
gamma–Chlordane	--		--		--		--		--		10	J
Aroclor 1016	--		--		--		--		--		--	
Aroclor 1254	--		--		--		350	J	260	J	--	
Aroclor 1260	--		--		--		--		--		--	
Inorganics (mg/kg)												
Aluminum	6990	J	5590	J	5630	J	16200		12100		10900	
Antimony	--		--		--		73.9	J	24.9	J	5.9	J
Arsenic	3.6	J	2.9	J	3.0	J	14.4	J	13.8	J	15.4	J
Barium	20.0		13.5		11.8		17.4		19.0		19.5	
Beryllium	0.30		--		--		0.53		0.57		0.50	
Cadmium	--		--		--		0.76		0.89		0.96	
Calcium	589		804		723		1650	J	1430	J	1150	
Chromium	8.3		7.0		7.6		28.0		22.2		18.0	
Cobalt	8.1		5.0		5.0		17.0		13.0		13.6	
Copper	16.2		11.0		11.9		293		110		60.8	
Iron	13400		12600		12900		41800		36900		26700	
Lead	20.2		8.1		7.8		49.5	J	128	J	124	
Magnesium	1960		2150		2210		5730		4240		3950	
Manganese	253	J	199	J	193	J	462		333		421	J
Mercury	--		--		--		0.31		1.9		0.40	
Nickel	13.6		8.8		10.0		38.8		38.3		29.2	
Potassium	325		448		424		387		197		410	
Selenium	--		--		--		--		--		--	
Silver	--		--		--		--		2.0		--	
Sodium	--		--		--		--		--		--	
Vanadium	11.5		8.7		9.1		33.2		51.3		41.1	
Zinc	50.2		25.5		26.0		186		377		131	

"--" = Non–Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ – Presumptive evidence for the presence of the material at an estimated value.

TABLE 4-2
NETC NEWPORT – PHASE II RI
SITE 01 – McALLISTER POINT LANDFILL
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location=	MP-B251	MP-B261	MP-B271	MP-M121	MP-M131	MP-M141
Sample Collection Date=	08 NOV 93	08 NOV 93	22 NOV 93	11 NOV 93	10 NOV 93	17 NOV 93
Volatile Organic Compounds (µg/kg)						
Methylene chloride	--	--	--	--	--	--
Acetone	--	--	--	--	--	--
2-Butanone	2 J	--	--	--	--	--
1,1,1-Trichloroethane	--	--	--	--	--	--
4-Methyl-2-Pentanone	--	--	--	2 J	--	--
Tetrachloroethene	--	--	--	--	--	--
Toluene	--	--	1 J	--	--	--
Xylenes (total)	--	--	--	--	--	--
Total VOCs	2	0	1	2	0	0
Semivolatile Organic Compounds (µg/kg)						
Acenaphthene*	--	7100	--	--	--	--
Acenaphthylene*	--	2200	--	--	56 J	--
Anthracene*	--	11000	--	--	45 J	--
9H-Carbazole	--	--	--	--	--	--
Benzo(a)anthracene**	--	43000 D	--	--	110 J	83 J
Benzo(a)pyrene**	440 J	27000 D	--	--	100 J	65 J
Benzo(b)fluoranthene**	200 J	40000 D	--	--	210 J	150 J
Benzo(g,h,i)perylene**	--	4000	--	--	60 J	38 J
Chrysene**	480 J	33000 D	--	--	120 J	96 J
Di-n-butyl phthalate	--	--	--	--	--	--
Dibenz(a,h)anthracene**	--	4000	--	--	--	--
Dibenzofuran	--	810 J	--	--	--	--
1,4-Dichlorobenzene	--	--	--	--	--	--
3,3'-Dichlorobenzidine	--	360 J	--	--	--	--
Diethyl phthalate	--	--	55 J	--	--	--
bis(2-Ethylhexyl) phthalate	--	--	--	--	--	140 J
Fluoranthene*	--	56000 D	--	--	170 J	180 J
Fluorene*	--	5100	--	--	--	--
Indeno(1,2,3-cd)pyrene**	--	6800	--	--	58 J	38 J
2-Methylnaphthalene*	--	630 J	--	--	--	--
Naphthalene*	--	410 J	--	--	--	--
N-Nitrosodiphenylamine	--	1500 J	--	--	--	--
Phenanthrene*	--	39000 D	--	--	53 J	86 J
Pyrene*	220 J	67000 D	--	--	220 J	140 J
Total SVOCs	1340	348910	55	0	1202	1016
* Total PAHs	1340	344040	0	0	1146	876
** Total Carcinogenic PAHs	1120	157800	0	0	658	470

"--" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ – Presumptive evidence for the presence of the material at an estimated value.

TABLE 4-2
NETC NEWPORT – PHASE II RI
SITE 01 – McALLISTER POINT LANDFILL
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location=	MP-B251		MP-B261		MP-B271		MP-M121		MP-M131		MP-M141	
Sample Collection Date=	08 NOV 93		08 NOV 93		22 NOV 93		11 NOV 93		10 NOV 93		17 NOV 93	
Pesticides/PCBs (µg/kg)												
alpha-BHC	--		5.9	NJ	--		--		0.80	J	1.1	J
beta-BHC	--		--		--		--		--		--	
gamma-BHC (Lindane)	--		--		--		0.066	J	1.1	J	--	
Heptachlor	--		--		2.4	J	--		--		--	
Heptachlor epoxide	0.67	J	93	J	0.78	J	--		2.1	J	--	
Endosulfan I	--		--		0.69	NJ	--		2.5	J	--	
Dieldrin	--		--		--		--		--		--	
4,4'-DDE	5.1	J	--		--		0.042	NJ	3.9	J	--	
Endrin	9.7	J	420	NJ	--		--		25	J	4.5	
Endosulfan II	2.1	J	--		--		--		6.8	J	0.27	NJ
4,4'-DDD	29	J	170	J	--		--		--		--	
Endosulfan sulfate	--		--		--		--		--		--	
4,4'-DDT	110	J	290	J	3.7	J	--		43	J	1.9	J
Methoxychlor	--		160	NJ	--		--		37	J	--	
Endrin ketone	--		88	NJ	--		--		--		--	
Endrin aldehyde	--		--		--		--		--		--	
alpha-Chlordane	--		--		--		--		0.94	J	--	
gamma-Chlordane	--		5.8	NJ	--		--		1.3	J	--	
Aroclor 1016	--		--		--		--		--		--	
Aroclor 1254	--		--		--		--		--		--	
Aroclor 1260	--		--		--		--		--		--	
Inorganics (mg/kg)												
Aluminum	9880		6680		11900		15400	J	12900		10400	
Antimony	--		--		--		--		--		--	
Arsenic	18.2	J	6.4	J	2.8		24.1	J	18.7	J	0.47	J
Barium	14.0		31.5		27.7		6.1		13.1		10.1	
Beryllium	0.45		0.45		0.46		--		0.46		0.45	
Cadmium	--		--		--		--		--		--	
Calcium	289		3290		282		1540		973	J	1050	J
Chromium	9.3		11.0		9.4		21.2		24.8		16.1	
Cobalt	3.9		7.1		8.1		8.0		13.9		17.3	
Copper	7.1		26.1		16.9		23.1		43.0		27.2	
Iron	12400		16500		16300		38700		41400		26500	
Lead	25.4		68.9		12.4		8.7		23.2	J	6.3	J
Magnesium	1400		2390		1780		5380		4620		4160	
Manganese	94.0	J	399	J	531		322	J	472		478	
Mercury	--		0.10		--		--		0.12		--	
Nickel	11.6		15.4		13.5		26.1		35.0		28.4	
Potassium	274		574		299		167		279		295	
Selenium	--		--		--		--		--		--	
Silver	--		--		--		--		--		--	
Sodium	--		--		--		--		--		--	
Vanadium	14.2		27.5		14.7		19.2		22.0		15.5	
Zinc	36.3		75.4		37.1		59.3		123		58.1	

'--' = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ – Presumptive evidence for the presence of the material at an estimated value.

TABLE 4-2
NETC NEWPORT – PHASE II RI
SITE 01 – McALLISTER POINT LANDFILL
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location=	MP-M142	MP-M151	MP-M161
Sample Collection Date=	(Dup of M14-2)	16 NOV 93	16 NOV 93
Volatile Organic Compounds (µg/kg)			
Methylene chloride	--	--	1 J
Acetone	--	--	--
2-Butanone	--	--	--
1,1,1-Trichloroethane	--	--	--
4-Methyl-2-Pentanone	--	--	--
Tetrachloroethene	--	--	--
Toluene	--	3 J	2 J
Xylenes (total)	--	3 J	2 J
Total VOCs	0	6	5
Semivolatile Organic Compounds (µg/kg)			
Acenaphthene*	--	--	--
Acenaphthylene*	--	--	--
Anthracene*	--	--	79 J
9H-Carbazole	--	--	43 J
Benzo(a)anthracene**	39 J	--	290 J
Benzo(a)pyrene**	--	--	200 J
Benzo(b)fluoranthene**	61 J	--	490 J
Benzo(g,h,i)perylene**	--	--	130 J
Chrysene**	38 J	--	280 J
Di-n-butyl phthalate	--	--	--
Dibenz(a,h)anthracene**	--	--	74 J
Dibenzofuran	--	--	--
1,4-Dichlorobenzene	--	--	--
3,3'-Dichlorobenzidine	--	--	--
Diethyl phthalate	--	--	--
bis(2-Ethylhexyl) phthalate	110 J	--	--
Fluoranthene*	83 J	--	610 J
Fluorene*	--	--	--
Indeno(1,2,3-cd)pyrene**	--	--	160 J
2-Methylnaphthalene*	--	--	--
Naphthalene*	--	--	--
N-Nitrosodiphenylamine	--	--	--
Phenanthrene*	44 J	--	330 J
Pyrene*	60 J	--	450 J
Total SVOCs	435	0	3136
* Total PAHs	325	0	3093
** Total Carcinogenic PAHs	138	0	1624

"--" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ – Presumptive evidence for the presence of the material at an estimated value.

TABLE 4-2
NETC NEWPORT – PHASE II RI
SITE 01 – McALLISTER POINT LANDFILL
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location=	MP-M142		MP-M151		MP-M161	
Sample Collection Date=	(Dup of M14-2)		16 NOV 93		16 NOV 93	
Pesticides/PCBs (µg/kg)						
alpha-BHC	0.59	J	--		--	
beta-BHC	0.27	J	--		--	
gamma-BHC (Lindane)	--		0.069	J	--	
Heptachlor	--		--		--	
Heptachlor epoxide	0.80	J	--		--	
Endosulfan I	--		--		--	
Dieldrin	--		--		--	
4,4'-DDE	--		1.1	J	6.0	
Endrin	0.49	J	--		--	
Endosulfan II	--		0.61	J	--	
4,4'-DDD	--		--		5.8	J
Endosulfan sulfate	--		--		--	
4,4'-DDT	--		1.3	J	14	J
Methoxychlor	--		--		--	
Endrin ketone	--		--		--	
Endrin aldehyde	--		1.3	J	--	
alpha-Chlordane	--		--		0.93	J
gamma-Chlordane	0.082	J	--		--	
Aroclor 1016	--		--		--	
Aroclor 1254	--		--		--	
Aroclor 1260	--		--		33	J
Inorganics (mg/kg)						
Aluminum	10500		11500		9110	
Antimony	--		--		--	
Arsenic	2.3	J	6.1	J	14.7	J
Barium	10.6		18.2		18.0	
Beryllium	0.42		0.34		0.36	
Cadmium	--		--		--	
Calcium	1150	J	460		837	
Chromium	14.8		13.5		13.2	
Cobalt	17.6		14.6		11.1	
Copper	21.8		19.3		32.2	
Iron	28600		25600		24700	
Lead	7.8	J	59.3		42.5	
Magnesium	4220		3550		2640	
Manganese	659		389	J	430	J
Mercury	--		0.06		0.14	
Nickel	29.2		22.1		22.8	
Potassium	173		224		362	
Selenium	--		0.70		--	
Silver	--		--		--	
Sodium	--		--		--	
Vanadium	14.6		18.8		20.7	
Zinc	62.0		77.5		87.2	

"--" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ – Presumptive evidence for the presence of the material at an estimated value.

RISK-BASED PRIORITIZATION OF CLEANUP SITE WORK

SITE: NETC-Newport CERCLA SITE Site 2 Melville North Landfill

ANALYTICAL DATA

Pathway	Reference
Groundwater	See attached SI Report Data Tables
Surface Soil	See Attached S.I. Report Data Tables
Surface Water	No Samples Obtained
Sediment	See attached S.I Report Data Tables
Notes	

QUALITATIVE QUESTIONS

Circle Choice	**Migration Pathway Factor**
1.	Physical evidence and/or analytical data indicate off-site migration.
(2.) GW. SW. Sed.	No current indication of off-site migration, but potential exists.
3.	Present engineering structures and/or physical/chemical properties of detected constituents greatly restrict potential for migration.
Reference	See S.I. Report Data Tables
Notes	No offsite samples obtained

SITE: NETC-Newport CERCLA SITE Site 2

Receptor Factor

Circle Choice	**Groundwater**
(1.)	Groundwater is currently used for human activities (i.e., drinking, agriculture, recreation).
2.	Groundwater not currently used for human activities (i.e., drinking, agriculture, recreation), but potential exists.
3.	No future potential for groundwater to be used for human activities (i.e., drinking, agriculture, recreation).
Reference	Draft Vol 1 Old Fire Fighting training Area R.I TRC Report March 94
Notes	Toilet Tank wells located South east of base Fig 3-9

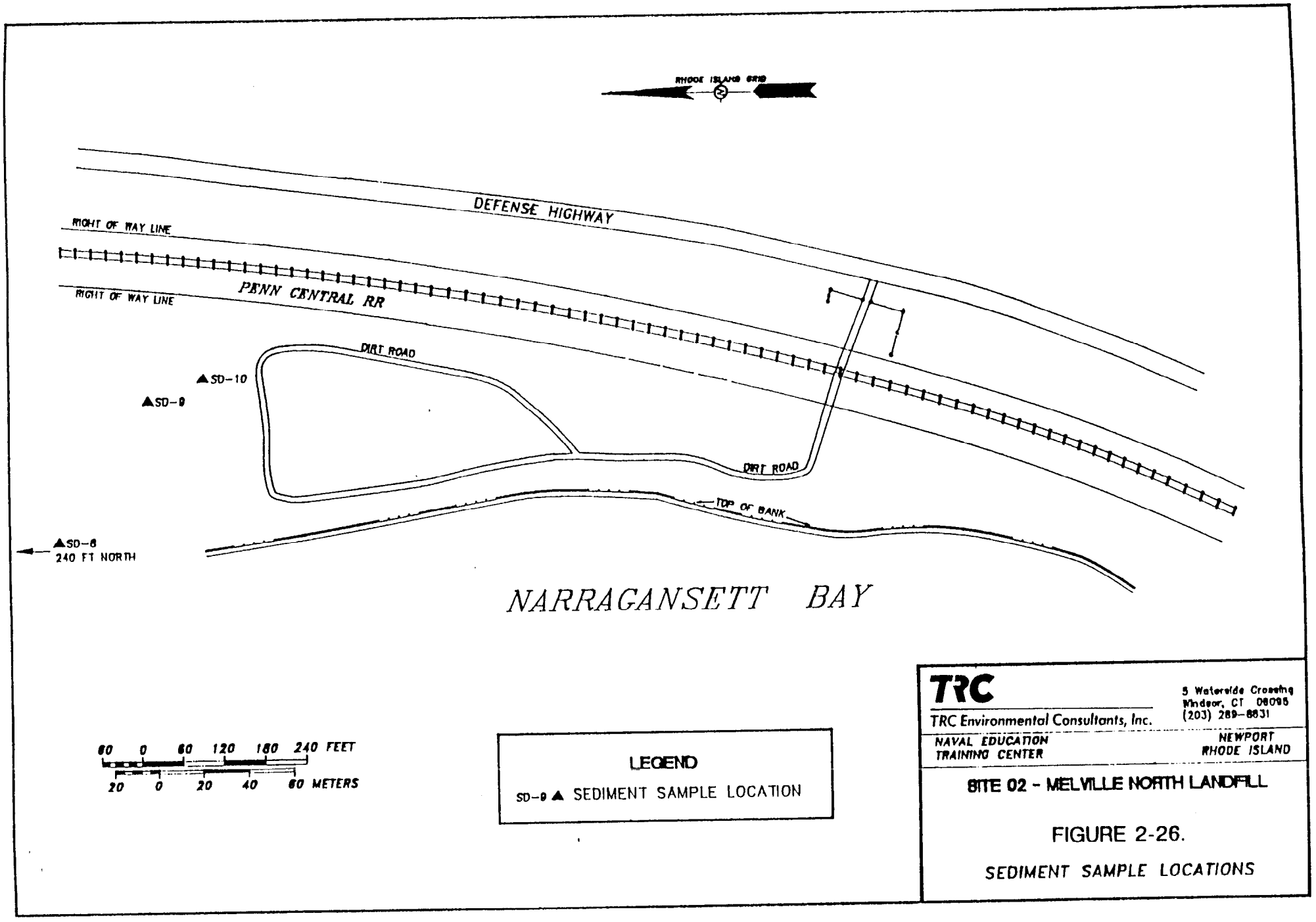
Circle Choice	**Surface Soil** (0 to 6 inches in depth)
1.	Sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) present and/or area routinely used by non-sensitive receptor (i.e., working, training).
(2.)	Potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area occasionally used by non-sensitive receptors (i.e., working, training)
3.	No potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area not used by non-sensitive receptor (i.e., working, training)
Reference	TRC Report March 1994
Notes	

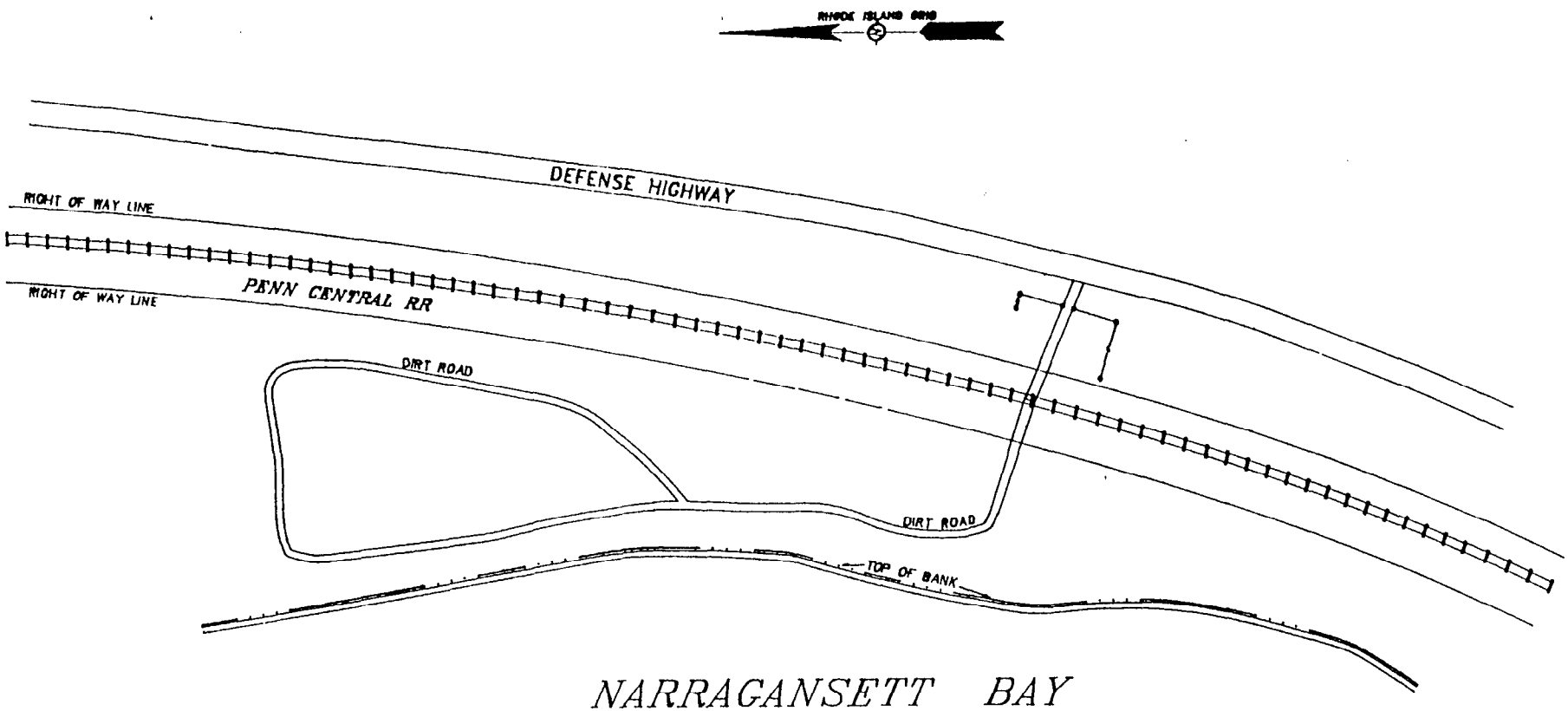
SITE: NETC-Newport CERCLA SITE Site 2

Circle Choice	**Surface Water**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	Wetland species, found at NETC TRC March 1994, p 3-3
Notes	

SITE: NETC-Newport CERCLA SITE Site 2

Circle Choice	**Sediment**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
(2.)	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	See Surface Water
Notes	


RHODE ISLAND GRID
DEFENSE HIGHWAY
RIGHT OF WAY LINE
PENN CENTRAL RR
RIGHT OF WAY LINE
DIRT ROAD
SD-10
SD-9
DIRT ROAD
TOP OF BANK
SD-8
240 FT NORTH
NARRAGANSETT BAY
60 0 60 120 180 240 FEET
20 0 20 40 60 METERS
LEGEND
SD-9 ▲ SEDIMENT SAMPLE LOCATION
TRC
TRC Environmental Consultants, Inc.
5 Waterside Crossing
Windsor, CT 06095
(203) 289-8831
NAVAL EDUCATION
TRAINING CENTER
NEWPORT
RHODE ISLAND
SITE 02 - MELVILLE NORTH LANDFILL
FIGURE 2-26.
SEDIMENT SAMPLE LOCATIONS



60 0 60 120 180 240 FEET

20 0 20 40 60 METERS

LEGEND

FENCE

TRC

TRC Environmental Consultants, Inc.

5 Waterside Crossing
Windsor, CT 06095
(203) 289-8831

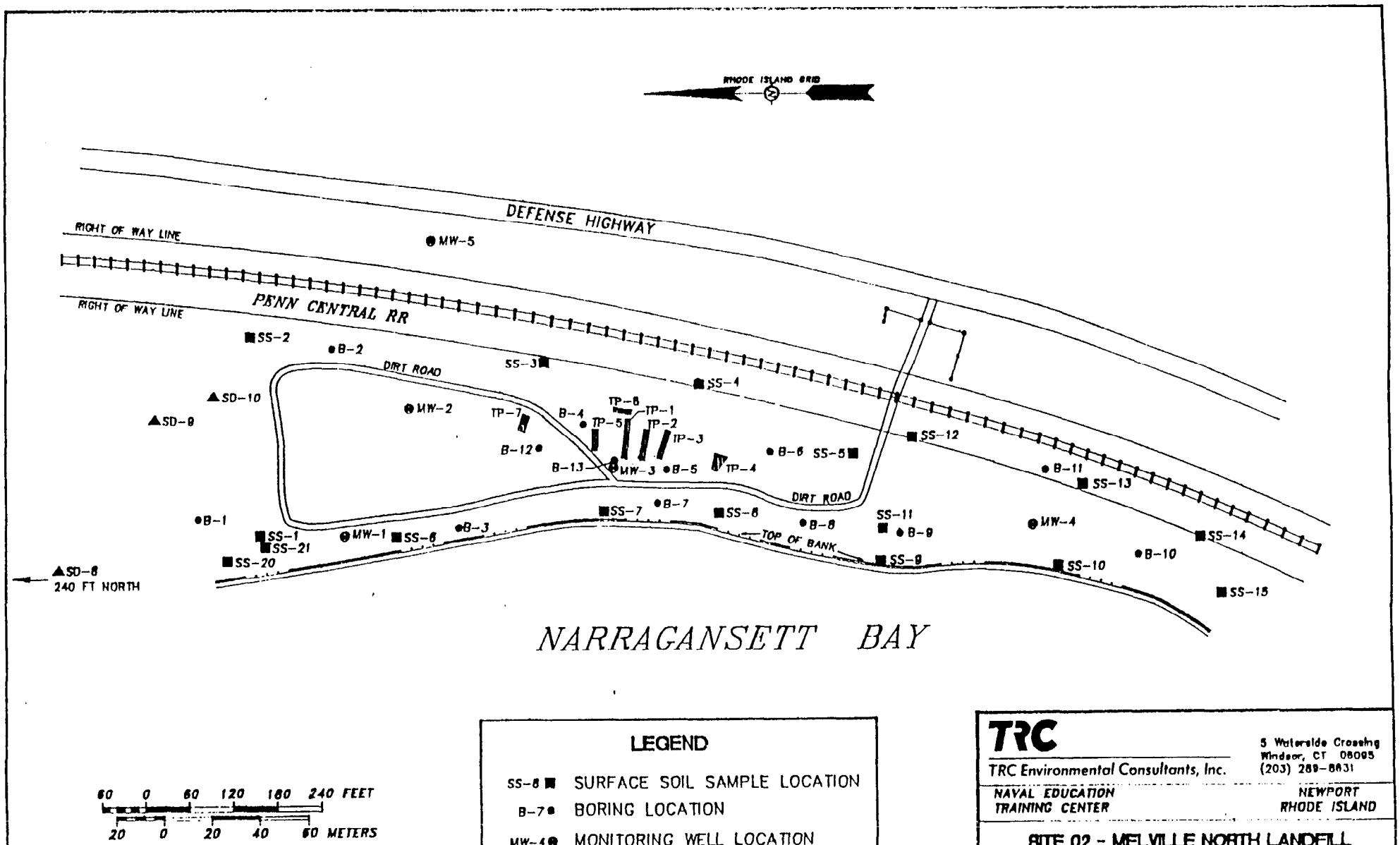
NAVAL EDUCATION TRAINING CENTER

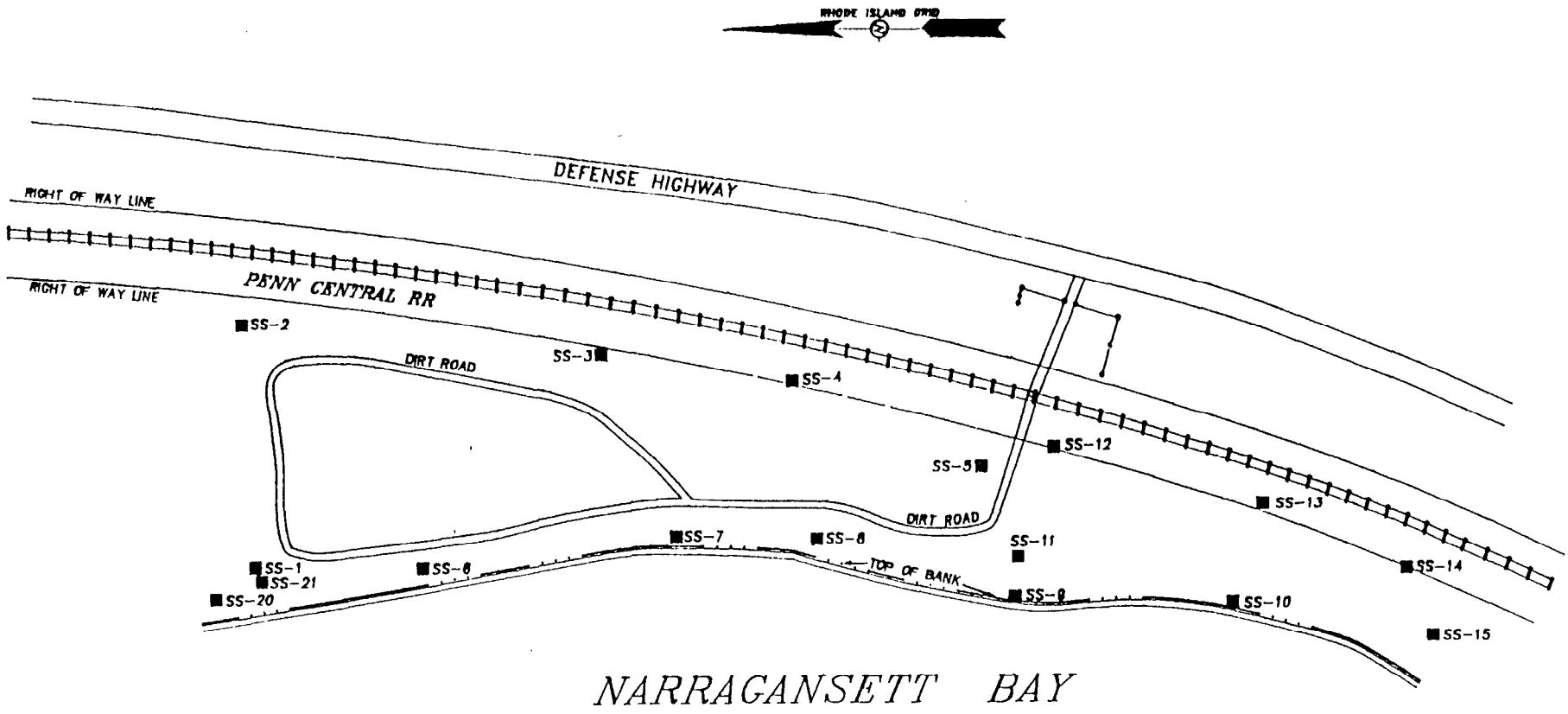
NEWPORT RHODE ISLAND

SITE 02 - MELVILLE NORTH LANDFILL

FIGURE 1-5.

SITE MAP


RHODE ISLAND GRID
DEFENSE HIGHWAY
RIGHT OF WAY LINE
RIGHT OF WAY LINE
PENN CENTRAL RR
MW-5
SS-2
B-2
DIRT ROAD
SS-3
SS-4
SD-10
SD-9
MW-2
TP-7
B-4
TP-6
TP-1
TP-5
TP-2
TP-3
B-12
B-13
MW-3
B-5
TP-4
B-6
SS-5
SS-12
B-11
SS-13
DIRT ROAD
B-1
SS-1
SS-21
SS-20
MW-1
SS-6
B-3
SS-7
B-7
SS-8
TOP OF BANK
B-8
SS-11
B-9
SS-9
MW-4
SS-14
B-10
SS-10
SS-15
SD-8
240 FT NORTH
NARRAGANSETT BAY
60 0 60 120 180 240 FEET
20 0 20 40 60 METERS
LEGEND
SS-8 SURFACE SOIL SAMPLE LOCATION
B-7 BORING LOCATION
MW-4 MONITORING WELL LOCATION
SD-10 SEDIMENT SAMPLE LOCATION
TP-7 TEST PIT LOCATION
TRC
TRC Environmental Consultants, Inc.
5 Waterside Crossing
Windsor, CT 06095
(203) 289-6631
NAVAL EDUCATION TRAINING CENTER
NEWPORT RHODE ISLAND
SITE 02 - MELVILLE NORTH LANDFILL
FIGURE 4-2.
INVESTIGATION SUMMARY MAP



60 0 60 120 180 240 FEET

20 0 20 40 60 METERS

LEGEND

SS-15 ■ SURFACE SOIL SAMPLE LOCATION

TRC

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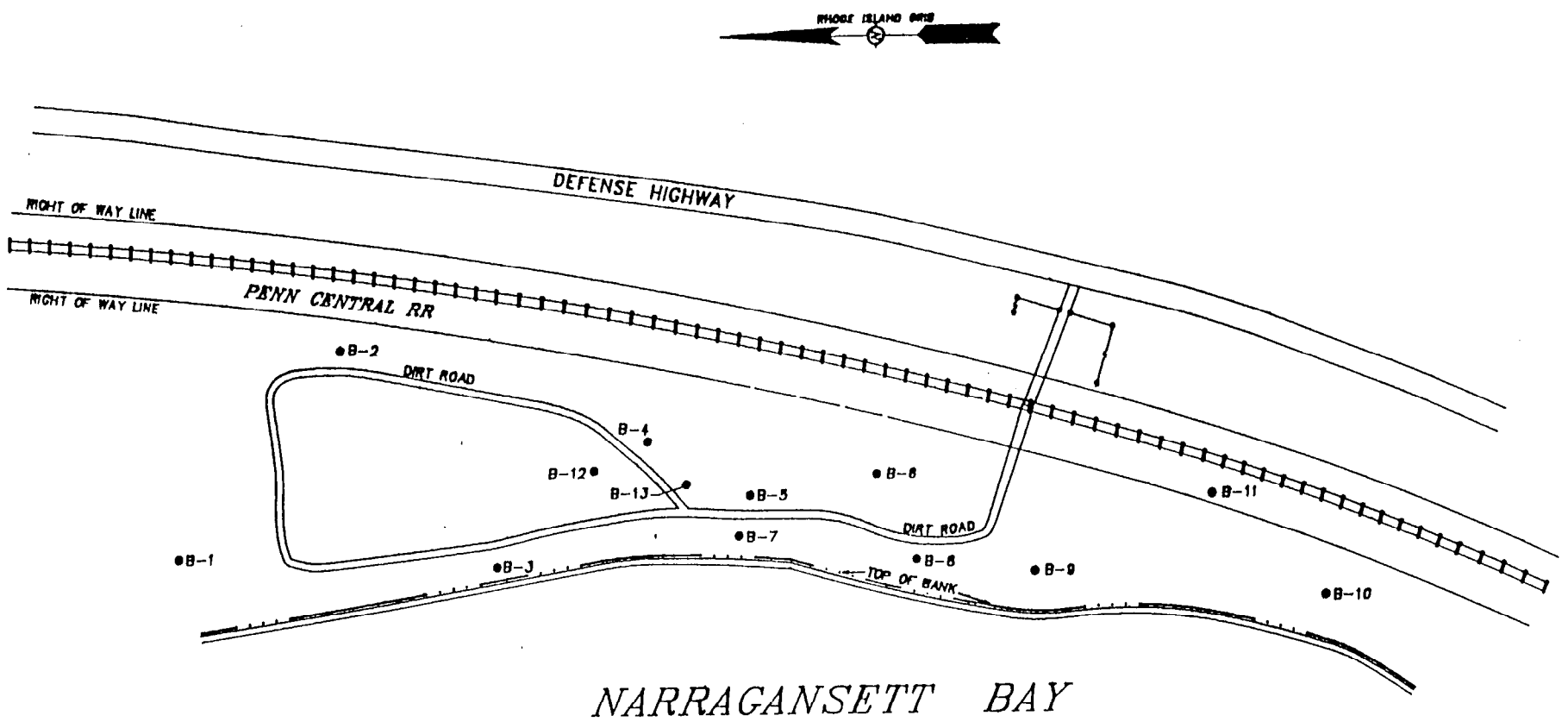
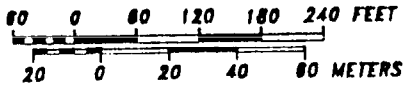
NEWPORT RHODE ISLAND

SITE 02 - MELVILLE NORTH LANDFILL

FIGURE 2-11.

SURFACE SOIL SAMPLE LOCATIONS





LEGEND

B-13 ● TEST BORING LOCATION

TRC

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5 Waterside Crossing
Windsor, CT 06095
(203) 289-6631

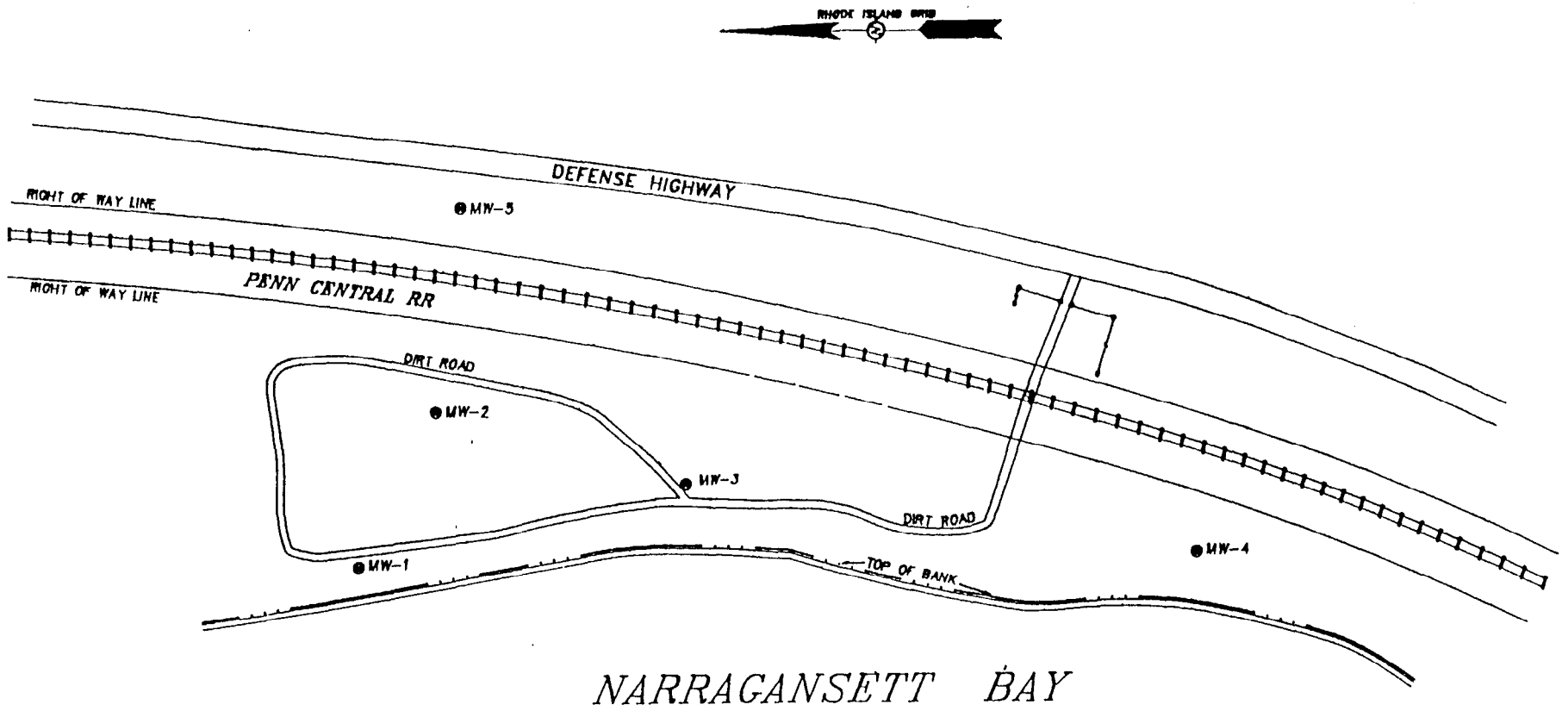
NAVAL EDUCATION TRAINING CENTER

NEWPORT RHODE ISLAND

SITE 02 - MELVILLE NORTH LANDFILL

FIGURE 2-18.

TEST BORING LOCATIONS



60 0 60 120 180 240 FEET

20 0 20 40 60 METERS

LEGEND

MW-4 ● MONITORING WELL LOCATION

TRC

TRC Environmental Consultants, Inc.

5 Waterside Crossing
Windsor, CT 06095
(203) 289-8631

NAVAL EDUCATION TRAINING CENTER

NEWPORT RHODE ISLAND

SITE 02 - MELVILLE NORTH LANDFILL

FIGURE 2-19.

MONITORING WELL LOCATIONS

SITE 02 - MELVILLE NORTH LANDFILL
CONSTITUENTS DETECTED IN GROUND WATER SAMPLES

SAMPLE IDENTIFICATION:	MW-1	MW-2	MW-3	MW-3-O OIL	MW-4	MW-5	FB-072090	TB1-071890	TB2-071890
** VOLATILE ORGANICS (PPB) **									
METHYLENE CHLORIDE.....	13 U*	16 U*	21 U*	160000 U*	93 U*	19 U*	45 J*	19 J*	140 J*
ACETONE.....			3 U*	10000 U*	93 U*				
CHLOROFORM.....									1 J
BENZENE.....	3 J		16		49 J*				
TOLUENE.....					6 J				
CHLOROBENZENE.....			5		79 J*				
ETHYLBENZENE.....					44 J*				
XYLENE.....					110 J**				
TOTAL VOLATILE ORGANICS....	3	0	21	0	288	0	45	19	141
* BASE NEUTRAL / ACIDS (PPB) *									
1,3-DICHLOROBENZENE.....				N/A	14 J			N/A	N/A
1,4-DICHLOROBENZENE.....				|	83			|	|
NAPHTHALENE.....@			7 J	|	100			|	|
2-METHYLNAPHTHALENE.....@			9 J	|	210			|	|
ACENAPHTHENE.....@				|	17 J			|	|
PHENANTHRENE.....@			11 J	|	62			|	|
ANTHRACENE.....@				|	12 J			|	|
PYRENE.....@				|	20 J			|	|
BIS(2-ETHYLHEXYL)PHTHALATE.			13 J	N/A				N/A	N/A
TOTAL BNA'S.....	0	0	40		518	0	0		
TOTAL PAH'S.....	0	0	20		407	0	0		
TOTAL CARCINOGENIC PAH'S...	0	0	0		0	0	0		
** PESTICIDES/PCB'S (PPB) **									
gamma-BHC (LINDANE).....				N/A	0.13 J			N/A	N/A
AROCLOR-1260.....			0.22 J	N/A	40			N/A	N/A
***** INORGANICS (PPB) *****									
SILVER.....		9.2 U*	5.1 U*	N/A	8.9 U*	11.2 U*		N/A	N/A
ALUMINUM.....	1080 J*	29200 J*	17000 J*	|	15200 J*	93200 J*		|	|
ARSENIC.....	3.3 J*	10.4 J*	4.6 J*	|	13.3 J*	22.4 J*		|	|
BARIUM.....	313	323	759	|	59.4	356		|	|
BERYLLIUM.....		1.7	1.1	|		3.8	0.17	|	|
CALCIUM.....	39500	45200	52500	|	22600	77100		|	|
CADMIUM.....		14.7 J*	10.1 J*	|				|	|
COBALT.....	6.3 U*	55	32.9	|	34.3 J*	192 J*		|	|
CHROMIUM.....		62.8	54.5	|	5.7 J*	121 J*		|	|
COPPER.....	32.5 J*	958	320	|	45 J*	133 J*	0.0053	|	|
IRON.....	18000	77200	59200	|	122000	208000	0.103 J*	|	|
MERCURY.....		1.8	0.38	|				|	|
POTASSIUM.....	4180 J*	6280 J*	9730 J*	|	2260 J*	6690 J*		|	|
MAGNESIUM.....	9690 J*	18100	16000	|	11800 J*	34400	0.0829	|	|
MANGANESE.....	549	2080	860	|	4210 J*	3600 J*		|	|
SODIUM.....	27500	20600	19700	|	19100	32700	0.458 J*	|	|
NICKEL.....	17.2 U*	137	126	|	37.3 U*	221	0.0102	|	|
LEAD.....	67.5 J*	960 J*	385 J*	|	23.5 J*	28.5 J*		|	|
ANTIMONY.....	107 U*	118 U*	71.8 U*	|		48.1 U*		|	|
VANADIUM.....	14.3 U*	203	137	|		34.2 U*	0.0069	|	|
ZINC.....	512	4170	2250	|	126	478		|	|
CYANIDE.....				N/A				N/A	N/A

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
**- INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION.
@ - INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH).
@@ - INDICATES THAT THE COMPOUND IS A CARCINOGENIC POLYNUCLEAR AROMATIC HYDROCARBON.
N/A - INDICATES THAT THE COMPOUND WAS NOT ANALYZED FOR.

SITE 02 - MELVILLE NORTH LANDFILL
CONSTITUENTS DETECTED IN SEDIMENT SAMPLES

SAMPLE IDENTIFICATION:	SD-8	SD-9	SD-10	FB-062190	TB-062190
**** VOLATILE ORGANICS (PPB) ***					
VINYL CHLORIDE.....					
METHYLENE CHLORIDE.....	19 U*	12 U*	15 U*	4 J*	4 J*
ACETONE.....	20 U*	27 U*	20 U**		
CARBON DISULFIDE.....	9 J				
BENZENE.....				2 J*	1 J*
2-HEXANONE.....		3 J			
TOLUENE.....	2 J	2 J			
TOTAL VOLATILE ORGANICS.....	11	5	0	6	5
** BASE NEUTRAL / ACIDS (PPB) **					
PHENOL.....		130 J			N/A
PHENANTHRENE.....@	180 J	81 J	430 J		|
DI-N-BUTYLPHTHALATE.....		140 J			|
FLUORANTHENE.....@	310 J	230 J	1000		|
PYRENE.....@	320 J	250 J	1100		|
BENZO(a)ANTHRACENE.....@@	150 J	140 J	450 J		|
CHRYSENE.....@@	220 J	150 J	620 J		|
BIS(2-ETHYLHEXYL)PHTHALATE.....		100 J			|
BENZO(b)FLUORANTHENE.....@@	210 J	170 J	450 J		|
BENZO(k)FLUORANTHENE.....@@	140 J	89 J	430 J		|
BENZO(a)PYRENE.....@@	200 J	130 J	430 J		|
INDENO(1,2,3-cd)PYRENE.....@@	110 J	74 J	260 J		|
BENZO(g,h,i)PERYLENE.....@	110 J	76 J	260 J		N/A
TOTAL BNA'S.....	1950	1760	5430	0	
TOTAL PAH'S.....	1950	1390	5430	0	
TOTAL CARCINOGENIC PAH'S.....	1030	753	2640	0	
**** PESTICIDES/PCB'S (PPB) ****					
ALDRIN.....					N/A
4,4'-DDE.....	64 J	7.9 J	470 J*		|
4,4'-DDD.....	460 J*		34 J		|
4,4'-DDT.....	7.9 J		740 J*		|
ALPHA-CHLORDANE.....		7.9 J			|
******* INORGANICS (PPM) *******					
SILVER.....		0.9 U*	2.1 U*		N/A
ALUMINUM.....	4510	6810	8180		|
ARSENIC.....	2.1 U*	11.8	14		|
BARIUM.....	6.2 U*	29.3	32.7		|
BERYLLIUM.....		0.33	0.4		|
CALCIUM.....	1260 J*	1480 J*	2920 J*	0.103 J*	|
CADMIUM.....		0.88			|
COBALT.....	4 U*	20	11.9 U*		|
CHROMIUM.....	10.8	11.7	162		|
COPPER.....	24.5	47.5	99.7		|
IRON.....	8590	21500	24100		|
MERCURY.....	0.44	0.29	0.43		|
POTASSIUM.....	552		232		|
MAGNESIUM.....	2630	2210	2600	0.073	|
MANGANESE.....	62.9	460	291 J*	0.0031	|
SODIUM.....	7420	86.9 U*	74.9 U*	0.381	|
NICKEL.....	10.8 U*	22.2	83		|
LEAD.....	24.4	47	206		|
ANTIMONY.....			5.3 U*		|
SELENIUM.....	0.89 J*				|
VANADIUM.....	24.7	17.2 U*	29.9 J*	0.0055	|
ZINC.....	96.8	221	585	0.0159 J*	|
CYANIDE.....					N/A

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
N/A - INDICATES THAT THE COMPOUND WAS NO ANALYZED FOR.

SITE 02 - MELVILLE NORTH LANDFILL
CONSTITUENTS DETECTED IN SURFACE SOIL SAMPLES
SAMPLES 1-8

SAMPLE IDENTIFICATION:	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07	SS-08
SAMPLE DEPTH (FT):								
**** VOLATILE ORGANICS (PPB) ***								
VINYL CHLORIDE.....								
METHYLENE CHLORIDE.....	11 U*	15 U*	23 U*	28 U*	24 U*	11 U*	9 U*	19 U*
ACETONE.....	10 U**	12 U**	21 U*	30 U*	13 U*		12 U**	11 U**
CARBON DISULFIDE.....								
CHLOROFORM.....					3 J			
2-BUTANONE.....								
1,1,1-TRICHLOROETHANE.....								
TRICHLOROETHENE.....								
BENZENE.....								
4-METHYL-2-PENTANONE.....								
TETRACHLOROETHENE.....								
TOLUENE.....								
CHLOROBENZENE.....								
ETHYLBENZENE.....								
XYLENE.....								
TOTAL VOLATILE ORGANICS.....	0	0	0	0	3	0	0	0
** BASE NEUTRAL / ACIDS (PPB) **								
PHENOL.....								
1,3-DICHLOROBENZENE.....								
1,4-DICHLOROBENZENE.....								
1,2-DICHLOROBENZENE.....								
4-METHYLPHENOL.....								
BENZOIC ACID.....								
2,4-DICHLOROPHENOL.....								
1,2,4-TRICHLOROBENZENE.....								
NAPHTHALENE.....@	450 J			71 J				
2-METHYLNAPHTHALENE.....@	1200 J			120 J				
DIMETHYLPHTHALATE.....								
ACENAPHTHYLENE.....@	1500 J	61 J						45 J
ACENAPHTHENE.....@	370 J							
4-NITROPHENOL.....								
DIBENZOFURAN.....	250 J							
FLUORENE.....@	2500					440 J		
PENTACHLOROPHENOL.....								
PHENANTHRENE.....@	14000	360 J		220 J	89 J	5300	96 J	170 J
ANTHRACENE.....@	2000	87 J				1100 J		
DI-N-BUTYLPHTHALATE.....								
FLUORANTHENE.....@	15000	840	68 J	290 J	170 J	8800	220 J	450
PYRENE.....@	15000	1200	57 J	260 J	170 J	7200	230 J	550 J*
BENZO(a)ANTHRACENE.....@@	9800	550		130 J	88 J	3500	210 J	290 J
CHRYSENE.....@@	11000	560	57 J	200 J	160 J	3100	390 J	450
BIS(2-ETHYLHEXYL)PHTHALATE...		380 U**	510 U**	520 U**				
BENZO(b)FLUORANTHENE.....@@	6400	460		160 J	69 J	2200 J	580	440
BENZO(k)FLUORANTHENE.....@@	6800	380		110 J		2500		410
BENZO(a)PYRENE.....@@	7500	440		110 J		2300 J	530	370
INDENO(1,2,3-cd)PYRENE.....@@	3300	350 J				1200 J		
DIBENZO(a,h)ANTHRACENE.....@@	1600 J					460 J		
BENZO(g,h,i)PERYLENE.....@	3400	430				1100 J		
TOTAL BNA'S.....	102070	5718	182	1671	746	39200	2256	3175
TOTAL PAH'S.....	101820	5718	182	1671	746	39200	2256	3175
TOTAL CARCINOGENIC PAH'S.....	46400	2740	57	710	317	15260	1710	1960

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
**- INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION.
@ - INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH).
@@- INDICATES THAT THE COMPOUND IS A CARCINOGENIC POLYNUCLEAR AROMATIC HYDROCARBON.

SITE 02 - MELVILLE NORTH LANDFILL
CONSTITUENTS DETECTED IN SURFACE SOIL SAMPLES
SAMPLES 1-8

SAMPLE IDENTIFICATION:	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07	SS-08
SAMPLE DEPTH (FT):								
**** PESTICIDES/PCB'S (PPB) ****								
ALDRIN								
4,4'-DDE			78 J*	41 J*	70 J*	17 J	130 J*	37 J
4,4'-DDD						5 J		
4,4'-DDT			57 J*	94 J*	220 J*	90 J*	450 J*	60 J
AROCLOR-1254								
AROCLOR-1260	8000	7300	96 J	77 J				
******* INORGANICS (PPM) *******								
SILVER			1.7 U*	1.9 U*	21.8			
ALUMINUM	4890	2900	9830	7610	11400	4830	7260	5000
ARSENIC	4.5 J*	5.4 J*	8.4 J*	6.8 J*	2.1 J*	4.3 J*	7.9 J*	3.2 J*
BARIUM	18.3 U*	14 U*	21.8 U*	37.9 J*	269	11.9 U*	25.8 J*	11.3 U*
BERYLLIUM				0.52	0.42			0.24
CALCIUM	708	488	2810	337	8720	2310	782	782
CADMIUM	1.3 U*	0.74 U*	2.3 U*	1.5 U*	4.2 U*	0.85 U*	1 U*	
COBALT	6.4	3.2	9.4	5.7	12.2	8.1	7.5	6.7
CHROMIUM	7.8	5.7	19.7	11.5	35.2	9.4	14.6	7.9
COPPER	23.5	22.8	36.7	38.2	135	21.6	29.5	16.2 U*
IRON	11700	7670	20300	14400	20900	12700	15800	13200
MERCURY		1.1 J*	0.22 J*	0.24 J*	0.42 J*			
POTASSIUM	279		472	347	422	325	322	228
MAGNESIUM	1510	959	2460	1170	1410	2150	1960	1870
MANGANESE	203 J*	109 J*	205 J*	251 J*	459 J*	243 J*	221 J*	260 J*
SODIUM	39.2 U*	27.8 U*	56.2 U*	58 U*	147 U*	61.4 U*	49.9 U*	34.2 U*
NICKEL	16.9	7.6	17.9	11	24	11.1	11.6	11.4
LEAD	51.9 J*	149 J*	59.6 J*	94.4 J*	125 J*	32.6 J*	83.3 J*	23.1 J*
ANTIMONY		5.1			8.1		10.2	
SELENIUM				0.84				
VANADIUM	21.8	12.5	32.2	44.3	53.8	15.4	22.6	20.6
ZINC	70	154	95.6	75.9	547	45.2	121	37.5
CYANIDE	0	0	0	0	1.5	0	0	0

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
**- INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION.
()- INDICATES THAT THE SAMPLE RESULTS HAVE BEEN REJECTED ACCORDING TO SAMPLE VALIDATION.

SITE 02 - MELVILLE NORTH LANDFILL
CONSTITUENTS DETECTED IN SURFACE SOIL SAMPLES
SAMPLES 9-21

SAMPLE IDENTIFICATION:	SS-09	SS-10	SS-11	SS-16	SS-12	SS-13	SS-14	SS-15	SS-20	SS-21
SAMPLE DEPTH (FT):										
**** VOLATILE ORGANICS (PPB) ***										
VINYL CHLORIDE.....									N/A	N/A
METHYLENE CHLORIDE.....	20 U*	10 U*	15 U*	11 U*	21 U*	11 U*	12 U*	12 U*		
ACETONE.....	12 U**	13 U**	12 U**	11 U**	16 U*	12 U**	14 U*	13 U**		
CARBON DISULFIDE.....										
CHLOROFORM.....										
2-BUTANONE.....										
1,1,1-TRICHLOROETHANE.....										
TRICHLOROETHENE.....										
BENZENE.....										
4-METHYL-2-PENTANONE.....										
TETRACHLOROETHENE.....										
TOLUENE.....					2 J					
CHLOROBENZENE.....										
ETHYLBENZENE.....										
XYLENE.....									N/A	N/A
TOTAL VOLATILE ORGANICS....	0	0	0	0	2	0	0	0		
** BASE NEUTRAL / ACIDS (PPB) **										
PHENOL.....										
1,3-DICHLOROBENZENE.....									N/A	N/A
1,4-DICHLOROBENZENE.....										
1,2-DICHLOROBENZENE.....										
4-METHYLPHENOL.....										
BENZOIC ACID.....										
2,4-DICHLOROPHENOL.....										
1,2,4-TRICHLOROBENZENE.....										
NAPHTHALENE.....@	46 J			42 J						
2-METHYLNAPHTHALENE.....@										
DIMETHYLPHTHALATE.....										
ACENAPHTHYLENE.....@	120 J			68 J						
ACENAPHTHENE.....@	47 J			39 J						
4-NITROPHENOL.....										
DIBENZOFURAN.....										
FLUORENE.....@	64 J			57 J						
PENTACHLOROPHENOL.....										
PHENANTHRENE.....@	1000	680	390 J	990	110 J			67 J		
ANTHRACENE.....@	140 J	86 J	56 J	100 J						
DI-N-BUTYLPHTHALATE.....								63 J		
FLUORANTHENE.....@	3000	1000	1200	2100	400 J			200 J		
PYRENE.....@	1800	710 J*	700 J*	1900	320 J			180 J		
BENZO(a)ANTHRACENE.....@@	1100	360 J	440	900	170 J			87 J		
CHRYSENE.....@@	1500	550	590	1100	250 J			130 J		
BIS(2-ETHYLHEXYL)PHTHALATE.	30 U**		100 U*	370 U**				420 U**		
BENZO(b)FLUORANTHENE.....@@	1500	570	560	890	200 J			110 J		
BENZO(k)FLUORANTHENE.....@@	1200	420	540	690	170 J			81 J		
BENZO(a)PYRENE.....@@	950	450	380 J	500	150 J			81 J		
INDENO(1,2,3-cd)PYRENE.....@@	610	240 J	270 J	390						
DIBENZO(a,h)ANTHRACENE.....@@	220 J			200 J						
BENZO(g,h,i)PERYLENE.....@	540	200 J	220 J	450					N/A	N/A
TOTAL BNA'S.....	13837	5266	5346	10416	1770	0	0	999		
TOTAL PAH'S.....	13837	5266	5346	10416	1770	0	0	936		
TOTAL CARCINOGENIC PAH'S...	7080	2590	2780	4670	940	0	0	489		

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
**- INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION.
@ - INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH).
@@- INDICATES THAT THE COMPOUND IS A CARCINOGENIC POLYNUCLEAR AROMATIC HYDROCARBON.

SITE 02 - MELVILLE NORTH LANDFILL
CONSTITUENTS DETECTED IN SURFACE SOIL SAMPLES
SAMPLES 9-21

SAMPLE IDENTIFICATION:	SS-09	SS-10	SS-11	SS-16	SS-12	SS-13	SS-14	SS-15	SS-20	SS-21
SAMPLE DEPTH (FT):										
**** PESTICIDES/PCB'S (PPB) ****										
ALDRIN.....										
4,4'-DDE.....	6.3 J		9 J		11 J			6.2 J		
4,4'-DDD.....										
4,4'-DDT.....	22 J	60 J*	99 J*	18 J	18 J			54		
AROCLOR-1254.....										
AROCLOR-1260.....					43 J				870 J*	880 J*
******* INORGANICS (PPM) *******										
SILVER.....									N/A	N/A
ALUMINUM.....	3390	4110	11900	8960	12700	11500	10400	8710		
ARSENIC.....	13.6 J*	2.7 J*	28.3 J*	18.5 J*	6.1 J*	4.4 J*	4.5 J*	6.7 J*		
BARIUM.....	9.2 U*	6.5 U*	90 J*	112 J*	42.9 J*	28.2 J*	23.3 J*	14.8 U*		
BERYLLIUM.....				0.38	0.5	0.47	0.4	0.35		
CALCIUM.....	531	620	1090	759	490	348	526	822		
CADMIUM.....										
COBALT.....	4.1	5.3	17.2 J*	13.2 J*	9.3	6.1	5.8	8.5 J*		
CHROMIUM.....	5.1	6	19.8 J*	14.8 J*	15.2	11.3	11.3	13.8 J*		
COPPER.....	12.2 U*	14.8 U*	40.6 J*	26.6 J*	33.8	17.9 U*	14.7 U*	57.4 J*		
IRON.....	8610	10300	29800	21900	19900	17700	16900	24400		
MERCURY.....					0.16 J*					
POTASSIUM.....	234	231	258	390	309	377	329	287		
MAGNESIUM.....	1200	1530	3740	3030	1970	1670	1710	2000		
MANGANESE.....	139 J*	194 J*	490 J*	361 J*	272 J*	196 J*	199 J*	212 J*		
SODIUM.....	54.5 U*	49.6 U*	44.9 U*	33.5 U*	41.2 U*	50.4 U*	29.5 U*	39.4 U*		
NICKEL.....	6	9.1	25.9	15.8	15.5	12.1	9	26.2		
LEAD.....	37.8 J*	18.7 J*	689 J*	112 J*	51 J*		13 J*	20.2 J*		
ANTIMONY.....				(5)	10.3	9.6				
SELENIUM.....								0.49 U*		
VANADIUM.....	10.4 U*	14.5	32.7 J*	23.1 J*	28.2	23.2	22.3	27.5 J*		
ZINC.....	39.3	29.9	234	163	85.4	38.3	50.9	35.7		
CYANIDE.....	0	0	0.94	0	0	0	0	0	N/A	N/A

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
**- INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION.
()- INDICATES THAT THE SAMPLE RESULTS HAVE BEEN REJECTED ACCORDING TO SAMPLE VALIDATION.

RISK-BASED PRIORITIZATION OF CLEANUP SITE WORK

SITE: NETC-Newport CERCLA SITE Site 4 Coddington Cove Rubble Fill

ANALYTICAL DATA

Pathway	Reference
Groundwater	
Surface Soil	
Surface Water	
Sediment	
Notes	NO DATA

QUALITATIVE QUESTIONS

Circle Choice	**Migration Pathway Factor**
1.	Physical evidence and/or analytical data indicate off-site migration.
2.	No current indication of off-site migration, but potential exists.
3.	Present engineering structures and/or physical/chemical properties of detected constituents greatly restrict potential for migration.
Reference	
Notes	

SITE: NETC-Newport CERCLA SITE Site 4

Receptor Factor

Circle Choice	**Groundwater**
1.	Groundwater is currently used for human activities (i.e., drinking, agriculture, recreation).
2.	Groundwater not currently used for human activities (i.e., drinking, agriculture, recreation), but potential exists.
3.	No future potential for groundwater to be used for human activities (i.e., drinking, agriculture, recreation).
Reference	
Notes	

Circle Choice	**Surface Soil** (0 to 6 inches in depth)
1.	Sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) present and/or area routinely used by non-sensitive receptor (i.e., working, training).
2.	Potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area occasionally used by non-sensitive receptors (i.e., working, training)
3.	No potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area not used by non-sensitive receptor (i.e., working, training)
Reference	
Notes	

SITE: NETC-Newport CERCLA SITE Site 4

Circle Choice	**Surface Water**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	

SITE: NETC-Newport CERCLA SITE Site 4

Circle Choice	**Sediment**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	

RISK-BASED PRIORITIZATION OF CLEANUP SITE WORK

SITE: NETC-Newport CERCLA SITE Site 7 Tank Farm #1

ANALYTICAL DATA

Pathway	Reference
Groundwater	
Surface Soil	
Surface Water	
Sediment	
Notes	NO DATA

QUALITATIVE QUESTIONS

Circle Choice	**Migration Pathway Factor**
1.	Physical evidence and/or analytical data indicate off-site migration.
2.	No current indication of off-site migration, but potential exists.
3.	Present engineering structures and/or physical/chemical properties of detected constituents greatly restrict potential for migration.
Reference	
Notes	

SITE: NETC-Newport CERCLA SITE Site 7

Receptor Factor

Circle Choice	**Groundwater**
1.	Groundwater is currently used for human activities (i.e., drinking, agriculture, recreation).
2.	Groundwater not currently used for human activities (i.e., drinking, agriculture, recreation), but potential exists.
3.	No future potential for groundwater to be used for human activities (i.e., drinking, agriculture, recreation).
Reference	
Notes	

Circle Choice	**Surface Soil** (0 to 6 inches in depth)
1.	Sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) present and/or area routinely used by non-sensitive receptor (i.e., working, training).
2.	Potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area occasionally used by non-sensitive receptors (i.e., working, training)
3.	No potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area not used by non-sensitive receptor (i.e., working, training)
Reference	
Notes	

SITE: NETC-Newport CERCLA SITE Site 7

Circle Choice	**Surface Water**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	

SITE: NETC-Newport CERCLA SITE Site 7

Circle Choice	**Sediment**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	

RISK-BASED PRIORITIZATION OF CLEANUP SITE WORK

SITE: NETC-Newport CERCLA SITE Site 8 NUSC Disposal Area

ANALYTICAL DATA

Pathway	Reference
Groundwater	
Surface Soil	
Surface Water	
Sediment	
Notes	NO DATA

QUALITATIVE QUESTIONS

Circle Choice	**Migration Pathway Factor**
1.	Physical evidence and/or analytical data indicate off-site migration.
2.	No current indication of off-site migration, but potential exists.
3.	Present engineering structures and/or physical/chemical properties of detected constituents greatly restrict potential for migration.
Reference	
Notes	

SITE: NETC-Newport CERCLA SITE Site 8

Receptor Factor

Circle Choice	**Groundwater**
1.	Groundwater is currently used for human activities (i.e., drinking, agriculture, recreation).
2.	Groundwater not currently used for human activities (i.e., drinking, agriculture, recreation), but potential exists.
3.	No future potential for groundwater to be used for human activities (i.e., drinking, agriculture, recreation).
Reference	
Notes	

Circle Choice	**Surface Soil** (0 to 6 inches in depth)
1.	Sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) present and/or area routinely used by non-sensitive receptor (i.e., working, training).
2.	Potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area occasionally used by non-sensitive receptors (i.e., working, training)
3.	No potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area not used by non-sensitive receptor (i.e., working, training)
Reference	
Notes	

SITE: NETC-Newport CERCLA SITE Site 8

Circle Choice	**Surface Water**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	

SITE: NETC-Newport CERCLA SITE Site 8

Circle Choice	**Sediment**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	

RISK-BASED PRIORITIZATION OF CLEANUP SITE WORK

SITE: NETC-Newport CERCLA SITE Site 9 Old Fire Fighting Training Area

ANALYTICAL DATA

Pathway	Reference
Groundwater	See attached: - SI Report Data Tables - RI Report Data Tables 4-11
Surface Soil	See attached: S.I Report Data Tables RI Report Data tables 4-2
Surface Water	Outfall from Storm Sewer Sampled See Attach R.I Report Table 4-1-5
Sediment	See Attached RI Report Data Tables ~~4~~ 3-2 3-4
Notes	

QUALITATIVE QUESTIONS

Circle Choice	**Migration Pathway Factor**
(1.) S.W. SD	Physical evidence and/or analytical data indicate off-site migration.
(2.) G.W. S.S.	No current indication of off-site migration, but potential exists.
3.	Present engineering structures and/or physical/chemical properties of detected constituents greatly restrict potential for migration.
Reference	RI Report Vol 1 Old Fire Fighting Training Area, TRC March 1994
Notes	Only offsite samples available are sediment & clam tissue samples

SITE: NETC-Newport CERCLA SITE Site 9

Receptor Factor

Circle Choice	**Groundwater**
1.	Groundwater is currently used for human activities (i.e., drinking, agriculture, recreation).
2.	Groundwater not currently used for human activities (i.e., drinking, agriculture, recreation), but potential exists.
3.	No future potential for groundwater to be used for human activities (i.e., drinking, agriculture, recreation).
Reference	Draft Vol 1 Old Fire Fighting Training Area R.I. TRC Report March 94
Notes	Trailer Park wells located Southeast of base Fig 3-9

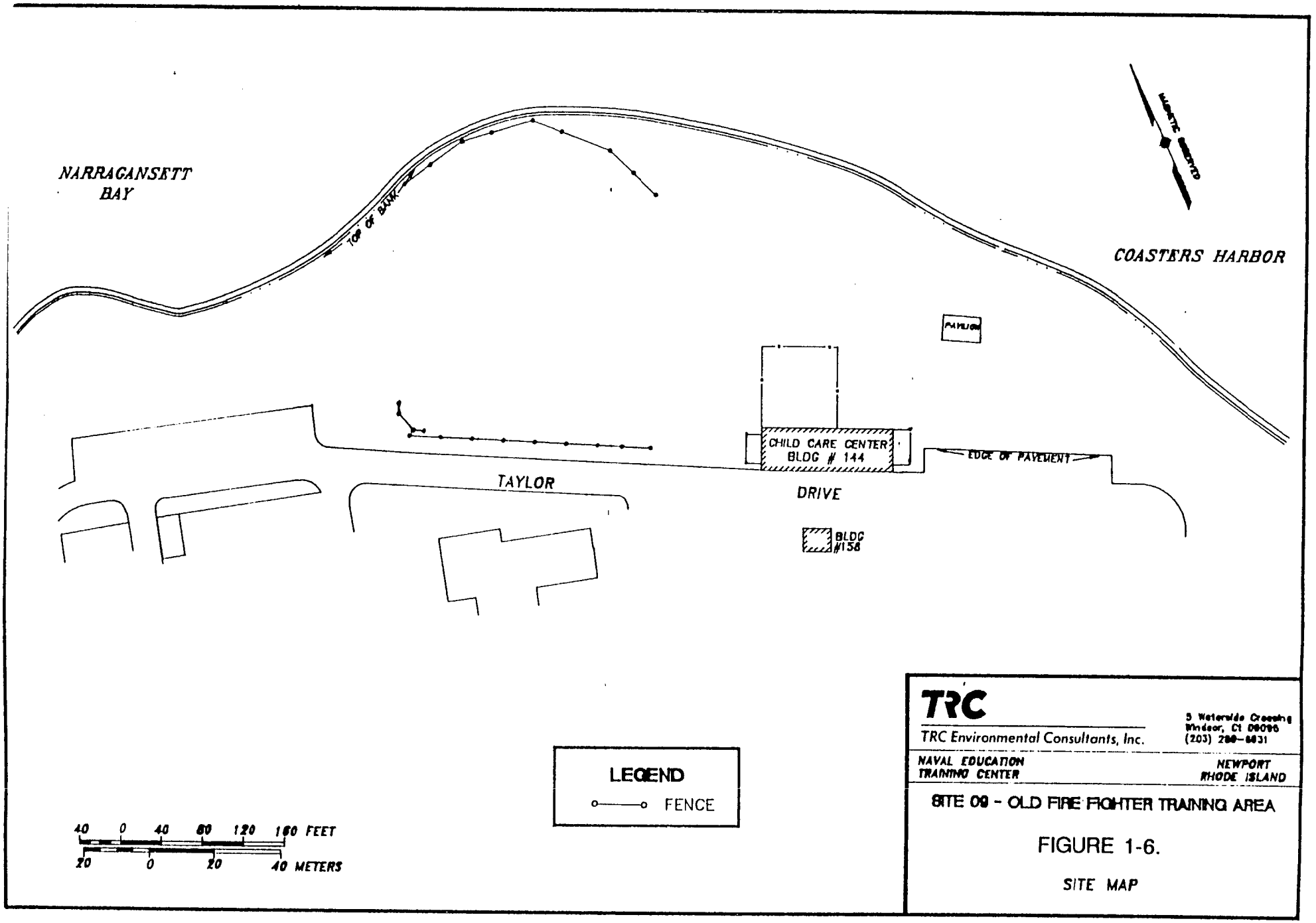
Circle Choice	**Surface Soil** (0 to 6 inches in depth)
1.	Sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) present and/or area routinely used by non-sensitive receptor (i.e., working, training).
2.	Potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area occasionally used by non-sensitive receptors (i.e., working, training)
3.	No potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area not used by non-sensitive receptor (i.e., working, training)
Reference	TRC Report March 1994
Notes	

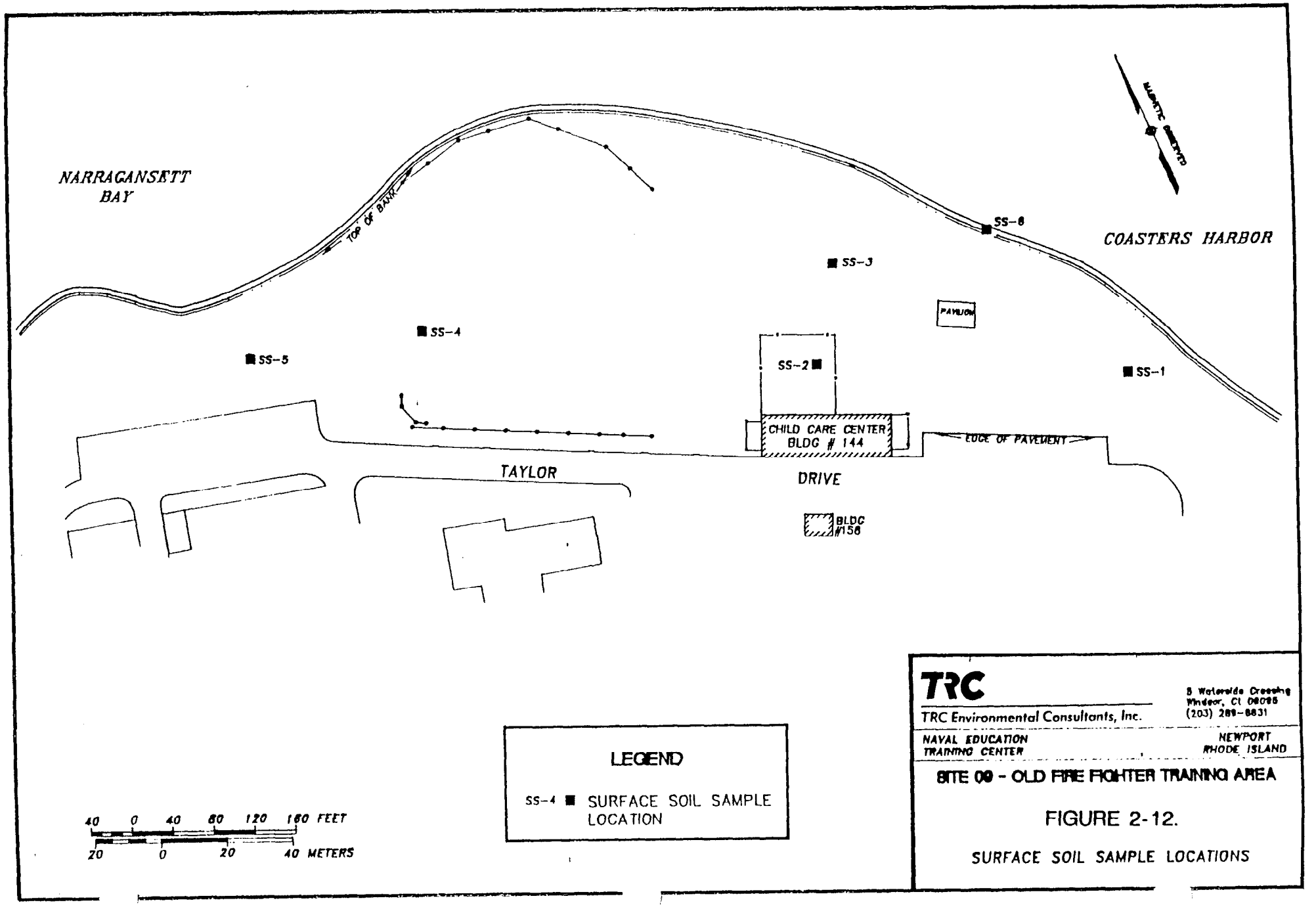
SITE: NETC-Newport CERCLA SITE Site 9

Circle Choice	**Surface Water**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	Wetland species found at NETC TRC March 1994 p3-3
Notes	

SITE: NETC-Newport CERCLA SITE Site 9

Circle Choice	**Sediment**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	See Surface Water
Notes	


NARRAGANSETT BAY
TOP OF BANK
COASTERS HARBOR
PAVILION
CHILD CARE CENTER
BLDG # 144
EDGE OF PAVEMENT
TAYLOR
DRIVE
BLDG #158
LEGEND
FENCE
40 0 40 80 120 160 FEET
20 0 20 40 METERS
TRC
TRC Environmental Consultants, Inc.
5 Waterside Crossing
Windsor, CT 06095
(203) 298-6831
NAVAL EDUCATION TRAINING CENTER
NEWPORT RHODE ISLAND
SITE 09 - OLD FIRE FIGHTER TRAINING AREA
FIGURE 1-6.
SITE MAP


NARRAGANSETT BAY
TOP OF BANK
COASTERS HARBOR
MAGNETIC DIRECTION
SS-6
SS-3
PAVILION
SS-4
SS-5
SS-2
SS-1
CHILD CARE CENTER
BLDG # 144
EDGE OF PAVEMENT
TAYLOR
DRIVE
BLDG #156
LEGEND
SS-4 SURFACE SOIL SAMPLE LOCATION
40 0 40 80 120 160 FEET
20 0 20 40 METERS
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NAVAL EDUCATION TRAINING CENTER
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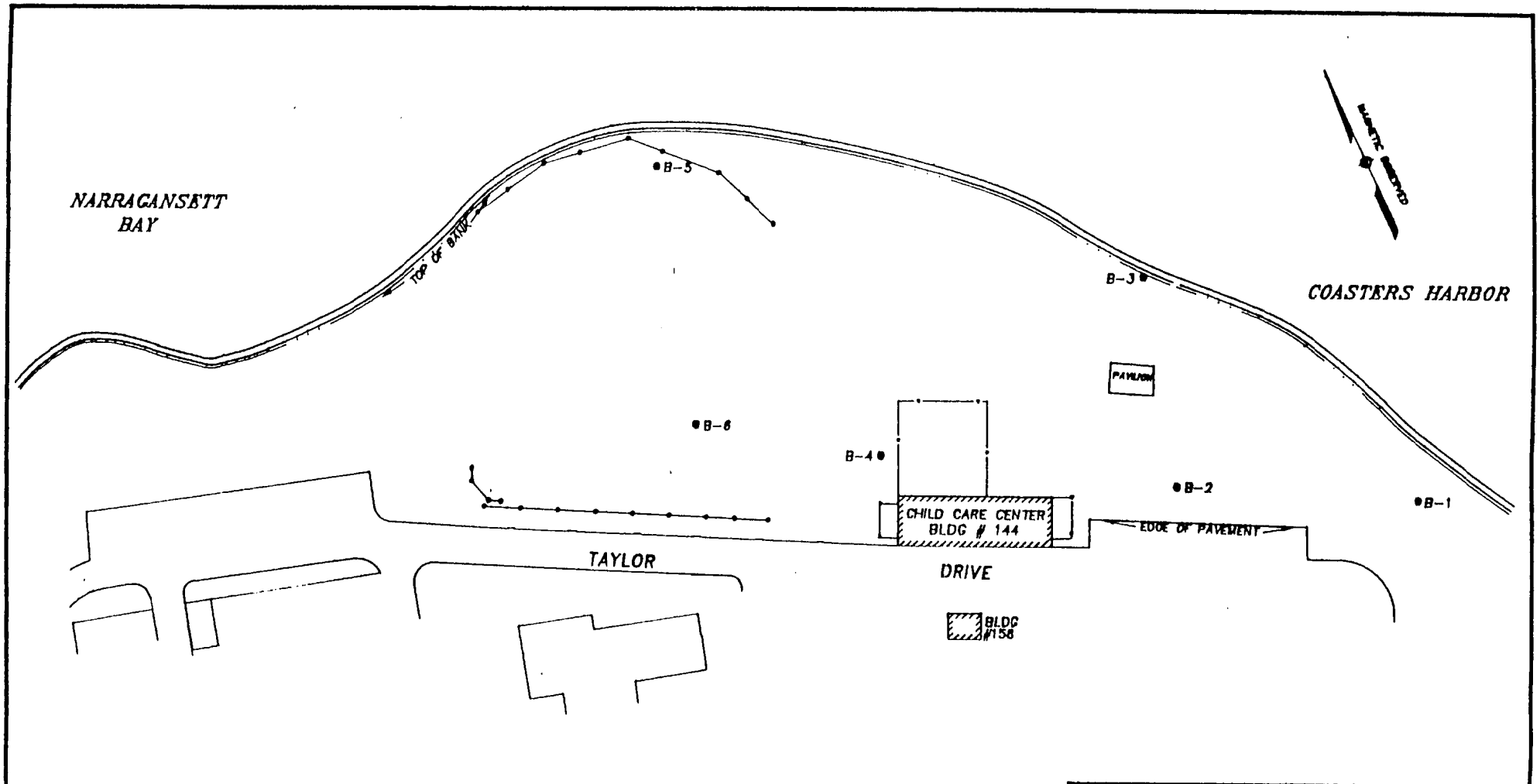
SITE 09 - OLD FIRE FIGHTER TRAINING AREA
FIGURE 2-12.
SURFACE SOIL SAMPLE LOCATIONS



LEGEND

B-2 • TEST BORING LOCATION

40 0 40 80 120 160 FEET
20 0 20 40 METERS

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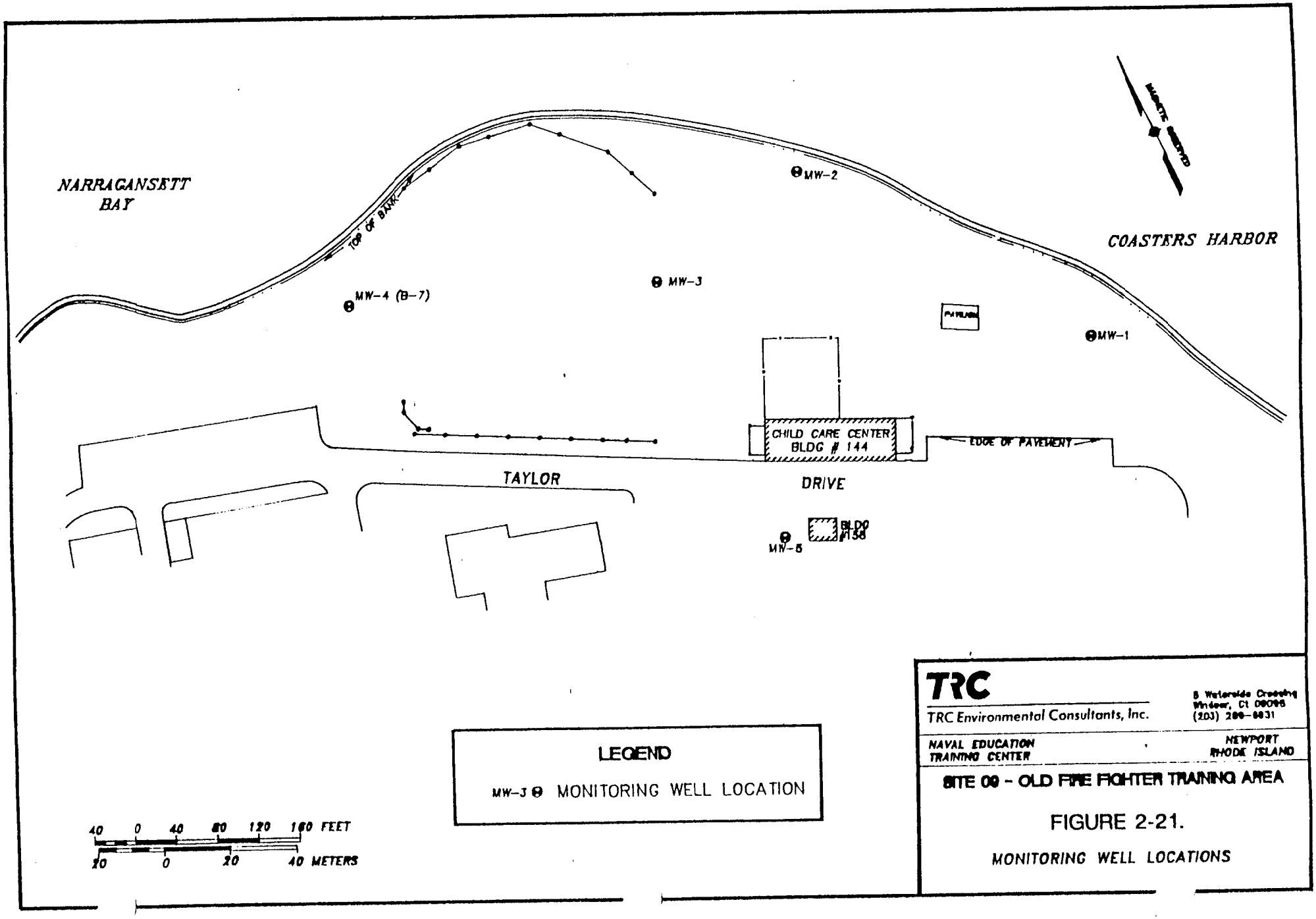
SITE 09 - OLD FIRE FIGHTER TRAINING AREA

FIGURE 2-20.

TEST BORING LOCATIONS


NARRAGANSETT BAY
TOP OF BANK
MW-2
MW-3
MW-4 (B-7)
MW-1
COASTERS HARBOR
CHILD CARE CENTER
BLDG # 144
EDGE OF PAVEMENT
TAYLOR
DRIVE
BLDG #138
MW-5
LEGEND
MW-3 MONITORING WELL LOCATION
40 0 40 80 120 160 FEET
20 0 20 40 METERS
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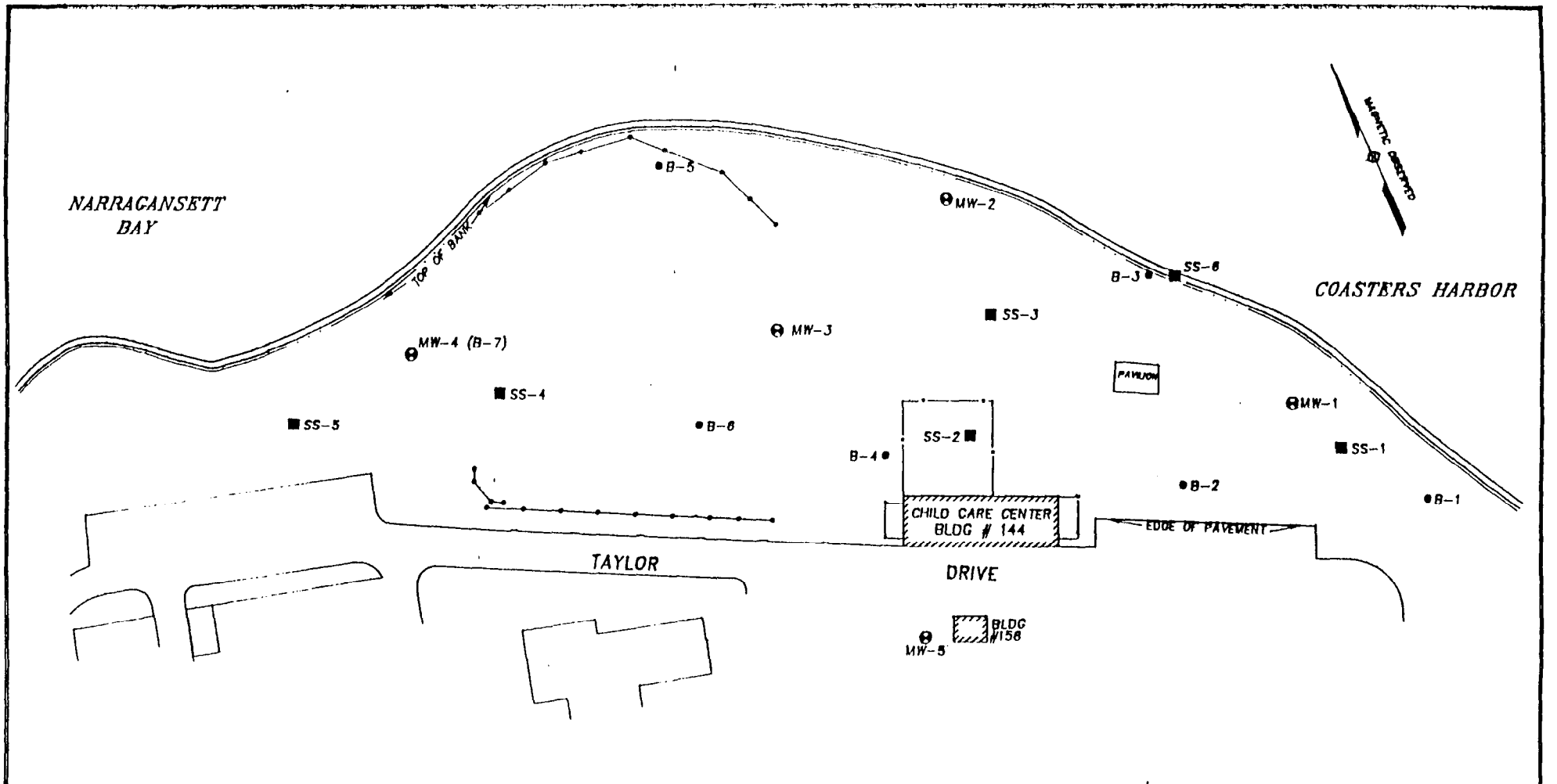
NEWPORT RHODE ISLAND
SITE 09 - OLD FIRE FIGHTER TRAINING AREA
FIGURE 2-21.
MONITORING WELL LOCATIONS



40 0 40 80 120 160 FEET

20 0 20 40 METERS

LEGEND

SS-5 ■ SURFACE SOIL SAMPLE LOCATION

B-6 ● BORING LOCATION

MW-5 ⊖ MONITORING WELL LOCATION

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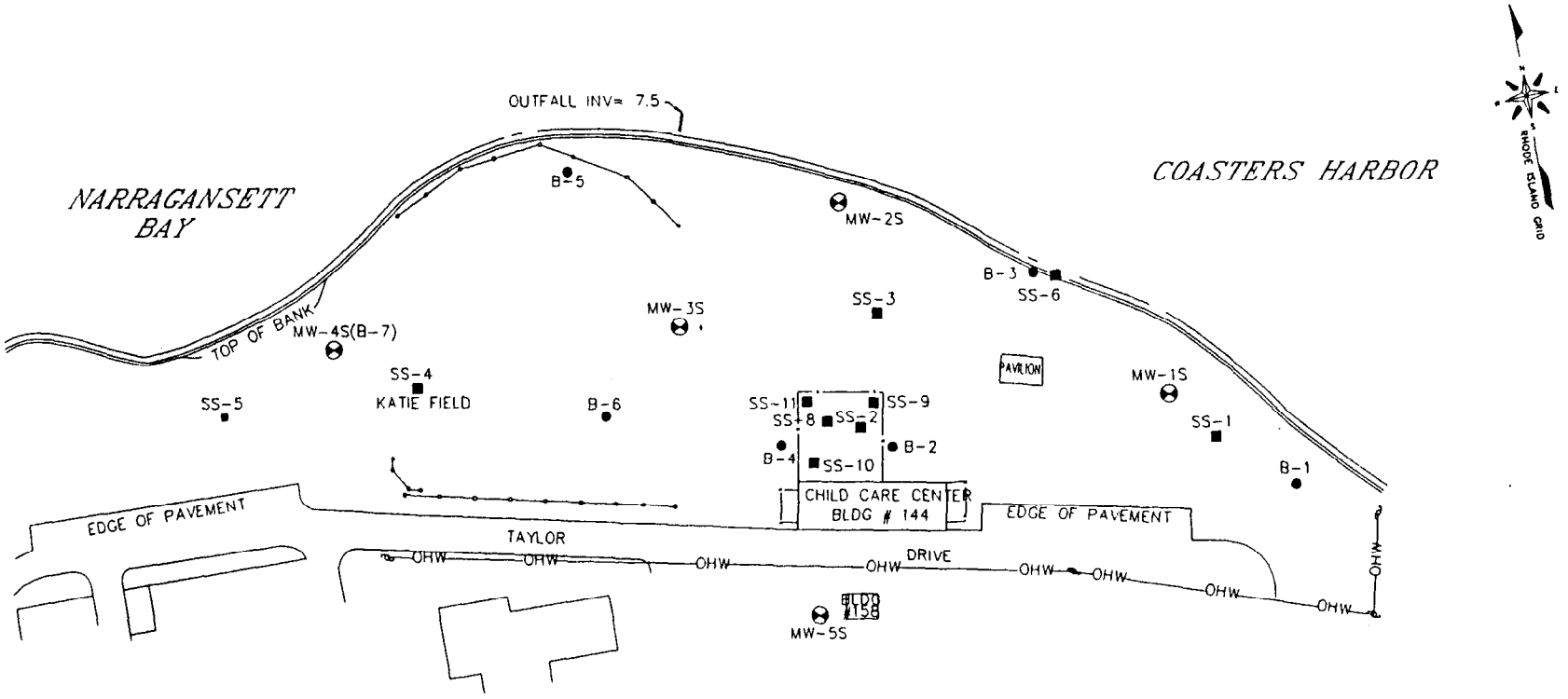
NEWPORT RHODE ISLAND

SITE 09 - OLD FIRE FIGHTING TRAINING AREA

FIGURE 4-3.

INVESTIGATION SUMMARY MAP



GRAPHIC SCALE

150 0 75 150 300

1 inch = 150 ft.

LEGEND

- SS-3 ..... SURFACE SOIL SAMPLE
- B-5 ..... TEST BORING
- MW-3 ..... MONITORING WELL
- ..... FENCE LINE
- -OHW- ..... OVERHEAD WIRES
- ..... UTILITY POLE
- ..... CHAIN LINK FENCE

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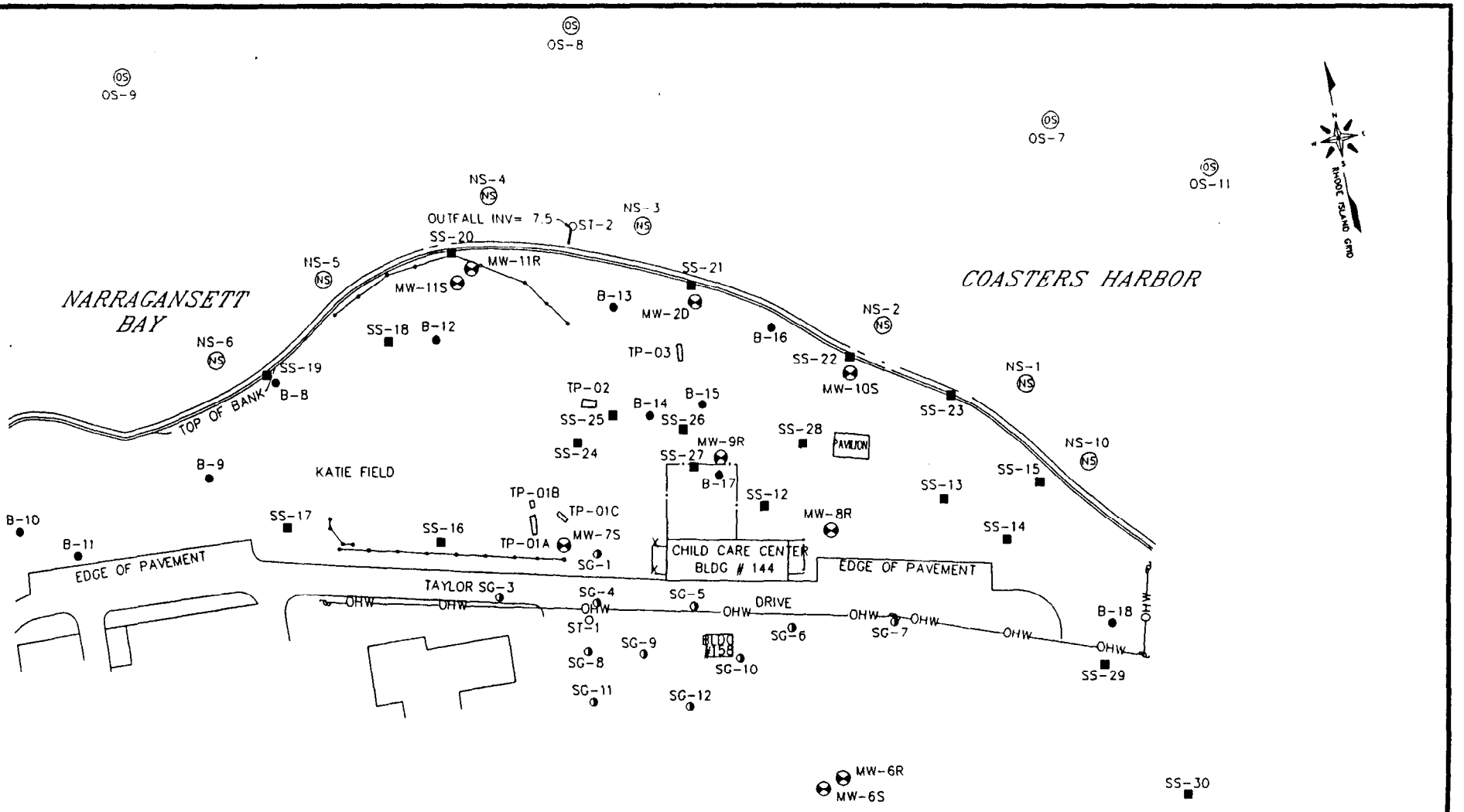
SITE 09 – OLD FIRE FIGHTING TRAINING AREA

FIGURE 1-7
PHASE I
INVESTIGATION SUMMARY

Date: 3/94 | Drawing No. 01043-0 | 0040

C:\10430060\



GRAPHIC SCALE

150 0 75 150 300

1 inch = 150 ft.

LEGEND

- TP-01 ..... TEST PIT
- OS-9 ..... OFFSHORE SAMPLE
- NS-3 ..... NEARSHORE SAMPLE
- SS-3 ..... SURFACE SOIL SAMPLE
- SG-3 ..... SOIL GAS SAMPLE
- ST-3 ..... STORM SEWER SAMPLE
- B-5 ..... TEST BORING
- MW-3 ..... MONITORING WELL
- ..... FENCE LINE
- OHW ..... OVERHEAD WIRES
- ..... UTILITY POLE
- ..... CHAIN LINK FENCE

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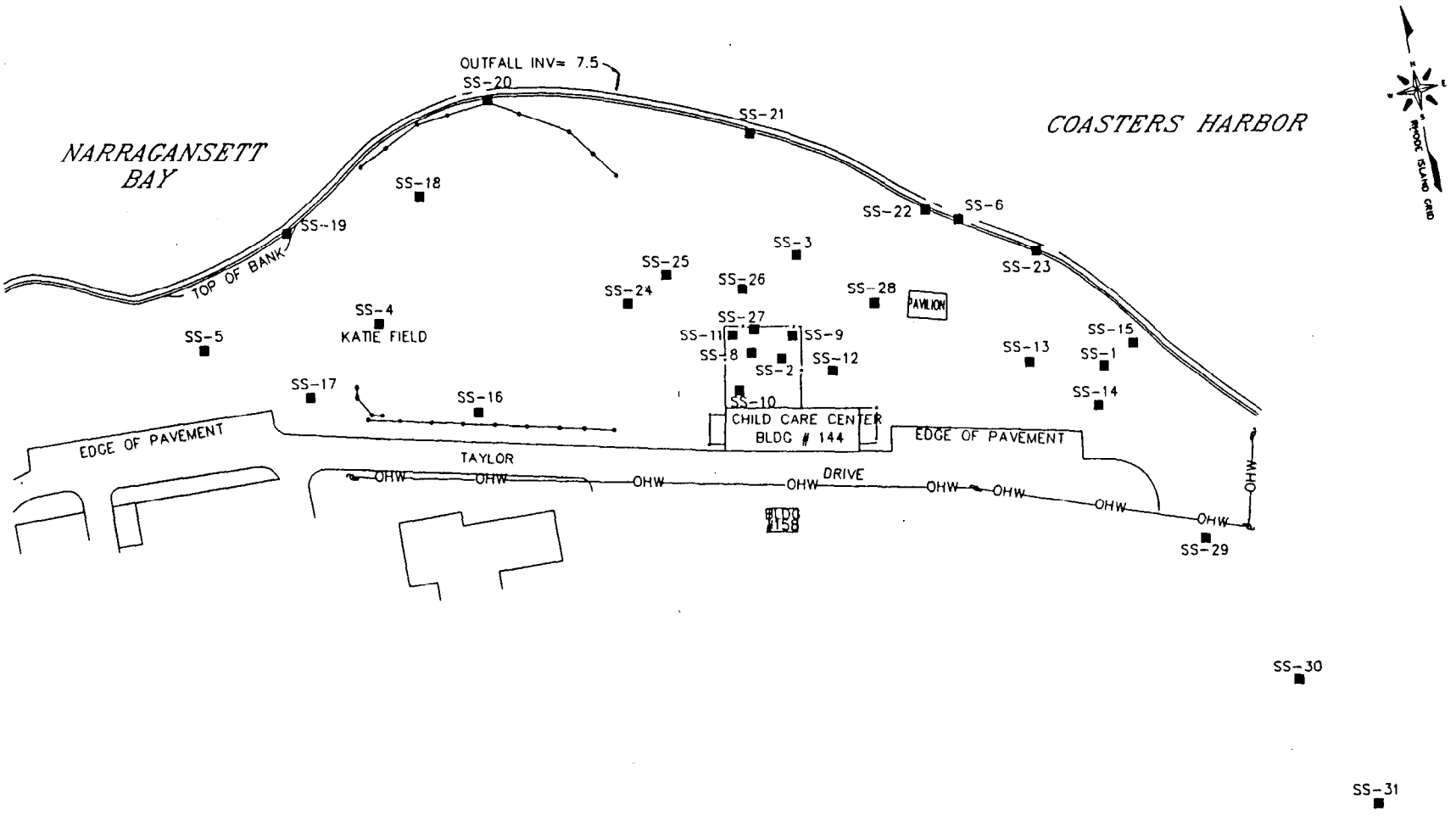
SITE 09 – OLD FIRE FIGHTING TRAINING AREA

FIGURE 2-1
PHASE II
INVESTIGATION SUMMARY

Date: 3/94 | Drawing No. 01043-0060-0040

C:\10430060\FIG2-1F



GRAPHIC SCALE

150 0 75 150 300

1 inch = 150 ft.

LEGEND

- ■ SS-3 ..... SURFACE SOIL SAMPLE
- —+— ..... FENCE LINE
- —OHW— ..... OVERHEAD WIRES
- ..... UTILITY POLE
- ..... CHAIN LINK FENCE

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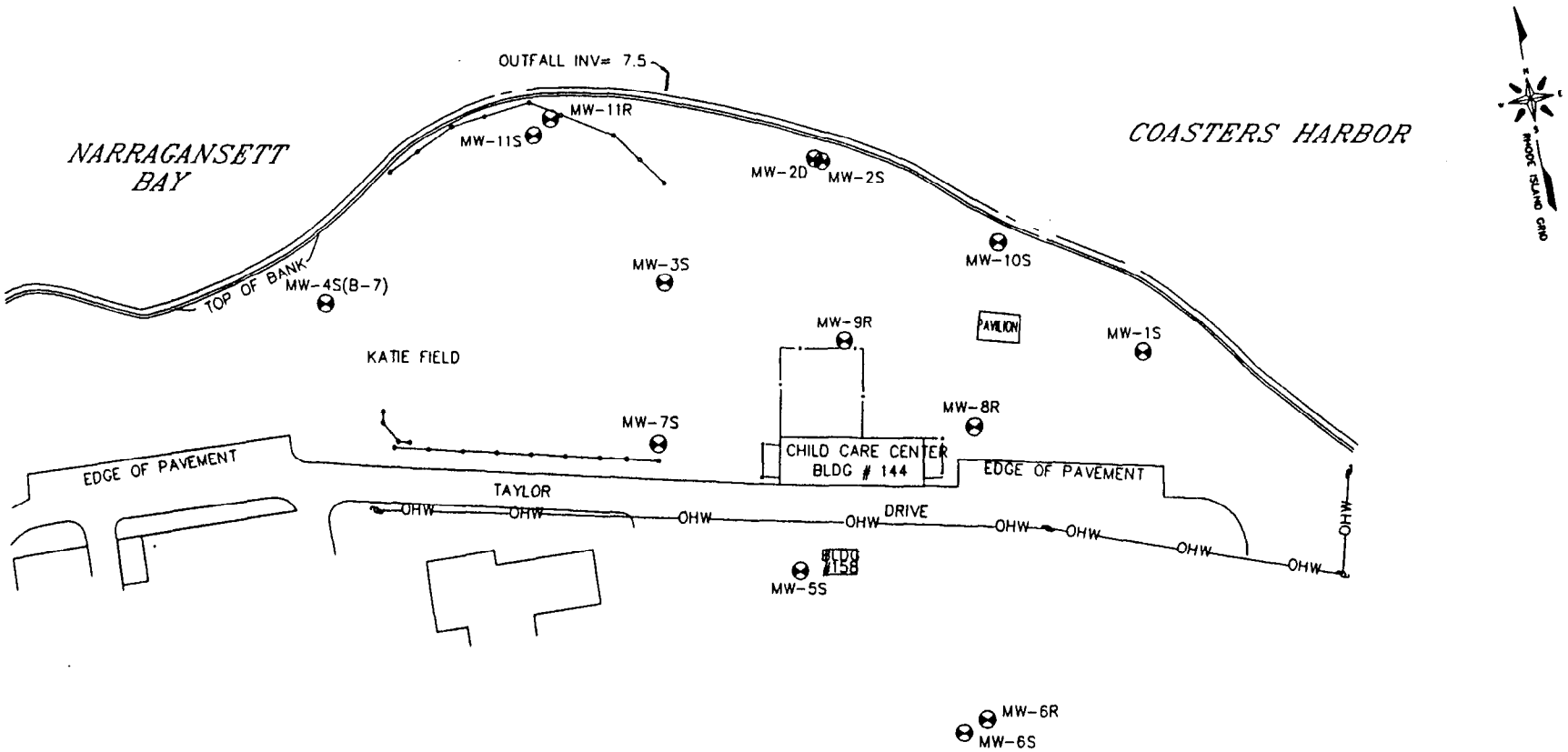
SITE 09 – OLD FIRE FIGHTING TRAINING AREA

FIGURE 2-5
PHASE I AND II
SURFACE SOIL SAMPLES

Date: 3/94 | Drawing No. 01043-0

C:\10430060\F.

0040



GRAPHIC SCALE

150 0 75 150 300

1 inch = 150 ft.

LEGEND

- MW-3 ..... MONITORING WELL
- ..... FENCE LINE
- OHW ..... OVERHEAD WIRES
- ..... UTILITY POLE
- ..... CHAIN LINK FENCE

C:\10430060\FIG2-8F

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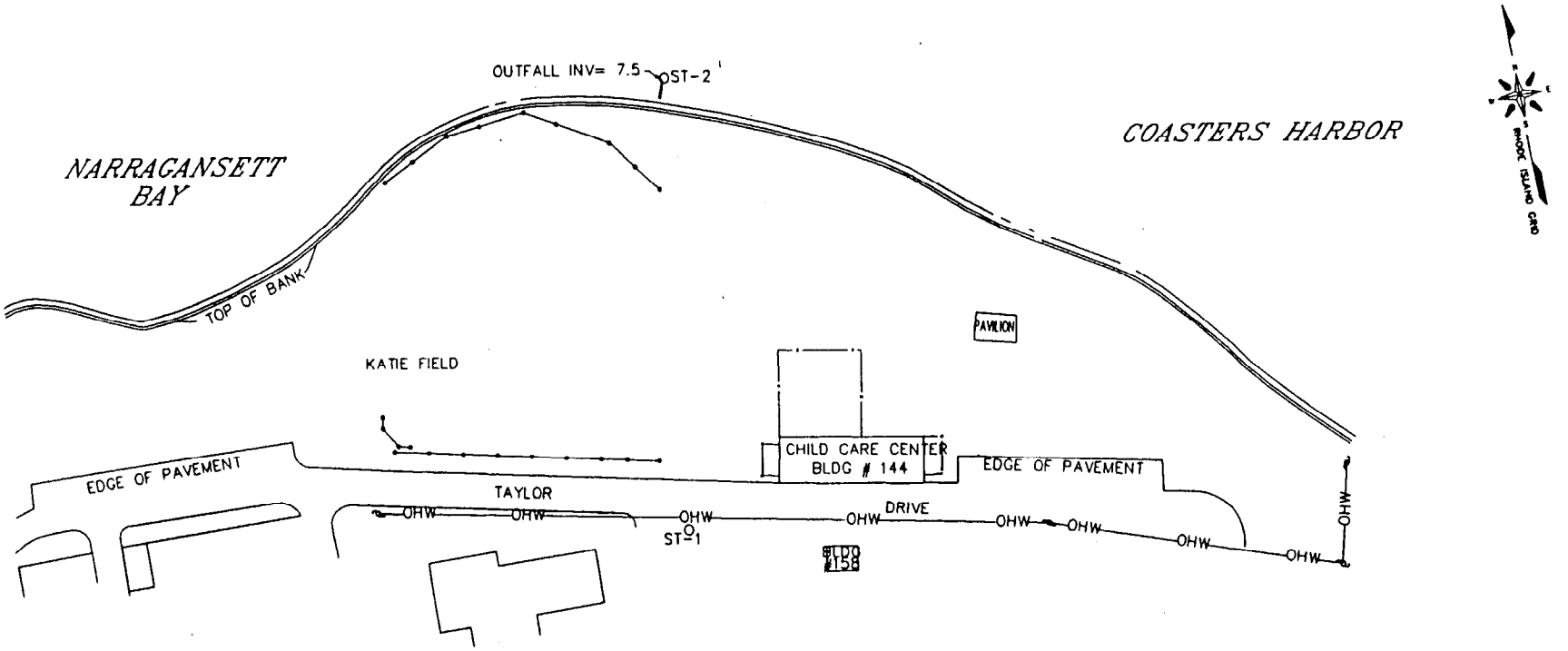
SITE 09 – OLD FIRE FIGHTING TRAINING AREA

FIGURE 2-8
PHASE I AND II
MONITORING WELL LOCATIONS

Date: 3/94 | Drawing No. 01043-0060-0040



GRAPHIC SCALE

150 0 75 150 300

1 inch = 150 ft.

LEGEND

- ST-3 ..... STORM SEWER SAMPLE
- ..... FENCE LINE
- OHW ..... OVERHEAD WIRES
- ..... UTILITY POLE
- ..... CHAIN LINK FENCE

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SITE 09 – OLD FIRE FIGHTING TRAINING AREA

FIGURE 2-10
PHASE II
STORM SEWER SAMPLE LOCATIONS

Date: 3/94 | Drawing No. 01043-0 -0040

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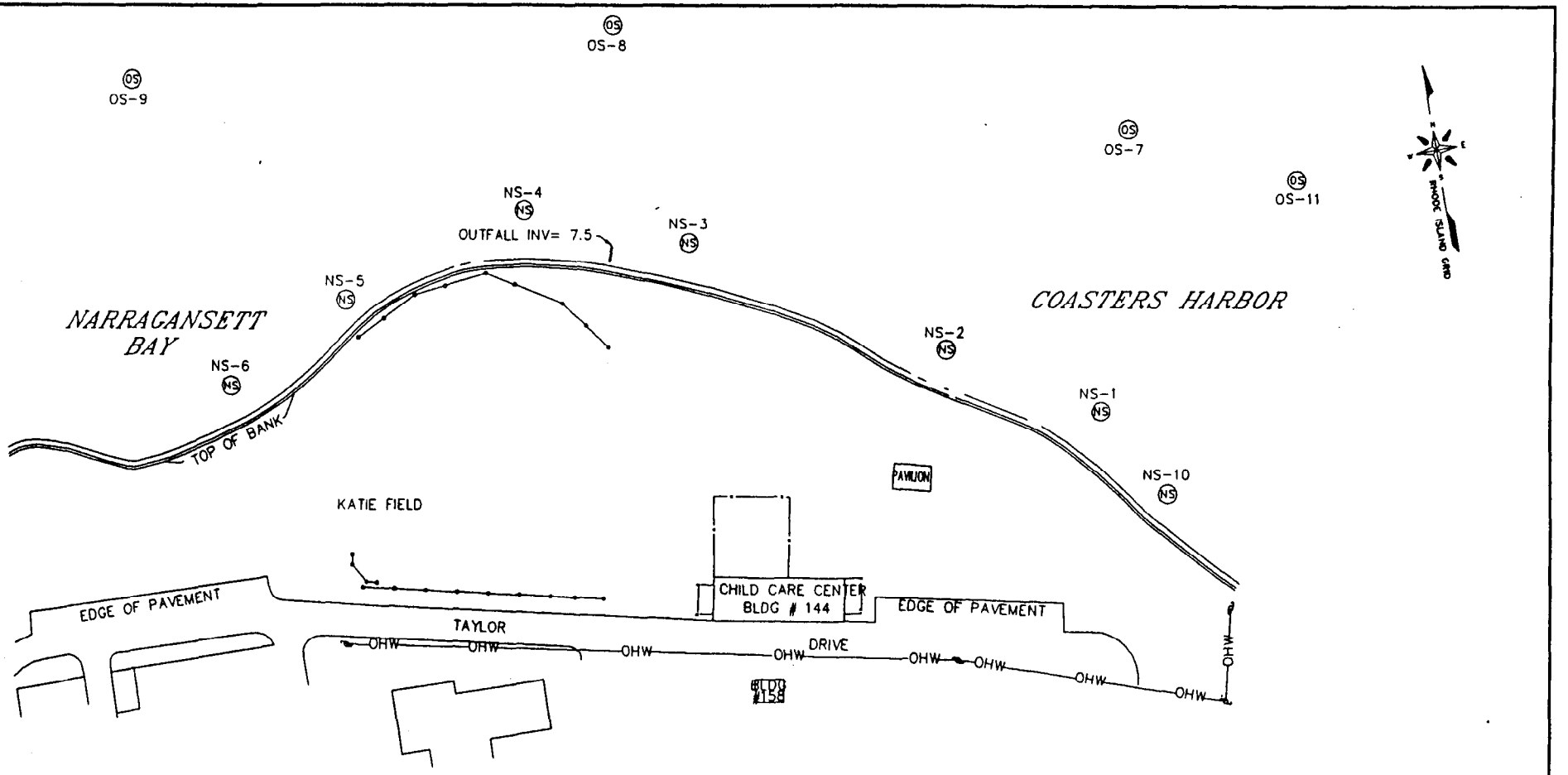

GRAPHIC SCALE

150 0 75 150 300

1 inch = 150 ft.

LEGEND

- OS-9 ..... OFFSHORE SAMPLE
- NS-3 ..... NEARSHORE SAMPLE
- ..... FENCE LINE
- OHW ..... OVERHEAD WIRES
- ..... UTILITY POLE
- ..... CHAIN LINK FENCE

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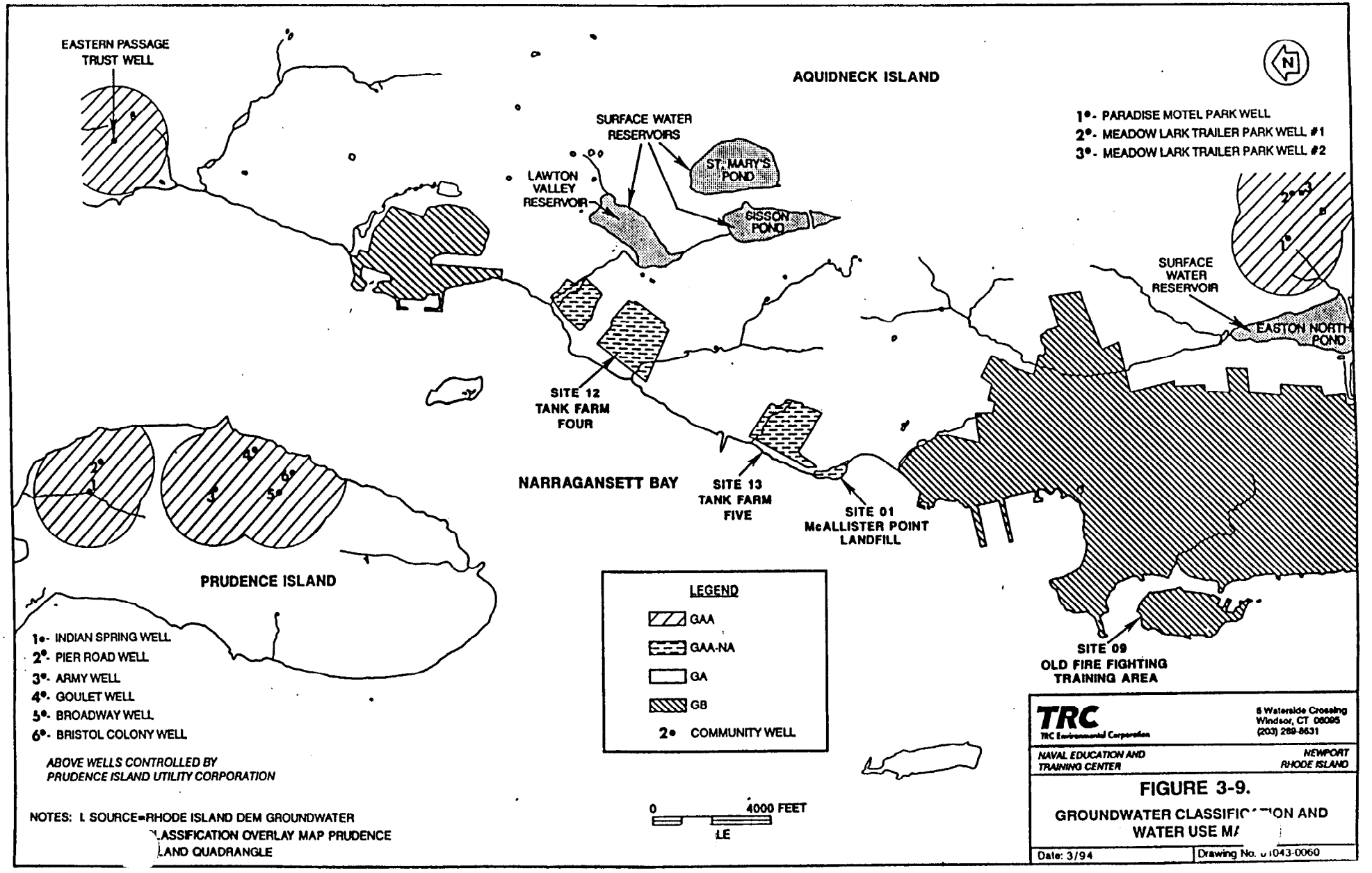
SITE 09 – OLD FIRE FIGHTING TRAINING AREA

FIGURE 2-11
PHASE II
NEAR SHORE/OFF SHORE SAMPLE LOCATIONS

Date: 3/94 | Drawing No. 01043-0060-0040

C:\10430060\FIG2-11F


EASTERN PASSAGE
TRUST WELL
AQUIDNECK ISLAND
SURFACE WATER
RESERVOIRS
ST. MARY'S
POND
LAWTON
VALLEY
RESERVOIR
SISSON
POND
1•- PARADISE MOTEL PARK WELL
2•- MEADOW LARK TRAILER PARK WELL #1
3•- MEADOW LARK TRAILER PARK WELL #2
SURFACE
WATER
RESERVOIR
EASTON NORTH
POND
SITE 12
TANK FARM
FOUR
NARRAGANSETT BAY
SITE 13
TANK FARM
FIVE
SITE 01
McALLISTER POINT
LANDFILL
PRUDENCE ISLAND
LEGEND
GAA
GAA-NA
GA
GB
2• COMMUNITY WELL
1•- INDIAN SPRING WELL
2•- PIER ROAD WELL
3•- ARMY WELL
4•- GOULET WELL
5•- BROADWAY WELL
6•- BRISTOL COLONY WELL
ABOVE WELLS CONTROLLED BY
PRUDENCE ISLAND UTILITY CORPORATION
NOTES: 1. SOURCE=RHODE ISLAND DEM GROUNDWATER
LASSIFICATION OVERLAY MAP PRUDENCE
LAND QUADRANGLE
0
4000 FEET
LE
SITE 09
OLD FIRE FIGHTING
TRAINING AREA
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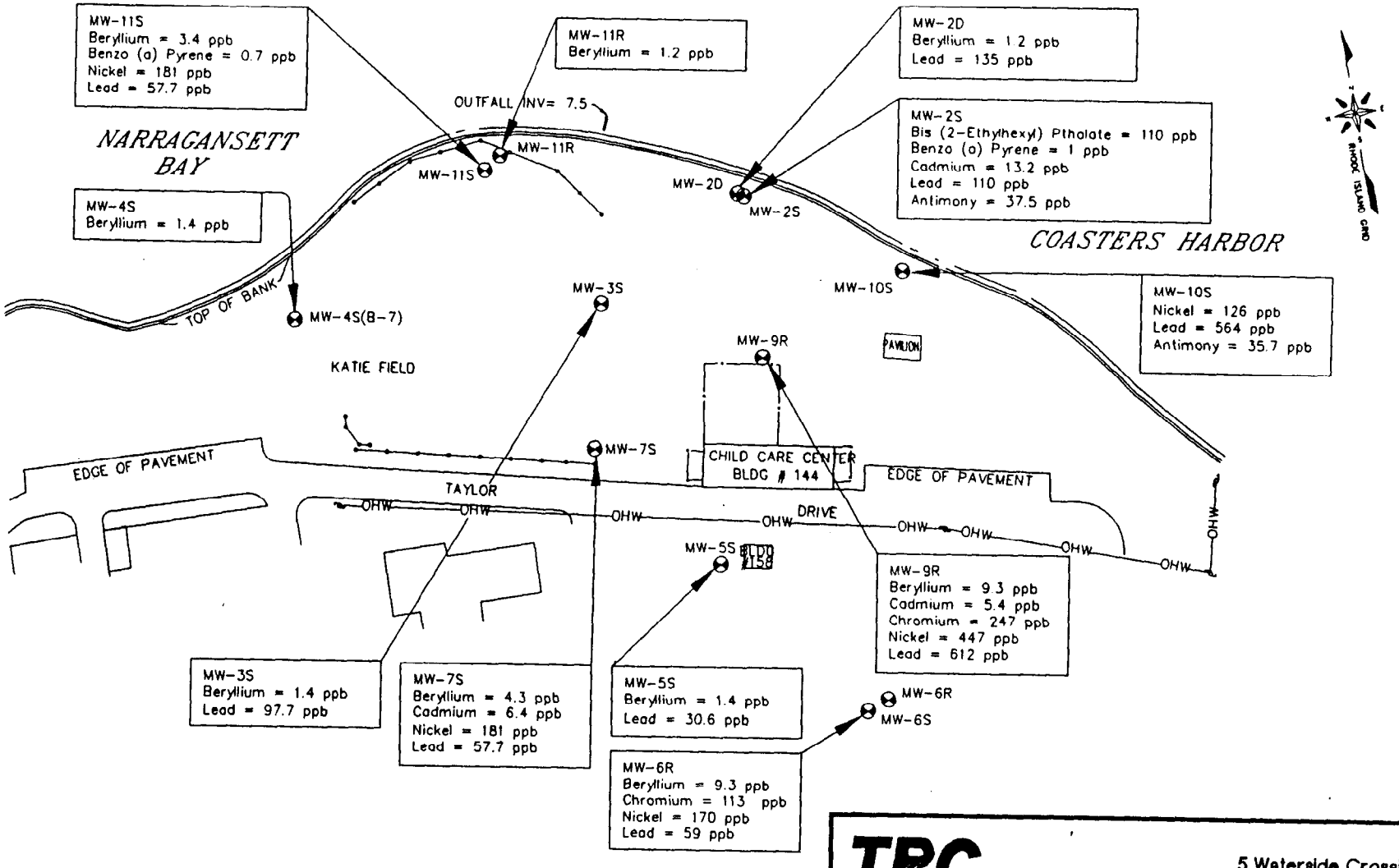
NAVAL EDUCATION AND
TRAINING CENTER
NEWPORT
RHODE ISLAND
FIGURE 3-9.
GROUNDWATER CLASSIFIC TION AND
WATER USE M
Date: 3/94
Drawing No. 01043-0060



GRAPHIC SCALE

150 0 75 150 300

1 inch = 150 ft.

LEGEND

- MW-3 ..... MONITORING WELL
- ..... FENCE LINE
- OHW ..... OVERHEAD WIRES
- ..... UTILITY POLE
- ..... CHAIN LINK FENCE

C:\10430060\FIG4-3F

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SITE 09 - OLD FIRE FIGHTING TRAINING AREA

FIGURE 4-3

GROUND WATER CONTAMINANTS EXCEEDING FEDERAL MCLs AND STATE OF RHODE ISLAND GROUND WATER QUALITY STANDARDS

Date: 3/94 | Drawing No. 01043-0060-0040

SITE 09 - OLD FIRE FIGHTER TRAINING AREA
CONSTITUENTS DETECTED IN GROUND WATER SAMPLES

SAMPLE IDENTIFICATION:	MW-1	MW-2	MW-3	MW-4	MW-5	FB-072090	TB1-071990	TB2-071990
**** VOLATILE ORGANICS (PPB) ***								
METHYLENE CHLORIDE.....	14 U*	900 U*	140 U*	11 U*	15 U*	45 J*	15 B	160 B
ACETONE.....		1100 U*	100 U**				4 J	
CHLOROFORM.....	2 J							
TOTAL VOLATILE ORGANICS.....	2	0	0	0	0	45	19	160
** BASE NEUTRAL / ACIDS (PPB) **								
ACENAPHTHENE.....@		24 J*	2 J				N/A	N/A
DIBENZOFURAN.....@			1 J				|	|
FLUORENE.....@		21 J*	1 J				|	|
PHENANTHRENE.....@		44 J*					|	|
ANTHRACENE.....@		9 J					|	|
DI-N-BUTYLPHTHALATE.....	12 U**						|	|
FLUORANTHENE.....@		6 J					|	|
PYRENE.....@		23					|	|
BENZO(a)ANTHRACENE.....@@		3					|	|
CHRYSENE.....@@		4 J					|	|
BIS(2-ETHYLHEXYL)PHTHALATE.....	12 U**	740	10 U**				|	|
BENZO(b)FLUORANTHENE.....@@		1 J					|	|
BENZO(a)PYRENE.....@@		2 J					N/A	N/A
TOTAL BNA'S.....	12	877	4	0	0	0		
TOTAL PAH'S.....	0	137	3	0	0	0		
TOTAL CARCINOGENIC PAH'S.....	0	10	0	0	0	0		
**** PESTICIDES/PCB'S (PPB) ****							N/A	N/A
******* INORGANICS (PPB) *******								
SILVER.....		10 U*	9.6 U*	4.7 U*	3.3 U*		N/A	N/A
ALUMINUM.....	1890 J*	16100 J*	44600 J*	18800 J*	14500 J*		|	|
ARSENIC.....	2.2 J*	16.6 J*		4.6 J*			|	|
BARIUM.....	37.9	569	247	39.9	50.1		|	|
BERYLLIUM.....			2.4				|	|
CALCIUM.....	40300	189000	76000	17900	115000	170	|	|
CADMIUM.....		48.8					|	|
COBALT.....	19.5 U*	31.4 J*	50 J*	30.6	26.5		|	|
CHROMIUM.....	5.4	36.1 J*	47 J*	32.7	20.1		|	|
COPPER.....	10.8 U*	1030 J*	148 J*	38.5 J*	31.8 J*	5.3	|	|
IRON.....	5750	132000	157000	43900	41700	103 J*	|	|
MERCURY.....		2.1	1.3				|	|
POTASSIUM.....	3020 J*	199000	26900	9320 J*	8000 J*		|	|
MAGNESIUM.....	5250 J*	414000	66500	21500	40000	82.9	|	|
MANGANESE.....	4620	1410 J*	5020 J*	8720	6140		|	|
SODIUM.....	26700	2800000	419000	88400	65600	458 J*	|	|
NICKEL.....	57.3 U*	81.5 J*	79.3 J*	38.1 U*	51.5 U*	10.2	|	|
LEAD.....	17 J*	4120 J*	448 J*	48.2 J*	11.7 J*		|	|
ANTIMONY.....		24.5 U*					|	|
VANADIUM.....	12.5 U*	76.2 U*	59.8 U*	24.4 U*	33.7 U*	6.9	|	|
ZINC.....	115	12400	877	108	130	24.8	|	|
CYANIDE.....			23.3				N/A	N/A

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
**- INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION.
@ - INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH).
@@ - INDICATES THAT THE COMPOUND IS A CARCINOGENIC POLYNUCLEAR AROMATIC HYDROCARBON.
N/A - INDICATES THAT THE COMPOUNDS WERE NOT ANALYZED FOR.

TABLE 4-11
NETC NEWPORT
U.S. NAVY – NORTHERN DIVISION
SITE 09 – OLD FIRE FIGHTING TRAINING AREA
GROUND WATER SAMPLE SUMMARY

Sample Location=	FF-MW-1S		FF-MW-2S		FF-MW-2D		FF-MW-3S		FF-MW-4S	
Sample Collection Date=	06 JAN 94		05 JAN 94		05 JAN 94		04 JAN 94		04 JAN 94	
Volatile Organic Compound (µg/l)										
Carbon Disulfide	--		--		1	J	--		--	
Semivolatile Organic Compound (µg/l)										
Naphthalene	--		--		--		--		--	
Acenaphthene	--		5	J	--		1	J	--	
Diethylphthalate	--		--		--		--		--	
Fluorene	--		--		--		--		--	
Phenanthrene	--		--		--		--		--	
Anthracene	--		3	J	--		--		--	
Di-n-butylphthalate	2	J	--		--		--		--	
Fluoranthene	--		2	J	--		--		--	
Pyrene	--		6	J	--		--		--	
Benzo(a)anthracene	--		0.7	J	--		--		--	
Chrysene	--		1	J	--		--		--	
bis(2-Ethylhexyl)phthalate	6	J	110		--		--		--	
Di-n-octyl phthalate	--		--		--		--		--	
Benzo(b)fluoranthene	--		0.7	J	--		--		--	
Benzo(k)fluoranthene	--		0.8	J	--		--		--	
Benzo(a)pyrene	--		1	J	--		--		--	
Indeno(1,2,3-cd)pyrene	--		0.7	J	--		--		--	
Benzo(g,h,i)perylene	--		0.8	J	--		--		--	
Pesticides/PCBs (µg/l)										
Endrin	--		--		--		--		--	
Inorganics (µg/l)										
Chloride	79.8		4740		1650		1080		618	
Silver, Total	--		1.9	J	--		0.7	J	0.9	J
Aluminum, Total	2820	J	248		6210		6010		28800	
Arsenic, Total	3.5		--		5		9.6	J	27.8	J
Barium, Total	62.8		194		60.8		67		53.2	
Beryllium, Total	1		--		1.2		1.4		1.4	
Calcium, Total	65400	J	131000	J	124000		85100	J	48900	J
Cadmium, Total	--		13.2	J	0.8	J	2	J	0.9	J
Cobalt, Total	52		--		14.6		9.1		76.2	
Chromium, Total	9.1		--		17.3		14.6		57.9	
Copper, Total	11.4		106		69.7		50.5		48.4	
Iron, Total	9670	J	4380	J	16400		28800	J	74600	J
Mercury, Total	--		0.2		--		0.12		--	
Potassium, Total	3980		130000		57400		27800		--	
Magnesium, Total	9590	J	298000	J	88300		67800	J	54200	J
Manganese, Total	2600	J	291	J	7230		1380	J	28000	J
Sodium, Total	65500	J	2410000		740000		517000		236000	
Nickel, Total	--		23.9		--		21.5		54.9	
Lead, Total	14.7	J	110		135		97		32	
Antimony, Total	--		37.5		--		--		--	
Vanadium, Total	7.1	J	--		--		--		--	
Zinc, Total	106		1560	J	122	J	346	J	156	J

-- = Non-Detect
J = Estimated Concentration

TABLE 4-11
NETC NEWPORT
U.S. NAVY – NORTHERN DIVISION
SITE 09 – OLD FIRE FIGHTING TRAINING AREA
GROUND WATER SAMPLE SUMMARY

Sample Location= / Sample Collection Date=	FF-MW-5S 06 JAN 94		FF-MW-6S 06 JAN 94		FF-MW-6R 06 JAN 94		FF-MW-7S 04 JAN 94		FF-MW-8R 06 JAN 94	
Volatile Organic Compound (µg/l)										
Carbon Disulfide	--		--		--		--		--	
Semivolatile Organic Compound (µg/l)										
Naphthalene	--		--		--		--		--	
Acenaphthene	--		--		--		--		--	
Diethylphthalate	--		--		--		--		--	
Fluorene	--		--		--		--		--	
Phenanthrene	--		--		--		--		--	
Anthracene	--		--		--		--		--	
Di-n-butylphthalate	--		--		--		--		1	J
Fluoranthene	--		--		--		--		--	
Pyrene	--		--		--		--		--	
Benzo(a)anthracene	--		--		--		--		--	
Chrysene	--		--		--		--		--	
bis(2-Ethylhexyl)phthalate	--		--		--		--		1	J
Di-n-octyl phthalate	--		--		--		--		--	
Benzo(b)fluoranthene	--		--		--		--		--	
Benzo(k)fluoranthene	--		--		--		--		--	
Benzo(a)pyrene	--		--		--		--		--	
Indeno(1,2,3-cd)pyrene	--		--		--		--		--	
Benzo(g,h,i)perylene	--		--		--		--		--	
Pesticides/PCBs (µg/l)										
Endrin	--		--		--		--		0.05	J
Inorganics (µg/l)										
Chloride	63		481		82.8		122		143	
Silver, Total	--		0.4		0.6		--		0.4	
Aluminum, Total	28300	J	21100	J	82500	J	37800		3110	J
Arsenic, Total	7.3	J	3.3		16.5		--		3.1	
Barium, Total	86.2		91.8		144		32.6		35.5	
Beryllium, Total	1.4		--		2.6		4.3		--	
Calcium, Total	84300	J	49300	J	13400	J	183000	J	57600	J
Cadmium, Total	0.5	J	0.4	J	0.7	J	6.4	J	--	
Cobalt, Total	46.2		24.3		111		237		3.5	
Chromium, Total	51.3		27.6		113		4.5		6.3	
Copper, Total	57.2		24.9		120		74.7		25.4	
Iron, Total	81400	J	52200	J	206000	J	70800	J	7010	J
Mercury, Total	--		--		--		--		--	
Potassium, Total	7710		14800		8290		15200		5740	
Magnesium, Total	32300	J	22000	J	28400	J	47100	J	10000	J
Manganese, Total	4420	J	1460	J	2950	J	11700	J	1030	J
Sodium, Total	49400	J	175000	J	49000	J	129000		92800	J
Nickel, Total	95		--		170		181		--	
Lead, Total	30.6	J	13.9	J	59	J	57.7		3.1	J
Antimony, Total	--		--		--		--		--	
Vanadium, Total	32.5	J	32.9		46.6	J	--		14.6	J
Zinc, Total	329		254		380		5610	J	75.4	

-- = Non-Detect
J = Estimated Concentration

TABLE 4-11
NETC NEWPORT
U.S. NAVY – NORTHERN DIVISION
SITE 09 – OLD FIRE FIGHTING TRAINING AREA
GROUND WATER SAMPLE SUMMARY

Sample Location=	FF-MW-9R		FF-MW-10S		FF-MW-11S		FF-MW-12S		FF-MW-11R	
Sample Collection Date=	06 JAN 94		06 JAN 94		05 JAN 94		Dup of MW-11S		05 JAN 94	
Volatile Organic Compound (µg/l)										
Carbon Disulfide	--		--		--		--		--	
Semivolatile Organic Compound (µg/l)										
Naphthalene	--		--		--		--		0.6	J
Acenaphthene	--		--		5	J	8	J	--	
Diethylphthalate	--		0.6	J	--		--		--	
Fluorene	--		--		1	J	--		--	
Phenanthrene	--		--		6	J	8	J	0.8	J
Anthracene	--		--		2	J	3	J	--	
Di-n-butylphthalate	1	J	0.9	J	--		--		--	
Fluoranthene	--		1	J	2	J	2	J	--	
Pyrene	--		1	J	2	J	3	J	--	
Benzo(a)anthracene	--		--		0.7	J	0.8	J	--	
Chrysene	--		--		0.7	J	0.9	J	--	
bis(2-Ethylhexyl)phthalate	0.5	J	2	J	--		--		--	
Di-n-octyl phthalate	--		--		--		--		--	
Benzo(b)fluoranthene	--		--		--		0.5	J	--	
Benzo(k)fluoranthene	--		--		--		0.6	J	--	
Benzo(a)pyrene	--		--		--		0.7	J	--	
Indeno(1,2,3-cd)pyrene	--		--		--		--		--	
Benzo(g,h,i)perylene	--		--		--		--		--	
Pesticides/PCBs (µg/l)										
Endrin	--		--		--		--		--	
Inorganics (µg/l)										
Chloride	134		3850		1080		1040		1830	
Silver, Total	1.2		3.6		0.9		1.4		--	
Aluminum, Total	193000	J	23900	J	41000		48700		5140	
Arsenic, Total	130		29.7		15.3		17.1		2.1	
Barium, Total	400		104		100		106		19.3	
Beryllium, Total	9.3		--		3.4		3		1.2	
Calcium, Total	205000	J	85900	J	62400		59600		51800	
Cadmium, Total	5.4	J	4.4	J	0.6	J	0.7	J	--	
Cobalt, Total	297		51.7		45.8		53.6		12.7	
Chromium, Total	247		42.4		43.6		56.4		7.5	
Copper, Total	511		346		345		406		18.8	
Iron, Total	398000	J	61100		75600		91200		10500	
Mercury, Total	0.36		0.41		0.42		0.4		--	
Potassium, Total	17800		66300		28100		27900		57300	
Magnesium, Total	95500	J	168000	J	84900		78400		94200	
Manganese, Total	18200	J	4110	J	2690		3030		5690	
Sodium, Total	69500	J	1710000	J	614000		555000		1250000	
Nickel, Total	447		126		121		137		--	
Lead, Total	612	J	564	J	1120		1640	J	--	
Antimony, Total	--		35.7		--		--		--	
Vanadium, Total	123		38	J	--		--		--	
Zinc, Total	1180		1340		382	J	402	J	54.5	J

-- = Non-Detect
J = Estimated Concentration

TABLE 4-15
NETC NEWPORT - PHASE II RI
U.S. NAVY - NORTHERN DIVISION
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
STORM SEWER WATER SAMPLE SUMMARY

Sample Location= Sample Collection Date=	FF-ST1 06 DEC 93		FF-ST2 06 DEC 93		MARINE ACUTE CRITERIA	MARINE CHRONIC CRITERIA
Volatile Organic Compound (µg/l)						
Semivolatile Organic Compound (µg/l)						
Acenaphthene	--		1	J	970	710
Anthracene	--		1	J	NA	NA
bis(2-Ethylhexyl) phthalate	3	J	3	J	400	360
Fluorene	--		2	J	NA	NA
2-Methylnaphthalene	--		2	J	NA	NA
Phenanthrene	--		3	J	7.7	4.6
Pyrene	--		1	J	NA	NA
Pesticides/PCBs (µg/l)						
Dieldrin	0.0058	J	0.016	J	0.71	0.0019
Endrin	0.016	J	0.051	J	0.037	0.0023
Endosulfan II	--		0.013	J	NA	NA
Endosulfan sulfate	--		0.011	J	NA	NA
4,4'-DDT	--		0.023	J	0.13	0.001
Inorganics (µg/l)						
Aluminum	54.3		97.2		NA	NA
Antimony	--		25.8		1500	500
Arsenic	--		1.1		NA	NA
Barium	35.4		22.4		NA	NA
Calcium	70500		82600		NA	NA
Copper	7.1		7.1		2.9	NA
Iron	558		779		NA	NA
Lead	4.2		2.2		220	8.5
Magnesium	8840		121000		NA	NA
Manganese	131		225		NA	NA
Nickel	14.9		--		75	8.3
Potassium	5570		41900		NA	NA
Selenium	3		--		300	71
Sodium	29000		983000		NA	NA
Zinc	48.4		46.9		95	86

NOTES:
-- = Non-Detect
J = Estimated Concentration

- Indicates a value which exceeds U.S. EPA marine chronic and/or acute ambient water quality criteria.

Table 3-2. Organic Contaminant Data Summary - PCB Concentrations (μg/kg dry weight).

Sample	Sediment		Mussels		Clam	
	Total PCB[a]	Σ Congeners[b]	Total PCB	Σ Congeners	Total PCB	Σ Congeners
Site 01 McAllister Point Landfill						
S1-NS-1/2/3	3.59 J	1.54	360	191	61.5	31.6
S1-NS-4/5/6	ND	ND	540	232	77.8/75.6[c]	47.0/46.2
S1-NS-7/8/9	26.0	23.6	745	317	—[d]	—
S1-NS-10/11/12	34.8	18.3	1120	561	—	—
S1-NS-13/14/15	582	299	2110	1000	—	—
S1-NS-16/17/18	184/215	219/134	864/836	424/415	—	—
S1-NS-19/20/21	221	114	1170	553	120	61.3
S1-OS-22	25.7	16.9	—	—	156	115
S1-OS-23	18.3	16.1	—	—	132	90.6
S1-OS-24	18.2	12.8	—	—	132	116
S1-OS-25	48.2	34.8	—	—	138	93.5
S1-OS-26	25.6	40.7	—	—	154	106
S1-OS-27	27.9	16.4	—	—	90.2	56.7
S1-OS-28	63.3	37.0	—	—	102	60.3
S1-OS-29	28.6	18.8	—	—	—	—
S1-OS-30	44.0	28.1	—	—	—	—
Site 02 Melville North Landfill						
S2-NS-1/2	17.1	8.13	376	191	78.1(H)/ 117(S)[e]	46.9(H)/ 65.1(S)
S2-NS-3/4	4.74 J/6.45 J	1.95/2.62	404/418	200/216	32.0/32.1	41.3/41.7
S2-NS-5/6	7.62 J	8.65	359	170	62.3	78.5
S2-OS-7	2.84 J	3.19	—	—	53.2	67.6
S2-OS-8	2.17 J	2.42	—	—	41.7	48.8
S2-OS-9	2.31 J	2.53	—	—	37.0	41.0
S2-OS-10	23.7	14.6	—	—	—	—
S2-OS-11	47.8	27.9	—	—	—	—

Sample	Sediment		Mussels		Clam	
	Total PCB[a]	Σ Congeners[b]	Total PCB	Σ Congeners	Total PCB	Σ Congeners
Site 09 Old Fire Fighting Training Area						
S9-NS-1/2	48.6	28.4	251	128	26.9	31.8
S9-NS-3/4	18.7/26.4	13.2/17.3	305/289	146/144	22.5/25.6	26.4/26.0
S9-NS-5/6	7.83 J	8.69	310	150	—	—
S9-OS-7	54.2	29.7	—	—	—	—
S9-OS-8	27.9	17.3	—	—	38.3	45.4
S9-OS-9	4.51 J	4.67	—	—	30.0	33.6
S9-NS-10	—	—	—	—	66.2	37.1
S9-OS-11	21.4	13.8	—	—	85.5	54.0
Reference Sites						
R1-NS-1/2/3	1.26 J	0.92	358	184	23.0(H)/ 31.0(S)	27.5(H)/ 30.3(S)
R1-OS-4	14.4	18.5	—	—	46.6	56.0
R2-NS-1/2/3	1.26 J	0.81	331	167	27.4	26.2
R2-OS-4	2.41 J	2.64	—	—	100	105
R3-NS-1/2/3	6.39 J	3.59	407	221	46.7	23.2
R3-OS-4	33.9	26.9	—	—	168	111

[a] Total PCB: Total PCB as Aroclor 1254, which was consistently the PCB formulation the PCB pattern most closely resembled.
[b] ΣCongeners: Sum of the 20 individual PCB congeners determined.
[c] Samples with two values reported show data for both field duplicates.
[d] No sample collected.
[e] Data for both hard (H) and soft (S) shell clam collected at the same station.

Table 3-4. Inorganic Contaminant Data Summary — Selected TAL Metals in Sediment.
(a) Non-normalized Concentrations ($\mu g/g$ dry weight)

Sample	Al	Ag	As	Cd	Cr	Cu	Hg	Ni	Pb	Sb	Zn
Site 01 McAllister Point Landfill											
S1-NS-1/2/3	57800	0.032	9.00	0.396	54.1	16.9	0.001 J	32.1	35.6	1.35	78.3
S1-NS-4/5/6	79800	0.052	19.5	0.443	74.0	43.4	0.001 J	40.5	69.5	1.78	92.2
S1-NS-7/8/9	58300	1.01	10.1	0.149	53.7	39.5	0.006	37.3	32.4	2.14	156
S1-NS-10/11/12	63100	2.87	24.9	0.021 J	112	300	0.166	53.8	368	360	501
S1-NS-13/14/15	47100	2.33	240	3.25	305	1140	10.7	344	12900	321	1580
S1-NS-16/17/18	50800/50600	2.45/2.28*	39.5/40.0	1.23/1.23	195/359	504/596	1.29/0.944	110/138	1010/993	50.9/68.5	1020/1340
S1-NS-19/20/21	68500	1.92	27.2	0.453	107	151	0.685	53.8	274	24.9	371
S1-OS-22	41000	0.520	6.30	0.165	48.6	32.4	0.166	16.0	56.1	0.880	107
S1-OS-23	56100	0.410	8.10	0.147	54.9	27.9	0.216	123	49.6	1.39	108
S1-OS-24	50900	0.414	6.20	0.094	48.6	23.5	0.134	20.1	37.8	1.01	96
S1-OS-25	47000	0.688	11.1	0.158	68.2	37.9	0.236	22.3	51.2	1.93	121
S1-OS-26	57300	0.532	6.30	0.152	66.6	30.8	0.166	25.1	44.7	1.60	114
S1-OS-27	60800	0.322	4.60	0.149	49.6	24.8	0.123	26.3	41.1	5.33	102
S1-OS-28	56000	0.834	6.60	0.238	66.8	37.2	0.160	36.5	49.1	3.95	139
S1-OS-29	54000	0.565	5.60	0.139	48.7	24.9	0.127	28.5	40.7	2.37	106
S1-OS-30	50800	0.660	10.6	0.188	52.9	36.8	0.201	20.6	48.9	2.04	124
Site 02 Melville North Landfill											
S2-NS-1/2	38600	0.020	1.80 J	0.084	21.9	9.00	0.014	9.20	31.5	0.518	36.9
S2-NS-3/4	23500/32400	0.032/0.032	3.97/2.11	0.089/0.056	15.9/19.0	9.20/9.30	0.107/0.016	10.7/9.60	13.2/12.8	1.06/0.634	35.1/34.9
S2-NS-5/6	6430	0.064	6.86	0.199	5.69	9.40	0.054	6.80	5.10	1.15	29.6
S2-OS-7	36700	0.076	1.50 J	0.128	16.2	7.20	0.021	7.90	14.9	0.447	32.5
S2-OS-8	34400	0.073	1.50 J	0.106	8.80	10.3	0.034	5.20	14.2	0.373	28.2
S2-OS-9	32700	0.092	1.50 J	0.074	10.1	7.20	0.028	4.65	13.9	0.365	28.4
S2-OS-10	36400	0.546	4.20	0.279	33.7	23.1	0.159	11.5	32.9	0.592	77.5
S2-OS-11	40800	0.926	8.40	0.397	51.7	35.0	0.249	13.5	52.4	0.684	120
Site 09 Old Fire Fighting Training Area											
S9-NS-1/2	46600	0.291	7.20	0.298	32.5	29.4	0.121	16.2	81.6	1.93	107
S9-NS-3/4	44600/47800	0.144/0.260	4.00/7.50	0.196/0.276	23.8/30.6	23.4/27.3	0.084/0.174	11.3/14.8	38.6/50.2	0.829/0.880	64.3/82.3
S9-NS-5/6	44800	0.123	5.10	0.157	24.3	1.20	0.069	19.4	33.4	0.708	71.4
S9-OS-7	51200	1.16	11.4	1.27	70.6	75.4	0.443	27.9	123	1.05	215
S9-OS-8	34800	0.553	9.30	0.681	42.6	30.2	0.228	20.0	57.8	0.618	109
S9-OS-9	49400	0.163	2.71	0.194	38.7	12.0	0.090	16.3	25.0	0.403	58.1
S9-OS-11	47200	0.586	11.0	0.812	53.2	41.3	0.216	18.5	62.1	0.611	118

Sample	Al	Ag	As	Cd	Cr	Cu	Hg	Ni	Pb	Sb	Zn
Reference Sites											
R1-NS-1/2/3	48000	0.054	2.20 J	0.108	33.9	17.1	0.014	15.6	43.5	0.348	64.5
R1-OS-4	56200	0.051	8.80	0.173	64.4	21.2	0.149	19.4	38.9	0.597	93.1
R2-NS-1/2/3	63100	0.040	4.20	0.187	59.1	20.3	0.012	36.2	30.7	0.197	107
R2-OS-4	43100	0.132	1.80 J	0.160	27.7	9.30	0.036	11.9	22.7	0.291	59.8
R3-NS-1/2/3	57300	0.056	7.90	0.103	44.8	39.1	0.011	45.0	23.1	0.521	101
R3-OS-4	32500	0.309	5.50	0.115	33.1	17.7	0.161	10.3	28.5	0.468	67.5

[a] Samples with two values reported show data for both field duplicates

SITE 09 - OLD FIRE FIGHTER TRAINING AREA
CONSTITUENTS DETECTED IN SURFACE SOIL SAMPLES

SAMPLE IDENTIFICATION:	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	FB-041290	TB-041290
**** VOLATILE ORGANICS (PPB) ***								
METHYLENE CHLORIDE.....	10 U*	14 U*	24 U*	11 U*	13 U*	12 U*	7 B	8 B
ACETONE.....		12 U**	10 U**	10 U**	10 U**		5 J	11
CARBON DISULFIDE.....								
CHLOROFORM.....								
2-BUTANONE.....								
TETRACHLOROETHENE.....		2 J						
TOLUENE.....								
ETHYLBENZENE.....								
XYLENE.....								
TOTAL VOLATILE ORGANICS....	0	2	0	0	0	0	12	19
** BASE NEUTRAL / ACIDS (PPB) **								
PHENOL.....								N/A
BENZOIC ACID.....								|
NAPETHALENE.....@						480 J		|
2-METHYLNAPETHALENE.....@								|
ACENAPETHYLENE.....@								|
ACENAPETHENE.....@						940 J		|
DIBENZOFURAN.....						650 J		|
FLUORENE.....@						1200 J		|
PHENANTHRENE.....@	83 J	350 J		250 J	100 J	7200		|
ANTHRACENE.....@						1500 J		|
DI-N-BUTYLPHTHALATE.....								|
FLUORANTHENE.....@	97 J	250 J	44 J	290 J	180 J	8000		|
PYRENE.....@	160 J	480		300 J	190 J	5700 J*		|
BUTYLBENZYLPHTHALATE.....								|
BENZO(a)ANTHRACENE.....@@		150 J		130 J	76 J	3300		|
CHRYSENE.....@@		170 J		110 J	78 J	2800		|
BIS(2-ETHYLHEXYL)PHTHALATE.	590 *	450 U**		340 U*				|
BENZO(b)FLUORANTHENE.....@@		130 J		120 J	65 J	2800		|
BENZO(k)FLUORANTHENE.....@@		91 J		110 J		3100		|
BENZO(a)PYRENE.....@@		130 J		120 J	61 J	2700		|
INDENO(1,2,3-cd)PYRENE.....@@								|
DIBENZO(a,h)ANTHRACENE.....@@								|
BENZO(g,h,i)PERYLENE.....@								N/A
TOTAL BNA'S.....	930	1751	44	1430	750	40370	0	
TOTAL PAH'S.....	340	1751	44	1430	750	39720	0	
TOTAL CARCINOGENIC PAH'S...	0	671	0	590	280	14700	0	

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
**- INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION.
@ - INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH).
@@ - INDICATES THAT THE COMPOUND IS A CARCINOGENIC POLYNUCLEAR AROMATIC HYDROCARBON.
N/A - INDICATES THAT THE COMPOUNDS WERE NOT ANALYZED FOR.

SITE 09 - OLD FIRE FIGHTER TRAINING AREA
CONSTITUENTS DETECTED IN SURFACE SOIL SAMPLES

SAMPLE IDENTIFICATION:	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	FB-041290	TB-041290
**** PESTICIDES/PCB'S (PPB) ****								
4,4'-DDE	7.3 J	7.2 J	8.1 J	2.9 J	3.7 J			N/A
4,4'-DDT	8.3 J	8.8 U*	6.3 J	8.8 J	3.7 J	2.3 J		|
AROCLOR-1254	80 J							N/A
******* INORGANICS (PPM) *******								
SILVER		0.68 J*						N/A
ALUMINUM	8800	6080	8730	5070	10500	10600		|
ARSENIC	6.2	5.1 J*	5.5	2	5.8	8.9		|
BARIUM	25.8	18.7	21.8	21.7	28.3	8		|
BERYLLIUM	0.47		0.41		0.48	0.39		|
CALCIUM	1100	673	540	21000	1480	1870	0.19 B1	|
CADMIUM				0.94				|
COBALT	7.5	5.7	7.1	4.7	9.3	20		|
CHROMIUM	15.9	6.8	18.8	8.8	16.7	16.4		|
COPPER	27.1	11.2	16.8	15.4	23	44.3		|
IRON	17400	10100	14500	10300	17800	35600		|
MERCURY				0.17				|
POTASSIUM	261	229	247	442	503	424		|
MAGNESIUM	1480	917	1530	7340	1820	5010		|
MANGANESE	249	174	185	174	251	750		|
SODIUM	60.8 U*	49	47.6 U*	93.6 U*	91.9 U*	907	0.198	|
NICKEL	12.3	5.4	10.9	7	12.8	25.6		|
LEAD	52.5	19	21		28.1	77.8		|
ANTIMONY						5.6		|
SELENIUM	0.53						0.0022	|
VANADIUM	24.5	9.8	19.5	19.3	27.4	36.3		|
ZINC	80.1	26.2	32.4	34.5	70.4	142	0.0111	|
CYANIDE								N/A

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
N/A - INDICATES THAT THE COMPOUNDS WERE NOT ANALYZED FOR.

TABLE 1

SITE 09 - OLD FIRE FIGHTING TRAINING AREA
CONSTITUENTS DETECTED IN SURFACE SOIL SAMPLES

SAMPLE IDENTIFICATION:	SS-07 (1)	SS-08 (2)	SS-12	SS-09	SS-10	SS-11	FB-1219
******* INORGANICS (ppm) *******							
SILVER.....							
ALUMINUM.....	4160	3430	2420	6120	6350	6570	
ARSENIC.....	3.5	2.2 B	2 B	5.6	4	4.4	
BARIUM.....	17 B	19.4 B	14 B	22.7 B	28.4 B	21.9 B	
BERYLLIUM.....			0.32 B	0.31 B	0.43 B	0.5 B	
CALCIUM.....	1090 B	859 B	628 B	1090 B	1220 B	1100 B	
CADMIUM.....							
COBALT.....	2.7 B	2.4 B	1.8 B	4.2 B	4 B	4.5 B	
CHROMIUM.....	8.7	5.8	4.3	10.3	10	8.5	
COPPER.....	8.4	9.8	6.9	9.7	13.4	11.4	
IRON.....	6760	6160	4470	9670	9470	10100	
MERCURY.....		0.08 B	0.07 B	0.07 B	0.09 B		
POTASSIUM.....	273 B	433 B	373 B	290 B	411 B		
MAGNESIUM.....	783 B	932 B	717 B	886 B	1010 B	945 B	
MANGANESE.....	143	166	117	189	197	201	
SODIUM.....							
NICKEL.....				8.6 B	6.2 B	5.1 B	
LEAD.....	22.2	27.5	26	32.4	38.7	20.6	
ANTIMONY.....							
SELENIUM.....							
THALLIUM.....							
VANADIUM.....	6.2 B	5.3 B	4.6 B	9.1 B	9.8 B	10.1 B	5.5 B
ZINC.....	36.1	38.1	26.6	34.9	46.5	35.3	

Note: (1) SS-07 was collected from the same location as SS-02.
(2) SS-12 is a duplicate sample of SS-8.
B = Indicates that the reported value is less than the CRDL

TABLE 4-2
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location:	FF-SS12	FF-SS13	FF-SS14	FF-SS15	FF-SS16	FF-SS17
Sample Collection Date:	03 NOV 93	03 NOV 93	03 NOV 93	03 NOV 93	03 NOV 93	03 NOV 93
Volatile Organic Compounds (µg/kg)						
Vinyl Chloride	--	--	--	--	2 J	3 J
Methylene chloride	--	--	--	2 J	--	--
Acetone	--	--	--	--	--	--
1,2-Dichloroethene (cis/trans)	--	--	--	--	--	--
2-Butanone	--	--	--	1 J	--	--
1,1,1-Trichloroethane	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	1 J
Tetrachloroethene	--	--	--	--	--	--
Toluene	--	--	2 J	--	--	2 J
Xylenes (total)	--	2 J	3 J	2 J	2 J	3 J
Total VOCs	0	2	5	5	4	9
Semivolatile Organic Compounds (µg/kg)						
Acenaphthene*	52 J	--	--	--	--	--
Acenaphthylene*	--	--	--	--	--	--
Anthracene*	46 J	--	--	--	--	--
9H-Carbazole	--	--	--	--	--	--
Benzo(a)anthracene**	190 J	--	93 J	--	--	56 J
Benzo(a)pyrene**	170 J	--	82 J	--	--	53 J
Benzo(b)fluoranthene**	230 J	47 J	150 J	--	--	130 J
Benzo(g,h,i)perylene**	93 J	--	54 J	--	--	--
Chrysene**	230 J	--	110 J	--	--	75 J
Di-n-butyl phthalate	--	--	--	--	--	--
Dibenz(a,h)anthracene**	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--
Diethyl phthalate	--	--	--	--	--	--
Di-n-octyl phthalate	--	--	--	--	--	--
bis(2-Ethylhexyl) phthalate	--	--	--	--	--	--
Fluoranthene*	400	60 J	200 J	42 J	--	140 J
Fluorene*	51 J	--	--	--	--	--
Hexachlorobenzene	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene**	84 J	--	49 J	--	--	--
2-Methylnaphthalene*	--	--	--	--	--	--
Naphthalene*	--	--	--	--	--	--
N-Nitrosodiphenylamine	--	--	--	--	--	--
Pentachlorophenol	--	--	--	--	--	--
Phenanthrene*	640	--	150 J	--	--	70 J
Phenol*	--	--	--	--	--	--
Pyrene*	680	61 J	220 J	54 J	--	120 J
Total SVOCs	2866	168	1108	96	0	644
* Total PAHs	2866	168	1108	96	0	644
** Total Carcinogenic PAHs	997	47	538	0	0	314

TABLE 4-2
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location:	FF-SS12		FF-SS13		FF-SS14		FF-SS15		FF-SS16		FF-SS17	
Sample Collection Date:	03 NOV 93		03 NOV 93		03 NOV 93		03 NOV 93		03 NOV 93		03 NOV 93	
Pesticides/PCBs (µg/kg)												
alpha-BHC	--		--		1.2	NJ	--		--		--	
beta-BHC	--		--		--		--		0.27	J	0.99	J
gamma-BHC (Lindane)	--		--		1.9	J	--		--		0.55	J
Heptachlor	--		--		--		--		--		--	
Aldrin	--		--		--		1.5	J	0.078	J	0.059	J
Heptachlor epoxide	10	J	--		3.5		--		0.34	J	0.63	J
Endosulfan I	1	J	--		--		--		--		--	
Dieldrin	--		3.8	J	2.8	NJ	1.5	J	0.47	J	3.3	J
4,4'-DDE	9.5	J	21		18		14	J	1.9	J	42	
Endrin	17	J	5.3	J	--		3.3	J	0.98	J	3.3	J
Endosulfan II	4.2	J	--		1.9	J	0.9	J	0.024	NJ	0.91	J
4,4'-DDD	--		9.2	J	10	J	6.2	J	0.82	J	15	
Endosulfan sulfate	--		--		2.2	NJ	--		0.3	NJ	0.55	J
4,4'-DDT	21		19	J	27	J	20	J	2.3	J	74	
Methoxychlor	8	J	--		--		--		--		--	
Endrin aldehyde	--		--		20		5.8	J	--		3.9	NJ
alpha-Chlordane	0.7	J	3.6	J	2.2	J	2.4	J	1.2	J	1.9	J
gamma-Chlordane	--		1.7	J	2.4		--		--		0.71	J
Aroclor 1254	--		--		--		--		--		--	
Inorganics (mg/kg)												
Aluminum	9800		11600		10900		10000		5470		10600	
Antimony	--		--		--		--		--		--	
Arsenic	5.9	J	5.3	J	6.3	J	6.3	J	1.7	J	5.6	J
Barium	27		30.8		26.1		24.7		16.8		24.6	
Beryllium	0.44		0.46		0.38		0.36		0.28		0.35	
Cadmium	--		--		--		--		--		--	
Calcium	901		1190		1140		764		1320		871	
Chromium	13.7		13.1		31.5		11.9		8.5		12	
Cobalt	5.5		6.2		6.8		5.4		4.4		5.3	
Copper	12.6	J	12.7	J	20.5	J	10.3	J	8.9	J	13.9	J
Iron	13700		15400		17500		13800		9770		14600	
Lead	22.1		25.1		69.4		27		7.5		28.9	
Magnesium	1690		2000		2620		1800		2490		1970	
Manganese	214		245		246		199		196		194	
Mercury	0.07		0.06		0.08		0.07		--		0.14	
Nickel	13		12.1		16.4		13.1		8.6		13	
Potassium	286		363		168		252		1030		234	
Selenium	0.53		0.61		0.64		--		--		--	
Sodium	--		--		--		--		--		--	
Vanadium	17.3		20		19.5		17.2		14		19.7	
Zinc	57.5		63.3		93.3		42		40.3		44	

"- -" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ - Presumptive evidence for the presence of the material at an estimated value
N/A - Not Analyzed

TABLE 4-2
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location: Sample Collection Date:	FF-SS18 03 NOV 93	FF-SS19 03 NOV 93	FF-SS20 03 NOV 93	FF-SS21 04 NOV 93	FF-SS22 04 NOV 93	FF-SS23 04 NOV 93
Volatile Organic Compounds (µg/kg)						
Vinyl Chloride	--	--	--	--	--	--
Methylene chloride	2 J	2 J	--	--	2 J	--
Acetone	--	--	--	--	--	--
1,2-Dichloroethene (cis/trans)	--	--	--	--	--	--
2-Butanone	--	--	--	--	--	--
1,1,1-Trichloroethane	--	--	--	--	--	2 J
Trichloroethene	--	--	--	--	--	--
Tetrachloroethene	--	--	--	--	--	1 J
Toluene	--	--	--	--	--	--
Xylenes (total)	--	--	--	--	--	--
Total VOCs	2	2	0	0	2	3
Semivolatile Organic Compounds (µg/kg)						
Acenaphthene*	--	--	470 J	--	--	--
Acenaphthylene*	--	--	--	47 J	--	--
Anthracene*	--	--	630	72 J	--	--
9H-Carbazole	--	--	380 J	--	--	--
Benzo(a)anthracene**	82 J	43 J	1200	180 J	47 J	--
Benzo(a)pyrene**	78 J	41 J	960	130 J	45 J	--
Benzo(b)fluoranthene**	140 J	81 J	1800	240 J	96 J	--
Benzo(g,h,i)perylene**	--	--	450 J	50 J	--	--
Chrysene**	82 J	49 J	1100	180 J	51 J	--
Di-n-butyl phthalate	120 J	170 J	--	--	--	--
Dibenz(a,h)anthracene**	--	--	270 J	--	--	--
Dibenzofuran	--	--	340 J	--	--	--
Diethyl phthalate	--	--	--	--	--	--
Di-n-octyl phthalate	--	--	--	--	--	--
bis(2-Ethylhexyl) phthalate	--	130 J	--	--	--	--
Fluoranthene*	160 J	84 J	1800	400	83 J	--
Fluorene*	--	--	570	74 J	--	--
Hexachlorobenzene	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene**	45 J	--	490 J	64 J	--	--
2-Methylnaphthalene*	--	--	290 J	--	--	--
Naphthalene*	--	--	740	--	--	--
N-Nitrosodiphenylamine	--	--	--	--	--	--
Pentachlorophenol	--	--	--	--	--	--
Phenanthrene*	81 J	--	1900	480	--	--
Phenol*	--	--	--	--	--	--
Pyrene*	140 J	80 J	1600	400	77 J	53 J
Total SVOCs	928	678	14990	2317	399	53
* Total PAHs	808	378	14270	2317	399	53
** Total Carcinogenic PAHs	427	214	6270	844	239	0

TABLE 4-2
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location:	FF-SS18		FF-SS19		FF-SS20		FF-SS21		FF-SS22		FF-SS23	
Sample Collection Date:	03 NOV 93		03 NOV 93		03 NOV 93		04 NOV 93		04 NOV 93		04 NOV 93	
Pesticides/PCBs (µg/kg)												
alpha-BHC	--		--		--		--		--		1.7	J
beta-BHC	--		0.44	JP	--		--		--		--	
gamma-BHC (Lindane)	--		--		--		--		0.054	NJ	0.33	J
Heptachlor	--		--		--		0.74	J	--		--	
Aldrin	--		--		--		--		--		--	
Heptachlor epoxide	2.3	J	--		1.6	J	1.1	J	0.96	J	0.38	J
Endosulfan I	--		--		1.1	J	--		--		0.35	J
Dieldrin	11	J	--		4.3	J	--		--		--	
4,4'-DDE	11	J	10	J	2.1	J	14		9.7	J	9.1	J
Endrin	8.7	J	4.1		6.2	J	7.6	J	4.7	J	1.8	NJ
Endosulfan II	2.2	J	0.63	NJ	4.3	J	--		--		--	
4,4'-DDD	--		4.8	J	4.9	J	8		2.1	J	3.8	J
Endosulfan sulfate	--		--		3.5	J	--		--		--	
4,4'-DDT	23		17	J	7.9	J	27		13	J	16	
Methoxychlor	6.6	J	--		--		--		--		--	
Endrin aldehyde	--		--		--		10	J	8.3	J	5.9	
alpha-Chlordane	14		--		--		--		--		--	
gamma-Chlordane	7.8		0.21	NJ	--		0.46	J	0.076	NJ	0.17	J
Aroclor 1254	--		--		--		--		--		--	
Inorganics (mg/kg)												
Aluminum	8950		10900		9810		9530		10000		9340	
Antimony	--		--		--		--		--		--	
Arsenic	6	J	6.7	J	7.4	J	6.1	J	5.6	J	8.5	J
Barium	24.9		22.1		24.8		14.9		25		21.8	
Beryllium	0.36		0.41		0.37		0.37		0.34		0.34	
Cadmium	--		--		--		--		--		--	
Calcium	3370		473		823		697	J	894	J	621	J
Chromium	12.2		11.8		18.1		12.9		11.8		10.8	
Cobalt	5.3		6.3		9.3		9.2		5.4		5.1	
Copper	19	J	11.4	J	54.7	J	18.3		10.1		9.2	
Iron	14400		15300		22000		19600		14800		14200	
Lead	36.2		29.9		100		39.5	J	16.1	J	22.1	J
Magnesium	3410		2020		2680		2390		1920		1780	
Manganese	212		211		313		336		203		203	
Mercury	0.61		0.08		0.07		0.07		0.07		0.07	
Nickel	12.4		13.3		20.7		16.3		12.3		11.7	
Potassium	405		309		471		321		374		234	
Selenium	--		0.61		--		--		--		--	
Sodium	--		377		--		--		--		--	
Vanadium	17		18.5		20.3		20.7		16.6		14.9	
Zinc	54.8		40.2		414		57.8		42.1		38.8	

"- -" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ - Presumptive evidence for the presence of the material at an estimated value
N/A - Not Analyzed

TABLE 4-2
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location: Sample Collection Date:	FF-SS24 04 NOV 93	FF-SS25 04 NOV 93	FF-SS26 04 NOV 93	FF-SS27 04 NOV 93	FF-SS35 04 NOV 93	FF-SS28 04 NOV 93
Volatile Organic Compounds (µg/kg)						
Vinyl Chloride	N/A	N/A	N/A	--	--	N/A
Methylene chloride	N/A	N/A	N/A	--	--	N/A
Acetone	N/A	N/A	N/A	--	--	N/A
1,2-Dichloroethene (cis/trans)	N/A	N/A	N/A	--	--	N/A
2-Butanone	N/A	N/A	N/A	--	--	N/A
1,1,1-Trichloroethane	N/A	N/A	N/A	--	--	N/A
Trichloroethene	N/A	N/A	N/A	--	--	N/A
Tetrachloroethene	N/A	N/A	N/A	--	--	N/A
Toluene	N/A	N/A	N/A	--	--	N/A
Xylenes (total)	N/A	N/A	N/A	--	--	N/A
Total VOCs	N/A	N/A	N/A	0	0	N/A
Semivolatile Organic Compounds (µg/kg)						
Acenaphthene*	--	--	--	--	--	--
Acenaphthylene*	--	--	--	--	--	--
Anthracene*	--	--	--	--	--	--
9H-Carbazole	--	--	--	--	--	--
Benzo(a)anthracene**	--	--	--	--	--	--
Benzo(a)pyrene**	--	--	--	--	--	--
Benzo(b)fluoranthene**	46 J	36 J	--	47 J	66 J	62 J
Benzo(g,h,i)perylene**	--	--	--	--	--	--
Chrysene**	--	--	--	--	--	--
Di-n-butyl phthalate	--	--	--	--	--	--
Dibenz(a,h)anthracene**	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--
Diethyl phthalate	--	--	--	--	--	--
Di-n-octyl phthalate	--	--	--	--	--	--
bis(2-Ethylhexyl) phthalate	--	--	--	--	--	--
Fluoranthene*	46 J	38 J	--	54 J	76 J	69 J
Fluorene*	--	--	--	--	--	--
Hexachlorobenzene	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene**	--	--	--	--	--	--
2-Methylnaphthalene*	--	--	--	--	--	--
Naphthalene*	--	--	--	--	--	--
N-Nitrosodiphenylamine	--	--	--	--	--	--
Pentachlorophenol	--	--	--	--	--	--
Phenanthrene*	--	--	--	66 J	67 J	43 J
Phenol*	--	--	--	--	--	--
Pyrene*	48 J	40 J	49 J	91 J	110 J	73 J
Total SVOCs	140	114	49	258	319	247
* Total PAHs	140	114	49	258	319	247
** Total Carcinogenic PAHs	46	36	0	47	66	62

TABLE 4-2
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location:	FF-SS24		FF-SS25		FF-SS26		FF-SS27		FF-SS35		FF-SS28	
Sample Collection Date:	04 NOV 93		04 NOV 93		04 NOV 93		04 NOV 93		04 NOV 93		04 NOV 93	
Pesticides/PCBs (µg/kg)												
alpha-BHC	--		--		--		--		--		--	
beta-BHC	--		--		--		--		--		--	
gamma-BHC (Lindane)	0.37	J	0.096	J	--		--		--		--	
Heptachlor	--		--		--		--		0.74	J	--	
Aldrin	--		--		--		--		--		--	
Heptachlor epoxide	--		--		0.58	J	--		0.35	J	0.65	J
Endosulfan I	--		--		--		--		--		--	
Dieldrin	0.91	NJ	0.66	J	--		--		--		2.3	J
4,4'-DDE	12		10		5.1	J	--		6.7		13	
Endrin	3.6	J	2.2	NJ	--		--		1.8	J	5.1	J
Endosulfan II	--		--		--		--		--		--	
4,4'-DDD	2.3	J	5.5		--		--		1.5	J	--	
Endosulfan sulfate	--		--		--		--		--		--	
4,4'-DDT	14		17		9.4	J	--		7.9		11	J
Methoxychlor	--		3.8	J	--		--		--		--	
Endrin aldehyde	6.9	J	5.1	J	9.4		--		2.5	NJ	6.6	
alpha-Chlordane	--		--		0.62	J	--		--		2.5	J
gamma-Chlordane	--		--		--		--		--		1	J
Aroclor 1254	--		--		--		--		--		--	
Inorganics (mg/kg)												
Aluminum	9360		9890		9090		7650		7890		10100	
Antimony	--		--		--		--		--		--	
Arsenic	5.2	J	5.5	J	5.2	J	4.3	J	4.7	J	6.2	J
Barium	24		22.9		22.8		20.9		19.9		25.2	
Beryllium	0.36		0.34		0.33		0.31		0.28		0.33	
Cadmium	--		--		--		--		--		--	
Calcium	907	J	604	J	643	J	743	J	774	J	766	J
Chromium	16.7		10.5		12.1		9		9		10.8	
Cobalt	5.5		5.6		5.6		4.5		4.4		7	
Copper	9.8		14.2		8.8		8.7		8.1		11.2	
Iron	13300		14200		14300		11800		11400		16200	
Lead	16.5	J	15.1	J	16.1	J	14.9	J	14.3	J	21.8	J
Magnesium	1720		1720		1790		1460		1530		2080	
Manganese	191		205		210		173		166		222	
Mercury	--		0.07		--		--		--		0.07	
Nickel	11.5		12.8		12		11.3		11.5		12.2	
Potassium	351		249		286		--		225		281	
Selenium	--		--		--		--		--		--	
Sodium	--		--		--		--		--		--	
Vanadium	16.9		16		15.3		13		13.5		17.2	
Zinc	40.6		38.2		37.2		41.5		40.5		41.5	

"- -" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ - Presumptive evidence for the presence of the material at an estimated value
N/A - Not Analyzed

TABLE 4-2
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location:	FF-SS29	FF-SS30	FF-SS31	FF-B81	FF-B91	FF-B101
Sample Collection Date:	04 NOV 93	04 NOV 93	04 NOV 93	22 NOV 93	23 NOV 93	23 NOV 93
Volatile Organic Compounds (µg/kg)						
Vinyl Chloride	--	--	--	--	--	--
Methylene chloride	--	4 J	--	--	--	--
Acetone	--	--	--	--	--	--
1,2-Dichloroethene (cis/trans)	--	--	--	--	--	--
2-Butanone	--	--	--	--	--	--
1,1,1-Trichloroethane	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	--
Tetrachloroethene	--	--	--	--	--	16
Toluene	--	--	--	--	2 J	--
Xylenes (total)	--	--	--	--	--	--
Total VOCs	0	4	0	0	2	16
Semivolatile Organic Compounds (µg/kg)						
Acenaphthene*	--	--	--	92 J	62 J	--
Acenaphthylene*	--	--	--	270 J	--	--
Anthracene*	--	67 J	--	320 J	130 J	68 J
9H-Carbazole	--	49 J	--	61 J	68 J	--
Benzo(a)anthracene**	42 J	350 J	160 J	1400	350 J	240 J
Benzo(a)pyrene**	--	300 J	140 J	1200	310 J	220 J
Benzo(b)fluoranthene**	89 J	610	310 J	1700	540	440
Benzo(g,h,i)perylene**	--	150 J	66 J	420	140 J	59 J
Chrysene**	53 J	400	180 J	1400	380	250 J
Di-n-butyl phthalate	--	54 J	--	41 J	--	140 J
Dibenz(a,h)anthracene**	--	77 J	--	270 J	59 J	43 J
Dibenzofuran	--	--	--	130 J	46 J	--
Diethyl phthalate	--	--	--	80 J	--	--
Di-n-octyl phthalate	--	--	--	--	--	--
bis(2-Ethylhexyl) phthalate	--	--	--	--	--	59 J
Fluoranthene*	84 J	710	280 J	2100	740	430
Fluorene*	--	--	--	190 J	75 J	--
Hexachlorobenzene	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene**	--	170 J	86 J	560	170 J	100 J
2-Methylnaphthalene*	--	--	--	--	45 J	--
Naphthalene*	--	--	--	--	39 J	--
N-Nitrosodiphenylamine	--	--	--	--	--	--
Pentachlorophenol	--	--	--	--	--	--
Phenanthrene*	43 J	470	120 J	1600	640	210 J
Phenol*	--	--	--	--	--	--
Pyrene*	90 J	770	290 J	2300	710	490
Total SVOCs	401	4177	1632	14134	4504	2749
* Total PAHs	401	4074	1632	13822	4390	2550
** Total Carcinogenic PAHs	184	2057	942	6950	1949	1352

TABLE 4-2
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location:	FF-SS29		FF-SS30		FF-SS31		FF-B81		FF-B91		FF-B101	
Sample Collection Date:	04 NOV 93		04 NOV 93		04 NOV 93		22 NOV 93		23 NOV 93		23 NOV 93	
Pesticides/PCBs (ug/kg)												
alpha-BHC	--		--		--		--		--		--	
beta-BHC	--		--		--		--		--		--	
gamma-BHC (Lindane)	0.18	J	--		--		--		--		--	
Heptachlor	1.2	J	--		--		--		--		--	
Aldrin	--		--		--		--		--		--	
Heptachlor epoxide	4.2	J	3.5	NJ	0.17	J	1.3	J	0.81	J	0.06	NJ
Endosulfan I	--		--		--		--		--		--	
Dieldrin	4.2	J	15	J	--		3.5	J	--		0.61	J
4,4'-DDE	14		4500		72	J	9.2	J	8.3	J	6.5	J
Endrin	10		22	J	--		7.6	J	2.5	J	--	
Endosulfan II	--		--		--		1.6	J	0.92	J	--	
4,4'-DDD	--		--		3.4	J	3.8	J	3.3	J	--	
Endosulfan sulfate	3.5	J	--		--		--		--		0.56	J
4,4'-DDT	23		14000		38	J	15	J	12	J	11	J
Methoxychlor	--		--		--		--		1.4	NJ	--	
Endrin aldehyde	5.7	J	16	NJ	--		--		--		3.3	J
alpha-Chlordane	8.9	J	--		0.17	J	--		--		0.33	J
gamma-Chlordane	2.7	J	--		--		--		--		--	
Aroclor 1254	--		--		--		--		--		--	
Inorganics (mg/kg)												
Aluminum	10200		8000		10000		10300		11200		9910	
Antimony	--		--		--		--		--		5.7	J
Arsenic	3.7	J	34	J	6.2	J	6.3	J	6	J	5	J
Barium	23.1		43.7		27.2		25.6		29.9		25.4	
Beryllium	0.32		0.38		0.4		0.33		0.43		0.39	
Cadmium	--		0.68		--		--		--		--	
Calcium	1170	J	539	J	668	J	644		1830		1170	
Chromium	11.8		10.6		11.6		12.1		13.2		11.5	
Cobalt	6.8		4.8		5.8		6.7		9.7		6.5	
Copper	15.3		17.2		17.2		11.3		19.8		16.4	
Iron	17100		13200		17300		16500		19800		16800	
Lead	33.6	J	349		133		35.1		68.7		60.4	
Magnesium	2300		1510		1900		1930		2390		2120	
Manganese	223		165		211		233	J	331	J	221	J
Mercury	0.08		0.29		0.19		--		--		0.07	
Nickel	13.3		13.9		14.3		12		15.7		15.4	
Potassium	340		251		280		446		419		402	
Selenium	--		0.46		--		--		--		--	
Sodium	--		--		--		--		--		--	
Vanadium	16.8		38.6		29.5		18.3	J	22.5		41.2	
Zinc	59.9		102		82		--		73.4	J	65.1	J

"- -" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ - Presumptive evidence for the presence of the material at an estimated value
N/A - Not Analyzed

TABLE 4-2
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location:	FF-B111	FF-B121	FF-B131	FF-B141	FF-B151	FF-B161
Sample Collection Date:	24 NOV 93	24 NOV 93	23 NOV 93	13 DEC 93	13 DEC 93	23 NOV 93
Volatile Organic Compounds (µg/kg)						
Vinyl Chloride	--	--	--	3 J	--	--
Methylene chloride	--	--	--	--	1 J	--
Acetone	--	--	--	--	--	--
1,2-Dichloroethene (cis/trans)	--	--	--	17	--	--
2-Butanone	3 J	3 J	--	1 J	--	--
1,1,1-Trichloroethane	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	--
Tetrachloroethene	--	--	--	--	--	--
Toluene	--	2 J	--	--	--	--
Xylenes (total)	--	--	--	--	--	--
Total VOCs	3	5	0	21	1	0
Semivolatile Organic Compounds (µg/kg)						
Acenaphthene*	--	--	680	--	--	330 J
Acenaphthylene*	--	--	140 J	--	40 J	--
Anthracene*	--	83 J	1300	--	170 J	720 J
9H-Carbazole	--	--	690	--	--	240 J
Benzo(a)anthracene**	130 J	180 J	--	--	440	2400
Benzo(a)pyrene**	130 J	170 J	2800	--	240 J	2600
Benzo(b)fluoranthene**	280 J	320 J	--	--	440	3900
Benzo(g,h,i)perylene**	43 J	77 J	980	--	120 J	1300 J
Chrysene**	150 J	180 J	--	--	390	2400
Di-n-butyl phthalate	--	--	--	--	--	--
Dibenz(a,h)anthracene**	--	--	610	--	77 J	350 J
Dibenzofuran	--	--	500	--	--	--
Diethyl phthalate	--	--	--	--	--	--
Di-n-octyl phthalate	--	--	--	--	--	--
bis(2-Ethylhexyl) phthalate	48 J	--	--	--	--	--
Fluoranthene*	270 J	370	--	--	740	3200
Fluorene*	--	--	740	--	--	380 J
Hexachlorobenzene	--	--	--	--	43 J	--
Indeno(1,2,3-cd)pyrene**	61 J	96 J	1200	--	130 J	1100 J
2-Methylnaphthalene*	--	--	270 J	--	--	190 J
Naphthalene*	--	--	380	--	--	--
N-Nitrosodiphenylamine	--	--	150 J	--	--	--
Pentachlorophenol	--	--	--	--	--	--
Phenanthrene*	140 J	250 J	--	--	500	3300
Phenol*	--	--	--	--	--	--
Pyrene*	300 J	360 J	--	--	800	4600
Total SVOCs	1552	2086	10440	0	4130	27010
* Total PAHs	1504	2086	9100	0	4087	26770
** Total Carcinogenic PAHs	794	1023	5590	0	1837	14050

TABLE 4-2
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location:	FF-B111	FF-B121	FF-B131	FF-B141	FF-B151	FF-B161
Sample Collection Date:	24 NOV 93	24 NOV 93	23 NOV 93	13 DEC 93	13 DEC 93	23 NOV 93
Pesticides/PCBs (ug/kg)						
alpha-BHC	--	0.048 J	--	--	--	--
beta-BHC	--	--	--	--	--	--
gamma-BHC (Lindane)	--	--	--	0.24 J	0.21 J	--
Heptachlor	--	--	--	0.27 J	--	--
Aldrin	--	--	--	--	--	--
Heptachlor epoxide	0.24 J	0.66 J	1.4 J	0.34 J	1.1 NJ	8.1 J
Endosulfan I	--	--	0.66 NJ	--	--	9.4 J
Dieldrin	--	--	5.6 NJ	0.88 J	--	--
4,4'-DDE	6.5	0.41 J	--	20 J	3.3 J	--
Endrin	3.2 J	4.8 J	9.7 NJ	0.59 NJ	13 J	74 J
Endosulfan II	0.98 J	--	7.3 NJ	0.72 J	3.6 J	25 NJ
4,4'-DDD	1.8 J	--	--	2.6 NJ	--	17 J
Endosulfan sulfate	--	--	--	--	1.7 J	33 J
4,4'-DDT	11	7.2 J	--	34 J	--	--
Methoxychlor	--	5.4 J	--	--	--	--
Endrin aldehyde	--	--	--	1.4 NJ	6.8 NJ	--
alpha-Chlordane	0.61 J	--	--	--	--	--
gamma-Chlordane	0.29 J	--	--	--	--	3.5 J
Aroclor 1254	--	--	--	--	--	--
Inorganics (mg/kg)						
Aluminum	10500	10500	8380	10700	9540	7080
Antimony	--	--	--	--	--	--
Arsenic	6.6 J	6.6 J	10 J	8.5	7	6.9 J
Barium	25.9	25.9	32.4	27.4	26.9	46.5
Beryllium	0.28	0.28	0.37	0.35	0.36	0.22
Cadmium	--	--	--	--	0.72	--
Calcium	1400	1400	4520	937	1640	1550
Chromium	13.7	13.7	19.3	11.8	12.1	28.4
Cobalt	10.8	10.8	10.6	5.8	11.1	7.4
Copper	33.9	33.9	63.8	9.1	20.5	87
Iron	23000	23000	31000	15400	22700	39200
Lead	108	108	125	22.5	77.4	126
Magnesium	3280	3280	3540	1930	2640	3330
Manganese	439 J	439 J	325 J	215 J	506 J	290 J
Mercury	0.080	0.08	0.14	--	--	0.11
Nickel	18.3	18.3	20.8	11.7	19.5	26.8
Potassium	382	382	443	279	329	1160
Selenium	--	--	0.58	--	--	--
Sodium	--	--	--	--	--	--
Vanadium	19.0	19	21.9	18.7	19.3	27.3
Zinc	104 J	104 J	168 J	38 J	89.3 J	207 J

"- -" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ - Presumptive evidence for the presence of the material at an estimated value
N/A - Not Analyzed

TABLE 4-2
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location:	FF-B164	FF-B171	FF-B181	FF-M61	FF-M71	FF-M81
Sample Collection Date:	23 NOV 93	24 NOV 93	23 NOV 93	30 NOV 93	29 NOV 93	30 NOV 93
Volatile Organic Compounds (µg/kg)						
Vinyl Chloride	--	--	--	--	--	--
Methylene chloride	--	--	--	--	--	--
Acetone	--	--	--	--	--	--
1,2-Dichloroethene (cis/trans)	--	--	--	--	--	--
2-Butanone	--	--	--	--	--	--
1,1,1-Trichloroethane	--	--	--	--	--	--
Trichloroethene	--	--	--	--	--	--
Tetrachloroethene	--	--	--	--	--	--
Toluene	--	--	--	--	--	--
Xylenes (total)	--	1 J	--	--	--	--
Total VOCs	0	1	0	0	0	0
Semivolatile Organic Compounds (µg/kg)						
Acenaphthene*	37 J	63 J	--	--	--	--
Acenaphthylene*	58 J	--	--	--	--	--
Anthracene*	190 J	100 J	--	42 J	--	--
9H-Carbazole	40 J	--	--	--	--	--
Benzo(a)anthracene**	400	320 J	--	180 J	71 J	--
Benzo(a)pyrene**	410	310 J	--	180 J	63 J	--
Benzo(b)fluoranthene**	750	480	63 J	350 J	130 J	54 J
Benzo(g,h,i)perylene**	320 J	87 J	--	46 J	40 J	--
Chrysene**	450	320 J	41 J	170 J	78 J	--
Di-n-butyl phthalate	--	--	--	--	--	--
Dibenz(a,h)anthracene**	120 J	60 J	--	--	--	--
Dibenzofuran	--	--	--	--	--	--
Diethyl phthalate	--	--	--	--	--	--
Di-n-octyl phthalate	--	--	--	--	--	--
bis(2-Ethylhexyl) phthalate	--	45 J	--	--	--	--
Fluoranthene*	670	480	67 J	280 J	130 J	53 J
Fluorene*	47 J	63 J	--	--	--	--
Hexachlorobenzene	--	--	--	210 J	--	--
Indeno(1,2,3-cd)pyrene**	290 J	110 J	--	62 J	48 J	--
2-Methylnaphthalene*	75 J	50 J	--	--	--	--
Naphthalene*	--	--	--	--	--	--
N-Nitrosodiphenylamine	--	--	--	--	--	--
Pentachlorophenol	350 J	--	--	--	--	--
Phenanthrene*	470	580	--	120 J	77 J	--
Phenol*	--	--	--	--	--	--
Pyrene*	610	870	68 J	330 J	120 J	76 J
Total SVOCs	5287	3938	239	1970	757	183
* Total PAHs	4897	3893	239	1760	757	183
** Total Carcinogenic PAHs	2740	1687	104	988	430	54

TABLE 4-2
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location:	FF-B164		FF-B171		FF-B181		FF-M61		FF-M71		FF-M81	
Sample Collection Date:	23 NOV 93		24 NOV 93		23 NOV 93		30 NOV 93		29 NOV 93		30 NOV 93	
Pesticides/PCBs (ug/kg)												
alpha-BHC	--		--		--		0.38	J	--		--	
beta-BHC	--		--		--		--		--		--	
gamma-BHC (Lindane)	--		--		--		--		--		--	
Heptachlor	--		--		--		--		--		--	
Aldrin	--		--		--		--		--		--	
Heptachlor epoxide	2	J	--		1.2	J	5.6	J	--		--	
Endosulfan I	2	J	--		--		3.3	J	--		--	
Dieldrin	--		--		1.6	NJ	--		--		--	
4,4'-DDE	--		1.5	J	7	J	6.9	J	7.1	J	13	J
Endrin	25	J	--		--		16	J	6	J	--	
Endosulfan II	6.5	J	--		--		--		--		2.9	J
4,4'-DDD	4.7	J	--		5.2	J	5.1	J	--		3.8	J
Endosulfan sulfate	11	J	--		0.97	J	--		0.86	NJ	--	
4,4'-DDT	9.6	J	3.6	J	14	J	29	J	42	J	16	J
Methoxychlor	--		1.4	J	10	J	32	J	--		--	
Endrin aldehyde	--		3.9	NJ	--		10	NJ	--		6.1	NJ
alpha-Chlordane	--		--		2.6	J	--		1.9	NJ	--	
gamma-Chlordane	--		--		--		1.7	J	0.57	J	--	
Aroclor 1254	--		--		--		--		--		--	
Inorganics (mg/kg)												
Aluminum	9580		6270		10300		10100		11200		5130	
Antimony	6.5	J	--		5.8	J	--		--		--	
Arsenic	7.3	J	3.4	J	4.4	J	4.6		5.6		5.7	
Barium	10.2		13.3		21.7		20.0		27.2		12.4	
Beryllium	0.4		0.23		0.34		0.39		0.46		--	
Cadmium	--		--		--		--		--		--	
Calcium	849		732		1120		876		1650		325	
Chromium	17.6		7.2		12.1		16.5		13.2		6.5	
Cobalt	14.9		7		6.5		9.1		7.5		4.4	
Copper	45.1		11.6		14.1		16.8		19.3		9.1	
Iron	31100		12700		16300		22900		20400		9880	
Lead	83.2		23.6		43.7		41.1		43.8		22.5	
Magnesium	3320		2170		2400		2900		2550		1240	
Manganese	554	J	404	J	236	J	306	J	232	J	168	J
Mercury	0.1		--		--		--		0.07		--	
Nickel	19.1		11		11.1		16.0		15.5		7.0	
Potassium	339		330		321		456		396		296	
Selenium	--		--		--		--		--		--	
Sodium	--		--		--		--		--		--	
Vanadium	16.4		9		16		18.8		18.9		9.2	
Zinc	125	J	39.5	J	52.9	J	70.6	J	77.5	J	30.0	J

"- -" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ - Presumptive evidence for the presence of the material at an estimated value
N/A - Not Analyzed

TABLE 4-2
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location:	FF-M91	FF-M93	FF-M101	FF-M111
Sample Collection Date:	01 DEC 93	01 DEC 93	29 NOV 93	29 NOV 93
Volatile Organic Compounds (µg/kg)				
Vinyl Chloride	--	--	--	--
Methylene chloride	--	--	--	--
Acetone	--	2 J	--	--
1,2-Dichloroethene (cis/trans)	--	--	--	--
2-Butanone	--	--	--	--
1,1,1-Trichloroethane	--	--	--	--
Trichloroethene	--	--	--	--
Tetrachloroethene	--	--	--	--
Toluene	--	--	--	--
Xylenes (total)	--	--	--	--
Total VOCs	0	2	0	0
Semivolatile Organic Compounds (µg/kg)				
Acenaphthene*	46 J	83 J	78 J	--
Acenaphthylene*	37 J	39 J	59 J	--
Anthracene*	160 J	290 J	220 J	51 J
9H-Carbazole	56 J	75 J	86 J	--
Benzo(a)anthracene**	490	790	890	68 J
Benzo(a)pyrene**	280 J	380	890	--
Benzo(b)fluoranthene**	510	680	1600	100 J
Benzo(g,h,i)perylene**	90 J	110 J	280 J	46 J
Chrysene**	450	660	750	83 J
Di-n-butyl phthalate	--	--	--	--
Dibenz(a,h)anthracene**	42 J	55 J	160 J	--
Dibenzofuran	--	39 J	38 J	72 J
Diethyl phthalate	--	--	--	--
Di-n-octyl phthalate	--	--	--	54 J
bis(2-Ethylhexyl) phthalate	48 J	--	--	170 J
Fluoranthene*	910	1400	1400	130 J
Fluorene*	49 J	110 J	88 J	--
Hexachlorobenzene	--	--	--	--
Indeno(1,2,3-cd)pyrene**	120 J	120 J	360 J	--
2-Methylnaphthalene*	41 J	42 J	--	660
Naphthalene*	--	39 J	--	120 J
N-Nitrosodiphenylamine	--	--	--	--
Pentachlorophenol	--	--	--	--
Phenanthrene*	600	1300	790	350 J
Phenol*	60 J	--	--	--
Pyrene*	1000	1800	1400	260 J
Total SVOCs	4989	8012	9089	2164
* Total PAHs	4885	7898	8965	1868
** Total Carcinogenic PAHs	1982	2795	4930	297

TABLE 4-2
NETC NEWPORT - PHASE II RI
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SURFACE SOIL SAMPLE SUMMARY TABLE

Sample Location:	FF-M91		FF-M93		FF-M101		FF-M111	
Sample Collection Date:	01 DEC 93		01 DEC 93		29 NOV 93		29 NOV 93	
Pesticides/PCBs (µg/kg)								
alpha-BHC	--		0.98	J	--		--	
beta-BHC	--		--		--		--	
gamma-BHC (Lindane)	--		2.4	J	--		--	
Heptachlor	--		--		--		--	
Aldrin	--		--		--		--	
Heptachlor epoxide	--		0.95	J	--		2.2	J
Endosulfan I	--		--		5.5	J	2.1	J
Dieldrin	0.74	J	1.7	NJ	--		2	J
4,4'-DDE	0.68	J	4.7		13	J	3.5	J
Endrin	0.86	NJ	12	J	11	J	2.3	NJ
Endosulfan II	1.4	J	2.8	J	20		--	
4,4'-DDD	--		7.2	J	--		--	
Endosulfan sulfate	0.57	NJ	2	J	--		0.83	J
4,4'-DDT	60	J	52		25	NJ	25	J
Methoxychlor	--		--		--		1.9	J
Endrin aldehyde	3.1	J	--		25	NJ	2.3	J
alpha-Chlordane	--		2.4		--		--	
gamma-Chlordane	0.32	J	1.9	J	--		--	
Aroclor 1254	--		--		530		--	
Inorganics (mg/kg)								
Aluminum	10500		11000		9230		7370	
Antimony	--		--		--		9.1	J
Arsenic	5.8		5.2		7.0		4.7	
Barium	31.9		37.8		49.9		282	
Beryllium	0.43		0.36		0.35		0.26	
Cadmium	--		--		0.84		--	
Calcium	2420		2380		4680		3200	
Chromium	13.4		13.9		18.7		25.9	
Cobalt	11.3		10.3		10.8		10.1	
Copper	27.1		25.8		80.3		220	
Iron	23800		22900		45400		29100	
Lead	97.3		82		372		2970	
Magnesium	3820		3540		3060		2580	
Manganese	451	J	389	J	697	J	374	J
Mercury	--		0.08		0.39		--	
Nickel	17.8		18.5		22.9		221	
Potassium	378		375		424		542	
Selenium	0.46		--		--		--	
Sodium	--		--		--		852	
Vanadium	22.1		21.3		15.4		17.4	
Zinc	124	J	126	J	571	J	1910	J

"- -" = Non-Detect
J = Estimated Concentration
D = Sample diluted prior to analysis

NJ - Presumptive evidence for the presence of the material at an estimated value
N/A - Not Analyzed

TABLE 4-10
NETC - NEWPORT
U.S. NAVY - NORTHERN DIVISION
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
MAXIMUM DETECTED INORGANIC ANALYTE CONCENTRATIONS

	Surface Soils			Subsurface Soils		
	Concentration (ppm)		Location	Concentration (ppm)		Location
ANALYTE						
Aluminum	11,600	@	SS-13	20,700	@	M07-2
Antimony	9.1	@	M11-1	6.8	@	B16-2
Arsenic	10	@	B13-1	16.3	@	TP3-1
Barium	282	@	M11-1	112	@	M02-2
Beryllium	0.47	@	SS-01	0.48	@	M03-2
Cadmium	0.94	@	SS-04	8.1	@	M02-1
Calcium	21,000	@	SS-04	91,300	@	B01-1
Chromium	31.5	@	SS-14	24	@	B16-2
Cobalt	14.9	@	B16-4	20.5	@	B06-2
Copper	220	@	M11-1	321	@	M11-2
Iron	45,400	@	M10-1	112,000	@	M02-2
Lead	2,970	@	M11-1	3,090	@	TP3-1
Magnesium	7,340	@	SS-04	6,000	@	M07-2
Manganese	697	@	M10-1	1,020	@	M05-2
Mercury	0.61	@	SS-18	0.38	@	B12-2
Nickel	221	@	M11-1	58.1	@	M11-2
Potassium	1,160	@	B16-1	1,030	@	B15-3
Selenium	0.64	@	SS-14	1.7	@	M03-1
Silver	0.68	@	SS-02	N/D		
Sodium	852	@	M11-1	3,820	@	B05-2
Thallium	N/D			N/D		
Vanadium	41.2	@	B10-1	57	@	M07-2
Zinc	1,910	@	M11-1	2,810	@	M02-2
Cyanide	N/D			N/D		

Notes: N/D - Non Detect

TABLE 4-9
NETC - NEWPORT
U.S. NAVY - NORTHERN DIVISION
SITE 09 - OLD FIRE FIGHTING TRAINING AREA
SUMMARY OF SURFACE SOIL INORGANIC BACKGROUND DATA

	Phase II				
	SS-29	SS-30	SS-31	M06-1	Range
ANALYTE					
Aluminum	10,200	8,000	10,000	10,100	8,000 - 10,200
Antimony	N/D	N/D	N/D	N/D	N/D
Arsenic	3.7	34	6.2	4.6	3.7 - 34
Barium	23.1	43.7	27.2	20	20 - 43.7
Beryllium	0.32	0.38	0.4	0.39	0.32 - 0.40
Cadmium	N/D	0.68	N/D	N/D	N/D - 0.68
Calcium	1,170	539	668	876	539 - 1,170
Chromium	11.8	10.6	11.6	16.5	10.6 - 16.5
Cobalt	6.8	4.8	5.8	9.1	4.8 - 9.1
Copper	15.3	17.2	17.2	16.8	15.3 - 17.2
Iron	17,100	13,200	17,300	22,900	13,200 - 22,900
Lead	33.6	349	133	41.1	33.6 - 349
Magnesium	2,300	1,510	1,900	2,900	1,510 - 2,900
Manganese	223	165	211	306	165 - 306
Mercury	0.08	0.29	0.19	N/D	N/D - 0.29
Nickel	13.3	13.9	14.3	16	13.3 - 16
Potassium	340	251	280	456	251 - 456
Selenium	N/D	0.46	N/D	N/D	N/D - 0.46
Silver	N/D	N/D	N/D	N/D	N/D
Sodium	N/D	N/D	N/D	N/D	N/D
Thallium	N/D	N/D	N/D	N/D	N/D
Vanadium	16.8	38.6	29.5	18.8	16.8 - 38.6
Zinc	59.9	102	82	70.6	59.9 - 102
Cyanide	N/D	N/D	N/D	N/D	N/D

Notes: N/D - Non Detect
- Indicates highest concentration detected in background surface soil samples.
- Indicates lowest concentration detected in background surface soil samples.

TABLE 4-8
NETC – NEWPORT
U.S. NAVY – NORTHERN DIVISION
SITE 09 – OLD FIRE FIGHTING TRAINING AREA
COMPARISON OF OBSERVED SOIL SAMPLE CONCENTRATION RANGES
OF ELEMENTS TO BACKGROUND AND PUBLISHED VALUES

	PUBLISHED RANGES OF BACKGROUND ELEMENTS IN U.S. SOILS (ppm)		ON-SITE SURFACE SOIL RANGES	ON-SITE SUBSURFACE SOIL RANGES	OBSERVED BACKGROUND (3) SURFACE SOIL CONCENTRATION RANGES
ELEMENT	EPA (1)	USGS (2)	(ppm)	(ppm)	(ppm)
Aluminum	10,300 – 300,000	7,000 – 100,000	5,130 – 11,600	3,030 – 20,700	8,000 – 10,200
Antimony	2 – 10	ND – 8.8	N/D – 9.1	N/D – 6.8	N/D
Arsenic	1 – 50	ND – 73	1.7 – 10	1.3 – 16.3	3.7 – 34
Barium	100 – 3,000	10 – 1,500	8 – 282	4.9 – 112	20 – 43.7
Beryllium	0.1 – 40	ND – 7	N/D – 0.47	N/D – 0.48	0.32 – 0.40
Cadmium	0.01 – 0.7	–	N/D – 0.94	N/D – 8.1	N/D– 0.68
Calcium	–	100 – 280,000	325 – 21,000	523 – 91,300	539 – 1,170
Chromium	1 – 1,000	1 – 1,000	6.5 – 31.5	5.4 – 24	10.6 – 16.5
Cobalt	1 – 40	ND – 70	4.4 – 14.9	2.8 – 20.5	4.8 – 9.1
Copper	2 – 100	ND – 700	8.1 – 220	6.1 – 321	15.3 – 17.2
Iron	–	100 – 100,000	9,770 – 45,400	5,230 – 112,000	13,200 – 22,900
Lead	2 – 200	ND – 300	7.5 – 2,970	2.2 – 3,090	33.6 – 349
Magnesium	600 – 6,000	50 – 50,000	917 – 7,340	602 – 6,000	1,510 – 2,900
Manganese	20 – 3,000	ND – 7,000	166 – 697	70.7 – 1,020	165 – 306
Mercury	0.01 – 0.3	0.01 – 3.4	N/D – 0.61	N/D – 0.38	N/D – 0.29
Nickel	5 – 500	ND – 700	5.4 – 221	4.3 – 58.1	13.3 – 16
Potassium	–	50 – 37,000	N/D – 1,160	184 – 1,030	251 – 456
Selenium	0.1 – 2	ND – 3.9	N/D – 0.64	N/D – 1.7	N/D – 0.46
Silver	0.01 – 5	–	N/D – 0.68	N/D	N/D
Sodium	–	ND – 50,000	N/D – 852	N/D – 3,820	N/D
Thallium	–	–	N/D	N/D	N/D
Vanadium	20 – 500	ND – 300	9 – 41.2	N/D – 57	16.8 – 38.6
Zinc	10 – 300	ND – 2,900	30.0 – 1,910	23.6 – 2,810	59.9 – 102
Cyanide	–	–	N/D	N/D	N/D

NOTES:
(1) From "Hazardous Waste Land Treatment", SW-874, April 1983.
(2) From "Element Concentrations in soils and other Surficial Materials of the Conterminous United States", USGS Professional Paper 1270, 1984. Soils in the Eastern United States (east of 96th meridian).
(3) Site background ranges obtained from surface soil samples SS-18, SS-19, and SS-20, and from surface soil samples collected from monitoring well borings MW-14R, MW-15R, and MW-16R.
– Indicates that the data for that element was not presented in that reference.
ND Indicates that the element was not detected in the soil sample.

RISK-BASED PRIORITIZATION OF CLEANUP SITE WORK

SITE: NETC-Newport CERCLA SITE Site 10 Tank Farm #2

ANALYTICAL DATA

Pathway	Reference
Groundwater	
Surface Soil	
Surface Water	
Sediment	
Notes	NO DATA

QUALITATIVE QUESTIONS

Circle Choice	**Migration Pathway Factor**
1.	Physical evidence and/or analytical data indicate off-site migration.
2.	No current indication of off-site migration, but potential exists.
3.	Present engineering structures and/or physical/chemical properties of detected constituents greatly restrict potential for migration.
Reference	
Notes	

SITE: NETC-Newport CERCLA SITE Site 10

Receptor Factor

Circle Choice	**Groundwater**
1.	Groundwater is currently used for human activities (i.e., drinking, agriculture, recreation).
2.	Groundwater not currently used for human activities (i.e., drinking, agriculture, recreation), but potential exists.
3.	No future potential for groundwater to be used for human activities (i.e., drinking, agriculture, recreation).
Reference	
Notes	

Circle Choice	**Surface Soil** (0 to 6 inches in depth)
1.	Sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) present and/or area routinely used by non-sensitive receptor (i.e., working, training).
2.	Potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area occasionally used by non-sensitive receptors (i.e., working, training)
3.	No potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area not used by non-sensitive receptor (i.e., working, training)
Reference	
Notes	

SITE: NETC-Newport · CERCLA SITE Site 10

Circle Choice	**Surface Water**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	

SITE: NETC-Newport CERCLA SITE Site 10

Circle Choice	**Sediment**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	

RISK-BASED PRIORITIZATION OF CLEANUP SITE WORK

SITE: NETC-Newport CERCLA SITE Site 11 Tank Farm # 3

ANALYTICAL DATA

Pathway	Reference
Groundwater	
Surface Soil	
Surface Water	
Sediment	
Notes	NO DATA

QUALITATIVE QUESTIONS

Circle Choice	**Migration Pathway Factor**
1.	Physical evidence and/or analytical data indicate off-site migration.
2.	No current indication of off-site migration, but potential exists.
3.	Present engineering structures and/or physical/chemical properties of detected constituents greatly restrict potential for migration.
Reference	
Notes	

SITE: NETC-Newport CERCLA SITE Site 11

Receptor Factor

Circle Choice	**Groundwater**
1.	Groundwater is currently used for human activities (i.e., drinking, agriculture, recreation).
2.	Groundwater not currently used for human activities (i.e., drinking, agriculture, recreation), but potential exists.
3.	No future potential for groundwater to be used for human activities (i.e., drinking, agriculture, recreation).
Reference	
Notes	

Circle Choice	**Surface Soil** (0 to 6 inches in depth)
1.	Sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) present and/or area routinely used by non-sensitive receptor (i.e., working, training).
2.	Potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area occasionally used by non-sensitive receptors (i.e., working, training)
3.	No potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area not used by non-sensitive receptor (i.e., working, training)
Reference	
Notes	

SITE: NETC-Newport CERCLA SITE Site 11

Circle Choice	**Surface Water**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	

SITE: NETC-Newport CERCLA SITE Site 11

Circle Choice	**Sediment**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	

RISK-BASED PRIORITIZATION OF CLEANUP SITE WORK

SITE: NETC-Newport CERCLA SITE Site 12 Tank Farm #4

ANALYTICAL DATA

Pathway	Reference
Groundwater	See Attached S.I Tables
Surface Soil	See Attached S.I. Report Tables
Surface Water	See Attached S.I. Report Tables
Sediment	See Attached S.I. Report Tables
Notes	

QUALITATIVE QUESTIONS

Circle Choice	**Migration Pathway Factor**
1.	Physical evidence and/or analytical data indicate off-site migration.
(2) GW SW S.S	No current indication of off-site migration, but potential exists.
3.	Present engineering structures and/or physical/chemical properties of detected constituents greatly restrict potential for migration.
Reference	S.I Report Data Tables
Notes	No off site Samples Taken

SITE: NETC-Newport CERCLA SITE Site 12

Receptor Factor

Circle Choice	**Groundwater**
1.	Groundwater is currently used for human activities (i.e., drinking, agriculture, recreation).
2.	Groundwater not currently used for human activities (i.e., drinking, agriculture, recreation), but potential exists.
3.	No future potential for groundwater to be used for human activities (i.e., drinking, agriculture, recreation).
Reference	Draft Vol 1 Old Fire Fighting Training Area R.I. TRC Report March 94
Notes	Trailer Park wells located S.E of base Fig 3-9

Circle Choice	**Surface Soil** (0 to 6 inches in depth)
1.	Sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) present and/or area routinely used by non-sensitive receptor (i.e., working, training).
2.	Potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area occasionally used by non-sensitive receptors (i.e., working, training)
3.	No potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area not used by non-sensitive receptor (i.e., working, training)
Reference	TRC Report March 1994
Notes	

SITE: NETC-Newport CERCLA SITE Site 12

Circle Choice	**Surface Water**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	Wetland Species found at NETC TRC March 1994 p 3-3
Notes	

SITE: NETC-Newport CERCLA SITE Site 12

Circle Choice	**Sediment**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	See Surface Water
Notes	

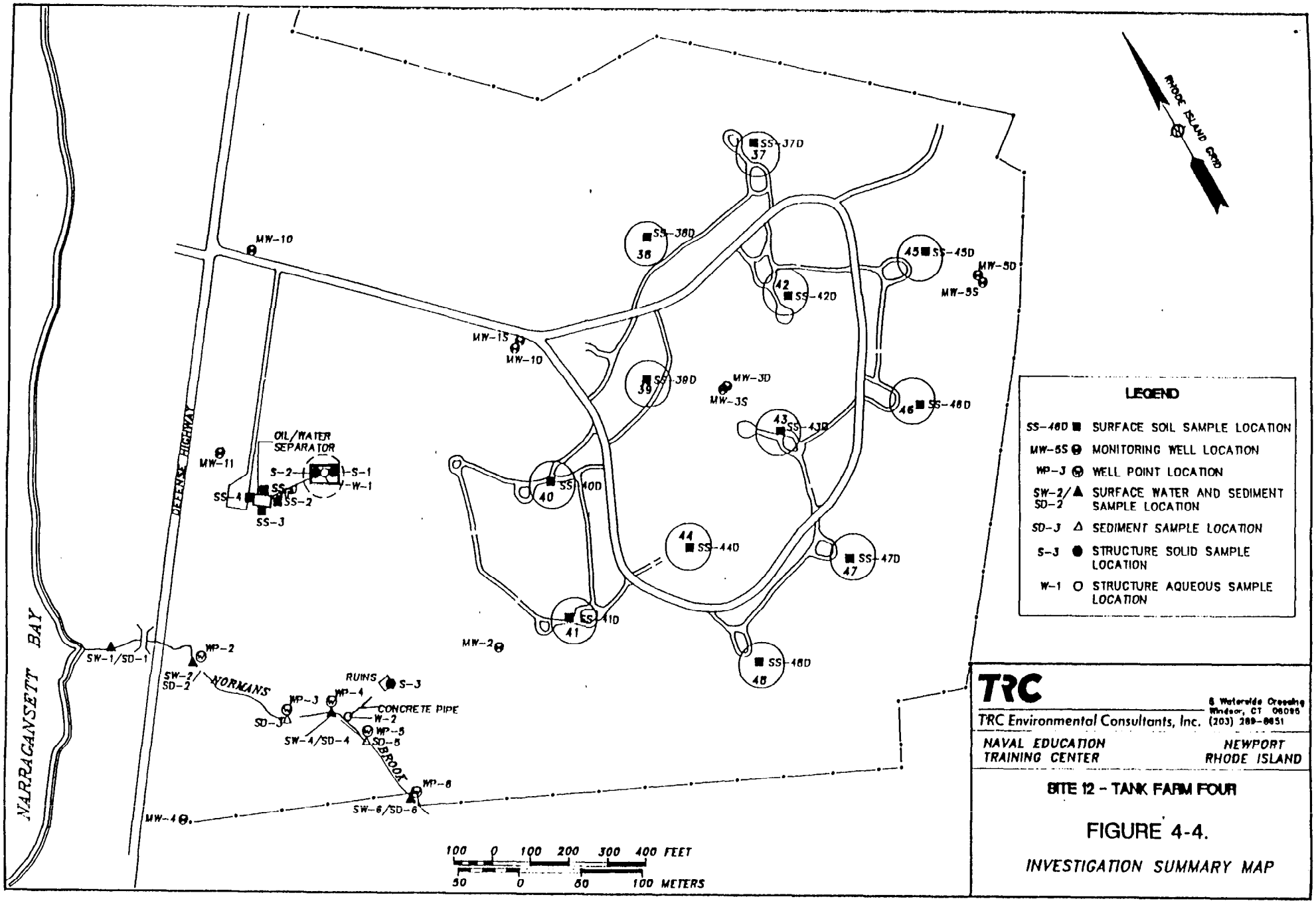

FIGURE 4-4.

INVESTIGATION SUMMARY MAP

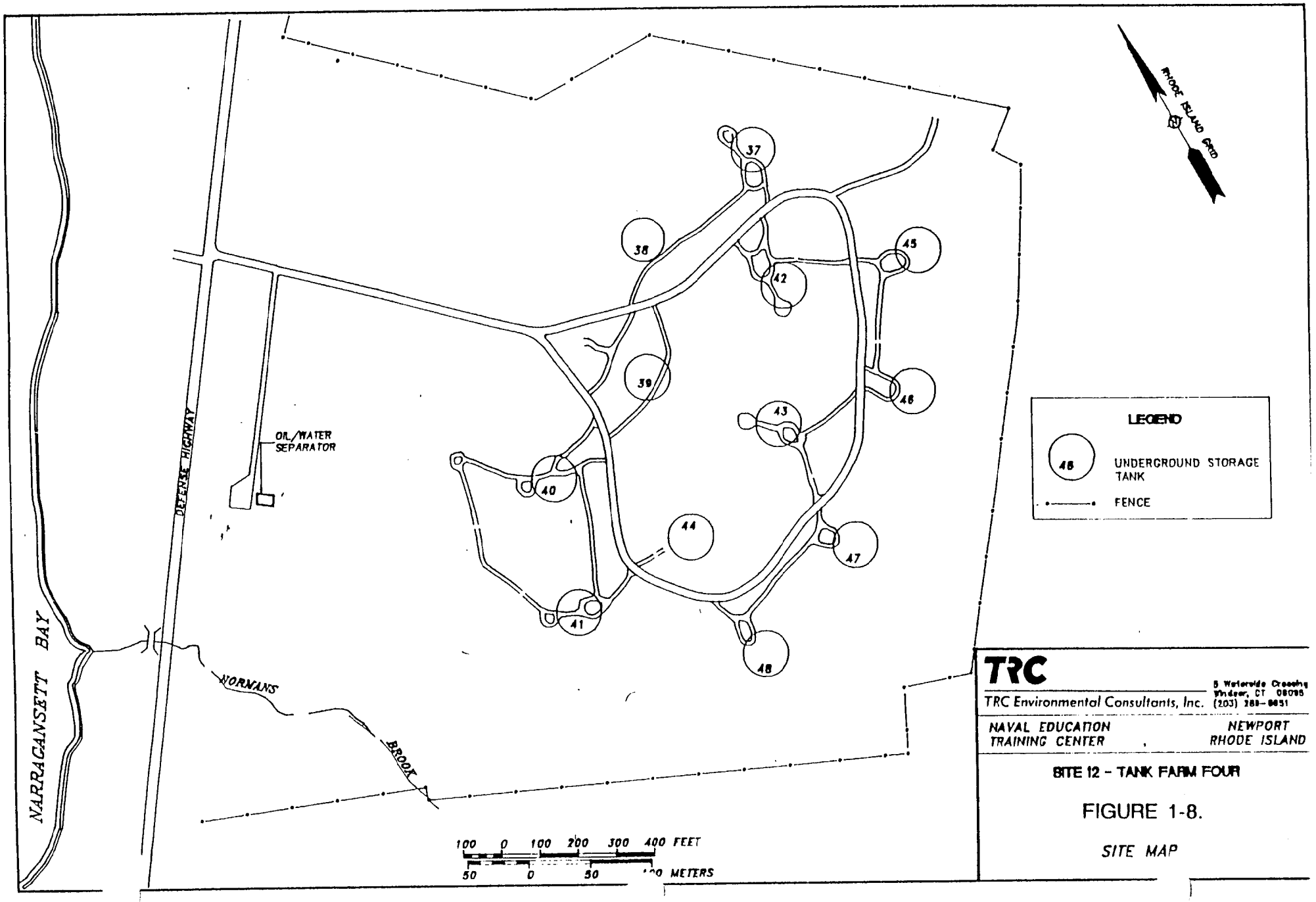

FIGURE 1-8.

SITE MAP

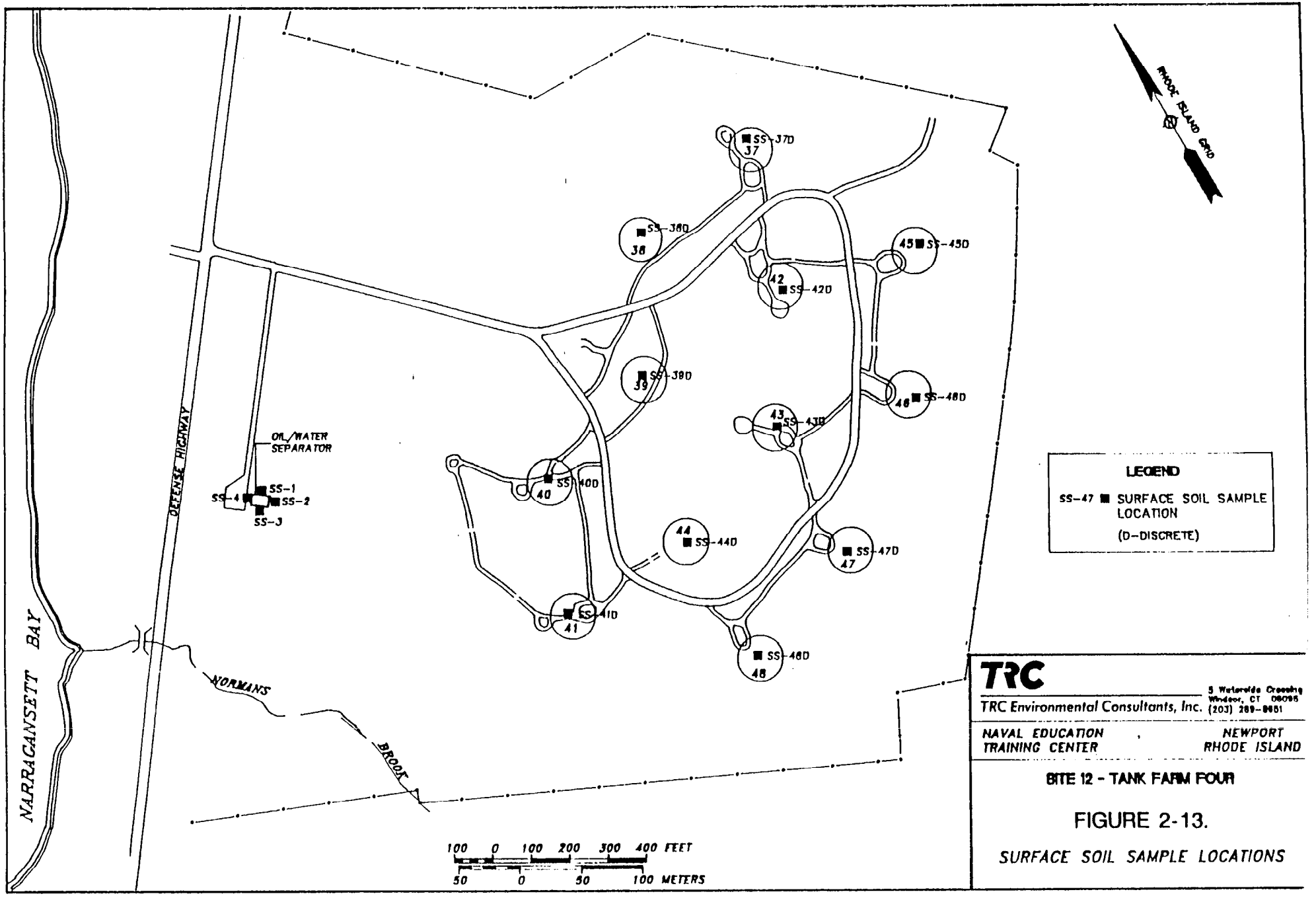

FIGURE 2-13.

SURFACE SOIL SAMPLE LOCATIONS

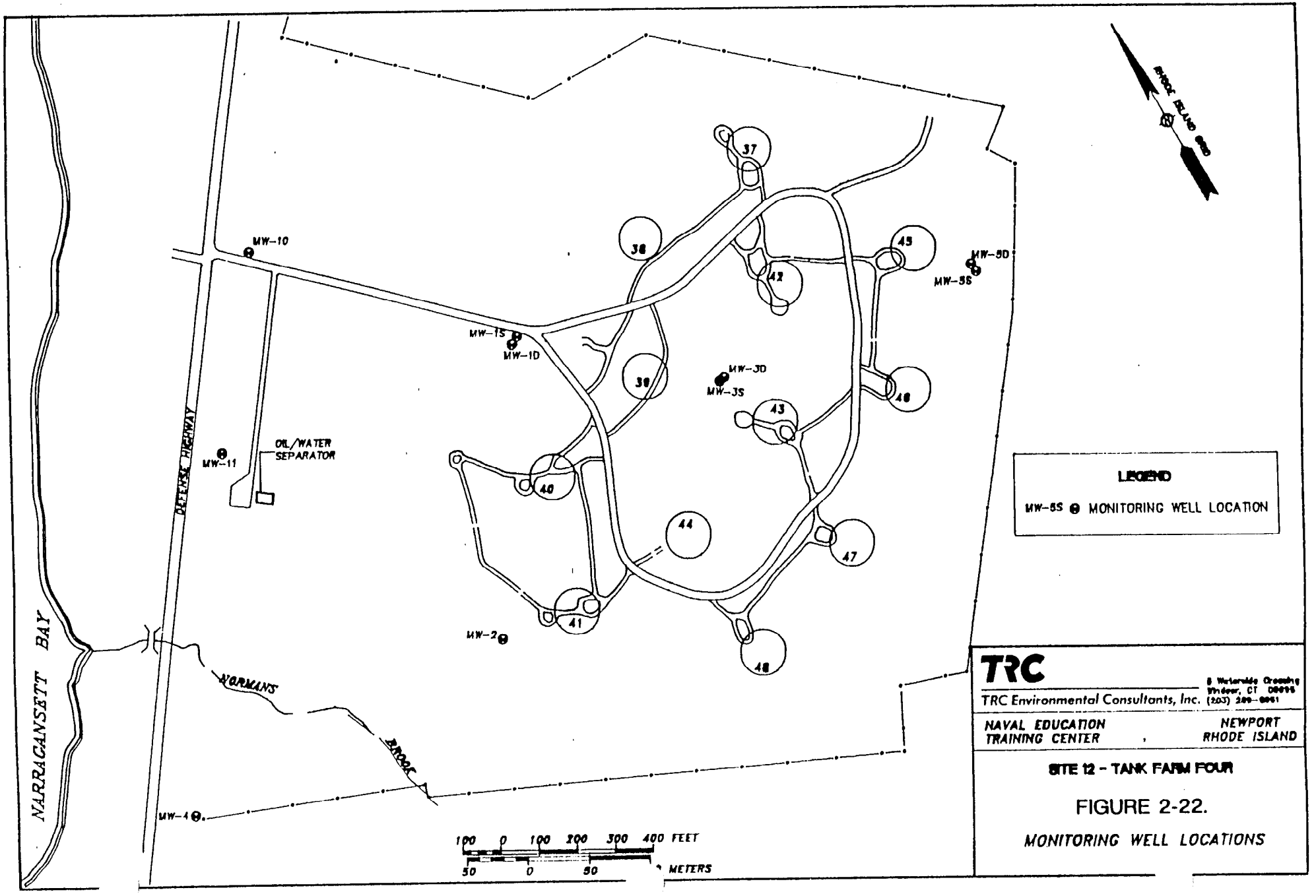

FIGURE 2-22.

MONITORING WELL LOCATIONS

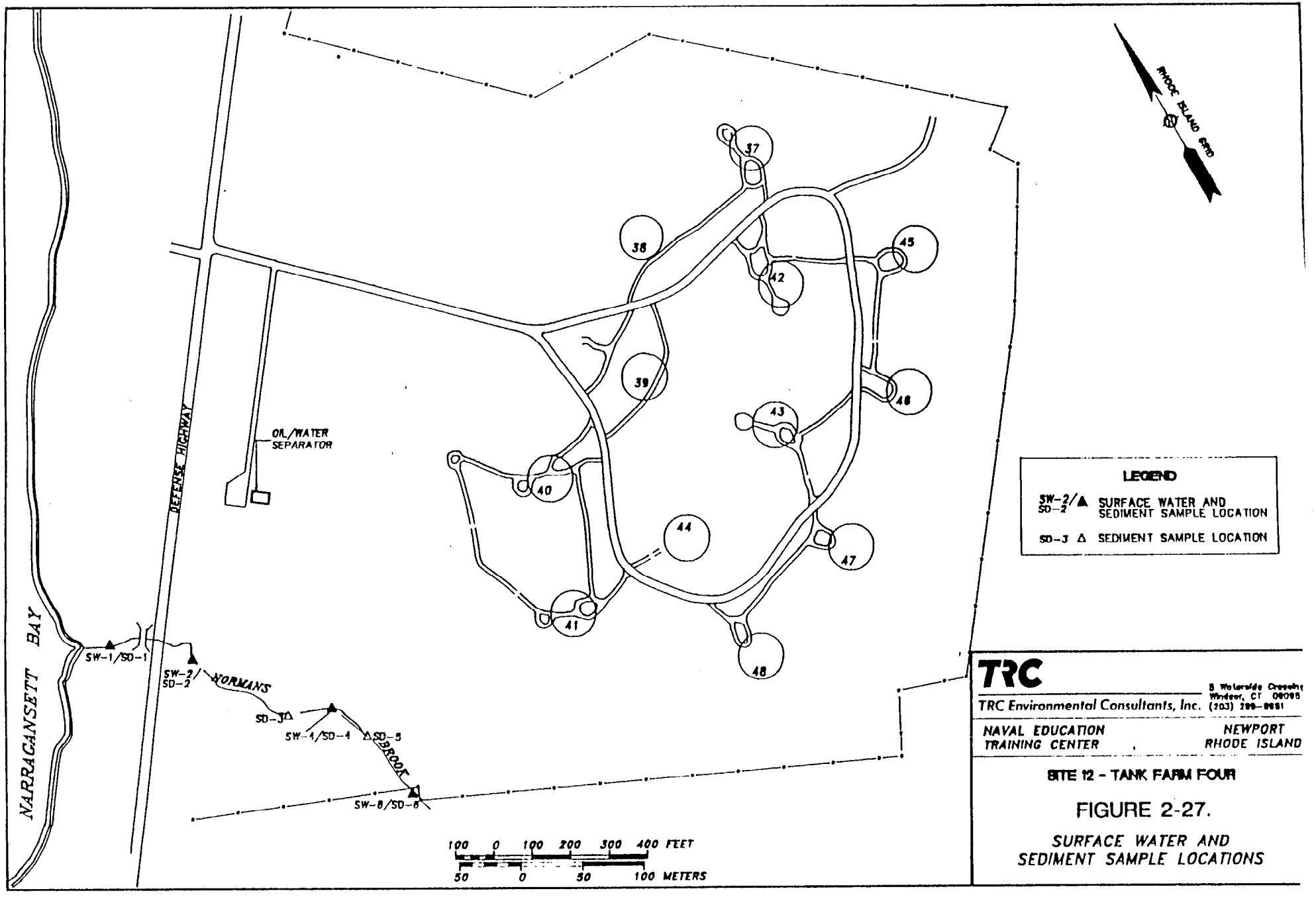

FIGURE 2-27.

SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS

SITE 12 - TANK FARM 4
CONSTITUENTS DETECTED IN GROUND WATER SAMPLES

SAMPLE IDENTIFICATION:	MW-1S	MW-1D	MW-2	MW-3S	MW-6 DUP MW-3S	MW-3D	MW-4	MW-5S
**** VOLATILE ORGANICS (PPB) ***								
CHLOROMETHANE.....								
METHYLENE CHLORIDE.....	7 U*	5 U*	8 U*	8 U*	8 U*	8 U*	7 U*	6 U*
ACETONE.....		3 U*	2 U*					
TOTAL VOLATILE ORGANICS.....	0	0	0	0	0	0	0	0
** BASE NEUTRAL / ACIDS (PPB) **								
PHENOL.....							N/A	
2-METHYLPHENOL.....							|	
4-METHYLPHENOL.....							|	
2,4-DIMETHYLPHENOL.....							|	
NAPHTHALENE.....@							|	
2-METHYLNAPHTHALENE.....@							|	
ACENAPHTEENE.....@							|	
DIBENZOFURAN.....							|	
FLUORENE.....@							|	
PHENANTHRENE.....@							|	
DI-N-BUTYLPHTHALATE.....						2 U*	|	
BUTYLBENZYLPHTHALATE.....							|	
BIS(2-ETHYLHEXYL)PHTHALATE.....			30 J*				N/A	
TOTAL BNA'S.....	0	0	30	0	0	0		0
TOTAL PAH'S.....	0	0	0	0	0	0		0
TOTAL CARCINOGENIC PAH'S.....	0	0	0	0	0	0		0
**** PESTICIDES/PCB'S (PPB) ****								
******* INORGANICS (PPB) *******								
SILVER.....			22.6 J*	28.1 J*			N/A	30.8
ALUMINUM.....	22300		251000	251000	39300	2320	|	57900
ARSENIC.....	10 J*		448 J*	284 J*	260 J*		|	24.6 J*
BARIUM.....	84.5 J*	44.7 J*	404 J*	391 J*	41.4 J*	10.9 J*	|	676
BERYLLIUM.....			8.5	7.5			|	7.2
CALCIUM.....	28400	33600	65500	86600	8050	19500	|	59100
CADMIUM.....				5.8 J*			|	8.5 J*
COBALT.....	38.3	8.6	380 J*	669 J*	74.1 J*	14.4	|	335 J*
CHROMIUM.....	27.9		391	372	55.8	4	|	213
COPPER.....	50.3	6.8	133 J*	569 J*	67.2 J*	9.3	|	153 J*
IRON.....	57800	9250	71600	64300	96200	12400	|	87900
MERCURY.....							|	
POTASSIUM.....	5040 J*	4730 J*	7960 J*	7770 J*		1080 J*	|	12800 J*
MAGNESIUM.....	29700	37900	96200	85600	14100	18200	|	91900
MANGANESE.....	1100	1570	6680 J*	9740 J*	1180 J*	2260	|	11500 J*
SODIUM.....	9940 J*	12900 J*	8690 J*	27400 J*	2280 J*	24700 J*	|	27700 J*
NICKEL.....	66.9 U*	17.7 U*	749	590	81.5	54.2 U*	|	447
LEAD.....	22 J*		55 J*	20 J*	156 J*		|	136 J*
ANTIMONY.....				(22.3)			|	
SELENIUM.....							|	
VANADIUM.....	32.2 U*	7.6 U*	114	168	27.5 U*	6 U*	|	35.6 U*
ZINC.....	152	18 U*	1450	1340	212	60.6	|	1390
CYANIDE.....							N/A	

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
()- INDICATES THAT THE SAMPLE RESULTS HAVE BEEN REJECTED ACCORDING TO SAMPLE VALIDATION.
@ - INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH).
N/A - INSUFFICIENT SAMPLE VOLUME FOR ANALYSIS.

SITE 12 - TANK FARM 4
CONSTITUENTS DETECTED IN GROUND WATER SAMPLES

SAMPLE IDENTIFICATION:	MW-5D	MW-10	MW-11	FB-72090	TB1-71990	TB2-71990	TB3-71990	TB4-71990
**** VOLATILE ORGANICS (PPB) ***								
CHLOROMETHANE.....								
METHYLENE CHLORIDE.....	8 U*	7 U*	8 U*	45 J*	10	9	10	9
ACETONE.....								
TOTAL VOLATILE ORGANICS.....	0	0	0		10	9	10	9
** BASE NEUTRAL / ACIDS (PPB) **								
PHENOL.....					N/A	N/A	N/A	N/A
2-METHYLPHENOL.....					|	|	|	|
4-METHYLPHENOL.....					|	|	|	|
2,4-DIMETHYLPHENOL.....					|	|	|	|
NAPHTHALENE.....@					|	|	|	|
2-METHYLNAPHTHALENE.....@					|	|	|	|
ACENAPHTHENE.....@					|	|	|	|
DIBENZOFURAN.....					|	|	|	|
FLUORENE.....@					|	|	|	|
PHENANTHRENE.....@					|	|	|	|
DI-N-BUTYLPHTHALATE.....					|	|	|	|
BUTYLBENZYLPHTHALATE.....					|	|	|	|
BIS(2-ETHYLHEXYL)PHTHALATE.....	18 J*				N/A	N/A	N/A	N/A
TOTAL BNA'S.....	18	0	0	0				
TOTAL PAH'S.....	0	0	0	0				
TOTAL CARCINOGENIC PAH'S.....	0	0	0	0				
*** PESTICIDES/PCB'S (PPB) ****					N/A	N/A	N/A	N/A
******* INORGANICS (PPB) *******								
SILVER.....					N/A	N/A	N/A	N/A
ALUMINUM.....	513 J*	177 J*	186 J*		|	|	|	|
ARSENIC.....	2.1 J*				|	|	|	|
BARIUM.....	10.9 J*	10.9 J*			|	|	|	|
BERYLLIUM.....					|	|	|	|
CALCIUM.....	14000	14600	14700	0.17	|	|	|	|
CADMIUM.....					|	|	|	|
COBALT.....	9.7 B1	27.3	10		|	|	|	|
CHROMIUM.....	8 B1				|	|	|	|
COPPER.....	18.4 B1	5.1	7.8	0.0053	|	|	|	|
IRON.....	19000	7530	3450	0.103 J*	|	|	|	|
MERCURY.....					|	|	|	|
POTASSIUM.....					|	|	|	|
MAGNESIUM.....	23400	9220	52100	0.0829	|	|	|	|
MANGANESE.....	1240	1640	565		|	|	|	|
SODIUM.....	26100 J*	9690 J*	13200 J*	0.458 J*	|	|	|	|
NICKEL.....	33.7 U*	27.7 U*	26.7 U*	0.0102	|	|	|	|
LEAD.....		27.2 J*			|	|	|	|
ANTIMONY.....					|	|	|	|
SELENIUM.....					|	|	|	|
VANADIUM.....	7.9 U*	5.8 U*	16.5 U*	0.0069	|	|	|	|
ZINC.....	66.4	42.7 U*	61	0.0248	|	|	|	|
CYANIDE.....					N/A	N/A	N/A	N/A

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
@ - INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH).
N/A - INDICATES THAT THE COMPOUND WAS NOT ANALYZED FOR.

SITE 12 - TANK FARM 4

CONSTITUENTS DETECTED IN SURFACE WATER SAMPLES

SAMPLE IDENTIFICATION:	SW-1	SW-2	SW-4	SW-6	FB-53190	TB1-53190	TB2-53190	TB3-53190	TB1-60190
**** VOLATILE ORGANICS (PPB) ***									
METHYLENE CHLORIDE.....	2 U*	2 U*		3 U*	4 J*	4 J*	4 J*	4 J*	4 J*
ACETONE.....			7 U*	6 U*	17 J*	13 J*			12 J*
CARBON DISULFIDE.....	26 J*		2 U*				1 J*		
CARBON TETRACHLORIDE.....			3 J						
TOTAL VOLATILE ORGANICS.....	26	0	3	0	21	17	5	4	16
** BASE NEUTRAL / ACIDS (PPB) **									
BIS(2-ETHYLHEXYL)PHTHALATE.....		1 U*	1 U*		3 J	N/A	N/A	N/A	N/A
TOTAL BNA'S.....	0	0	0	0	3				
TOTAL PAH'S.....	0	0	0	0	0				
TOTAL CARCINOGENIC PAH'S.....	0	0	0	0	0				
**** PESTICIDES/PCB'S (PPB) ****						N/A	N/A	N/A	N/A
******* INORGANICS (PPB) *******									
SILVER.....			7.9 U*			N/A	N/A	N/A	N/A
ALUMINUM.....	383 U*	236 U*			851 J*				
ARSENIC.....									
BARIUM.....	12.4 J*	10.9 J*	11.7 J*	10.8 J*					
BERYLLIUM.....									
CALCIUM.....	20300	19500 J*	19100	19400	72.3 J*				
CADMIUM.....			3.3 J*						
COBALT.....									
CHROMIUM.....		4 J*							
COPPER.....	15.3 U*	8.8 U*	28.5 U*	11.8 U*	5.4 J*				
IRON.....	1680	657	639	365					
MERCURY.....									
POTASSIUM.....	3800 J*	3090 J*	3030 J*	2920 J*					
MAGNESIUM.....	11800 J*	7580 J*	7530 J*	5820 J*	179 J*				
MANGANESE.....	112 J*	80.3 J*	78.8 J*	22.6 J*					
SODIUM.....	46200	15800	15300	15000 J*	332 J*				
NICKEL.....	11 U*	18.5 U*	13.4 U*	10.2 U*	94.3 J*				
LEAD.....	3.6								
ANTIMONY.....			30.8 U*						
SELENIUM.....			3.1						
VANADIUM.....	11.2 U*	12.5 U*	10.3 U*	11.9 U*	10.9 J*				
ZINC.....	325	24.7 U*	37.5 U*	24 U*	18.6 J*				
CYANIDE.....						N/A	N/A	N/A	N/A

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
@ - INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH).
N/A - INDICATES THAT THE COMPOUND WAS NOT ANALYZED FOR.

SITE 12 - TANK FARM 4
CONSTITUENTS DETECTED IN SEDIMENT SAMPLES

SAMPLE IDENTIFICATION:	SD1-1	SD1-2	SD2-1	SD7-1	SD2-2	SD3-1	SD3-2	SD4-1	SD4-2
SAMPLE DEPTH (FT):	0-1	1-2	0-1	DUP SD2-1	1-2	0-1	1-2	0-1	1-2
** VOLATILE ORGANICS (PPB) **									
METHYLENE CHLORIDE.....	9 U*	12 U*	12 U*	8 U*	6 U*	11 U*	14 U*	13 U*	9 U*
ACETONE.....	28 U*	45 U*	46 U*	56 U*	34 U*	29 U*	110 U*	29 U*	26 U*
CARBON DISULFIDE.....	4 U*			4 U*	2 U*	2 U*	21	3 U*	2 U*
TOTAL VOLATILE ORGANICS.....	0	0	0	0	0	0	21	0	0
* BASE NEUTRAL / ACIDS (PPB) *									
1,2-DICHLOROBENZENE.....									270 J
BENZOIC ACID.....		250 J		110 J					200 J
DI-N-BUTYLPHTHALATE.....				670					
BIS(2-ETHYLHEXYL)PHTHALATE...						140 U*			110 U*
TOTAL BNA'S.....	0	250	0	780	0	0	0	0	470
TOTAL PAH'S.....	0	0	0	0	0	0	0	0	0
TOTAL CARCINOGENIC PAH'S.....	0	0	0	0	0	0	0	0	0
*** PESTICIDES/PCB'S (PPB) **									
4,4'-DDT.....							5.9 J	2.8 J	5.3 J
***** INORGANICS (PPM) ******									
SILVER.....	1.1 U*	1.1 U*		1.2 U*	1.1 U*		1.2 U*		1.1 U*
ALUMINUM.....	6370 J*	5060 J*	9920 J*	8750 J*	10100 J*	10300 J*	10300 J*	9280 J*	9100 J*
ARSENIC.....	21.1 J*	6.03 J**	13 J*	7 J*	5.91 J**	10.3 J*	5.77 J*	7.1 J*	5.26 J**
BARIUM.....	5.6 J*	6.9 J*	15 J*	12.9 J*	20.3 J*	28.9 J*	19.8 J*	19.5 J*	11.7 J*
BERYLLIUM.....	0.46 B1								
CALCIUM.....	386 J*	524 J*	666 J*	549 J*	428 J*	492 J*	552 J*	768 J*	728 J*
CADMIUM.....		0.78 J*							
COBALT.....	13.6 J*	13.6 J*	16.1 J*	12.6 J*	16.3 J*	15.9 J*	14.1 J*	14.7 J*	14.3 J*
CHROMIUM.....	25.9	11.6	15.2	11.9	14.7	12.8	14.6	12.1	11.9
COPPER.....	16.1 J*	11.8 J*	13.8 J*	17.3 J*	6.4 U*	11.6 J*	9.7 J*	6.9 U*	12.6 J*
IRON.....	41100	32800	32000	27300	24500	28000	26400	19700	26800
MERCURY.....									
POTASSIUM.....				262 J*	262 J*	253 J*		214 J*	
MAGNESIUM.....	2110 J*	1550 J*	3210 J*	2830 J*	3180 J*	2520 J*	2820 J*	2570 J*	2790 J*
MANGANESE.....	236 J*	225 J*	396 J*	220 J*	146 J*	178 J*	162 J*	177 J*	132 J*
SODIUM.....	203 U*	556 U*	314 U*	243 U*	94.2 U*	45.9 U*	43.8 U*		32.6 U*
NICKEL.....	35.5 U*	21.2 U*	26.4 U*	23.8 U*	27.7 U*	21.2 U*	22.9 U*	24.3 U*	27.2 U*
LEAD.....	12.1 J*	6.9 J*	8 J*	5.6 J*	9.7 J*	16.4 J*	8.4 J*	8 J*	6 J*
ANTIMONY.....									
SELENIUM.....	0.66 J*				0.78 J*		0.63 J*		
VANADIUM.....	26.5 U*	20.4 U*	22.8 U*	22.1 U*	18.6 U*	19.3 U*	19.4 U*	16.4 U*	16.6 U*
ZINC.....	104 U*	82	75.8 U*	58.7 U*	60.2	56.1	61.4	62	78.6
CYANIDE.....									

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
**- INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION.

SITE 12 - TANK FARM 4
CONSTITUENTS DETECTED IN SEDIMENT SAMPLES

SAMPLE IDENTIFICATION:	SD5-1	SD5-2	SD6-1	SD6-2	FB-53190	TB1-53190	TB2-53190	TB3-53190
SAMPLE DEPTH (FT):	0-1	1-2	0-1	1-2				
**** VOLATILE ORGANICS (PPB) ***								
METHYLENE CHLORIDE.....	8 U*	13 U*	6 U*	16 U*	4 J*	4 J*	4 J*	4 J*
ACETONE.....	28 U*	17 U*	9 U*	39 U*	17 J*	13 J*		
CARBON DISULFIDE.....	2 U*						1 J*	
TOTAL VOLATILE ORGANICS.....	0	0	0	0	21	17	5	4
** BASE NEUTRAL / ACIDS (PPB) **								
1,2-DICHLOROBENZENE.....						N/A	N/A	N/A
BENZOIC ACID.....						|	|	|
DI-N-BUTYLPHTHALATE.....						|	|	|
BIS(2-ETHYLHEXYL)PHTHALATE.....			74 U*		3 J	|	|	|
						N/A	N/A	N/A
TOTAL BNA'S.....	0	0	0	0	3			
TOTAL PAH'S.....	0	0	0	0	0			
TOTAL CARCINOGENIC PAH'S.....	0	0	0	0	0			
**** PESTICIDES/PCB'S (PPB) ****								
						N/A	N/A	N/A
4,4'-DDT.....								
******* INORGANICS (PPM) *******								
SILVER.....	1.1 U*	1.3 U*	1.1 U*	1.4 U*		N/A	N/A	N/A
ALUMINUM.....	9020 J*	10900 J*	9350 J*	9230 J*	0.851 J*	|	|	|
ARSENIC.....	8.89 J**	19.5 J**	9.48 J**	12.8 J**		|	|	|
BARIUM.....	14.3 J*	27 J*	9.2 J*	9.3 J*		|	|	|
BERYLLIUM.....						|	|	|
CALCIUM.....	550 J*	791 J*	533 J*	677 J*	0.0723 J*	|	|	|
CADMIUM.....						|	|	|
COBALT.....	15.1 J*	25 J*	12.5 J*	13.5 J*		|	|	|
CHROMIUM.....	13.4	16.3	12.4	11.5		|	|	|
COPPER.....	14.8 J*	12.8 J*	13.3 J*	17.8 J*	0.0054 J*	|	|	|
IRON.....	27700	24200	35100	33500		|	|	|
MERCURY.....						|	|	|
POTASSIUM.....	275 J*			212 J*		|	|	|
MAGNESIUM.....	2900 J*	2750 J*	3250 J*	3150 J*	0.179 J*	|	|	|
MANGANESE.....	192 J*	215 J*	248 J*	224 J*		|	|	|
SODIUM.....		54.9 U*		31.6 U*	0.332 J*	|	|	|
NICKEL.....	24.1 U*	30.3 U*	24.3 U*	26.4 U*	0.0943 J*	|	|	|
LEAD.....	7.3 J*	12 J*	5.2 J*	5.2 J*		|	|	|
ANTIMONY.....						|	|	|
SELENIUM.....		0.83 J**				|	|	|
VANADIUM.....	18.7 U*	19.9 U*	19.8 U*	18.2 U*	0.0109 J*	|	|	|
ZINC.....	72.7	78.2	67	68.5	0.0186 J*	|	|	|
CYANIDE.....						N/A	N/A	N/A

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
**- INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION.
@ - INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH).
@@ - INDICATES THAT THE COMPOUND IS A CARCINOGENIC POLYNUCLEAR AROMATIC HYDROCARBON.
N/A - INDICATES THAT THE COMPOUND WAS NOT ANALYZED FOR.

SITE 12 - TANK FARM 4
CONSTITUENTS DETECTED IN DISCRETE SURFACE SOIL SAMPLES

SAMPLE IDENTIFICATION:	SS-42D	SS-44D	TB-051090
**** VOLATILE ORGANICS (PPB) ***			
METHYLENE CHLORIDE.....	11 U*	14 U*	6 B
ACETONE.....	10 U**	13 U*	
TETRACHLOROETHENE.....			
TOLUENE.....			
TOTAL VOLATILE ORGANICS.....	0	0	6
** BASE NEUTRAL / ACIDS (PPB) **			
PENTACHLOROPHENOL.....			|
PHENANTHRENE.....@	120 J	170 J	|
DI-N-BUTYLPHTHALATE.....			|
FLOURANTHENE.....@	260 J	250 J	|
PYRENE.....@	420 U**	470 U**	|
BENZO(a)ANTHRACENE.....@@	120 J	100 J	|
CHRYSENE.....@@	140 J	120 J	|
BIS(2-ETHYLHEXYL)PHTHALATE.....	700 U*	530 U*	|
BENZO(b)FLUORANTHENE.....@@		86 J	|
BENZO(a)PYRENE.....@@	110 J	90 J	N/A
TOTAL BNA'S.....	750	816	
TOTAL PAH'S.....	750	816	
TOTAL CARCINOGENIC PAH'S.....	370	396	
**** PESTICIDES/PCB'S (PPB) ****			
4,4'-DDE.....		4.5 J	N/A
4,4'-DDT.....			N/A
******* INORGANICS (PPM) *******			
SILVER.....			N/A
ALUMINUM.....	9530	7620	|
ARSENIC.....	6.6 J*	8.5 J*	|
BARIUM.....	18.7 J*	16.5 J*	|
BERYLLIUM.....			|
CALCIUM.....	633	741	|
CADMIUM.....			|
COBALT.....	13.9 J*	12.5 J*	|
CHROMIUM.....	11.9 J*	15.1 J*	|
COPPER.....	25.8 J*	21.5 J*	|
IRON.....	23800	21400	|
MERCURY.....	0.22 U*	0.24 U*	|
POTASSIUM.....	182	222	|
MAGNESIUM.....	2610	2470	|
MANGANESE.....	471 J*	436 J*	|
NICKEL.....	18.7	18.5 J*	|
SODIUM.....			
LEAD.....	40	26.4	|
ANTIMONY.....			|
SELENIUM.....			|
VANADIUM.....	18.1 J*	17.9 J*	|
ZINC.....	58.3	56.9	|
CYANIDE.....			N/A
PETROLEUM HYDROCARBONS (PPM)....	3.1 J		N/A

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
**- INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION.
@ - INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH).
@@ - INDICATES THAT THE COMPOUND IS A CARCINOGENIC POLYNUCLEAR AROMATIC HYDROCARBON.
N/A - INDICATES THAT THE COMPOUND WAS NOT ANALYZED FOR.

SITE 12 - TANK FARM 4
CONSTITUENTS DETECTED IN COMPOSITE SURFACE SOIL SAMPLES

SAMPLE IDENTIFICATION:	SS-37	SS-37D	SS-38	SS-38D	SS-39	SS-39D	SS-50D DUP. SS-39D	SS-40
TOTAL PETROLEUM HYDROCARBONS (PPM).	22	10	51	12	20	17	36	19
LEAD (PPM).....	24.5	12.4 J*	27.3	15.4 J*	30 J**	12.5 J*	13 J*	38.6

SAMPLE IDENTIFICATION:	SS-40D	SS-41	SS-41D	SS-42D	SS-43	SS-43D	SS-44D	SS-45
TOTAL PETROLEUM HYDROCARBONS (PPM).	7.9	70	14	22	14	29	28	61
LEAD (PPM).....	14 J*	28.9	15 J*	20.1 J*	18.2	15.3 J*	15 J*	20.4

SAMPLE IDENTIFICATION:	SS-45D	SS-46	SS-46D	SS-47	SS-47D	SS-48	SS-48D	FB-061490
TOTAL PETROLEUM HYDROCARBONS (PPM).	9.1	52	19	32	11	31	14	
LEAD (PPM).....	18 J*	35.6	18.2 J*	33.3	17 J*	31.4	18 J*	

NOTE: J - INDICATES AN ESTIMATED VALUE. THE VALUE IS BELOW THE SAMPLE QUANTITATION LIMIT BUT GREATER THAN ZERO.
* - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
**- INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION.

SITE 12 - TANK FARM 4
CONSTITUENTS DETECTED IN SURFACE SOIL SAMPLES
AROUND OIL/WATER SEPARATOR

SAMPLE IDENTIFICATION:	SS-1	SS-2	SS-3	SS-4	FB-061490
TOTAL PETROLEUM HYDROCARBONS (PPM).	18	270	44	34	
LEAD (PPM).....	21.8	67.9	30.5	23.3	

RISK-BASED PRIORITIZATION OF CLEANUP SITE WORK

SITE: NETC-Newport CERCLA SITE Site 13 Tank Farm #5

ANALYTICAL DATA

Pathway	Reference
Groundwater	- Tank Closure Investigation (TRC-EC 1991) Table Titled: Site 13 Tank Farm 5 (7/20/90 ppb) - Soil Investigation (TRC December 1993) table 4-1
Surface Soil	- Tank Closure Investigation (TRC-EC 1990) Data Summary Tables - Soil Investigation (TRC December 1993) Table 3
Surface Water	No Samples
Sediment	- Tank Closure Investigation lead data only
Notes	

QUALITATIVE QUESTIONS

Circle Choice	Migration Pathway Factor
1.	Physical evidence and/or analytical data indicate off-site migration.
(2) GW Sd	No current indication of off-site migration, but potential exists.
3.	Present engineering structures and/or physical/chemical properties of detected constituents greatly restrict potential for migration.
Reference	- TRC December 1993 - TRC-EC 1990
Notes	No off site samples taken

SITE: NETC-Newport CERCLA SITE Site 13

Receptor Factor

Circle Choice	**Groundwater**
(1)	Groundwater is currently used for human activities (i.e., drinking, agriculture, recreation).
2.	Groundwater not currently used for human activities (i.e., drinking, agriculture, recreation), but potential exists.
3.	No future potential for groundwater to be used for human activities (i.e., drinking, agriculture, recreation).
Reference	– Draft Vol 1 old Fire Fighting Training Area RI TRC Report March 1994
Notes	Trailer Park wells located south east of base Fig 3-9

Circle Choice	**Surface Soil** (0 to 6 inches in depth)
1.	Sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) present and/or area routinely used by non-sensitive receptor (i.e., working, training).
(2)	Potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area occasionally used by non-sensitive receptors (i.e., working, training)
3.	No potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area not used by non-sensitive receptor (i.e., working, training)
Reference	TRC Report March 1994
Notes	

SITE: NETC-Newport CERCLA SITE Site 13

Circle Choice	**Surface Water**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
(2.)	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	Wetland species found at NETC TRC March 1994 p3-3
Notes	

SITE: NETC-Newport CERCLA SITE Site 13

Circle Choice	**Sediment**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	See Surface water
Notes	

SITE 13 - TANK FARM 5
CONSTITUENTS DETECTED IN GROUND WATER SAMPLES
SAMPLES COLLECTED ON 7/20/90

SAMPLE IDENTIFICATION:	MW-1	MW-2	MW-3	MW-4	MW-5	MW-7 DUP MW-5	MW-6
**** VOLATILE ORGANICS (PPB) ***							
CHLOROMETHANE.....							
VINYL CHLORIDE.....							
CHLOROETHANE.....							
METHYLENE CHLORIDE.....	13 U*	13 U*	7 U*	7 U*	13 U*	13 U*	13 U*
ACETONE.....				10 U**		10 U**	
CARBON DISULFIDE.....							
1,2-DICHLOROETHANE.....				4 J			
1,2-DICHLOROETHENE (TOTAL).....				17			
CHLOROFORM.....				3 J	7	6	
1,1,1-TRICHLOROETHANE.....				10 J*			
CARBON TETRACHLORIDE.....							
TRICHLOROETHENE.....				4 J			
BENZENE.....							
4-METHYL-2-PENTANONE.....							
TETRACHLOROETHENE.....							
TOLUENE.....							
ETHYLBENZENE.....							
XYLENE.....							
TOTAL VOLATILE ORGANICS.....	0	0	0	38	7	6	0
** BASE NEUTRAL / ACIDS (PPB) **							
PHENOL.....							
2-METHYLPHENOL.....							
4-METHYLPHENOL.....							
ISOPHORONE.....							
2,4-DIMETHYLPHENOL.....							
NAPHTHALENE.....@							
2-METHYLNAPHTHALENE.....@							
ACENAPHTHENE.....@							
DIBENZOFURAN.....							
FLUORENE.....@							
PHENANTHRENE.....@							
DI-N-BUTYLPHTHALATE.....			10 U**				
PYRENE.....@							
BIS(2-ETHYLHEXYL)PHTHALATE.....	10 U**						
TOTAL BNA'S.....	0	0	0	0	0	0	0
TOTAL PAH'S.....	0	0	0	0	0	0	0
TOTAL CARCINOGENIC PAH'S.....	0	0	0	0	0	0	0

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
** - INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION
@ - INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH).

SITE 13 - TANK FARM 5
CONSTITUENTS DETECTED IN GROUND WATER SAMPLES
SAMPLES COLLECTED ON 7/20/90

SAMPLE IDENTIFICATION:	MW-1	MW-2	MW-3	MW-4	MW-5	MW-7	MW-6
**** PESTICIDES/PCB'S (PPB) ****				N/A	N/A		
******* INORGANICS (PPB) *******							
SILVER		24.5	20.6	N/A	22.2	20.3	12.6
ALUMINUM	9480	161000	107000		190000	158000	88000
ARSENIC	44.6 J*	154 J*	73.7 J*		265 J*	204 J*	31.6 J*
BARIUM	38.2 J*	307 J*	277 J*		489 J*	424 J*	345 J*
BERYLLIUM		10.2	7.2		9.4	7.9	5.5
CALCIUM	23000	83900	76000		89700	85100	44900
CADMIUM		5					
COBALT	38.5 J*	209 J*	199 J*		295 J*	240 J*	210 J*
CHROMIUM	32.5	271	183		384	312	116
COPPER	52.4	182	67.3		304	254	297
IRON	101000	679800 **	452000		787100 **	471000	288000
MERCURY							
POTASSIUM	2670	6460	3900		9270	8440	5370
MAGNESIUM	11700	85600	70200		108000	97400	51300
MANGANESE	1240 J*	8440 J*	10200 J*		5430 J*	4470 J*	7650 J*
SODIUM	39600	9290 J*	7540 J*		8150 J*	8430 J*	8650 J*
NICKEL	78.9	474	341		530	447	341
LEAD	66.4 J*	630 J*	170 J*		94 J*	135 J*	108 J*
ANTIMONY			22 U**				
SELENIUM	2.6 J*						
VANADIUM		104 J*	92.3 J*		108 J*	86.1 J*	63.9 U*
ZINC	152	957	1190		1630	1400	708
CYANIDE				N/A			

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
** - INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION
N/A - INSUFFICIENT SAMPLE VOLUME FOR ANALYSIS.

SITE 13 - TANK FARM FIVE
CONSTITUENTS DETECTED IN GROUND WATER SAMPLES
COLLECTED ON 7/20/90

SAMPLE IDENTIFICATION:	MW-53W	MW-53E	MW-56W	MW-56E	MW-86-1	MW-86-2	MW-86-4
* VOLATILE ORGANIC COMPOUNDS (PPB) *							
CHLOROMETHANE.....		N/A		N/A	N/A	N/A	N/A
VINYL CHLORIDE.....		|		|	|	|	|
CHLOROETHANE.....		|		|	|	|	|
METHYLENE CHLORIDE.....	47 U*	|	6 U*	|	|	|	|
ACETONE.....	10 U**	|		|	|	|	|
CARBON DISULFIDE.....		|		|	|	|	|
1,2-DICHLOROETHANE.....	23 J	|		|	|	|	|
1,2-DICHLOROETHENE (TOTAL).....	630	|		|	|	|	|
CHLOROFORM.....		|		|	|	|	|
1,1,1-TRICHLOROETHANE.....	190 J*	|		|	|	|	|
CARBON TETRACHLORIDE.....	25 U**	|		|	|	|	|
TRICHLOROETHENE.....	38	|		|	|	|	|
BENZENE.....		|		|	|	|	|
4-METHYL-2-PENTANONE.....		|		|	|	|	|
TETRACHLOROETHENE.....	7 J	|		|	|	|	|
TOLUENE.....	38	|		|	|	|	|
ETHYLBENZENE.....	47	|		|	|	|	|
XYLENE.....	100	N/A		N/A	N/A	N/A	N/A
TOTAL VOLATILE ORGANICS.....	1073		0				
* BASE NEUTRAL / ACID EXTRACTABLE COMPOUNDS (PPB) *							
PHENOL.....		N/A		N/A	N/A	N/A	N/A
2-METHYLPHENOL.....		|		|	|	|	|
4-METHYLPHENOL.....		|		|	|	|	|
ISOPHORONE.....		|		|	|	|	|
2,4-DIMETHYLPHENOL.....		|		|	|	|	|
NAPHTHALENE.....@	27 J	|		|	|	|	|
2-METHYLNAPHTHALENE.....@	71 J	|		|	|	|	|
ACENAPHTHENE.....@		|		|	|	|	|
DIBENZOFURAN.....		|		|	|	|	|
FLUORENE.....@	45 J	|		|	|	|	|
PHENANTHRENE.....@	42 J	|		|	|	|	|
DI-N-BUTYLPHTHALATE.....		|		|	|	|	|
PYRENE.....@	21 J	|		|	|	|	|
BIS(2-ETHYLHEXYL)PHTHALATE.....	100 U**	N/A		N/A	N/A	N/A	N/A
TOTAL BNA'S.....	206		0				
TOTAL PAH'S.....	206		0				
TOTAL CARCINOGENIC PAH'S.....	0		0				

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
** - INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION
@ - INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH).
N/A - INDICATES THAT THE COMPOUND WAS NOT ANALYZED FOR IN SAMPLE.

SITE 13 - TANK FARM FIVE
CONSTITUENTS DETECTED IN GROUND WATER SAMPLES
COLLECTED ON 7/20/90

SAMPLE IDENTIFICATION:	MW-53W	MW-53E	MW-56W	MW-56E	MW-86-1	MW-86-2	MW-86-4
**** PESTICIDES/PCB'S (PPB) ****							
		N/A		N/A	N/A	N/A	N/A
******* INORGANICS (PPB) *******							
SILVER		N/A	6.3	N/A	N/A	N/A	N/A
ALUMINUM	3900		39800				
ARSENIC	21.4 J*		43.2 J*				
BARIUM	24 J*		120 J*				
BERYLLIUM			2.4				
CALCIUM	44200		34500				
CADMIUM							
COBALT	22.8		116 J*				
CHROMIUM	2.4		6.7				
COPPER	14.4 U*		92.6				
IRON	34700		144000				
MERCURY							
POTASSIUM	1790		3540				
MAGNESIUM	29900		26700 **				
MANGANESE	4720		7600 J*				
SODIUM	15700		10500 J*				
NICKEL	46 U*		210				
LEAD	13.4 J*	115 J*	44.5 J*	80.5 J*	21.6 J*		20.2 J*
ANTIMONY							
SELENIUM							
VANADIUM	10.7 U*		24.8 U*				
ZINC	69.8		1250				
CYANIDE		N/A		N/A	N/A	N/A	N/A
PETROLEUM HYDROCARBONS (PPM)	230	4600					

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
** - INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION
N/A - INDICATES THAT THE COMPOUND WAS NOT ANALYZED FOR IN SAMPLE.

TABLE 4-1
TANK FARM FIVE
POSITIVE ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
MAY 1992

SAMPLE IDENTIFICATION:	MW-1	MW-11 (dup of MW-1)	MW-2	MW-3	MW-4	MW-5
VOLATILE ORGANICS (PPB)						
VINYL CHLORIDE	–	–	–	–	–	–
METHYLENE CHLORIDE	11 U*	10 U**	10 U**	10 U**	13 U*	10 U**
ACETONE	14 U*	18 U*		11 U*	11 U*	16 U*
1,1-DICHLOROETHANE	–	–	–	–	–	–
1,2-DICHLOROETHENE (TOTAL)	–	–	–	–	5 J	–
CHLOROFORM	–	–	–	–	5 J	–
1,1,1-TRICHLOROETHANE	–	–	–	–	3 J	–
TRICHLOROETHENE	–	–	–	–	6 J	–
TETRACHLOROETHENE	–	–	–	–	–	–
BENZENE	–	–	–	–	–	–
TOLUENE	–	–	–	–	–	–
ETHYLBENZENE	–	–	–	–	–	–
XYLENE	–	–	–	–	–	–
TOTAL VOLATILE ORGANICS	0	0	0	0	19	0
BASE NEUTRAL / ACIDS (PPB)						
NAPHTHALENE @	–	–	–	–	–	–
2-METHYLNAPHTHALENE @	–	–	–	–	–	–
DI-N-BUTYLPHTHALATE	11 U**	11 U**	11 U**	11 U**	11 U**	11 U**
BUTLYBENZYLPHTHALATE	–	–	–	–	–	–
BIS(2-ETHYLHEXYL)PHTHALATE	11 U**	11 U**	11 U**	11 U**	11 U**	11 U**
TOTAL BNA'S	0	0	0	0	0	0
TOTAL PAH'S	0	0	0	0	0	0
TOTAL CARCINOGENIC PAH'S	0	0	0	0	0	0
PESTICIDES/PCB'S (PPB)						
ALPHA-BHC	–	–	–	–	–	–
4,4'-DDD	–	0.011 NJ*	–	–	–	–

NOTE: J – REPORTED RESULT IS QUANTITATIVELY ESTIMATED.
B – COMPOUND ALSO DETECTED IN THE BLANK.
U – NOT DETECTED
UJ – REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED.
NJ – PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE.
* – INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
** – INDICATES THAT THE CONCENTRATION HAS CHANGED ACCORDING TO DATA VALIDATION.
N/A – INSUFFICIENT SAMPLE VOLUME FOR ANALYSIS.
@ – INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH)

TABLE 4-1, cont.
TANK FARM FIVE
POSITIVE ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
MAY 1992

SAMPLE IDENTIFICATION:	MW-1	MW-11 (dup of MW-1)	MW-2	MW-3	MW-4	MW-5
INORGANICS (PPM) TOTAL (UNFILTERED SAMPLES)						
ALUMINUM	10.2	15.5	73.3	22.2	1.87	31.8
ARSENIC	0.039 J*	0.055 J	0.036 J*	0.026 J*	0.029 J*	0.071 J*
BARIUM	0.049 B	0.06 B	0.091 B	0.044 B	0.026 B	0.138 B
BERYLLIUM	–	–	0.002 B	–	–	0.001 B
CADMIUM	–	–	–	–	–	–
CALCIUM	22.5	28.7	45.6	37.1	29.8	69.4
CHROMIUM	0.042	0.062	0.138	0.045	0.011	0.072
COBALT	0.022 B	0.025 B	0.056	0.041 B	0.012 B	0.164
COPPER	0.04	0.058	0.049	0.013 B	0.012 B	0.068
IRON	121	130	265	115	14.6	109
LEAD	0.039 J*	0.053 J*	0.057 J*	0.028 J*	0.003 J*	0.028 J*
MAGNESIUM	12.2	14.7	52.1	35.3	24.3	62.7
MANGANESE	1.47	1.7	3.31	2.83	0.154	6.8
MERCURY	–	–	–	–	–	–
NICKEL	0.052	0.075	0.14	0.071	0.02 B	0.137
POTASSIUM	2.11 B	3.13 B	4.68 B	1.19 B	1.7 B	4.03 B
SELENIUM	–	–	–	0.06	–	–
SILVER	0.008 B	0.011	18.9	0.88	–	–
SODIUM	42.4	46.6	16.1	6.83	18	7.86
VANADIUM	–	–	0.012 B	–	–	0.016 B
ZINC	156	0.184	0.386	0.218	0.041	0.245
INORGANICS (PPM) SOLUBLE (FILTERED SAMPLES)						
ALUMINUM	0.068 BU*	0.065 BU*	0.062 BU*	0.056 BU*	0.094 BU*	0.081 BU*
ANTIMONY	–	–	–	–	–	–
ARSENIC	–	0.002 UJ*	0.002 UJ*	0.002 BJ*	0.003 BJ*	0.002 UJ*
BARIUM	–	–	–	0.008 B	0.007 B	0.022 B
BERYLLIUM	–	–	–	–	–	–
CADMIUM	–	–	–	–	–	–
CALCIUM	18.6	17.9	30.7	32.7	30.8	65.0
CHROMIUM	–	–	–	–	–	–
COBALT	–	–	–	–	–	0.009 B
COPPER	–	–	–	–	–	–
IRON	0.679	1.36	–	3.91	0.055 B	0.693
LEAD	–	rejected*	rejected*	rejected*	rejected*	rejected*
MAGNESIUM	5.64	5.61	23.5	26.8	25.4	54.9
MANGANESE	0.096	0.152	0.003 B	1.18	0.019	0.789
MERCURY	–	–	–	–	–	–
NICKEL	–	–	–	–	–	0.020 B
POTASSIUM	2.26 B	1.8 B	2.09 B	0.986 B	2.12 B	3.03 B
SELENIUM	0.002 UJ*	0.002 UJ*	0.002 UJ*	0.002 UJ*	0.002 UJ*	0.002 UJ*
SILVER	–	–	–	–	–	–
SODIUM	54.1	51.4	15.8	7.00	18.0	8.12
VANADIUM	–	–	–	–	–	0.010 B
ZINC	–	–	–	0.007 B	–	–
Chemical Oxygen Demand	64.3	48	49.6	22	15.5	39.9
Total Suspended Solids	2730	3260	7670	30	1980	1240
Biological Oxygen Demand (5 day)	1.1	1	1	2.9	1	1.4

NOTE: J – REPORTED RESULT IS QUANTITATIVELY ESTIMATED.
B – COMPOUND ALSO DETECTED IN THE BLANK.
U – THE COMPOUND WAS ANALYZED FOR BUT NOT NOT DETECTED. THE ASSOCIATED NUMERICAL VALUE IS THE SAMPLE QUANTITATION LIMIT.
UJ – THE COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED.
NJ – PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE.
* – INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
** – INDICATES THAT THE CONCENTRATION HAS CHANGED ACCORDING TO DATA VALIDATION.
N/A – INSUFFICIENT SAMPLE VOLUME FOR ANALYSIS.

TRC

TABLE 4-1, cont.
TANK FARM FIVE
POSITIVE ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
MAY 1992

SAMPLE IDENTIFICATION:	MW-6	MW-7	MW-8	MW-9	MW-12 (dup of MW-9)	MW-10
VOLATILE ORGANICS (PPB)						
VINYL CHLORIDE	–	–	–	–	–	–
METHYLENE CHLORIDE	10 U**	10 U**	10 U**	10 U**	10 U*	10 U*
ACETONE	–	–	10 U**	–	–	–
1,1-DICHLOROETHANE	–	35	6 J	–	–	–
1,2-DICHLOROETHENE (TOTAL)	–	12	19	–	–	–
CHLOROFORM	–	–	–	–	–	–
1,1,1-TRICHLOROETHANE	–	6 J	8 J	–	–	–
TRICHLOROETHENE	–	3 J	–	–	–	–
TETRACHLOROETHENE	–	–	–	–	–	–
BENZENE	–	4 J	–	–	–	–
TOLUENE	–	–	–	–	–	–
ETHYLBENZENE	–	1 J	–	–	–	–
XYLENE	–	2 J	–	–	–	–
TOTAL VOLATILE ORGANICS	0	63	33	0	0	0
BASE NEUTRAL / ACIDS (PPB)						
NAPHTHALENE @	–	1 J	–	–	–	–
2-METHYLNAPHTHALENE @	–	10 U**	–	–	–	–
DI-N-BUTYLPHTHALATE	11 U**	10 U**	10 U**	10 U**	10 U**	10 U**
BUTLYBENZYLPHTHALATE	–	–	–	–	–	–
BIS(2-ETHYLHEXYL)PHTHALATE	11 U**	10 U**	10 U**	10 U**	10 U**	10 U**
TOTAL BNA'S	0	1	0	0	0	0
TOTAL PAH'S	0	1	0	0	0	0
TOTAL CARCINOGENIC PAH'S	0	0	0	0	0	0
PESTICIDES/PCB'S (PPB)						
ALPHA-BHC	–	0.054 UJ**	–	–	–	–
4,4'-DDD	–	–	–	–	–	–

NOTE: J – REPORTED RESULT IS QUANTITATIVELY ESTIMATED.
B – COMPOUND ALSO DETECTED IN THE BLANK.
U – NOT DETECTED
UJ – REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED.
NJ – PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE.
* – INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
** – INDICATES THAT THE CONCENTRATION HAS CHANGED ACCORDING TO DATA VALIDATION.
N/A – INSUFFICIENT SAMPLE VOLUME FOR ANALYSIS.
@ – INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH)

TABLE 4-1, cont.
TANK FARM FIVE
POSITIVE ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
MAY 1992

SAMPLE IDENTIFICATION:	MW-6	MW-7	MW-8	MW-9	MW-12 (dup of MW-9)	MW-10
INORGANICS (PPM) TOTAL (UNFILTERED SAMPLES)						
ALUMINUM	11.5	16.4	5.59	2.67	2.7	148
ARSENIC	0.013 J*	0.019 J*	0.02	0.04	0.035	0.27 B
BARIUM	0.049 B	0.055 B	0.062 B	0.056 B	0.048	0.586
BERYLLIUM	–	–	–	–	–	0.011
CADMIUM	–	–	–	–	–	0.005 B
CALCIUM	18	17.9	24.3 J*	74.5 J*	69.5 J	78.7 J
CHROMIUM	0.017	0.028	0.019	–	–	0.336
COBALT	0.024 B	0.035 B	0.027 B	0.078	0.064	0.582
COPPER	0.022 B	0.034	0.05	0.02 B	0.019	0.144
IRON	33.5	80.1	22.1 J*	29.1 J*	24.1 J*	796 J
LEAD	0.014 J*	0.04 J*	0.03 J*	0.036 J*	0.066 J*	0.167 J
MAGNESIUM	23.4	11.3	19.8 J*	56.7 J*	53.1 J*	81.6 J
MANGANESE	1.3	6.6	0.535 J*	4.62 J*	3.62 J*	14.4 J
MERCURY	–	–	–	–	–	–
NICKEL	0.036 B	0.065	0.035	0.051	0.05	0.818
POTASSIUM	0.896	1.75 B	2.28 B	2.18 B	2.09 B	11.3
SELENIUM	–	–	–	–	–	–
SILVER	–	–	–	–	–	0.041
SODIUM	7.87	5.8	10.5	10.3	9.9	10
VANADIUM	0.013 B	–	0.063 B	0.015 B	0.014 B	–
ZINC	0.071	0.102	0.068	0.073	0.059	1.22
INORGANICS (PPM) SOLUBLE (FILTERED SAMPLES)						
ALUMINUM	0.063 BU*	0.082 BU*	–	–	–	–
ANTIMONY	–	–	–	–	–	0.038 B
ARSENIC	0.002 UJ*	0.013 J*	–	–	–	0.003 B
BARIUM	–	0.022 B	0.01 B	0.012 B	0.012 B	0.009 B
BERYLLIUM	–	–	–	–	–	–
CADMIUM	–	–	–	–	–	–
CALCIUM	18.0	29.3	23.7 J*	72.5 J*	76.1 J	31.1 J
CHROMIUM	–	–	–	–	–	–
COBALT	–	0.008 B	–	0.01 B	0.013 B	0.018 B
COPPER	–	–	–	–	–	–
IRON	0.038 B	48.0	0.063 BU*	–	–	0.089 BU*
LEAD	rejected*	rejected*	0.002 UJ*	0.013 J	0.002 UJ*	0.003 BJ*
MAGNESIUM	21.3	12.2	18.9 J*	55.3 J	57.9 J*	18.9 J*
MANGANESE	0.33	10.8	0.041 J*	0.516 J	0.723 J*	1.53 J*
MERCURY	–	–	–	–	0.0001 B	0.0001 B
NICKEL	–	–	–	–	–	0.028 B
POTASSIUM	–	2.26 B	1.59 B*	2.11 B	2.04 B	2.28 B
SELENIUM	0.002 UJ*	0.002 UJ*	–	–	–	–
SILVER	–	–	–	–	–	–
SODIUM	8.2	10.7	10.9	10.4	10.7	8.70
VANADIUM	–	–	0.006 B	0.019 B	0.017 B	0.006 B
ZINC	–	–	0.013 BU*	0.012 BU*	0.012 B	0.012 BU*
Chemical Oxygen Demand	15.5	77.6	7.7	6.1	12.5	142
Total Suspended Solids	854	193	384	804	308	5900
Biological Oxygen Demand (5 day)	1	4.1	2	1.2	1	2.3

NOTE: J – REPORTED RESULT IS QUANTITATIVELY ESTIMATED.
B – COMPOUND ALSO DETECTED IN THE BLANK.
U – THE COMPOUND WAS ANALYZED FOR BUT NOT NOT DETECTED. THE ASSOCIATED NUMERICAL VALUE IS THE SAMPLE QUANTITATION LIMIT.
UJ – THE COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED.
NJ – PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE.
* – INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
** – INDICATES THAT THE CONCENTRATION HAS CHANGED ACCORDING TO DATA VALIDATION.
N/A – INSUFFICIENT SAMPLE VOLUME FOR ANALYSIS.

TRC

TABLE 4-1, cont.
TANK FARM FIVE
POSITIVE ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
MAY 1992

SAMPLE IDENTIFICATION:	RW-1	MW-861	MW-862	MW-864	MW-865	MW-53E
VOLATILE ORGANICS (PPB)						
VINYL CHLORIDE	5 J	–	–	–	–	–
METHYLENE CHLORIDE	12 U*	10 U**	10 U*	–	10 U**	74 U*
ACETONE	25 U*	–	–	10 U**	17 U*	44 U*
1,1-DICHLOROETHANE	41	–	–	–	–	55
1,2-DICHLOROETHENE (TOTAL)	21	–	–	–	–	420
CHLOROFORM	–	8 J	–	–	–	–
1,1,1-TRICHLOROETHANE	36	–	–	–	–	800
TRICHLOROETHENE	22	–	–	–	–	570
TETRACHLOROETHENE	2 J	–	–	–	–	220
BENZENE	1 J	–	–	–	–	94
TOLUENE	–	–	–	–	–	88
ETHYLBENZENE	–	–	–	–	–	230
XYLENE	7 J	–	–	–	–	1100
TOTAL VOLATILE ORGANICS	135	8	0	0	0	3577
BASE NEUTRAL / ACIDS (PPB)						
NAPHTHALENE @	55 J	–	–	–	–	73 J
2-METHYLNAPHTHALENE @	270	–	–	–	–	180
DI-N-BUTYLPHTHALATE	–	10 U**	10 U**	11 U**	11 U**	
BUTLYBENZYLPHTHALATE	–	–	–	11 U**	–	–
BIS(2-ETHYLHEXYL)PHTHALATE	130 **	10 U**	10 U**	44 U*	11 U**	200 **
TOTAL BNA'S	455	0	0	0	0	453
TOTAL PAH'S	325	0	0	0	0	253
TOTAL CARCINOGENIC PAH'S	0	0	0	0	0	0
PESTICIDES/PCB'S (PPB)						
ALPHA-BHC	–	–	–	–	–	–
4,4'-DDD	–	–	N/A	–	–	–

NOTE: J – REPORTED RESULT IS QUANTITATIVELY ESTIMATED.
B – COMPOUND ALSO DETECTED IN THE BLANK.
U – NOT DETECTED
UJ – REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED.
NJ – PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE.
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** – INDICATES THAT THE CONCENTRATION HAS CHANGED ACCORDING TO DATA VALIDATION.
N/A – INSUFFICIENT SAMPLE VOLUME FOR ANALYSIS.
@ – INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH)

TABLE 4-1, cont.
TANK FARM FIVE
POSITIVE ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
MAY 1992

SAMPLE IDENTIFICATION:	RW-1	MW-861	MW-862	MW-864	MW-865	MW-53E
INORGANICS (PPM) TOTAL (UNFILTERED SAMPLES)						
ALUMINUM	1.2	16.9	18.9	17.4	136	9.67
ARSENIC	0.015	0.057 J*	0.047	0.016 J*	0.102 J*	0.033
BARIUM	0.021 B	0.052 B	0.067	0.023 B	0.155 B	0.4 B
BERYLLIUM	–	–	–	–	0.003 B	–
CADMIUM	–	–	–	–	–	–
CALCIUM	35.1 J	16.4	25.3 J*	6	25.4	19.9 J*
CHROMIUM	–	0.03	0.066	0.03	0.278	0.016
COBALT	0.01 B	0.171	0.102	0.017 B	0.342	0.071
COPPER	–	0.063	0.076	0.034	0.332	0.073
IRON	60.2 J*	72.2	94.6 J*	44.7	350	50.3 J*
LEAD	0.002 B,J*	0.025 J*	0.053 J*	0.017 J*	124 J*	0.021 J*
MAGNESIUM	15.3 J*	16.7	27.7 J*	7	45.1	12.9 J*
MANGANESE	7.65 J*	3.1	4.38 J*	0.263	1.79	6.54 J*
MERCURY	–	–	0.00014 B	–	–	0.001
NICKEL	–	0.116	0.115	0.027 B	0.372	0.052
POTASSIUM	2.28 B	1.6 B	2.86 B	1.33 B	4.15 B	1.96 B
SELENIUM	–	–	–	2.00 UJ*	2.00 UJ*	2.00 UJ*
SILVER	–	–	–	–	0.024	–
SODIUM	11.6	9.23	15.1	8.7	8.11	10.6
VANADIUM	–	–	–	0.012 B	0.039 B	0.054 B
ZINC	0.06	0.19	0.255	0.084	0.873	0.107
INORGANICS (PPM) SOLUBLE (FILTERED SAMPLES)						
ALUMINUM	–	0.368	18.9	0.105 BU*	N/A	N/A
ANTIMONY	–	–	–	–	–	–
ARSENIC	0.013	0.002 UJ*	0.047	0.002 UJ*	–	–
BARIUM	0.017 B	0.008 B	0.067 B	–	–	–
BERYLLIUM	–	–	–	–	–	–
CADMIUM	–	0.007	–	–	–	–
CALCIUM	32.5 J	16.2	25.3 J*	4.66 B	–	–
CHROMIUM	–	–	0.066	–	–	–
COBALT	0.007 B	0.036 B	0.102	–	–	–
COPPER	–	–	0.076	0.008 B	–	–
IRON	51.9 J	1.17	94.6 J*	–	–	–
LEAD	0.002 UJ*	rejected	0.053 J*	rejected	–	–
MAGNESIUM	14.0 J*	13.0	27.7 J*	2.1 B	–	–
MANGANESE	7.11 J*	0.721	4.38 J*	0.020	–	–
MERCURY	–	–	0.00014 B	–	–	–
NICKEL	–	0.040	0.115	–	–	–
POTASSIUM	2.43 B	1.03 B	2.86 B	–	–	–
SELENIUM	–	0.002 UJ*	–	0.002 UJ*	–	–
SILVER	–	–	–	–	–	–
SODIUM	11.4	9.51	15.1	8.96	–	–
VANADIUM	–	–	–	–	–	–
ZINC	0.015 BU*	0.023	0.255	0.010 B	–	–
Chemical Oxygen Demand	255	12.3		15.5	31.8	
Total Suspended Solids	353	142		496	1100	
Biological Oxygen Demand (5 day)	5.8	1		1	1	

NOTE: J – REPORTED RESULT IS QUANTITATIVELY ESTIMATED.
B – COMPOUND ALSO DETECTED IN THE BLANK.
U – THE COMPOUND WAS ANALYZED FOR BUT NOT NOT DETECTED. THE ASSOCIATED NUMERICAL VALUE IS THE SAMPLE QUANTITATION LIMIT.
UJ – THE COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED.
NJ – PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE.
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** – INDICATES THAT THE CONCENTRATION HAS CHANGED ACCORDING TO DATA VALIDATION.
N/A – INSUFFICIENT SAMPLE VOLUME FOR ANALYSIS.

TRC

TABLE 4-1, cont.
TANK FARM FIVE
POSITIVE ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
MAY 1992

SAMPLE IDENTIFICATION:	FB-506	FB-507	TB1-506	TB2-506	TB3-506	TB4-506
VOLATILE ORGANICS (PPB)						
VINYL CHLORIDE	–	–	–	–	–	–
METHYLENE CHLORIDE	10 U**	10 U*	10 U**	10 U**	10 U**	10 U*
ACETONE	–	10 U**	20 U*	–	8 J	25
1,1-DICHLOROETHANE	–	–	–	–	–	–
1,2-DICHLOROETHENE (TOTAL)	–	–	–	–	–	–
CHLOROFORM	–	–	–	–	–	–
1,1,1-TRICHLOROETHANE	–	–	–	–	–	–
TRICHLOROETHENE	–	–	–	–	–	–
TETRACHLOROETHENE	–	–	–	–	–	–
BENZENE	–	–	–	–	–	–
TOLUENE	–	–	–	–	–	–
ETHYLBENZENE	–	–	–	–	–	–
XYLENE	–	–	–	–	–	–
TOTAL VOLATILE ORGANICS	0	0	0	0	8	25
BASE NEUTRAL / ACIDS (PPB)						
NAPHTHALENE @	–	–				
2-METHYLNAPHTHALENE @	–	–				
DI-N-BUTYLPHTHALATE	11 U**	11 U**				
BUTLYBENZYLPHTHALATE	–	–				
BIS(2-ETHYLHEXYL)PHTHALATE	11 U**	11 U**				
TOTAL BNA'S	0	0				
TOTAL PAH'S	0	0				
TOTAL CARCINOGENIC PAH'S	0	0				
PESTICIDES/PCB'S (PPB)						
ALPHA-BHC	–	–				
4,4'-DDD	–	–				

NOTE: J – REPORTED RESULT IS QUANTITATIVELY ESTIMATED.
B – COMPOUND ALSO DETECTED IN THE BLANK.
U – NOT DETECTED
UJ – REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED.
NJ – PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE.
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** – INDICATES THAT THE CONCENTRATION HAS CHANGED ACCORDING TO DATA VALIDATION.
N/A – INSUFFICIENT SAMPLE VOLUME FOR ANALYSIS.
@ – INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH)

TABLE 4-1, cont.
TANK FARM FIVE
POSITIVE ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
MAY 1992

SAMPLE IDENTIFICATION:	FB-506	FB-507	TB1-506	TB2-506	TB3-506	TB4-506
INORGANICS (PPM) TOTAL (UNFILTERED SAMPLES)						
ALUMINUM	–	–				
ARSENIC	2.00 UJ*	–				
BARIUM	–	–				
BERYLLIUM	–	–				
CADMIUM	–	–				
CALCIUM	0.147 B	–				
CHROMIUM	0.055 B	–				
COBALT	–	–				
COPPER	–	–				
IRON	–	0.035 BU*				
LEAD	rejected	2.00 UJ*				
MAGNESIUM	–	–				
MANGANESE	–	–				
MERCURY	–	–				
NICKEL	–	–				
POTASSIUM	–	–				
SELENIUM	2.00 UJ*	–				
SILVER	–	–				
SODIUM	0.058 B	0.175 B				
VANADIUM	–	–				
ZINC	–	0.009 BU*				
INORGANICS (PPM) SOLUBLE (FILTERED SAMPLES)						
ALUMINUM	0.06 BU*	–				
ANTIMONY	–	–				
ARSENIC	0.002 UJ*	–				
BARIUM	–	–				
BERYLLIUM	–	–				
CADMIUM	–	–				
CALCIUM	–	–				
CHROMIUM	–	–				
COBALT	–	–				
COPPER	–	–				
IRON	–	–				
LEAD	rejected	0.018 J*				
MAGNESIUM	–	–				
MANGANESE	–	0.004 BJ*				
MERCURY	–	–				
NICKEL	–	–				
POTASSIUM	–	–				
SELENIUM	0.002 UJ*	–				
SILVER	–	–				
SODIUM	–	0.134 B				
VANADIUM	–	–				
ZINC	–	–				

Chemical Oxygen Demand
Total Suspended Solids
Biological Oxygen Demand (5 day)

NOTE: J – REPORTED RESULT IS QUANTITATIVELY ESTIMATED.
B – COMPOUND ALSO DETECTED IN THE BLANK.
U – THE COMPOUND WAS ANALYZED FOR BUT NOT NOT DETECTED. THE ASSOCIATED NUMERICAL VALUE IS THE SAMPLE QUANTITATION LIMIT.
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** – INDICATES THAT THE CONCENTRATION HAS CHANGED ACCORDING TO DATA VALIDATION.
N/A – INSUFFICIENT SAMPLE VOLUME FOR ANALYSIS.

TRC

TABLE 4-1, cont.
TANK FARM FIVE
POSITIVE ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
MAY 1992

SAMPLE IDENTIFICATION:	TB1-507	TB2-507	TB3-507
VOLATILE ORGANICS (PPB)			
VINYL CHLORIDE	–	–	–
METHYLENE CHLORIDE	10 U**	14 U*	10 U**
ACETONE	10 U**	27 U*	11 U*
1,1-DICHLOROETHANE	–	–	–
1,2-DICHLOROETHENE (TOTAL)	–	–	–
CHLOROFORM	–	–	–
1,1,1-TRICHLOROETHANE	–	–	–
TRICHLOROETHENE	–	–	–
TETRACHLOROETHENE	–	–	–
BENZENE	–	–	–
TOLUENE	–	–	–
ETHYLBENZENE	–	–	–
XYLENE	–	–	–
TOTAL VOLATILE ORGANICS	0	0	0
BASE NEUTRAL / ACIDS (PPB)			
NAPHTHALENE @			
2-METHYLNAPHTHALENE @			
DI-N-BUTYLPHTHALATE			
BUTLYBENZYLPHTHALATE			
BIS(2-ETHYLHEXYL)PHTHALATE			
TOTAL BNA'S			
TOTAL PAH'S			
TOTAL CARCINOGENIC PAH'S			
PESTICIDES/PCB'S (PPB)			
ALPHA-BHC			
4,4'-DDD			

NOTE: J – REPORTED RESULT IS QUANTITATIVELY ESTIMATED.
B – COMPOUND ALSO DETECTED IN THE BLANK.
U – NOT DETECTED
UJ – REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED.
NJ – PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE.
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** – INDICATES THAT THE CONCENTRATION HAS CHANGED ACCORDING TO DATA VALIDATION.
N/A – INSUFFICIENT SAMPLE VOLUME FOR ANALYSIS.
@ – INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH)

TABLE 4-1, cont.
TANK FARM FIVE
POSITIVE ANALYTICAL RESULTS FOR GROUND WATER SAMPLES
MAY 1992

SAMPLE IDENTIFICATION:	TB1-507	TB2-507	TB3-507
INORGANICS (PPM) TOTAL (UNFILTERED SAMPLES)			
ALUMINUM			
ARSENIC			
BARIUM			
BERYLLIUM			
CADMIUM			
CALCIUM			
CHROMIUM			
COBALT			
COPPER			
IRON			
LEAD			
MAGNESIUM			
MANGANESE			
MERCURY			
NICKEL			
POTASSIUM			
SELENIUM			
SILVER			
SODIUM			
VANADIUM			
ZINC			
INORGANICS (PPM) SOLUBLE (FILTERED SAMPLES)			
ALUMINUM			
ANTIMONY			
ARSENIC			
BARIUM			
BERYLLIUM			
CADMIUM			
CALCIUM			
CHROMIUM			
COBALT			
COPPER			
IRON			
LEAD			
MAGNESIUM			
MANGANESE			
MERCURY			
NICKEL			
POTASSIUM			
SELENIUM			
SILVER			
SODIUM			
VANADIUM			
ZINC			
Chemical Oxygen Demand			
Total Suspended Solids			
Biological Oxygen Demand (5 day)			

NOTE: J – REPORTED RESULT IS QUANTITATIVELY ESTIMATED.
B – COMPOUND ALSO DETECTED IN THE BLANK.
U – THE COMPOUND WAS ANALYZED FOR BUT NOT NOT DETECTED. THE ASSOCIATED NUMERICAL VALUE IS THE SAMPLE QUANTITATION LIMIT.
UJ – THE COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED.
NJ – PRESUMPTIVE EVIDENCE FOR THE PRESENCE OF THE MATERIAL AT AN ESTIMATED VALUE.
* – INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
** – INDICATES THAT THE CONCENTRATION HAS CHANGED ACCORDING TO DATA VALIDATION.
N/A – INSUFFICIENT SAMPLE VOLUME FOR ANALYSIS.

TRC

SITE 13 - TANK FARM 5
CONSTITUENTS DETECTED IN SEDIMENT SAMPLES

SAMPLE IDENTIFICATION: SAMPLE DEPTH (FT):	SD-1	SD-2	SD-6 DUP OF SD-2	SD-3	SD-4	SD-5	FB-060190
PETROLEUM HYDROCARBONS..(PPM)...	220	41	28	29	13	110	
LEAD (PPM).....	24.6	5.7 J*	4.2 J*	19.6 J*	25.8	155 J*	
PCB'S.....							

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.

SITE 13 - TANK FARM 5
CONSTITUENTS DETECTED IN SURFACE SOIL SAMPLES

SAMPLE IDENTIFICATION:	SS-56	SS-57	TB-051090
**** VOLATILE ORGANICS (PPB) ***			
METHYLENE CHLORIDE.....	13 U*	17 U*	6
ACETONE.....	10 U**	14 U*	
BENZENE.....			
4-METHYL-2-PENTANONE.....			
TETRACHLOROETHENE.....	2 J	5 J	
TOLUENE.....		2 J	
XYLENE.....		2 J	
TOTAL VOLATILE ORGANICS.....	2	9	6
** BASE NEUTRAL / ACIDS (PPB) **			
BENZOIC ACID.....			N/A
PHENANTHRENE.....	240 J	72 J	|
ANTHRACENE.....	45 J		|
DI-N-BUTYLPHTHALATE.....	46 J	50 J	|
FLUORANTHENE.....	370 J	180 J	|
PYRENE.....	440 U**	470 U*	|
BUTYLBENZYLPHTHALATE.....			|
BENZO(a)ANTHRACENE.....	160 J	84 J	|
CHRYSENE.....	190 J	100 J	|
BIS(2-ETHYLHEXYL)PHTHALATE.....	560 U*	480 U*	|
BENZO(b)FLUORANTHENE.....	140 J		|
BENZO(k)FLUORANTHENE.....		70 J	|
BENZO(a)PYRENE.....	140 J	69 J	N/A
TOTAL BNA'S.....	1331	625	
TOTAL PAH'S.....	1285	575	
TOTAL CARCINOGENIC PAH'S.....	630	323	
**** PESTICIDES/PCB'S (PPB) ****			
4,4'-DDE.....	32 J	25 J	N/A
4,4'-DDT.....	74	31 J	|
******* INORGANICS (PPM) *******			
SILVER.....		0.7	N/A
ALUMINUM.....	9060	9550	|
ARSENIC.....	6.6 J*	10.1 J*	|
BARIUM.....	19.9 J*	17.3 J*	|
BERYLLIUM.....			|
CALCIUM.....	854	786	|
CADMIUM.....			|
COBALT.....	15.1 J*	12.1 J*	|
CHROMIUM.....	14 J*	12 J*	|
COPPER.....	24.3 J*	19.6 J*	|
IRON.....	25500	21700	|
MERCURY.....	54 J**	2 J*	|
POTASSIUM.....	182	250	|
MAGNESIUM.....	2960	2540	|
MANGANESE.....	445 J*	376 J*	|
SODIUM.....			|
NICKEL.....	21 J*	19.5 J*	|
LEAD.....	56.6	29.2	|
ANTIMONY.....		5.4 J*	|
SELENIUM.....			|
VANADIUM.....	21 J*	20.3 J*	|
ZINC.....	83	55.5	|
CYANIDE.....			N/A
PETROLEUM HYDROCARBONS (PPM)....	24	7.5	N/A

NOTE: ** - INDICATES THAT THE CONTAMINANT VALUE HAS CHANGED ACCORDING TO DATA VALIDATION
@ - INDICATES THAT THE COMPOUND IS A POLYNUCLEAR AROMATIC HYDROCARBON (PAH).
N/A - INDICATES THAT THE COMPOUND WAS NOT ANALYZED FOR.

SITE 13 - TANK FARM 5
CONSTITUENTS DETECTED IN SURFACE SOIL SAMPLES

SAMPLE IDENTIFICATION:	SS-49	SS-49D	SS-50	SS-60 DUP SS-50	SS-50D	SS-51	SS-51D	SS-52
PETROLEUM HYDROCARBONS..(PPM)...	870	35	14000	15000	60000	4900	19	48
LEAD (PPM).....	205	52.7 J*	61.3	57.8	28.9 J*	40.6	15.1 J*	70.9

SAMPLE IDENTIFICATION:	SS-52D	SS-53	SS-61 DUP SS-53	SS-53D	SS-54	SS-54D	SS-55	SS-55D
PETROLEUM HYDROCARBONS..(PPM)...	6.7	16	31		69	3.6 J	100	13
LEAD (PPM).....	19.6 J*	16.2 J*	17.9 J*	9 J*	45.7	14.7 J*	31.3	21 J*

SAMPLE IDENTIFICATION:	SS-56D	SS-57D	SS-58	SS-58D	SS-59	SS-59D	FB-061490
PETROLEUM HYDROCARBONS..(PPM)...	9.5	51	21		48	8.6	
LEAD (PPM).....	8.6 J*	23.3 J*	13.1	16.6 J*	25.1	16.7 J*	

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.
D - DISCRETE SOIL SAMPLE LOCATION.

SITE 13 - TANK FARM 5
CONSTITUENTS DETECTED IN SURFACE SOIL SAMPLES
COLLECTED FROM AROUND OIL/WATER SEPARATOR

SAMPLE IDENTIFICATION:	SS-1	SS-2	SS-5	SS-3	SS-4	FB-061490
SAMPLE DEPTH (FT):			DUP SS-2			
PETROLEUM HYDROCARBONS..(PPM)...	32	96	65	8.8	42	
LEAD (PPM).....	370 J*	40 J*	41.4 J*	30.1 J*	18.4 J*	

NOTE: * - INDICATES THAT THE QUALIFIER HAS CHANGED ACCORDING TO DATA VALIDATION.

TABLE 3
VOLATILE ORGANIC COMPOUND (VOC) DATA
TANK 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	B101	B107	B117	B132	B144	B145	B149	B165
SAMPLE DEPTH (FT):	0-2	12-14	12-14	2-4	6-8	8-10	16-18	8-10
	Tank 53	Tank 53	Tank 53	Tank 53	Tank 53	Tank 53	Tank 53	Tank 53
VOLATILE ORGANICS (PPB)								
Chloromethane								
Bromomethane								
Vinyl Chloride								
Chloroethane								
Methylene Chloride	2 J			8 JB	670 JB	800 JB	760 JB	330 JB
Acetone		5 JB		21 JB	1100 JB	890 JB	590 JB	
Carbon Disulfide								
1,1-Dichloroethene								
1,1-Dichloroethane								
1,2-Dichloroethene (Total)								
Chloroform								
1,2-Dichloroethane								
2-Butanone								
1,1,1-Trichloroethane							300 J	
Carbon Tetrachloride								
Bromodichloromethane								
1,2-Dichloropropane								
cis-1,3-Dichloropropene								
Trichloroethene							1000 J	
Dibromochloromethane								
1,1,2-Trichloroethane								
Benzene								
trans-1,3-Dichloropropene								
Bromoform								
4-Methyl-2-pentanone								
2-Hexanone								
Tetrachloroethene						530 J	850 J	670 J
1,1,2,2-Tetrachloroethane								
Toluene						1000 J	300 J	690 J
Chlorobenzene								
Ethyl Benzene					180 J	2800	4300	2400
Styrene								
Total Xylenes					850 J	13000	9800	6500
TOTAL VOLATILE ORGANICS	2	5	0	29	2800	19020	17900	10590

TABLE 3
VOLATILE ORGANIC COMPOUND (VOC) DATA
TANK 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	B1615	B172	B187	B1821	B1816	B2016	B215	B217	B239
SAMPLE DEPTH (FT):	28-30	2-4	12-14	12-14	30-32	30-32	8-10	12-14	16-18
	Tank 53	Tank 53	Tank 53	Duplicate	Tank 53	Tank 53	Tank 53	Tank 53	Tank 53
VOLATILE ORGANICS (PPB)									
Chloromethane									
Bromomethane									
Vinyl Chloride									
Chloroethane									
Methylene Chloride	5 JB	2 J	430 JB	500 JB	440 JB	5 JB	360 JE	330 JE	2 J
Acetone	6 JB	140 B		2500	2000	9 JB			10 JB
Carbon Disulfide									
1,1-Dichloroethene									
1,1-Dichloroethane									
1,2-Dichloroethene (Total)									
Chloroform									
1,2-Dichloroethane									
2-Butanone									
1,1,1-Trichloroethane			500 J	250 J	240 J				
Carbon Tetrachloride									
Bromodichloromethane									
1,2-Dichloropropane									
cis-1,3-Dichloropropene									
Trichloroethene			550 J	330 J	670 J				
Dibromochloromethane									
1,1,2-Trichloroethane									
Benzene									
trans-1,3-Dichloropropene									
Bromoform									
4-Methyl-2-pentanone									
2-Hexanone									
Tetrachloroethene			1100 J	960 J	400 J			460 J	
1,1,2,2-Tetrachloroethane									
Toluene		3 J	1300 J	1100 J	270 J			300 J	
Chlorobenzene									
Ethyl Benzene			3100	2800	490		1100 J	1500	
Styrene									
Total Xylenes		1 J	11000	9700	4400		4400	6100	
TOTAL VOLATILE ORGANICS	11	146	17980	18140	8910	14	5860	8690	12
TICs (No.)						9			

TABLE 3
VOLATILE ORGANIC COMPOUND (VOC) DATA
TANK 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	B273	B277	B2717	B331	B431	B442	B501	B502
SAMPLE DEPTH (FT):	4-6	12-14	32-34	0-2	0-2	2-4	0-2	2-4
	Tank 53	Tank 53	Tank 53	Tank 56	Tank 53	Tank 53	Background	Background
VOLATILE ORGANICS (PPB)								
Chloromethane								
Bromomethane								
Vinyl Chloride								
Chloroethane								
Methylene Chloride	920 JB	390 JB	7 JB			6 JB	3 J	2 J
Acetone					4 JB			
Carbon Disulfide								
1,1-Dichloroethene								
1,1-Dichloroethane								
1,2-Dichloroethene (Total)								
Chloroform								
1,2-Dichloroethane								
2-Butanone								
1,1,1-Trichloroethane								
Carbon Tetrachloride								
Bromodichloromethane								
1,2-Dichloropropane								
cis-1,3-Dichloropropene								
Trichloroethene		190 J	1 J					
Dibromochloromethane								
1,1,2-Trichloroethane								
Benzene								
trans-1,3-Dichloropropene								
Bromoform								
4-Methyl-2-pentanone								
2-Hexanone								
Tetrachloroethene		600 J	5 J					
1,1,2,2-Tetrachloroethane								
Toluene	1300 J	2500	1 J				3 J	
Chlorobenzene								
Ethyl Benzene	6700	3700						
Styrene								
Total Xylenes	34000	18000	38					
TOTAL VOLATILE ORGANICS	44920	25380	52	0	4	6	6	2

TABLE 3
VOLATILE ORGANIC COMPOUND (VOC) DATA
TANK 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	B503	B511	B514	B512	B513	B521	B522	B523
SAMPLE DEPTH (FT):	14–16	0–2	0–2	2–4	14–16	0–2	2–4	16–18
	Background	Background	Duplicate	Background	Background	Background	Background	Background
VOLATILE ORGANICS (PPB)								
Chloromethane								
Bromomethane								
Vinyl Chloride								
Chloroethane								
Methylene Chloride	6 JB	2 J			1 J	7 J		
Acetone	6 JB	15 B		6 JB				
Carbon Disulfide								
1,1–Dichloroethene								
1,1–Dichloroethane								
1,2–Dichloroethene (Total)								
Chloroform								
1,2–Dichloroethane								
2–Butanone								
1,1,1–Trichloroethane								
Carbon Tetrachloride								
Bromodichloromethane								
1,2–Dichloropropane								
cis–1,3–Dichloropropene								
Trichloroethene								
Dibromochloromethane								
1,1,2–Trichloroethane								
Benzene								
trans–1,3–Dichloropropene								
Bromoform								
4–Methyl–2–pentanone								
2–Hexanone								
Tetrachloroethene								
1,1,2,2–Tetrachloroethane								
Toluene	1 J	3	1			3 J		
Chlorobenzene								
Ethyl Benzene								
Styrene								
Total Xylenes								
TOTAL VOLATILE ORGANICS	13	20	1	6	1	10	0	0

TABLE 3
VOLATILE ORGANIC COMPOUND (VOC) DATA
TANK 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	TB1	TB2	TB3	TB4	TB5	FB1	FB2	FB3	SW1
SAMPLE DEPTH (FT):	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Field Blank	Field Blank	Field Blank	Source Water
VOLATILE ORGANICS (PPB)									
Chloromethane									
Bromomethane									
Vinyl Chloride									
Chloroethane									
Methylene Chloride	3 J	3 J	5 J	11 B	6 JB	3 J	3 J	9 JB	
Acetone		17 B		6 JB				3 JB	
Carbon Disulfide									
1,1-Dichloroethene									
1,1-Dichloroethane									
1,2-Dichloroethene (Total)									
Chloroform									81
1,2-Dichloroethane									
2-Butanone									
1,1,1-Trichloroethane									
Carbon Tetrachloride									
Bromodichloromethane									34
1,2-Dichloropropane									
cis-1,3-Dichloropropene									
Trichloroethene									
Dibromochloromethane									11
1,1,2-Trichloroethane									
Benzene									
trans-1,3-Dichloropropene									
Bromoform									
4-Methyl-2-pentanone									
2-Hexanone									
Tetrachloroethene									
1,1,2,2-Tetrachloroethane									
Toluene									
Chlorobenzene									
Ethyl Benzene									
Styrene									
Total Xylenes									
TOTAL VOLATILE ORGANICS	3	20	5	17	6	3	3	12	126

Notes: 1. J indicates an estimated value. This qualifier is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. If the limit of detection is 10 ug and a concentration of 3 ug is calculated, then the value is reported as 3J.

2. B indicates the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

3. A blank indicates that the compound was not detected.

TABLE 5
TCL BNA, TCL PESTICIDE/PCB AND TAL METALS DATA
TANK 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	B501	B502	B503	B511	B512	B513
SAMPLE DEPTH (FT):	0-2	2-4	14-16	0-2	2-4	14-16
	Background	Background	Background	Background	Background	Background
BNA COMPOUNDS						
Phenol						
bis(2-Chloroethyl)ether						
2-Chlorophenol						
1,3-Dichlorobenzene						
1,4-Dichlorobenzene						
1,2-Dichlorobenzene						
2-Methylphenol						
2,2'-oxybis(2-chloropropane)						
4-Methylphenol						
N-Nitroso-di-n-propylamine						
Hexachloroethane						
Nitrobenzene						
Isophorone						
2-Nitrophenol						
2,4-Dimethylphenol						
bis(2-Chloroethoxy)methane						
2,4-Dichlorophenol						
1,2,4-Trichlorobenzene						
Napthalene						
4-Chloroaniline						
Hexachlorocyclopentadiene						
2,4,6-Trichlorophenol						
2,4,5-Trichlorophenol						
2-Chloronaphthalene						
2-Nitroaniline						
Dimethylnapthalene						
Acenaphthalene						
2,6-Dinitrotoluene						
3-Nitroaniline						
Acenaphthene						
2,4-Dinitrophenol						
4-Nitrophenol						
Dibenzofuran						
2,4-Dinitrotoluene						
Diethylphthalate						
4-Chlorophenyl-phenylether						
Fluorene						
4-Nitroaniline						
4,6-Dinitro-2-methylpenol						
N-Nitrosodipheylamine						
4-Bromophenyl-phenylether						
Hexachlorobenzene						
Pentachlorophenol						
Phenanthrene						
Carbazole						
Di-n-butylphthalate	59 JB	53 JB	83 JB	72 JB	54 JB	79 JB
Flouranthene						
Pyrene						
Butylbenzylphthalate						
3,3'-Dichlorobenzidine						
Benzo(a)anthracene						
Chrysene						
bis(2-Ethylhexyl)phthalate	41 JB	53 JB	99 JB	56 JB	44 JB	65 JB
Di-n-octyl phthalate						
Benzo(b)fluoranthene						
Benzo(k)fluoranthene						
Benzo(a)pyrene						
Ideno(1,2,3-cd)pyrene						
Dibenz(a,h)anthracene						
Benzo(g,h,i)perylene						

TABLE 5
TCL BNA, PESTICIDE/PCB AND METALS DATA
TANK 53 AND 56 SOIL INVESTIGATION

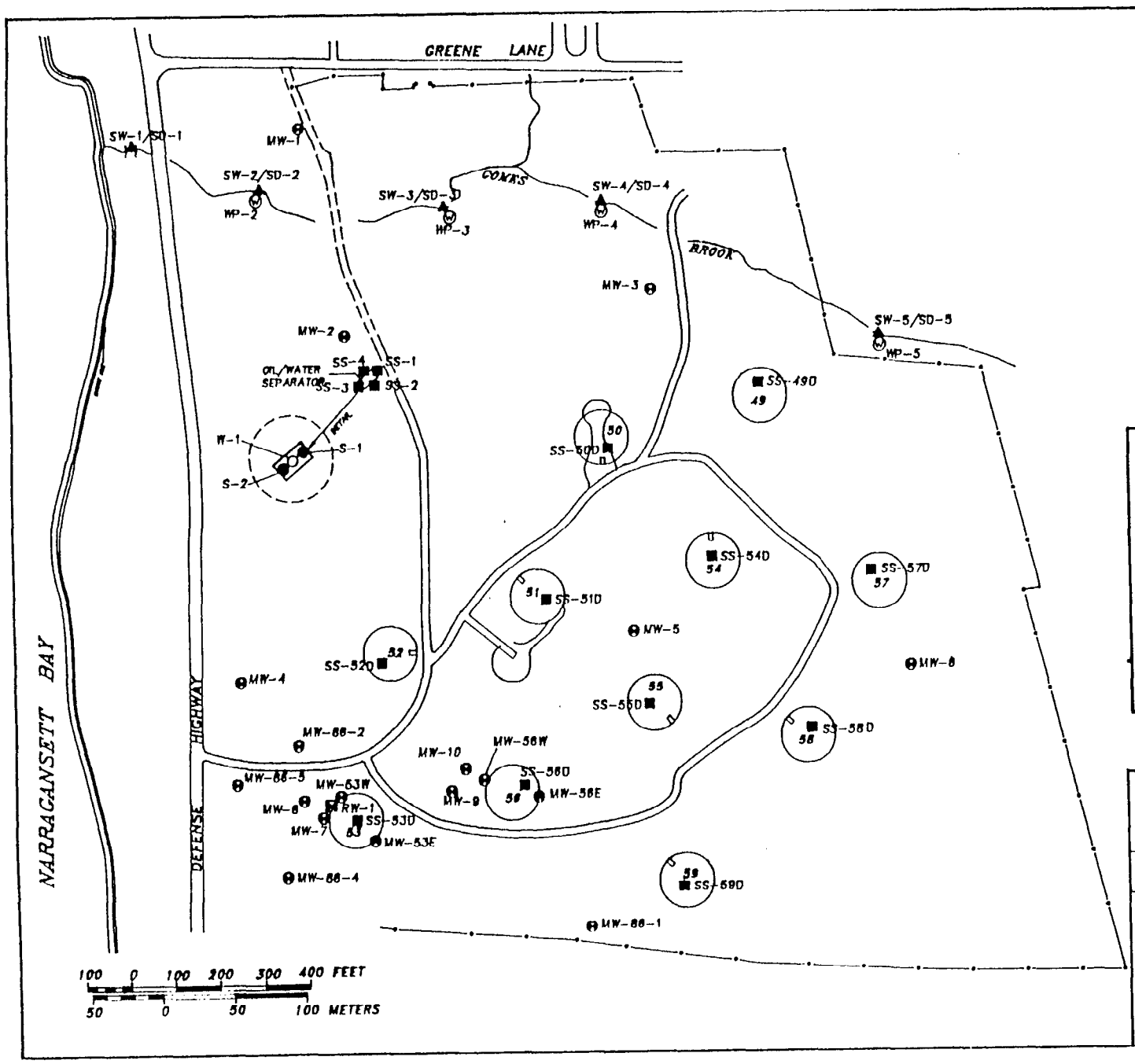
SAMPLE IDENTIFICATION	B501	B502	B503	B511	B512	B513
SAMPLE DEPTH (FT):	0–2	2–4	14–16	0–2	2–4	14–16
	Background	Background	Background	Background	Background	Background
PESTICIDES/PCBs						
Alpha–BHC						
Beta–BHC						
Delta–BHC						
Gamma–BHC (Lindane)						
Heptachlor						
Aldrin						
Heptachlor Epoxide						
Endosulfan I						
Dieldrin						
4,4'–DDE						
Endrin						
Endosulfan II						
4,4'–DDD						
Endosulfan sulfate						
4,4'–DDT						
Methoxychlor						
Endrin ketone						
Endrin aldehyde						
Alpha–Chlordane						
Gamma–Chlordane						
Toxaphene						
Aroclor–1016						
Aroclor–1221						
Aroclor–1232						
Aroclor–1242						
Aroclor–1248						
Aroclor–1254						
Aroclor–1260						
INORGANICS						
Aluminum	7,320	4,270	5,340	6,790	7,960	5,280
Antimony						
Arsenic	–	–	–	–	–	–
Barium	18.4 B	9.2 B		15.4 B	3.8 B	12.0 B
Beryllium	18.4 B	0.32 B	0.22 B	0.32 B	0.23 B	0.43 B
Cadmium						
Calcium	–	–	–	–	–	–
Chromium	9.5	9.0 B	9.6	9.8	15.6	11.3
Cobalt	15.8	18.9	23.2	14.0	20.7	14.5
Copper	14.8	19.5	28.8	13.7	25.2	25.1
Iron	23,200	25,800	17,100	21,100	32,700	35,100
Lead	22.4	6.5	1.5	28.5	7.1	5.1
Magnesium	1,830 J	1,550 J	1,980 J	1,470 J	3,770 J	1,900 J
Manganese	422	452	272	387	346	349
Mercury						
Nickel	23.4	24.7	18.2	15.9	34.5	21.5
Potassium						322.8
Selenium						
Silver					–	–
Sodium	31.8 B					34.5 B
Thallium						
Vanadium	–			–		
Zinc	59	59	33.5	43.6	71.8	55.8

TABLE 5
TCL BNA, PESTICIDE/PCB AND METALS DATA
TANK 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	B514	B521	B522	B523	FB-1	FB-2	FB-3	SW-1
SAMPLE DEPTH (FT):	0-2	0-2	2-4	16-18	-	-	-	-
	Duplicate	Background	Background	Background	Field Blank	Field Blank	Field Blank	Source Water
BNA COMPOUNDS								
Phenol								
bis(2-Chloroethyl)ether								
2-Chlorophenol								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
1,2-Dichlorobenzene								
2-Methylphenol								
2,2'-oxybis(2-chloropropane)								
4-Methylphenol								
N-Nitroso-di-n-propylamine								
Hexachloroethane								
Nitrobenzene								
Isophorone								
2-Nitrophenol								
2,4-Dimethylphenol								
bis(2-Chloroethoxy)methane								
2,4-Dichlorophenol								
1,2,4-Trichlorobenzene								
Napthalene								
4-Chloroaniline								
Hexachlorocyclopentadiene								
2,4,6-Trichlorophenol								
2,4,5-Trichlorophenol								
2-Chloronaphthalene								
2-Nitroaniline								
Dimethylnapthalene								
Acenaphthalene								
2,6-Dinitrotoluene								
3-Nitroaniline								
Acenaphthene								
2,4-Dinitrophenol								
4-Nitrophenol								
Dibenzofuran								
2,4-Dinitrotoluene								
Diethylphthalate								
4-Chlorophenyl-phenylether								
Fluorene								
4-Nitroaniline								
4,6-Dinitro-2-methylpenol								
N-Nitrosodipheylamine								
4-Bromophenyl-phenylether								
Hexachlorobenzene								
Pentachlorophenol								
Phenanthrene								
Carbazole								
Di-n-butylphthalate	77 JB	71 JB	29 JB	62 JB	2 JB	3 JB		3 JB
Flouranthene								
Pyrene								
Butylbenzylphthalate								
3,3'-Dichlorobenzidine								
Benzo(a)anthracene								
Chrysene								
bis(2-Ethylhexyl)phthalate	50 JB	-	26 JB	65 JB	2 JB	2 JB	1 JB	0.8 JB
Di-n-octyl phthalate								
Benzo(b)fluoranthene								
Benzo(k)fluoranthene								
Benzo(a)pyrene								
Ideno(1,2,3-cd)pyrene								
Dibenz(a,h)anthracene								
Benzo(g,h,i)perylene								

TABLE 5
TCL BNA, PESTICIDE/PCB AND METALS DATA
TANK 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	B514	B521	B522	B523	FB-1	FB-2	FB-3	SW-1
SAMPLE DEPTH (FT):	0-2	0-2	2-4	16-18	-	-	-	-
	Duplicate	Background	Background	Background	Field Blank	Field Blank	Field Blank	Source Water
PESTICIDES/PCBs								
Alpha-BHC								
Beta-BHC								
Delta-BHC								
Gamma-BHC (Lindane)								
Heptachlor								
Aldrin								
Heptachlor Epoxide								
Endosulfan I								
Dieldrin								
4,4'-DDE								
Endrin								
Endosulfan II								
4,4'-DDD								
Endosulfan sulfate								
4,4'-DDT								
Methoxychlor								
Endrin ketone								
Endrin aldehyde								
Alpha-Chlordane								
Gamma-Chlordane								
Toxaphene								
Aroclor-1016								
Aroclor-1221								
Aroclor-1232								
Aroclor-1242								
Aroclor-1248								
Aroclor-1254								
Aroclor-1260								
INORGANICS								
Aluminum	4970	5790	4960	7700				63.6 B
Antimony								
Arsenic								
Barium	12.1 B	21.3 B	10.7 B	3.6 B				
Beryllium	0.28 B	0.32 B		.74 B				
Cadmium								
Calcium	239 B	135 B	145 B	1050 B	74.7 B		313 B	20,900
Chromium	6.7	3.5	3.2	13.9				
Cobalt	10.9 B	3.1 B	3.1 B	27.6				
Copper	13.0	4.3 B	2.7 B	43.2				12.3 B
Iron	15,500	6830	5670	43,400	93.4 B	37.8 B	353	43.4 B
Lead	15.1	10	5.4	6.3				
Magnesium	795 B	397 B	473 B	3020	95.3 B		145 B	3800 B
Manganese	298	280	124	601	5 B		21.5	4.7 B
Mercury								
Nickel	12.4			42.4				
Potassium								2410 B
Selenium								
Silver				2.9				
Sodium							206 B	20300
Thallium								
Vanadium	2.7 B	2.1 B	2.2 B					
Zinc	36.1	16.8	14.4	89.3	12.7 B	8.2 B	10.5 B	8.5 B



LEGEND

SS-57 ■	SURFACE SOIL SAMPLE LOCATION
MW-6 ⊕	MONITORING WELL LOCATION
WP-2 Ⓦ	WELL POINT LOCATION
SW-2/SD-2 ▲	SURFACE WATER AND SEDIMENT SAMPLE LOCATION
S-1 ●	STRUCTURE SOLID SAMPLE LOCATION
W-1 ○	STRUCTURE AQUEOUS SAMPLE LOCATION

TRC

TRC Environmental Consultants, Inc.

5 Waterside Crossing
Windsor, CT 06095
(203) 289-8631

NAVAL EDUCATION TRAINING CENTER

NEWPORT RHODE ISLAND

SITE 13 - TANK FARM FIVE

FIGURE 4-5.

INVESTIGATION SUMMARY MAP

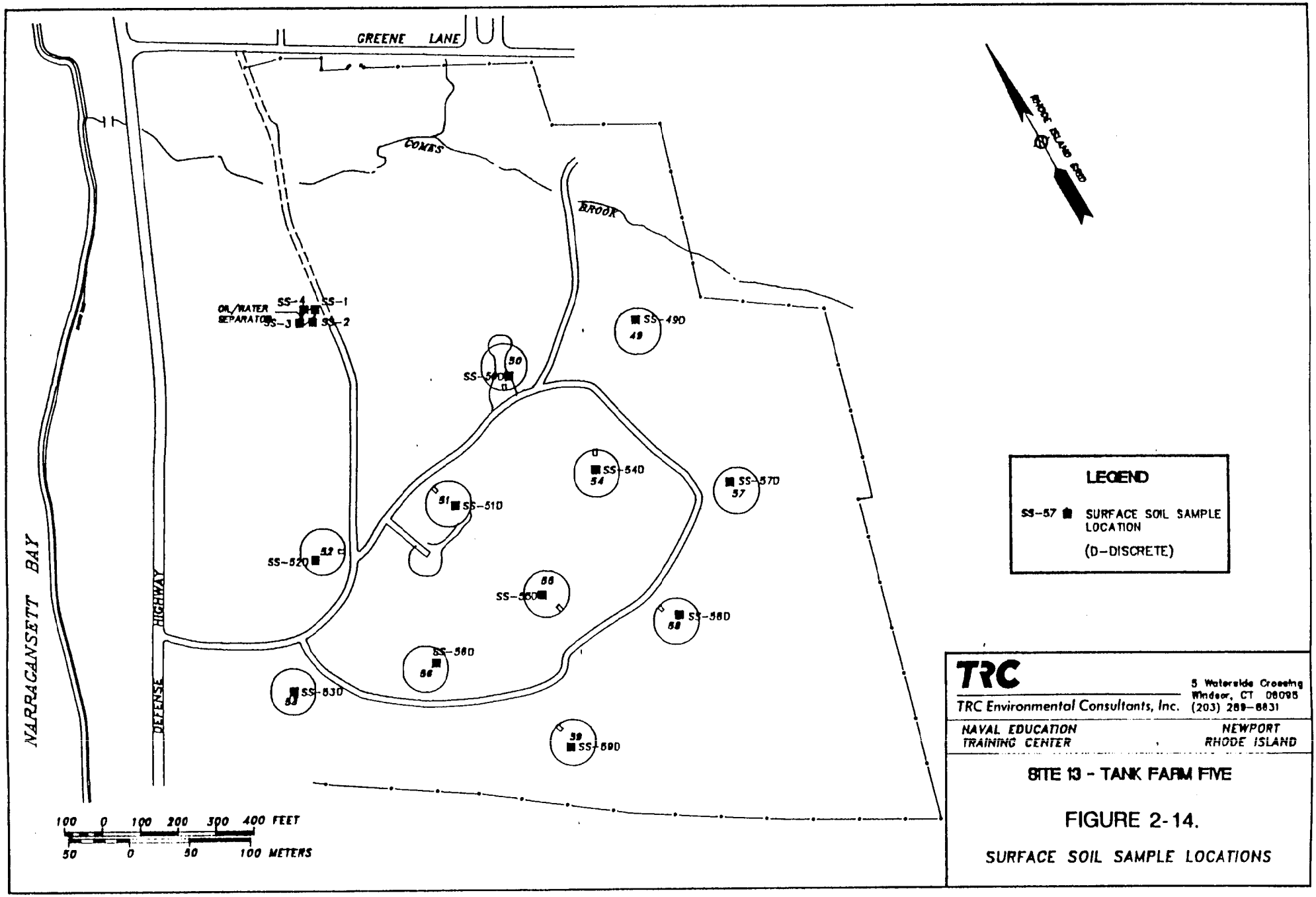


FIGURE 2-14.

SURFACE SOIL SAMPLE LOCATIONS

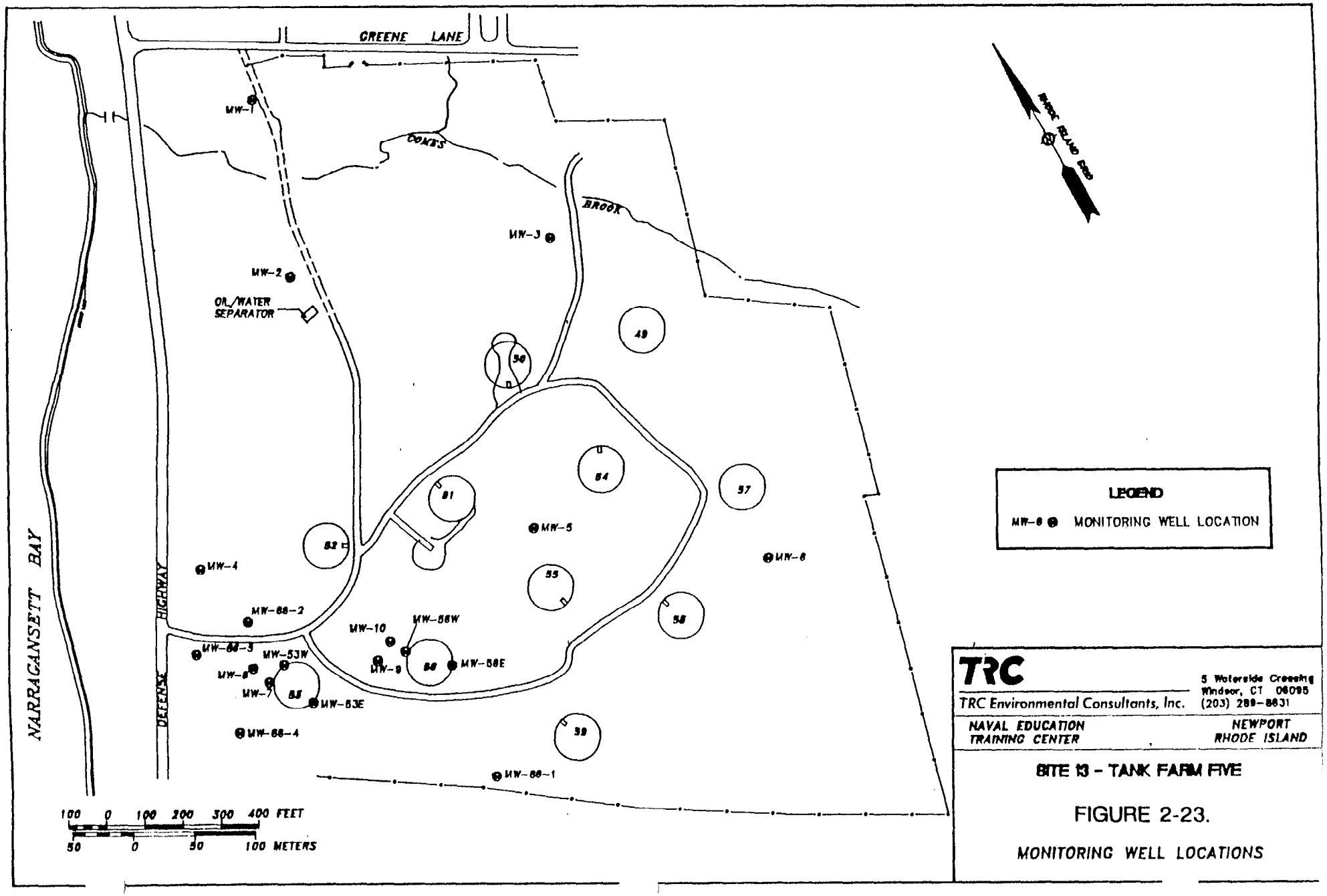
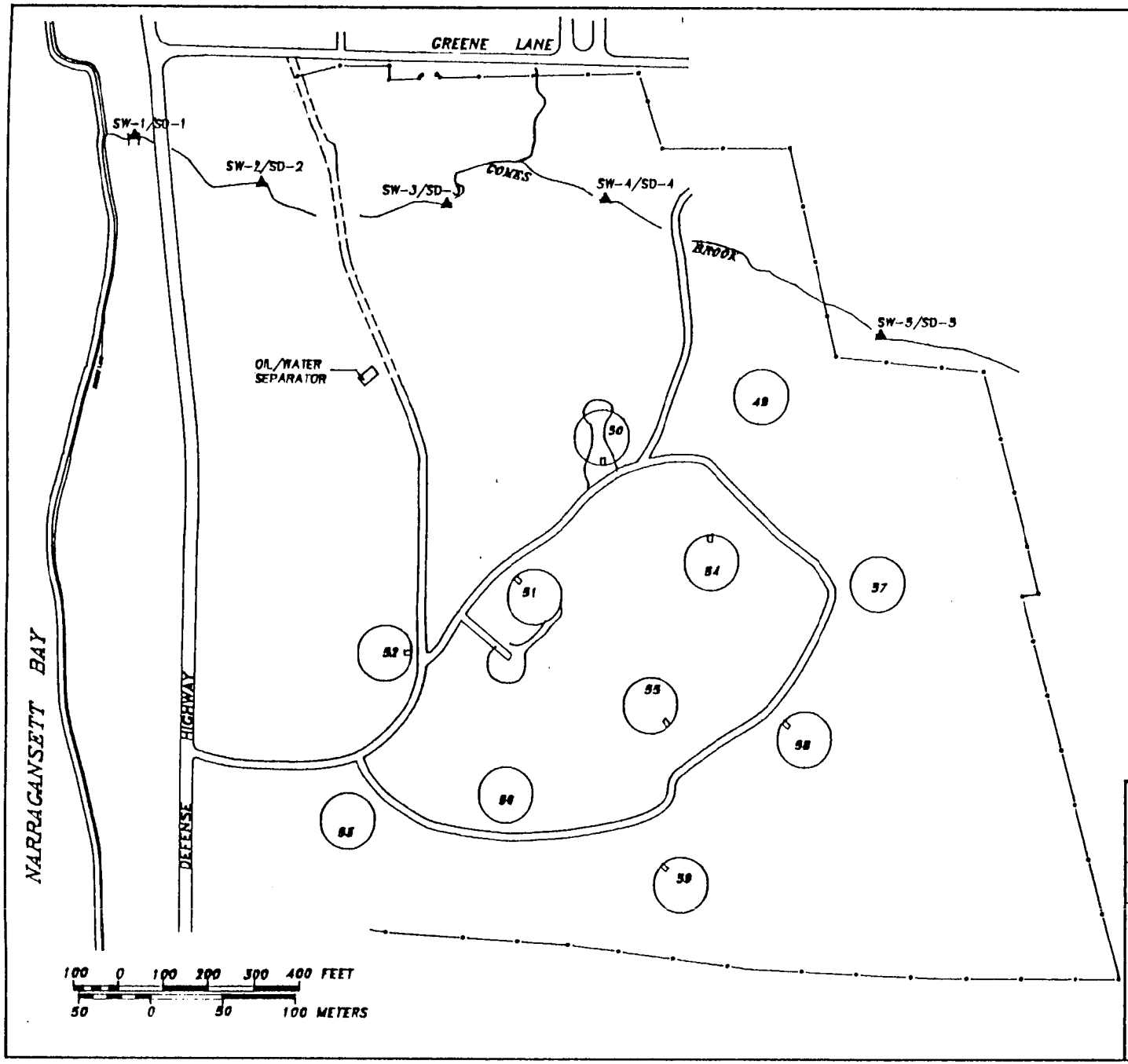
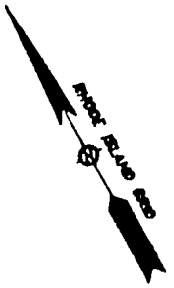


FIGURE 2-23.

MONITORING WELL LOCATIONS





LEGEND

SW-5/SD-5 ▲ SURFACE WATER AND SEDIMENT SAMPLE LOCATION

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FIGURE 2-28.

SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS

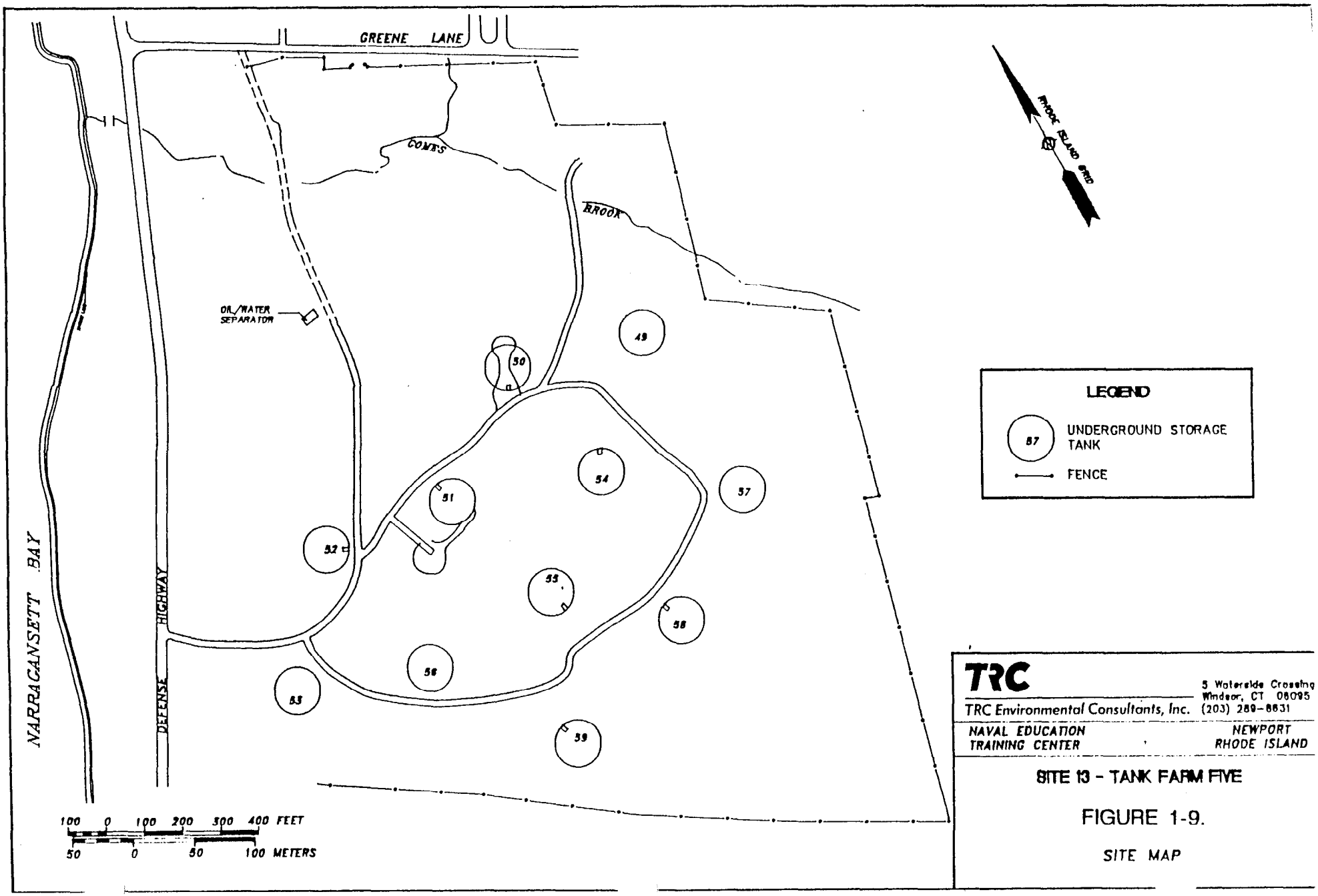

FIGURE 1-9.

SITE MAP

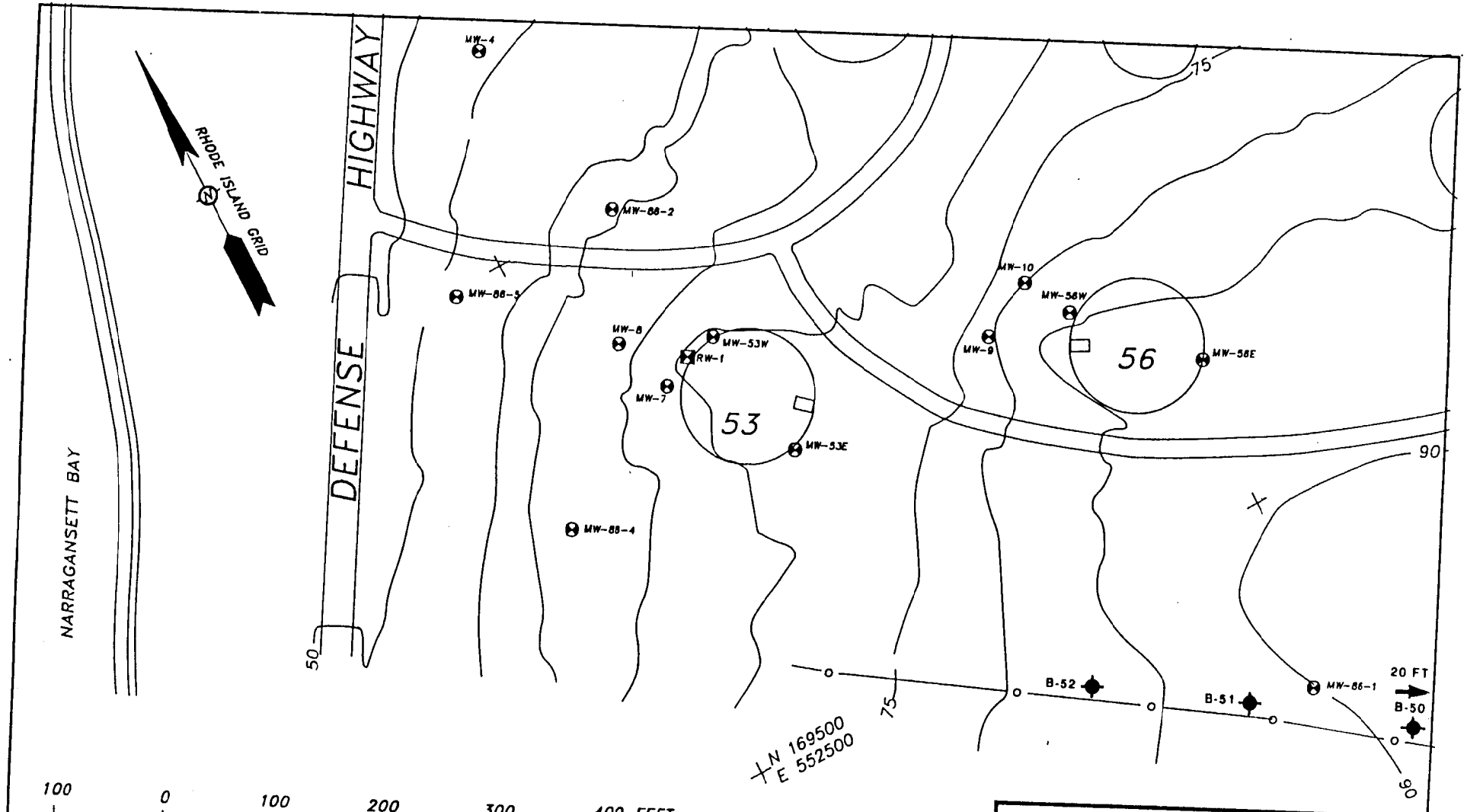

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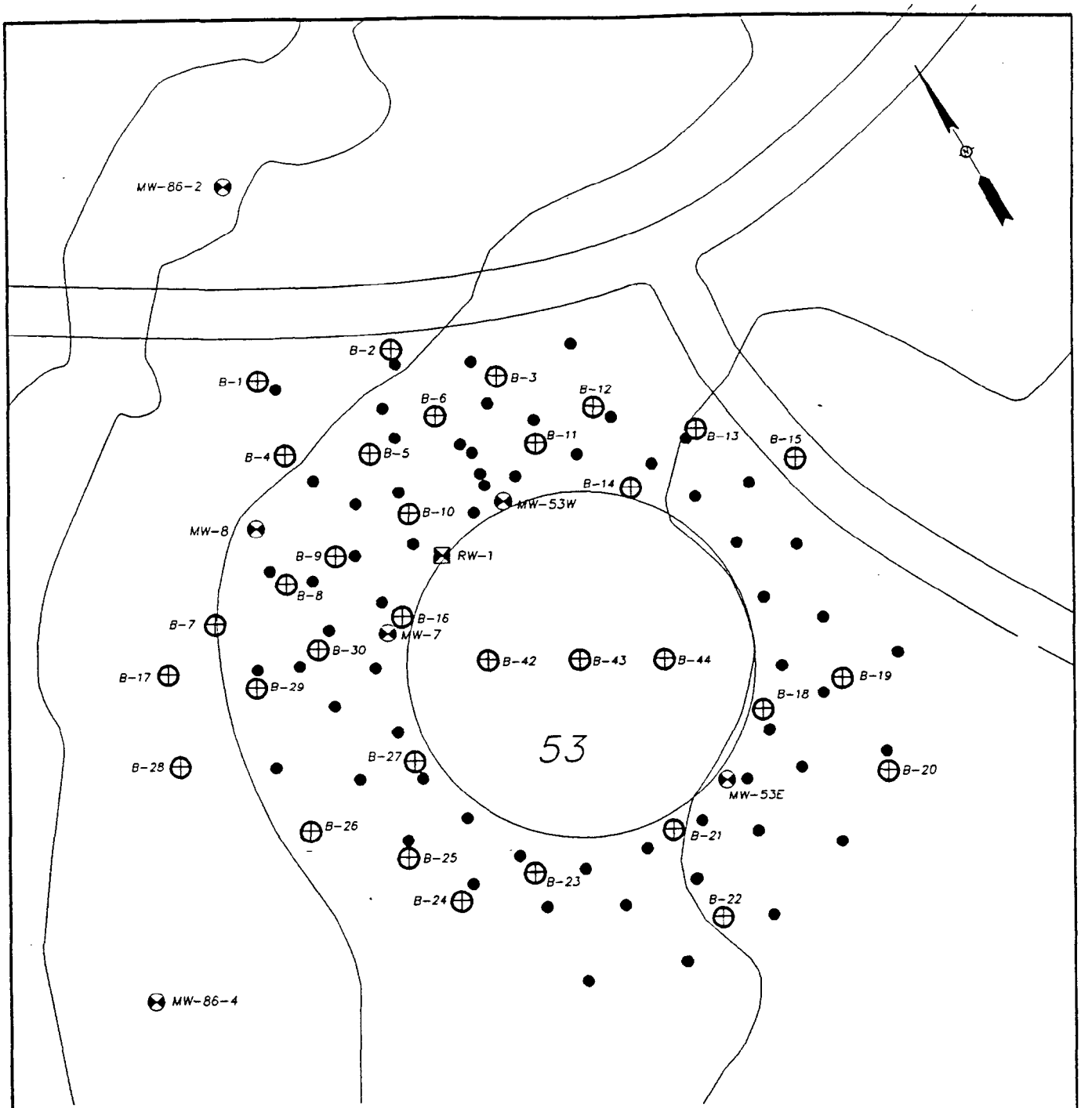
FIGURE 3.
TANKS 53 AND 56
MONITOR WELL LOCATION MAP

Date: 12/93
Drawing No. 01043-002-140



0 50 100 FEET

0 10 20 30 METERS

LEGEND

- MW-7 RECOVERY WELL
- RW-1 MONITOR WELL
- 53 UNDERGROUND STORAGE TANK
- SG-20 SOIL GAS POINT LOCATION
- B-2 SOIL BORING LOCATION

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NAVAL EDUCATION AND TRAINING CENTER

NEWPORT RHODE ISLAND

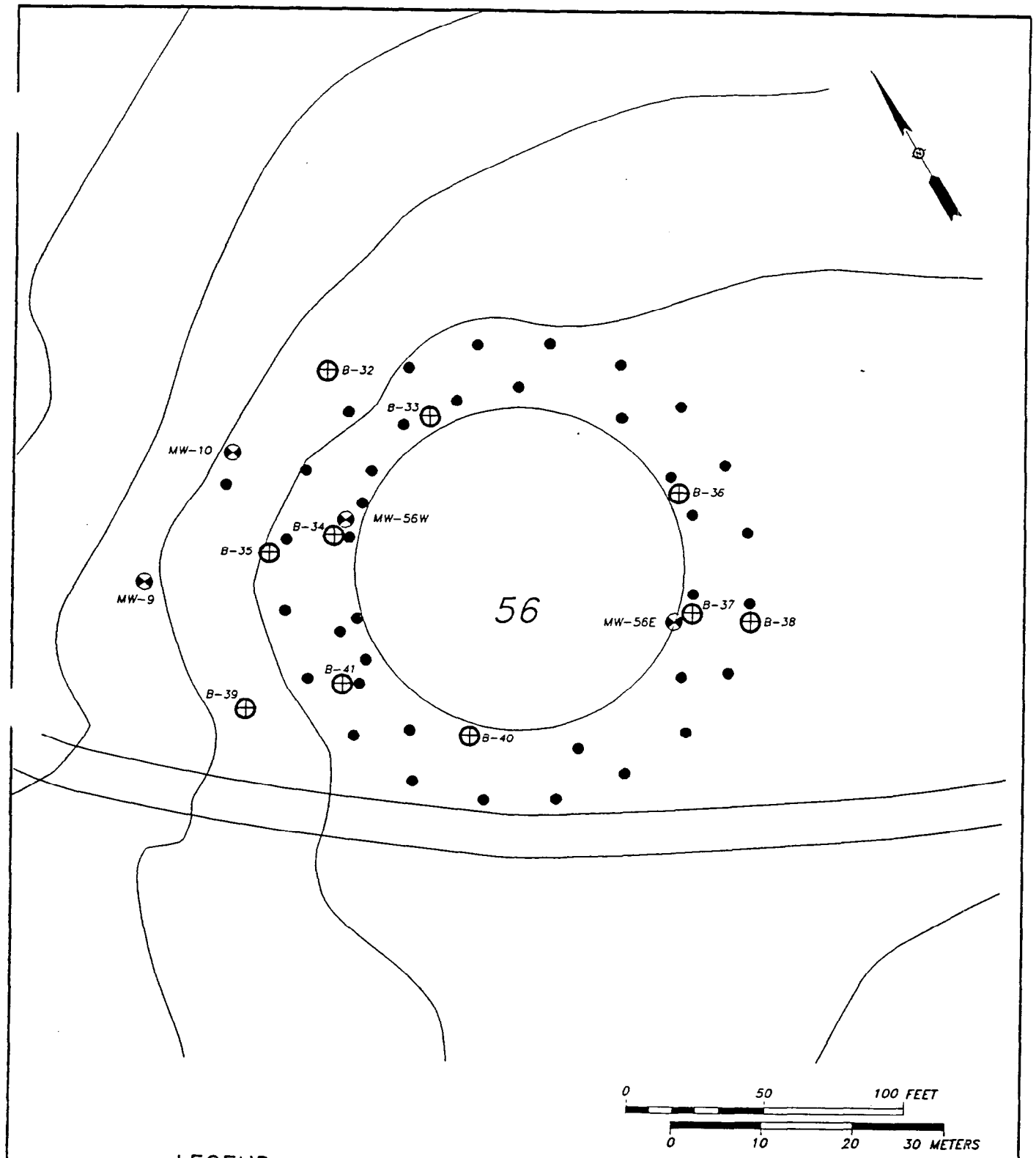
SITE 13 - TANK FARM FIVE

FIGURE 7.

TANK 53
SOIL BORING LOCATIONS

Date: 12/93

Drawing No. 01043-002-140



LEGEND

- MW-9 MONITOR WELL
- 56 UNDERGROUND STORAGE TANK
- SG-39 SOIL GAS POINT LOCATION
- B-39 SOIL BORING LOCATION

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NAVAL EDUCATION AND TRAINING CENTER

NEWPORT RHODE ISLAND

SITE 13 - TANK FARM FIVE

FIGURE 8.

TANK 56
SOIL BORING LOCATIONS

Date: 12/93

Drawing No. 01043-002-140

RISK-BASED PRIORITIZATION OF CLEANUP SITE WORK

SITE: NETC-Newport CERCLA SITE Site 17 Gould Island Electroplating Shop

ANALYTICAL DATA

Pathway	Reference
Groundwater	
Surface Soil	
Surface Water	
Sediment	
Notes	NO DATA

QUALITATIVE QUESTIONS

Circle Choice	**Migration Pathway Factor**
1.	Physical evidence and/or analytical data indicate off-site migration.
2.	No current indication of off-site migration, but potential exists.
3.	Present engineering structures and/or physical/chemical properties of detected constituents greatly restrict potential for migration.
Reference	
Notes	

SITE: NETC-Newport CERCLA SITE Site 17

Receptor Factor

Circle Choice	**Groundwater**
1.	Groundwater is currently used for human activities (i.e., drinking, agriculture, recreation).
2.	Groundwater not currently used for human activities (i.e., drinking, agriculture, recreation), but potential exists.
3.	No future potential for groundwater to be used for human activities (i.e., drinking, agriculture, recreation).
Reference	
Notes	

Circle Choice	**Surface Soil** (0 to 6 inches in depth)
1.	Sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) present and/or area routinely used by non-sensitive receptor (i.e., working, training).
2.	Potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area occasionally used by non-sensitive receptors (i.e., working, training)
3.	No potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area not used by non-sensitive receptor (i.e., working, training)
Reference	
Notes	

SITE: NETC-Newport CERCLA SITE Site 17

Circle Choice	**Surface Water**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	

SITE: NETC-Newport CERCLA SITE Site 17

Circle Choice	**Sediment**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	

RISK-BASED PRIORITIZATION OF CLEANUP SITE WORK

SITE: NETC Newport Deweck tow Shipyard

ANALYTICAL DATA

Pathway	Reference
Groundwater	No Samples Obtained
Surface Soil	Limited Data See attached tables
Surface Water	No Samples obtained
Sediment	Limited Sample Data Available see attached letter 7/1/93 to Mr Parson From Brian J. Condike
Notes	Poor Sample Documentation

QUALITATIVE QUESTIONS

Circle Choice	Migration Pathway Factor
1. Sd	Physical evidence and/or analytical data indicate off-site migration.
2.	No current indication of off-site migration, but potential exists.
3.	Present engineering structures and/or physical/chemical properties of detected constituents greatly restrict potential for migration.
Reference	7/1/93 letter to Mr. Parson from Brian J. Condike, Dept. of the Army 2/22/93 Memorandum - Dept of Navy pR-27
Notes	

SITE: NETC-Newport CERCLA SITE Derecktor Shipyard

Receptor Factor

Circle Choice	**Groundwater**
1.	Groundwater is currently used for human activities (i.e., drinking, agriculture, recreation).
2.	Groundwater not currently used for human activities (i.e., drinking, agriculture, recreation), but potential exists.
3.	No future potential for groundwater to be used for human activities (i.e., drinking, agriculture, recreation).
Reference	Draft Vol 1 Old Fire Fighting Training Area R-I TRC Report March 94
Notes	Toilet Pack Wells located South east of base Fig 3-9

Circle Choice	**Surface Soil** (0 to 6 inches in depth)
1.	Sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) present and/or area routinely used by non-sensitive receptor (i.e., working, training).
2.	Potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area occasionally used by non-sensitive receptors (i.e., working, training)
3.	No potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area not used by non-sensitive receptor (i.e., working, training)
Reference	TRC Report March 1994
Notes	

SITE: NETC-Newport CERCLA SITE Dereckton Shipyard

Circle Choice	**Surface Water**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	Wetland species found at NETC RC March 1994 p 3-3
Notes	

SITE: NETC-Newport CERCLA SITE Director Shipyard

Circle Choice	**Sediment**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	See Surface water
Notes	

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254-9149

REPLY TO
ATTENTION OF

July 1, 1988

Naval Education & Training Center
Newport, RI 02841-5051

ATTN: Mr. Roger Poisson, Code 24

Dear Mr. Poisson:

This is in reference to our chemical analysis of sediment samples from NETC's Pier II. A complete set of the analytical results is attached for your reference. These results were previously sent to you piecemeal on various dates.

The State of Rhode Island currently has no formally published criteria for assessing the contamination of marine sediments. Following the scheme devised on your previous set of samples, I am using the State of Connecticut and Commonwealth of Massachusetts criteria to evaluate the current samples. These criteria are displayed in Table 1.

Applying those criteria to this set of test results yields the summary evaluations shown in Table 2. Two of the locations (S-4 and S-8) are highly contaminated with trace metals, while two other locations (S-3 and S-6) were moderately contaminated. The other seven locations revealed no significant trace metal contamination.

There are no criteria in Rhode Island for evaluating organic contamination levels in marine sediments. However, even a cursory examination of the priority pollutant scan on sample number 2944 (S-4) will result in a label of "highly contaminated" for sample number 2944. Location S-4 is apparently polluted with some form of coal tar, asphalt, or crude oil, based on the high levels of polynuclean aromatic hydrocarbons (PAHs) which include phenanthrene, fluoranthene, pyrene, chrysene, and benzo(b)fluoranthene. S-4 also possesses a very high level of a PVC plasticizer, butylbenzylphthalate. If this weren't enough, the total PCB (Aroclors 1254 and 1260) concentration in this sample exceeds 6000 ppb (6 ppm), which is not high by terrestrial (soil) standards, but is high for marine sediments. This organic contamination appears to be unrelated to the previously cited inorganic (i.e., trace metal) contamination. I would not hazard to state which type of contamination (organic or inorganic) is the more serious at these levels; suffice it to say that sample number 2944, representing location S-4, is dirty on all counts. The minor amounts of volatile chlorinated hydrocarbon solvents (methylene chloride and trichloroethene) found in this sample pale in comparision to the PAH, trace metal, and PCB contaminations already mentioned and are insignificant.

Sample number 2949, representing location S-9, revealed no organic contamination with the exception of a small amount (140 ppb) of methylene chloride. I have no basis for characterizing this as a high level of contamination. My overall reaction is that this is not something to be overly concerned about.

As before, I suggest that you ask the State of Rhode Island to formally characterize the hazardous (or non-hazardous) nature of these materials.

Should you have any questions regarding this information, please call me at 617-928-4238.

Sincerely,

Brian J. Condike

Brian J. Condike
Chief Chemist
Water Quality Laboratory

CF: Mr. Carroll
Mr. Brazeau

NEW ENGLAND DIVISION WATER QUALITY LABORATORY

REPORT PRODUCED ON 04/11/88 10:04:40

NAVY PIER II

Negative values are detection limits and indicate that substance was not detected.

SAMPLE	FIELD DESCRIPTION	Cu (ppm)	Pb (ppm)	Zn (ppm)
2941	S - 1	92	59	188
2942	S - 2	83	57	158
2943	S - 3	115	64	208
2944	S - 4	881	1250	2780
2945	S - 5	77	69	199
2946	S - 6	174	69	237
2947	S - 7	75	60	176
2948	S - 8	273	289	725
2949	S - 9	42	52	172
2950	S - 10	77	66	159
2951	S - 12	66	56	167

BASE/NEUTRALS AND ACIDS

PARAMETER	Detection Limits ug/Kg	2944 S-4
Phenol	6395	ND
Bis(2-chloroethyl)ether	6395	ND
2-Chlorophenol	6395	ND
1,3-Dichlorobenzene	6395	ND
1,4-Dichlorobenzene	6395	ND
Benzyl alcohol	6395	ND
1,2-Dichlorobenzene	6395	ND
2-Methylphenol	6395	ND
Bis(2-chloroisopropyl)ether	6395	ND
4-Methylphenol	6395	ND
N-Nitroso-di-n-propylamine	6395	ND
Hexachloroethane	6395	ND
Nitrobenzene	6395	ND
Isophrone	6395	ND
2-Nitrophenol	6395	ND
2,4-Dimethylphenol	6395	ND
Benzoic acid	31008	ND
Bis(2-chloroethoxy)methane	6395	ND
2,4-Dichlorophenol	6395	ND
1,2,4-Trichlorobenzene	6395	ND
Aniline	6395	ND
Napthalene	6395	ND
4-Chloroaniline	6395	ND
Hexachlorobutadiene	6395	ND
4-Chloro-3-methylphenol	6395	ND
2-Methylnapthalene	6395	ND
Hexachlorocyclopentadiene	6395	ND
2,4,6-Trichlorophenol	6395	ND
2,4,5-Trichlorophenol	31008	ND
2-Chloronaphthalene	6395	ND
2-Nitroaniline	31008	ND
Dimethyl phthalate	6395	ND
Acenaphthylene	6395	ND
3-Nitroaniline	31008	ND
Acenaphthene	6395	ND
2,4-Dinitrophenol	31008	ND
4-Nitrophenol	31008	ND
Dibenzofuran	6395	ND
2,4-Dinitrotoluene	6395	ND
2,6-Dinitrotoluene	6395	ND
Diethylphthalate	6395	ND
4-Chlorophenyl-phenylether	6395	ND
Fluorene	6395	ND
4-Nitroaniline	31008	ND

BASE/NEUTRALS AND ACIDS

PARAMETER	Detection Limits ug/Kg	2944 S-4
4,6-Dinitro-2-methylphenol	31008	ND
N-Nitrosodiphenylamine **	6395	ND
4-Bromophenyl-phenylether	6395	ND
Hexachlorobenzene	6395	ND
Pentachlorophenol	31008	ND
Phenanthrene	6395	31000
Anthracene	6395	ND
Di-n-butylphthalate	6395	ND
Fluoranthene	6395	44600
N-Nitrosodimethylamine	6395	ND
Pyrene	6395	32900
Butylbenzylphthalate	6395	11800
3,3-Dichlorobenzidine	12791	ND
Benzo(a)anthracene	6395	ND
Bis(2ethylhexyl)phthalate	6395	ND
Chrysene	6395	14300
Di-n-octyl phthalate	6395	ND
Benzo(b)fluoranthene	6395	13800
Benzo(k)fluoranthene	6395	ND
Benzo(a)pyrene	6395	ND
Indeno(1,2,3-cd)pyrene	6395	ND
Dibenz(a,h)anthracene	6395	ND
Benzo(g,h,i)perylene	6395	ND

ND = not detected

** Cannot be separated from diphenylamine

ORGANOCHLORINE PESTICIDES & PCBS

PARAMETER	Detection Limits ug/Kg	2944 S-4
Alpha-BHC	310	ND
Beta-BHC	310	ND
Delta-BHC	310	ND
Gamma-BHC (Lindane)	310	ND
Heptachlor	310	ND
Aldrin	310	ND
Heptachlor epoxide	310	ND
Endosulfan I	310	ND
Dieldrin	620	ND
4,4'-DDE	620	ND
Endrin	620	ND
Endosulfan II	620	ND
4,4'-DDD	620	ND
Endosulfan sulfate	620	ND
4,4'-DDT	620	ND
Methoxychlor	3101	ND
Endrin ketone	620	ND
Chlordane	3101	ND
Toxaphene	6202	ND
Endrin aldehyde	620	ND
Aroclor-1016	3101	ND
Aroclor-1221	3101	ND
Aroclor-1232	3101	ND
Aroclor-1242	3101	ND
Aroclor-1248	3101	ND
Aroclor-1254	6202	J 4070
Aroclor-1260	6202	J 1938
Aroclor-1262	***	ND
Aroclor-1268	***	ND

ND = not detected

EPA-CLP does not analyze for Aroclors 1262 and 1268. The detection limits for these are similar to that for Aroclor 1260

VOLATILE ORGANICS

NAVY PIER II - SOIL SAMPLES

PARAMETER	Detection Limits ug/Kg	2944 S-4	2949 S-9
Chloromethane	10	ND	ND
Bromomethane	10	ND	ND
Vinyl chloride	10	ND	ND
Chloroethane	10	ND	ND
Methylene chloride	5	140	120
Trichlorofluoromethane	10	ND	ND
Acetone	10	ND	ND
Carbon disulfide	5	ND	ND
1,1-Dichloroethene	5	ND	ND
1,1-Dichloroethane	5	ND	ND
1,2-Dichloroethenes(total)	5	ND	ND
Chloroform	5	ND	ND
1,2-Dichloroethane	5	ND	ND
2-Butanone	10	ND	ND
1,1,1-Trichloroethane	5	ND	ND
Carbon tetrachloride	5	ND	ND
Vinyl acetate	10	ND	ND
Bromodichloromethane	5	ND	ND
1,1,2,2-Tetrachloroethane	5	ND	ND
1,1-Dichloropropane	5	ND	ND
cis-1,3-Dichloropropene	5	ND	ND
Trichloroethene	5	ND	240
Dibromochloromethane	5	ND	ND
1,1,2-Trichloroethane	5	ND	ND
Benzene	5	ND	ND
trans-1,3-Dichloropropene	5	ND	ND
2-Chloroethylvinylether	10	ND	ND
Bromoform	5	ND	ND
4-Methyl-2-pentanone	10	ND	ND
2-Hexanone	10	ND	ND
Tetrachloroethene	5	ND	ND
Toluene	5	ND	ND
Chlorobenzene	5	ND	ND
Ethylbenzene	5	ND	ND
Styrene	5	ND	ND
Total xylenes	5	ND	ND
1,3-Dichlorobenzene	10	ND	ND
1,2 & 1,4-Dichlorobenzenes	10	ND	ND

ND = not detected

BASE/NEUTRALS AND ACIDS

PARAMETER	Detection Limits ug/Kg	2949 S-9
4,6-Dinitro-2-methylphenol	2614	ND
N-Nitrosodiphenylamine **	539	ND
4-Bromophenyl-phenylether	539	ND
Hexachlorobenzene	539	ND
Pentachlorophenol	2614	ND
Phenanthrene	539	ND
Anthracene	539	ND
Di-n-butylphthalate	539	ND
Fluoranthene	539	ND
N-Nitrosodimethylamine	539	ND
Pyrene	539	ND
Butylbenzylphthalate	539	ND
3,3-Dichlorobenzidine	1078	ND
Benzo(a)anthracene	539	ND
Bis(2ethylhexyl)phthalate	539	ND
Chrysene	539	ND
Di-n-octyl phthalate	539	ND
Benzo(b)fluoranthene	539	ND
Benzo(k)fluoranthene	539	ND
Benzo(a)pyrene	539	ND
Indeno(1,2,3-cd)pyrene	539	ND
Dibenz(a,h)anthracene	539	ND
Benzo(g,h,i)perylene	539	ND

ND = not detected
** Cannot be separated from diphenylamine

BASE/NEUTRALS AND ACIDS

PARAMETER	Detection Limits ug/Kg	2949 S-9
Phenol	539	ND
Bis(2-chloroethyl)ether	539	ND
2-Chlorophenol	539	ND
1,3-Dichlorobenzene	539	ND
1,4-Dichlorobenzene	539	ND
Benzyl alcohol	539	ND
1,2-Dichlorobenzene	539	ND
2-Methylphenol	539	ND
Bis(2-chloroisopropyl)ether	539	ND
4-Methylphenol	539	ND
N-Nitroso-di-n-propylamine	539	ND
Hexachloroethane	539	ND
Nitrobenzene	539	ND
Isophrone	539	ND
2-Nitrophenol	539	ND
2,4-Dimethylphenol	539	ND
Benzoic acid	2614	ND
Bis(2-chloroethoxy)methane	539	ND
2,4-Dichlorophenol	539	ND
1,2,4-Trichlorobenzene	539	ND
Aniline	539	ND
Napthalene	539	ND
4-Chloroaniline	539	ND
Hexachlorobutadiene	539	ND
4-Chloro-3-methylphenol	539	ND
2-Methylnapthalene	539	ND
Hexachlorocyclopentadiene	539	ND
2,4,6-Trichlorophenol	539	ND
2,4,5-Trichlorophenol	2614	ND
2-Chloronaphthalene	539	ND
2-Nitroaniline	2614	ND
Dimethyl phthalate	539	ND
Acenaphthylene	539	ND
3-Nitroaniline	2614	ND
Acenaphthene	539	ND
2,4-Dinitrophenol	2614	ND
4-Nitrophenol	2614	ND
Dibenzofuran	539	ND
2,4-Dinitrotoluene	539	ND
2,6-Dinitrotoluene	539	ND
Diethylphthalate	539	ND
4-Chlorophenyl-phenylether	539	ND
Fluorene	539	ND
4-Nitroaniline	2614	ND

ORGANOCHLORINE PESTICIDES & PCBS

PARAMETER	Detection Limits ug/Kg	2949 S-9
Alpha-BHC	261	ND
Beta-BHC	261	ND
Delta-BHC	261	ND
Gamma-BHC (Lindane)	261	ND
Heptachlor	261	ND
Aldrin	261	ND
Heptachlor epoxide	261	ND
Endosulfan I	261	ND
Dieldrin	523	ND
4,4'-DDE	523	ND
Endrin	523	ND
Endosulfan II	523	ND
4,4'-DDD	523	ND
Endosulfan sulfate	523	ND
4,4'-DDT	523	ND
Methoxychlor	2614	ND
Endrin ketone	523	ND
Chlordane	2614	ND
Toxaphene	5229	ND
Endrin aldehyde	523	ND
Aroclor-1016	2614	ND
Aroclor-1221	2614	ND
Aroclor-1232	2614	ND
Aroclor-1242	2614	ND
Aroclor-1248	2614	ND
Aroclor-1254	5229	ND
Aroclor-1260	5229	ND
Aroclor-1262	###	ND
Aroclor-1268	###	ND

ND = not detected

EPA-CLP does not analyze for Aroclors 1262 and 1268. The detection limits for these are similar to that for Aroclor 1260

DEPARTMENT OF THE NAVY
MEMORANDUM
CODE 424E: RTM

DATE: 22 Feb 89

FROM: 424E
TO: 42
VIA: 424

SUBJ: R. E. DERECKTOR, DRYDOCK #3, DREDGING PERMIT

REF: (a) R. E. Derecktor ltr dtd 9 Feb 8
(b) Army Corps of Engineers ltr dtd 1 Jul 88
(c) Army Corps of Engineers ltr dtd 20 Aug 87

1. As requested regarding reference (a), the purpose of the SAIC Report Bathymetry/REMOTS Survey of Coddington Cove (1986) was to provide an updated bathymetric survey of the area adjacent to Pier I and to determine the presence and areal extent of a sandblasting material known as "Black Beauty" on the seafloor using Remote Ecological Monitoring of the Seafloor (REMOTS). Field surveys were performed along the southern edge of Pier I and around the drydock. Sampling could not be performed along the northern edge of the Pier due to the presence of LNG tankers, etc.

2. The results showed the presence of sandblast material on the seafloor to be in 14 of 47 images that were taken immediately along the southern edge of Pier I. Of 17, 200 sq meters of seafloor that were surveyed, only 17% of the area was contaminated with sandblast material. According to the study, the material has settled and dispersed throughout the sedimentary matrix and therefore was not considered to be newly deposited material, that is, within the last 1-3 months of the study. Further, it could not be determined how much material was on the seafloor based on the available data.

3. Another survey was performed by the Army Corps of Engineers (ACE) in 1987 at the request of NETC. Using a different method than that described above, the survey was designed to assess the contamination of marine sediments using heavy metals and a priority pollutant levels as criteria. References (b) and (c) detailed the results of the survey. Initially, 20 samples taken from the south side of Pier I were analyzed. According to the ACE study, thirteen of the twenty samples were evaluated as being highly contaminated by at least one of three trace metals (Cu, Pb, and Zn). The remaining seven samples were moderately contaminated. Tin and titanium levels were below detection levels and were not considered to be in high enough concentrations to be different than background levels. The priority pollutant scan (organic contamination) of three samples showed minor contamination. This contamination was far outweighed by the level for the copper, lead and zinc. An additional 11 samples were taken in the vicinity of Pier II. Four out of 11 samples showed high to moderate heavy metal contamination. In particular, one sample showed heavy organic contamination which appears to be unrelated to the trace metal inorganic contamination.

4. Summary. If the studies are considered individually, the REMOTS study seems inconclusive due to the fact that no sampling was done on the north side of Pier I and the magnitude of the problem was not identified in environmental terms. The study suggested that the findings could not be attributed to recent sandblasting operations. Using a different method, the ACE study

conducted additional sampling north of Pier I, around Pier II and also used enviromental criteria for determining the level of contamination. It should be noted that the State of Rhode Island has no formally published criteria for assessing contamination of marine sediments but the ACE used the criteria of Connecticut and Massachusetts to evaluate their results. Also, there are no criteria for evaluating organic contamination. The ACE study results showed contamination on the south side of Pier I and around the Pier II area (north of Pier I) as mentioned above. Therefore, the ACE study identifies definite contamination of the sediment bottom using the criteria mentioned above. However, the ACE study did not mention at what depth the sediments were sampled in order to somehow draw a relationship to more recent or past sandblasting operations.

5. **Conclusion.** The levels and types of pollutants found are not typical background levels and therefore are considered to be significant. Assuming that sandblasting material consists of Copper, Lead, and Zinc, one might attribute the levels of these metals found in and around Pier I to be the result of sandblasting operations conducted at Pier I. The trace metal contamination around Pier II might be attributed to the spreading of contaminants by natural processes (i.e. tidal, current). However, one must consider whether or not the high trace metal contamination around Pier II is the result of former Navy practices. Based on the findings of these studies, there is evidence of sediment contamination probably associated with past shipbuilding/repair operations. Overall, in my opinion the studies leave some unanswered questions and should not be considered conclusive.

R. MARINO

RISK-BASED PRIORITIZATION OF CLEANUP SITE WORK

SITE: NETC-Newport UST SITE 01 Tank Farm #4

ANALYTICAL DATA

Pathway	Reference
Groundwater	
Surface Soil	
Surface Water	
Sediment	
Notes	No information found

QUALITATIVE QUESTIONS

Circle Choice	**Migration Pathway Factor**
1.	Physical evidence and/or analytical data indicate off-site migration.
2.	No current indication of off-site migration, but potential exists.
3.	Present engineering structures and/or physical/chemical properties of detected constituents greatly restrict potential for migration.
Reference	
Notes	

SITE: NETC-Newport UST SITE Tank Farm #4

Receptor Factor

Circle Choice	**Groundwater**
1.	Groundwater is currently used for human activities (i.e., drinking, agriculture, recreation).
2.	Groundwater not currently used for human activities (i.e., drinking, agriculture, recreation), but potential exists.
3.	No future potential for groundwater to be used for human activities (i.e., drinking, agriculture, recreation).
Reference	
Notes	

Circle Choice	**Surface Soil** (0 to 6 inches in depth)
1.	Sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) present and/or area routinely used by non-sensitive receptor (i.e., working, training).
2.	Potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area occasionally used by non-sensitive receptors (i.e., working, training)
3.	No potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area not used by non-sensitive receptor (i.e., working, training)
Reference	
Notes	

SITE: NETC-Newport UST SITE Tank Farm #4

Circle Choice	**Surface Water**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	

SITE: NETC-Newport UST SITE Tank Farm #4

Circle Choice	**Sediment**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	

RISK-BASED PRIORITIZATION OF CLEANUP SITE WORK

SITE: NETC-Newport UST SITE **02** Tank Farm #5

ANALYTICAL DATA

Pathway	Reference
Groundwater	No samples
Surface Soil	Soil Investigation, Tank Farm 5 (SI) December 1993 SI Tables 3 & 4
Surface Water	No samples
Sediment	No samples
Notes	TPH analyzed for in 24 soil samples - depths 0-2 ft. Free product in GW samples SI See 2.3.2

QUALITATIVE QUESTIONS

Circle Choice	**Migration Pathway Factor**
1.	Physical evidence and/or analytical data indicate off-site migration.
(2.) SS	No current indication of off-site migration, but potential exists.
3.	Present engineering structures and/or physical/chemical properties of detected constituents greatly restrict potential for migration.
Reference	SI Figs 7 & 8
Notes	No off site samples

SITE: NETC-Newport UST SITE Tank Farm #5

Receptor Factor

Circle Choice	**Groundwater**
(1.)	Groundwater is currently used for human activities (i.e., drinking, agriculture, recreation).
2.	Groundwater not currently used for human activities (i.e., drinking, agriculture, recreation), but potential exists.
3.	No future potential for groundwater to be used for human activities (i.e., drinking, agriculture, recreation).
Reference	Soil Investigation Dec. 1993 Sec. 2.6.3
Notes	Private wells on Aquidneck Is.

Circle Choice	**Surface Soil** (0 to 6 inches in depth)
1.	Sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) present and/or area routinely used by non-sensitive receptor (i.e., working, training).
(2.)	Potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area occasionally used by non-sensitive receptors (i.e., working, training)
3.	No potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area not used by non-sensitive receptor (i.e., working, training)
Reference	SI Sec 2.1
Notes	Activities nearby

SITE: NETC-Newport UST SITE Tank Farm #5

Circle Choice	**Surface Water**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	No evidence of identified endangered species / wetlands on or proximal to site

SITE: NETC-Newport UST SITE Tank Farm #5

Circle Choice	**Sediment**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	See SW

SOIL INVESTIGATION TANK FARM FIVE - TANKS 53 AND 56

NAVAL EDUCATION AND TRAINING CENTER NEWPORT, RHODE ISLAND

Contract No. N62472-86-C-1282
December 1993

Submitted By:
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2.0 BACKGROUND INFORMATION

2.1 LOCATION AND DESCRIPTION

Tank Farm Five is located in the north-central portion of NETC, in the town of Middletown, Rhode Island. While this investigation focuses on Tanks 53 and 56, a total of eleven underground storage tanks (Tanks 49 to 59) comprise Tank Farm Five. A Locus Plan showing the location of Tank Farm Five at the Newport Naval Base is provided as Figure 1. Tanks 53 and 56 are located in the western portion of the Tank Farm as indicated on Figure 2.

Tank Farm Five occupies approximately 73 acres. The Tank Farm is bordered by the Defense Highway and Narragansett Bay to the west, Greene Lane to the northeast, a residential development to the east, and by a wooded area and cemetery to the south.

Access to the site is from the west, off of Defense Highway through a gate and along a paved entrance way which leads to the central portion of the site. Just inside the entrance and north of the paved road is a Fire Fighting Training area which occupies approximately three acres and is surrounded by a chain link fence. The paved road continues through the site in a loop past the underground storage tank locations. Adjacent to each of the underground tanks are pump/valve houses for the tanks. The entire tank farm is surrounded by a chain-link fence. All of the underground storage tanks at Tank Farm Five are inactive.

Site topography generally slopes downward to the north. The ground elevation ranges from approximately 10 feet above mean low water level (mlw) in the northern corner of the site to 90 feet above mlw at the southern edge of the site. Gomes Brook passes through the northeastern portion of the site and drains east to west into Narragansett Bay. Gomes Brook is located approximately 1,200 feet north of Tanks 53 and 56.

Tank Farm Five is vegetated with grass, weeds, brush, and some trees. The soil overlying Tanks 53 and 56 is also vegetated with grass, weeds, and small brush. The area around the new Fire Fighting Training area is open and grassy with new sod. The northern and southern corners of the site support more mature trees.

Available information indicates that each of the tanks within Tank Farm Five are constructed of pre-stressed, reinforced concrete and are approximately 116 feet in diameter, 33.5 feet deep and have a nominal capacity of 60,000 barrels (2,520,000 gallons). Each of the tanks

2.3 PREVIOUS INVESTIGATIONS

Four previous investigations have included activities in the vicinity of Tanks 53 and 56 on Tank Farm Five. These investigations include a tank closure investigation conducted by Environmental Resource Associates, Inc. in 1988 (ERA, 1988), a tank closure investigation conducted by TRC-EC (TRC-EC, 1991a), a Remedial Investigation of the entire tank farm conducted by TRC-EC (TRC-EC, 1991b), and a supplemental ground water investigation around Tanks 53 and 56 by TRC-EC (TRC-EC, 1992a). A discussion of each of these investigations is provided below.

2.3.1 ERA Tank Closure Investigation

Sampling of the water, oil, and sludge in Tanks 53 and 56 was conducted in 1983 by Tibbetts Engineering Corporation (Tibbetts). The presence of three phases (sludge, oil, and water) was observed in the tanks by Tibbetts during sampling activities. According to the ERA report, the results of the sample analyses indicated that the oil phase in both tanks was hazardous due to the concentration of lead in the oil (Tank 53 - 53.0 and 53.2 ppm, Tank 56 - 44.9 and 45.4 ppm). Similarly, the sludge layer in both tanks was also reported to be hazardous due to elevated concentrations of lead, cadmium, chromium, barium, mercury and silver. The results of the 1983 Tibbetts sampling effort are provided with background information in Appendix A.

In 1985, ERA installed a total of four ground water monitor wells (MW-53E, MW-53W, MW-56E, and MW-56W) in the ring drains which surround Tanks 53 and 56 (see Figure 3). Ground water samples collected from wells in the ring drain surrounding Tank 53 indicated the presence of both chlorinated (up to 7,018 parts per billion or ppb) and aromatic hydrocarbons (up to 3,152 ppb) in the ring drain ground water. Ground water samples collected from wells in the Tank 56 ring drain indicated the presence of 339 ppb chlorinated volatile organic compounds (VOCs). VOCs detected in the Tank 56 ring drain included methylene chloride (304 ppb), chloroform (18 ppb), and 1,1,1-trichloroethane (17 ppb). Additionally, trace concentrations of mercury (less than 2 ppb) were detected in the ring drain of Tank 53 (MW-53W = 1.4 ppb) and Tank 56 (MW-56E = 1.2 ppb, MW-56W = 0.8 ppb). Cadmium (7 ppb) was also detected in one ground water sample (MW-53E) from the ring drain of Tank 53. No other metals were detected in the ground water samples from the four wells. While soil samples

2.3.2 TRC-EC Tank Closure Investigation

A tank closure investigation conducted near Tanks 53 and 56 during 1990 by TRC Environmental Corporation was summarized in a report dated June 1991 (TRC-EC, 1991a). The purpose of this investigation was to assess if petroleum hydrocarbons had migrated from the tanks into site soil and/or ground water. As part of this investigation, a total of five new wells (MW-7, MW-8, MW-9, MW-10 and RW-1) were installed near the two tanks. Boring logs from these wells are provided with background information in Appendix A. Monitoring wells MW-7 and MW-8 replaced damaged wells MW-86-3S/3D and GHR, respectively. Well RW-1 (eight inch diameter) was installed in a manner consistent with possible future product recovery in the ring drain of Tank 53. Monitoring wells MW-9 and MW-10 were installed northwest of Tank 56. Additionally, soil boring and ground water samples were collected and laboratory analyzed under this investigation. The location of these wells is shown on Figure 3. The laboratory results of this sampling event are provided with background information in Appendix A.

Of the six soil samples submitted for laboratory analysis, all six were analyzed for VOCs, five were analyzed for base neutral/acid extractable (BNA) organic compounds and Total Petroleum Hydrocarbons (TPH) and four samples were analyzed for inorganic compounds as indicated on Table 10 within Appendix A. Results of these soil analyses indicated the presence of elevated levels of VOCs and BNAs in one sample collected at five to seven feet below ground surface at the boring for well RW-1 located within the Tank 53 ring drain. Detectable concentrations of VOCs and BNA's, although at lower total concentrations, were also reported in all of the other soil samples. TPH soil concentrations ranged from 4.5 to 15 ppm in samples collected from borings in the vicinity of the tanks. Soils samples collected within the ring drain of Tank 53 indicated 2,000 to 22,000 ppm TPH as indicated on Table 10 in Appendix A. Metals were also detected in the subsurface soil samples at concentrations within the range of levels observed for surficial soils as indicated on Table 9 in Appendix A.

Two rounds of ground water sampling (July 20 and October 25, 1990) were conducted near Tanks 53 and 56. Once again, evidence of floating oil was observed in the Tank 53 ring drain wells. The ground water sample analytical results indicate the highest concentration of contaminants were observed in the Tank 53 ring drain wells. Ground water samples collected

2.3.4 TRC-EC Supplemental Ground Water Sampling Investigation

A supplemental ground water investigation was conducted in 1992 by TRC-EC (TRC-EC, 1992a) near Tanks 53 and 56 to assess ground water quality and to determine if migration of contaminants had occurred since the last sampling event (October, 1990). During this investigation, a total of sixteen ground water samples were collected on May 7 and 8, 1992 from the existing well network of nineteen wells (three wells were dry). Ground water samples were analyzed for Target Compound List (TCL) and Target Analyte List (TAL) parameters. Results of this sampling effort confirmed that ground water in the vicinity of Tank 53 has been impacted by volatile and semivolatile organic compounds. Free product was also again observed in the wells located within the ring drain of Tank 53. Laboratory results of this sampling effort are provided with background information in Appendix A.

2.3.5 Summary

In summary, the previous four investigations relative to Tanks 53 and 56 at Tank Farm Five indicate the following:

- Both Tanks 53 and 56 held waste oil which contained lead at concentrations which would characterize the oil as a hazardous waste.

- Sampling and analysis of oil and water conducted within Tank 53 during the 1990 RI indicated the presence of both aromatic and chlorinated VOCs in the tank contents.

- Ground water samples collected within the ring drain wells of Tank 53 indicated a predominance of chlorinated VOCs (7 ppm or 75% of the total VOCs) during a sampling event conducted in 1985. Subsequent sampling events have indicated generally lower total VOC concentrations (1986 - 6 ppm, 1990 - 1 ppm, 1992 - 3.6 ppm). However, the relative percentage of chlorinated VOCs of the total VOCs has remained generally consistent (1986 - 59%, 1990 - 82%, 1992 - 58%).

- Free product (oil) was consistently observed within the wells screened within the ring drain of Tank 53.

The native unconsolidated soil on the site consists of brown to gray-black fine sand and silt. In many locations the fine sand and silt are mixed with angular shale rock fragments, suggesting disturbance during tank construction and grading. Surficial soils in many locations consist of similar regraded silts and sands with rock fragments. Observed overburden thickness ranges from 11 to 40 feet near Tanks 53 and 56.

The till unit observed on-site ranged from approximately one foot in thickness (MW-3) to greater than 20 feet (MW-8).

Site-specific geologic data gathered during the Phase I RI and from previous investigations indicates that the bedrock surface slopes to the north and west across the site from an elevation of over 70 feet above mlw near Tank 59 (Boring B-9), to approximately 40 feet above mlw near Tank 49 (Boring B-7). The bedrock was reportedly excavated at most, if not at all, of the underground storage tank locations during the tank construction/installation activities. In some instances, this may have required excavation 10 to 30 feet into bedrock, for a total depth of approximately 40 feet below ground surface at the tank locations. As a result, the existing bedrock surface at the tank farm is expected to be irregular near the tanks.

The bedrock at the site consists of gray, highly weathered to competent, slightly metamorphosed shale, with quartz lenses (the Rhode Island Formation). Zones of weathered bedrock were observed above the more competent bedrock. Bedrock cores collected during the 1986 boring program were reported to consist of near horizontally bedded and stratified shales schist, schistose sandstone and vein quartz. The shales and fine grained schists were reported to be very soft and erosive and exhibiting staining along with a weathered and weakened fabric along discernable joint surfaces. The more coarse grained schistose sandstone was reported to be fragmental in recovery and exhibited both oxidation staining and a pitted texture. The observed thickness of the weathered rock ranges up to 27 feet (MW-86-3; ERA, 1988). Depth to weathered bedrock ranged from 1 foot (at MW-3) to 36 feet (in B-20) away from the tanks. The location of MW-3 is provided on Figure 4 and the location of boring B-20 is shown on Figure 7.

2.5.4 Average Linear Velocities

The calculated average horizontal hydraulic gradients, along with hydraulic conductivity and effective porosity values estimated during the Phase I Remedial Investigation (TRC, 1991b) were used to calculate average linear ground water velocity values at the site.

Using a form of Darcy's Law, and estimates of effective porosity (15%, Freeze & Cherry) and hydraulic conductivity (0.25 ft/day) developed on the basis of the Phase I Remedial Investigation, ground water flow velocity can be estimated as follows:

$$v = Ki/n$$

where
- v = average ground water flow rate (ft/day)
- i = hydraulic gradient (unitless or ft/ft)
- n = effective porosity (unitless)
- K = hydraulic conductivity (ft/day)

Using the values above, the ground water is conservatively estimated to flow at an average rate of approximately 0.078 feet per day (29 ft/yr) at Tank 53 and 0.082 feet per day (30 ft/yr) in native overburden material near Tank 56. However, flow rates may vary in localized areas due to the presence of the permeable ring drains around each tank and the variability of hydraulic conductivity in natural soils.

2.6 ENVIRONMENTAL SETTING

A brief discussion of the environmental setting of the site is provided below. This information has been extracted from previous reports (TRC-EC, 1992b) and will be used to establish the sensitivity of the environmental setting of the site when evaluating analytical data generated during this investigation. The site's ground water and surface water classification are discussed below along with a summary of area water use.

2.6.3 Area Water Use

Public water in the Town of Middletown, where Tank Farm Five is located, is supplied and managed by the Newport Water Department. While no specific records exist as to private well use in the vicinity of Tank Farm Five, background information (TRC-EC 1992b) suggests the majority of private wells are located on the eastern portion of Aquidneck Island, approximately two miles east of Tank Farm Five.

The Newport Water Department receives its water supply from a series of seven surface water reservoirs located on Aquidneck Island and two surface water reservoirs on the mainland. The reservoir closest to Tank Farm Five is the Sisson Pond Reservoir. This reservoir is located approximately one mile northeast and is 80 feet higher in elevation than Tank Farm Five. The closest known public water supply well (February 1992 RIDEM Ground Water Section Facilities Inventory Map for the Prudence Island quadrangle) is located over three miles north of Tank Farm Five.

4.0 RESULTS AND DATA EVALUATION

4.1 SUBSURFACE MATERIALS ENCOUNTERED

In general, subsurface conditions observed during the installation of soil borings in the vicinity of Tanks 53 and 56 were consistent with the geologic information gathered from previous investigations, as presented in Section 2.4. Geologic units encountered during field explorations consisted of an upper fill material underlain by a native sand and silt unit, which was in turn underlain by till and weathered bedrock. Boring logs for the thirty three borings conducted near Tank 53 (B-1 to B-30, and B-41 to B-43) and the ten borings near Tank 56 (B-32 to B-41) are provided in Appendix B. Included on the boring logs are VOC readings which were measured immediately upon opening the split-spoon soil samples.

The fill material consists of a medium to very dense, brown to gray-brown to gray-black, fine to medium sand with numerous rock fragments. This unit generally extended from the ground surface to a depth of between six to ten feet below grade. However, in several instances this heterogeneous mixture of soil and native rock fragments extended to over 20 feet below ground surface. It is likely that this material represents the mixing of native soils and bedrock fragments which occurred during tank construction activities. Field screening of soil samples from this unit for total VOCs provided variable total VOC readings, ranging from non-detectable to over 1,000 ppm in soil around Tank 53. Where high total VOC readings were encountered, field observations of site soil indicated the presence of petroleum odors or staining. Low to non-detectable VOC readings were reported in the surficial fill unit around Tank 56.

The sand and silt unit consisted of a medium to dense, gray-black to gray, fine sand material with variable quantities of silt and gravel. On several occasions, lenses of orange-brown fine sand were observed within this unit. Where present, the sand and silt is located in the range of six to fourteen feet below ground surface. Field screening of soil samples from this unit for total VOCs around both Tank 53 and 56 indicated the presence of low to non-detectable VOC readings.

The till unit consists of a dense to very dense, brown to gray-black, fine to medium sand with variable amounts of gravel, bedrock fragments and silt. The till unit directly overlies the bedrock at approximately fourteen to twenty feet below ground surface. VOC field screening

Detectable concentrations of chlorinated VOCs were reported in nearly all the soil gas points analyzed during the survey around Tank 53. As anticipated, concentrations of chlorinated VOCs were higher immediately adjacent to the tank, as opposed to those locations further away from the tank. Two exceptions were at soil gas points located south (SG-13, SG-15, SG-17 and SG-18) and north (SG-34, SG-35, TG-4, etc.) of the tank. The compound 1,1-dichloroethene was the most prevalently detected chlorinated VOC in the soil gas samples, followed by either 1,1,1-trichloroethane, trichloroethene or tetrachloroethene. The detection of higher concentrations of chlorinated VOCs relative to aromatic VOCs in subsurface soil near Tank 53 is consistent with the findings of previous investigations, which indicated the presence of chlorinated VOC contamination in the ground water in this area.

4.2.2 Tank 56 Soil Gas Results

The soil gas survey conducted around Tank 56 did not identify any points with detectable levels of aromatic VOCs (the sum of benzene, toluene, ethylene and xylene). Similarly, with the exception of the reported detection of 13 ug/l of methylene chloride at soil gas point SG-11 (21 feet below ground surface), no evidence of total chlorinated VOC compounds above 1 ug/l was reported around Tank 56. This information is generally consistent with the prior reported lack of VOC contamination in the vicinity of Tank 56.

4.3 SUBSURFACE SOIL INVESTIGATION RESULTS

4.3.1 Headspace Screening Results

As described in Section 3.3, headspace VOC readings were measured for each soil sample collected from borings B-1 through B-41. The results of the headspace OVA-FID screening are provided in Appendix D. The headspace results are discussed for each tank in the following sections.

Consistent with RIDEM policy, TPH data was evaluated taking into consideration the environmental setting of the site. According to this policy, a standard of 100 mg/kg (ppm) for TPH should be used to evaluate the extent of TPH contamination within an area classified as one of high environmental impact, while a higher standard of 300 ppm may be used within areas of low environmental impact. In general, areas of high environmental impact are those which are close to public or private water supplies or sensitive environments. Areas of low environmental impact are typically within urban areas where public water is available. Based on information presented in Section 2.6, the site was considered to be within an area which could be classified as environmentally sensitive. This classification is based on the established ground water classification of GAA-NA, which implies RIDEM's long term goal is to obtain GAA (drinking water) standards within ground water, and the proximity of Gomes Brook and Narragansett Bay. Therefore, the 100 ppm standard was used in the evaluation of TPH contamination in the vicinity of Tanks 53 and 56.

- Tank 53 - TPH Results

The results of the TPH soil analyses indicate that, of the 97 samples collected from the 33 borings completed in the vicinity of Tank 53, TPH concentrations greater than 100 ppm were reported at six locations (B-14, B-16, B-18, B-20, B-21, and B-27). Of the six locations, five are located within the ring drain surrounding Tank 53. The remaining boring, B-20, was located approximately 50 feet southeast of the tank. The Tank 53 soil boring locations at which TPH results were greater than 100 ppm are shown on Figure 9. A summary of the TPH analytical methodology is provided in Appendix E following presentation of TPH results.

Five soil samples collected from five other borings (B-12, B-13, B-15, B-17 and B-23) exhibited TPH concentrations between 50 and 100 ppm. Of these samples, three were collected from within the upper four feet of soil (2-4' @ B-13, 0-2' @ B-15, and 2-4' @ B-17), while at the other two borings, the soil samples were collected from depths of 20 to 22 feet (B-12) and 16 to 18 feet (B-23) below the ground surface.

In summary, the highest TPH levels were generally measured in ring drain borings. At those boring locations where TPH was detected above 100 ppm, TPH soil concentrations were generally to be in the range of 1,000 to 20,000 ppm, indicating the presence of residual fuel oil

professional judgement. Validation was performed on the following analytical fractions for the following samples:

- TCL Volatile Organic Compounds - 33 Soil + 9 Water
- TCL Semivolatile Organic Compounds - 10 Soil + 4 Water
- TCL Pesticides/PCBs - 10 Soil + 2 Water
- TAL Metals - 10 Soil + 3 Water

In general, the findings of the data validation were as follows:

- The overall system performance was fair. The laboratory did not encounter any large problems. The data reviewer estimated that less than 10% of the data is qualified.

- Reanalyzed samples were rejected in favor of the results from the original analysis due to non-compliant internal standards and/or surrogate recoveries.

- Methylene chloride, acetone, and phthalates, which are known laboratory contaminants, were found in many samples and blanks and were appropriately qualified as estimated or rejected.

The discussion of data below and the data presented in the report tables and appendices incorporates information provided by the data validation. Copies of the validated data summary sheets are provided in Appendix E.

4.3.4 Volatile Organic Compounds (VOCs)

Based on the TPH soil sample results, 23 of the soil samples collected from 14 borings completed around both Tanks 53 and 56 were also analyzed for TCL VOCs. The analyses along with the VOC analysis of soil samples collected from background borings (nine samples from borings B-50 to B-52), aqueous field blanks (three samples), and trip blanks (five samples) are summarized in Table 3 and discussed below.

analysis were not applied to the data validation process. However, results of the source water analysis are discussed in the presentation of analytical results in the text.

- Tank 53 - VOC Results

The VOC results of the 21 soil samples analyzed for VOCs near Tank 53 varied widely. Total VOC concentrations ranged from a high of 44,920 ppb (B27-3) to non-detectable (B11-7). As depicted on Figure 10, soil samples collected from five locations (B-14, B-16, B-18, B-21 and B-27) indicated greater than 1,000 ppb total VOCs. Each of these borings is located within, or in close proximity to the Tank 53 ring drain. Aromatic VOCs, most notably total xylenes, comprised the majority of the total VOCs detected in the soil samples around Tank 53.

- Tank 56 - VOC Results

The single soil sample analyzed for VOCs from the vicinity of Tank 56, the surficial sample (0-2 feet) from boring B-33, exhibited 5 ppb of methylene chloride, a suspected laboratory contaminant. However, data validation of the sample results negated the 5 ppb methylene chloride value (e.g., affixed an undetected "U" qualifier to this sample).

4.3.5 Toxicity Characteristic Leaching Procedure (TCLP) Results

To assess whether the contaminated soil around Tank 53 would be considered a characteristically hazardous waste, select soil samples were analyzed for TCLP parameters. Of the seventeen (17) samples analyzed for TCLP parameters, none exceeded the regulatory criteria which define the soil as a characteristically hazardous waste by toxicity. The TCLP sample results are summarized in Table 4.

Results from the TCLP volatile fraction analysis (17 samples) indicated the detection of chloroform in two samples, B13-2 and B27-3, at 11 ppb each. As previously noted, chloroform was also detected in laboratory blank samples. Trichloroethene, which was the only other TCLP VOC detected in the samples, was reported at a concentration of 14 ppb in sample B-149.

TCLP BNA analysis indicated detection of both pyridine (81 ppb in sample B-215) and pentachlorophenol (64 ppb in sample B-431) in two of the samples. Both results were qualified as approximate (J qualifier). No TCLP pesticides were detected in the soil samples.

4.4 DATA EVALUATION

Based on a review of previous investigation results, the results of the soil gas program and the sampling and analysis of the soil boring samples, the estimated extent of soil contamination near Tank 53 and Tank 56 is discussed below.

4.4.1 Tank 53 - Preliminary Extent of Soil Contamination

Previous investigations conducted near Tank 53 have indicated that the oil and sludge within the tank were considered hazardous wastes due to their lead content. Ground water sampling conducted in 1985 indicated the presence of free product in wells installed within the ring drain of the tank. In addition, up to 7,018 ppb of chlorinated VOCs and 3,152 ppb of aromatic VOCs were detected within ground water in the Tank 53 ring drain. Three subsequent ground water sampling events (July and October 1990 and May 1992) of wells within the ring drain indicated somewhat lower chlorinated VOC concentrations: 888 ppb - July 1990, 2,662 ppb - October 1990, and 2,065 ppb - May 1992. In addition, aromatic VOC concentrations varied over this same period: 185 ppb - July 1990, 902 ppb - October 1990, and 1,512 ppb - May 1992. Surface soil sampling conducted in 1990 on top of Tank 53 indicated low levels (9.5 to 31 ppm) of TPH.

Results of the recent soil sampling and analysis program conducted near Tank 53 are summarized in Table 6. The soil gas program indicated the detection of aromatic VOCs above 10 ppb at 30 points located around the tank. Chlorinated VOCs were detected in at least one sample from every point completed near the tank. This result is consistent with the documented ground water contamination observed near Tank 53 from previous investigations. Soil headspace analysis results were comparable with the soil gas results, in that more locations on the downgradient side of the tank indicated headspace readings greater than 10 ppm than on the upgradient side of the tank.

Laboratory analysis of soil samples collected near Tank 53 indicated the presence of elevated (greater than 100 ppm) concentrations of TPH at six boring locations. Five of these boring locations are within or in close proximity to the tank ring drain. The sixth boring location (B-20) is approximately 50 feet southeast of the tank. The two soil samples from this location which exhibited TPH concentrations (380 and 200 ppm) were collected from depths of

additional contaminated soil which may require removal near soil boring B-20 would fall within the 2,400 cubic yard approximation. A calculation work sheet used to estimate the volume of contaminated soil is provided as Appendix F.

4.4.2 Tank 56 - Preliminary Extent of Soil Contamination

Previous investigations conducted near Tank 56 have indicated that the oil and sludge within the tank were considered hazardous wastes due to their lead content. Ground water sampling conducted in 1985 indicated the presence of up to 339 ppb of chlorinated VOCs in ground water near the tank. However, 95% of the total amount of VOCs detected during the 1985 sampling event were from the presence of VOCs typically associated with laboratory induced contamination (methylene chloride and chloroform). The presence of VOCs was not confirmed during three proceeding sampling events, during which time only methylene chloride (maximum of 19 ppb) or acetone (maximum of 13 ppb), were detected in ground water.

Results of the recent soil sampling and analysis program conducted near Tank 56 are summarized in Table 7. The soil gas survey results indicated no evidence of aromatic VOCs (sum of benzene, ethylbenzene, toluene and xylenes), and only a single occurrence of chlorinated VOCs (13 ppb of methylene chloride at SG-11). Similarly, only a single soil sample (B34-3) exhibited a total VOC field headspace reading greater than 10 ppm. Boring B-34 was completed on the opposite side of Tank 56, across from soil gas point SG-11.

Laboratory analysis of soil samples collected in the vicinity of Tank 56 did not indicate evidence of TPH contamination greater than 100 ppm. Only two soil samples from two different borings (B-33 and B-39) indicated TPH concentrations greater than 50 ppm. These two soil samples were collected from borings B33-1 (66 ppm) and B39-4 (58 ppm). Analysis of the sample with the higher TPH concentration (B-33) for TCL VOCs indicated the detection of just 5 ppb of methylene chloride, which may be due to laboratory induced contamination.

In summary, no evidence of elevated concentrations of total petroleum hydrocarbons or volatile organic compounds were detected in the soil around Tank 56. Therefore, based on these findings, remediation of soil near this tank is not considered necessary.

TABLE 2

TOTAL PETROLEUM HYDROCARBON (TPH) RESULTS
TANK 53

SAMPLE IDENTIFICATION (1)	DEPTH (FEET) (2)	TPH (PPM) (3)
B011	0 – 2	27
B012	2 – 4	21
B017	12 – 14	4.5 U
B021	0 – 2	18
B022	2 – 4	4.0 J
B023	4 – 6	4.1 U
B031	0 – 2	13
B032	2 – 4	7.4
B038	14 – 16	4.4 U
B041	0 – 2	6.3
B042	2 – 4	15
B043	4 – 6	4.2
B051	0 – 2	23
B052	2 – 4	32
B053	4 – 6	4.5 U
B061	0 – 2	13
B062	2 – 4	9.6

SAMPLE IDENTIFICATION (1)	DEPTH (FEET) (2)	TPH (PPM) (3)
B0610 (B062)	2 – 4	5.4
B063	4 – 6	4.3 U
B071	0 – 2	7.1
B072	2 – 4	5.5
B073	4 – 6	6.5
B0714 (B073)	4 – 6	9.6
B081	0 – 2	11
B082	2 – 4	8.1
B083	4 – 6	4.4 U
B091	0 – 2	16
B092	2 – 4	19
B0911 (B092)	2 – 4	9.2
B093	4 – 6	3.6 J
B0912 (B093)	4 – 6	3.6 J
B101	0 – 2	9.0
B107	12 – 14	4.4 U
B1011	20 – 22	4.3 U

SAMPLE IDENTIFICATION (1)	DEPTH (FEET) (2)	TPH (PPM) (3)
B112	2 – 4	16
B116	10 – 12	4.4 U
B117	12 – 14	2.8 J
B122	2 – 4	19
B1210	18 – 20	4.4 U
B1211	20 – 22	58
B132	2 – 4	96
B139	16 – 18	4.4 U
B1310	18 – 20	4.3 U
B144	6 – 8	10,000
B1421 (B144)	6 – 8	7,300
B145	8 – 10	9,300
B149	16 – 18	15,000
B151	0 – 2	64
B152	2 – 4	40
B153	4 – 6	12
B165	8 – 10	9,700

SAMPLE IDENTIFICATION (1)	DEPTH (FEET) (2)	TPH (PPM) (3)
B1618 (B165)	8 – 10	12,000
B168	14 – 16	5,100
B1615	28 – 30	25
B1623 (B1615)	28 – 30	39
B171	0 – 2	21
B172	2 – 4	25
B1712 (B172)	2 – 4	92
B174	6 – 8	7.4
B1713 (B174)	6 – 8	4.3 U
B186	10 – 12	14,000
B1820 (B186)	10 – 12	5,900
B187	12 – 14	17,000
B1821 (B187)	12 – 14	15,000
B1816	30 – 32	7,100
B193	4 – 6	4.4 U
B1911	20 – 22	3.5 J
B1916	30 – 32	4.2 U

NOTES:

1. Sample Identification: B indicates soil boring, the next two digits indicate the boring number, and the last digit, or digits indicates the interval from which the sample was collected. Example: B062 indicates that a sample was collected from soil boring B–6, at the second interval sampled (2 to 4 feet below ground surface).
2. Depth reported in feet below ground surface.
3. Results reported in mg/kg or parts per million (PPM) of Total Petroleum Hydrocarbons (TPH).
   Laboratory Qualifiers:
   U = Analyzed, not Detected.

TABLE 2

TOTAL PETROLEUM HYDROCARBON (TPH) RESULTS
TANK 53

SAMPLE IDENTIFICATION (1)	DEPTH (FEET) (2)	TPH (PPM) (3)
B2010	18 – 20	4.2 U
B2016	30 – 32	380
B2017	32 – 34	200
B215	8 – 10	18,000
B217	12 – 14	6,700
B2120 (B217)	12 – 14	9,100
B2117	32 – 34	1,000
B225	8 – 10	4.4 U
B227	12 – 14	4.5
B228	14 – 16	4.3 U
B233	4 – 6	4.4 U
B239	16 – 18	59
B2313	24 – 26	17
B242	2 – 4	4.4 U
B243	4 – 6	4.4 U
B2410	18 – 20	4.3 U
B254	6 – 8	4.5 U

SAMPLE IDENTIFICATION (1)	DEPTH (FEET) (2)	TPH (PPM) (3)
B2515 (B254)	6 – 8	4.4 U
B259	16 – 18	6.7
B2512	22 – 24	4.6 U
B262	2 – 4	4.6
B263	4 – 6	4.2 U
B269	16 – 18	4.4 U
B272	2 – 4	18,000
B2718 (B272)	2 – 4	6,300
B273	4 – 6	31,000
B2719 (B273)	4 – 6	29,000
B277	12 – 14	12,000
B2717	32 – 34	820
B281	0 – 2	15
B283	4 – 6	5.7
B284	6 – 8	3.0 J
B292	2 – 4	12
B293	4 – 6	9.4

SAMPLE IDENTIFICATION (1)	DEPTH (FEET) (2)	TPH (PPM) (3)
B2911	20 – 22	4.2 U
B301	0 – 2	9.3
B302	2 – 4	7.2
B303	4 – 6	4.4 U
B421	0 – 2	4.5 U
B422	2 – 4	4.4 U
B431	0 – 2	4.4 U
B432	2 – 4	3.1 J
B441	0 – 2	10
B442	2 – 4	38

NOTES:

1. Sample Identification: B indicates soil boring, the next two digits indicate the boring number, and the last digit indicates the interval from which the sample was collected. Example: B254 indicates a sample was collected from soil boring B–25, at the fourth interval sampled (6 – 8 ft).
2. Depth reported in feet below ground surface.
3. Results reported in mg/kg or parts per million (PPM) Total Petroleum Hydrocarbons (TPH).
   Laboratory Qualifiers:
   U = Analyzed, not Detected.
   J = Present Below Detection Limit

TABLE 2

TOTAL PETROLEUM HYDROCARBON (TPH) RESULTS
TANK 56

SAMPLE IDENTIFICATION (1)	DEPTH (FEET) (2)	TPH (PPM) (3)
B321	0 – 2	5.7
B323	4 – 6	3.7 J
B327	12 – 14	4.5 U
B331	0 – 2	66
B332	2 – 4	3.1 J
B333	4 – 6	2.3 J
B341	0 – 2	5.3
B342	2 – 4	2.3 J
B343	4 – 6	4.3 J
B353	4 – 6	15
B357	12 – 14	2.7 J
B3514	26 – 28	4.5 U

SAMPLE IDENTIFICATION (1)	DEPTH (FEET) (2)	TPH (PPM) (3)
B361	0 – 2	20
B362	2 – 4	5.6
B363	4 – 6	4.6 U
B371	0 – 2	5.4
B372	2 – 4	2.4 J
B373	4 – 6	4.4 U
B381	0 – 2	5.4
B382	2 – 4	4.4 U
B383	4 – 6	4.4 U

SAMPLE IDENTIFICATION (1)	DEPTH (FEET) (2)	TPH (PPM) (3)
B393	4 – 6	4.3 U
B394	6 – 8	58
B395	8 – 10	4.4 U
B402	2 – 4	4.4 U
B403	4 – 6	4.5 U
B404	6 – 8	4.4 J
B411	0 – 2	2.7 J
B412	2 – 4	13
B413	4 – 6	3.1 J
B4117 (B413)	4 – 6	3.1 J

NOTES:

1. Sample Identification: B indicates soil boring, the next two digits indicate the boring number, and the last digit indicates the interval from which the sample was collected, for example: B145 indicates that a sample was analyzed from soil boring B–14, at the fifth interval sampled (8 to 10 feet below ground surface).
2. Depth reported in feet below ground surface.
3. Results reported in mg/kg or parts per million (PPM) Total Petroleum Hydrocarbons (TPH).
   Laboratory Qualifiers:
   U = Analyzed, not detected.
   J = Present Below Detection Limit.

TABLE 3
VOLATILE ORGANIC COMPOUND (VOC) DATA
TANK 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	B101	B107	B117	B132	B144	B145	B149	B165
SAMPLE DEPTH (FT):	0-2	12-14	12-14	2-4	6-8	8-10	16-18	8-10
	Tank 53	Tank 53	Tank 53	Tank 53	Tank 53	Tank 53	Tank 53	Tank 53
VOLATILE ORGANICS (PPB)								
Chloromethane								
Bromomethane								
Vinyl Chloride								
Chloroethane								
Methylene Chloride	2 J			8 JB	670 JB	800 JB	760 JB	330 JB
Acetone		5 JB		21 JB	1100 JB	890 JB	590 JB	
Carbon Disulfide								
1,1-Dichloroethene								
1,1-Dichloroethane								
1,2-Dichloroethene (Total)								
Chloroform								
1,2-Dichloroethane								
2-Butanone								
1,1,1-Trichloroethane							300 J	
Carbon Tetrachloride								
Bromodichloromethane								
1,2-Dichloropropane								
cis-1,3-Dichloropropene								
Trichloroethene							1000 J	
Dibromochloromethane								
1,1,2-Trichloroethane								
Benzene								
trans-1,3-Dichloropropene								
Bromoform								
4-Methyl-2-pentanone								
2-Hexanone								
Tetrachloroethene						530 J	850 J	670 J
1,1,2,2-Tetrachloroethane								
Toluene						1000 J	300 J	690 J
Chlorobenzene								
Ethyl Benzene					180 J	2800	4300	2400
Styrene								
Total Xylenes					850 J	13000	9800	6500
TOTAL VOLATILE ORGANICS	2	5	0	29	2800	19020	17900	10590

TABLE 3
VOLATILE ORGANIC COMPOUND (VOC) DATA
TANK 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	B1615	B172	B187	B1821	B1816	B2016	B215	B217	B239
SAMPLE DEPTH (FT):	28–30	2–4	12–14	12–14	30–32	30–32	8–10	12–14	16–18
	Tank 53	Tank 53	Tank 53	Duplicate	Tank 53	Tank 53	Tank 53	Tank 53	Tank 53
VOLATILE ORGANICS (PPB)									
Chloromethane									
Bromomethane									
Vinyl Chloride									
Chloroethane									
Methylene Chloride	5 JB	2 J	430 JB	500 JB	440 JB	5 JB	360 JE	330 JE	2 J
Acetone	6 JB	140 B		2500	2000	9 JB			10 JB
Carbon Disulfide									
1,1–Dichloroethene									
1,1–Dichloroethane									
1,2–Dichloroethene (Total)									
Chloroform									
1,2–Dichloroethane									
2–Butanone									
1,1,1–Trichloroethane			500 J	250 J	240 J				
Carbon Tetrachloride									
Bromodichloromethane									
1,2–Dichloropropane									
cis–1,3–Dichloropropene									
Trichloroethene			550 J	330 J	670 J				
Dibromochloromethane									
1,1,2–Trichloroethane									
Benzene									
trans–1,3–Dichloropropene									
Bromoform									
4–Methyl–2–pentanone									
2–Hexanone									
Tetrachloroethene			1100 J	960 J	400 J			460 J	
1,1,2,2–Tetrachloroethane									
Toluene		3 J	1300 J	1100 J	270 J			300 J	
Chlorobenzene									
Ethyl Benzene			3100	2800	490		1100 J	1500	
Styrene									
Total Xylenes		1 J	11000	9700	4400		4400	6100	
TOTAL VOLATILE ORGANICS	11	146	17980	18140	8910	14	5860	8690	12
TICs (No.)						9			

TABLE 3
VOLATILE ORGANIC COMPOUND (VOC) DATA
TANK 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	B273	B277	B2717	B331	B431	B442	B501	B502
SAMPLE DEPTH (FT):	4-6	12-14	32-34	0-2	0-2	2-4	0-2	2-4
	Tank 53	Tank 53	Tank 53	Tank 56	Tank 53	Tank 53	Background	Background
VOLATILE ORGANICS (PPB)								
Chloromethane								
Bromomethane								
Vinyl Chloride								
Chloroethane								
Methylene Chloride	920 JB	390 JB	7 JB			6 JB	3 J	2 J
Acetone					4 JB			
Carbon Disulfide								
1,1-Dichloroethene								
1,1-Dichloroethane								
1,2-Dichloroethene (Total)								
Chloroform								
1,2-Dichloroethane								
2-Butanone								
1,1,1-Trichloroethane								
Carbon Tetrachloride								
Bromodichloromethane								
1,2-Dichloropropane								
cis-1,3-Dichloropropene								
Trichloroethene		190 J	1 J					
Dibromochloromethane								
1,1,2-Trichloroethane								
Benzene								
trans-1,3-Dichloropropene								
Bromoform								
4-Methyl-2-pentanone								
2-Hexanone								
Tetrachloroethene		600 J	5 J					
1,1,2,2-Tetrachloroethane								
Toluene	1300 J	2500	1 J				3 J	
Chlorobenzene								
Ethyl Benzene	8700	3700						
Styrene								
Total Xylenes	34000	18000	38					
TOTAL VOLATILE ORGANICS	44920	25380	52	0	4	6	6	2

TABLE 3
VOLATILE ORGANIC COMPOUND (VOC) DATA
TANK 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	B503	B511	B514	B512	B513	B521	B522	B523
SAMPLE DEPTH (FT):	14–16	0–2	0–2	2–4	14–16	0–2	2–4	16–18
	Background	Background	Duplicate	Background	Background	Background	Background	Background
VOLATILE ORGANICS (PPB)								
Chloromethane								
Bromomethane								
Vinyl Chloride								
Chloroethane								
Methylene Chloride	6 JB	2 J			1 J	7 J		
Acetone	6 JB	15 B		6 JB				
Carbon Disulfide								
1,1–Dichloroethene								
1,1–Dichloroethane								
1,2–Dichloroethene (Total)								
Chloroform								
1,2–Dichloroethane								
2–Butanone								
1,1,1–Trichloroethane								
Carbon Tetrachloride								
Bromodichloromethane								
1,2–Dichloropropane								
cis–1,3–Dichloropropene								
Trichloroethene								
Dibromochloromethane								
1,1,2–Trichloroethane								
Benzene								
trans–1,3–Dichloropropene								
Bromoform								
4–Methyl–2–pentanone								
2–Hexanone								
Tetrachloroethene								
1,1,2,2–Tetrachloroethane								
Toluene	1 J	3	1			3 J		
Chlorobenzene								
Ethyl Benzene								
Styrene								
Total Xylenes								
TOTAL VOLATILE ORGANICS	13	20	1	6	1	10	0	0

TABLE 3
VOLATILE ORGANIC COMPOUND (VOC) DATA
TANK 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	TB1	TB2	TB3	TB4	TB5	FB1	FB2	FB3	SW1
SAMPLE DEPTH (FT):									
	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Field Blank	Field Blank	Field Blank	Source Water
VOLATILE ORGANICS (PPB)									
Chloromethane									
Bromomethane									
Vinyl Chloride									
Chloroethane									
Methylene Chloride	3 J	3 J	5 J	11 B	6 JB	3 J	3 J	9 JB	
Acetone		17 B		6 JB				3 JB	
Carbon Disulfide									
1,1-Dichloroethene									
1,1-Dichloroethane									
1,2-Dichloroethene (Total)									
Chloroform									81
1,2-Dichloroethane									
2-Butanone									
1,1,1-Trichloroethane									
Carbon Tetrachloride									
Bromodichloromethane									34
1,2-Dichloropropane									
cis-1,3-Dichloropropene									
Trichloroethene									
Dibromochloromethane									11
1,1,2-Trichloroethane									
Benzene									
trans-1,3-Dichloropropene									
Bromoform									
4-Methyl-2-pentanone									
2-Hexanone									
Tetrachloroethene									
1,1,2,2-Tetrachloroethane									
Toluene									
Chlorobenzene									
Ethyl Benzene									
Styrene									
Total Xylenes									
TOTAL VOLATILE ORGANICS	3	20	5	17	6	3	3	12	126

Notes: 1. J indicates an estimated value. This qualifier is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. If the limit of detection is 10 ug and a concentration of 3 ug is calculated, then the value is reported as 3J.

2. B indicates the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

3. A b. .ndicates that the compound was not detected.

TABLE 4
TOXICITY CHARACTERISTIC LEACHING PROCEDURE DATA
TANKS 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	REGULATORY	B101	B132	B144	B145	B149	B165
SAMPLE DEPTH (FT):	LIMIT	0–2	2–4	6–8	8–10	16–18	8–10
		Tank 53	Tank 53	Tank 53	Tank 53	Tank 53	Tank 53
TCLP VOLATILE ORGANICS (ppb)							
Vinyl Chloride	200						
1,1–Dichloroethene	700						
Chloroform	6,000		11 JB				
1,2–Dichloroethane	500						
2–Butanone	200,000						
Carbon Tetrachloride	500						
Trichloroethene	700					14 J	
Benzene	500						
Tetrachloroethene	700						
Chlorobenzene	100,000						
TCLP BNA (ppb)							
Pyridine	5,000						
1,4–Dichlorobenzene	7,500						
2–Methylphenol	200,000						
3– and/or 4–Methylphenol	200,000						
Hexachloroethane	3,000						
Nitrobenzene	2,000						
Hexachlorobutadiene	500						
2,4,6–Trichlorophenol	2,000						
2,4,5–Trichlorophenol	400,000						
2,4–Dinitrotoluene	10,000						
Hexachlorobenzene	130						
Pentachlorophenol	100,000						

TABLE 4
TOXICITY CHARACTERISTIC LEACHING PROCEDURE DATA
TANKS 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	REGULATORY	B101	B132	B144	B145	B149	B165
SAMPLE DEPTH (FT);	LIMIT	0-2	2-4	6-8	8-10	16-18	8-10
		Tank 53	Tank 53	Tank 53	Tank 53	Tank 53	Tank 53
TCLP PESTICIDES (ppb)							
Gamma-BHC (Lindane)	400						
Heptachlor	8						
Heptachlor Epoxide	8						
Endrin	20						
Methoxychlor	10,000						
Alpha-Chlordane	30						
Gamma-Chlordane	30						
Toxaphene	500						
TCLP METALS (ppb)							
Silver	5,000						
Arsenic	5,000						
Barium	100,000	214	204	215			
Cadmium	1,000						
Chromium	5,000						
Mercury	200						
Lead	5,000						
Selenium	1,000						

TABLE 4
TOXICITY CHARACTERISTIC LEACHING PROCEDURE DATA
TANKS 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	REGULATORY	B1615	B172	B2016	B215	B239
SAMPLE DEPTH (FT):	LIMIT	28–30	2–4	30–32	8–10	16–18
		Tank 53	Tank 53	Tank 53	Tank 53	Tank 53
TCLP VOLATILE ORGANICS (ppb)						
Vinyl Chloride	200					
1,1–Dichloroethene	700					
Chloroform	6,000					
1,2–Dichloroethane	500					
2–Butanone	200,000					
Carbon Tetrachloride	500					
Trichloroethene	700					
Benzene	500					
Tetrachloroethene	700					
Chlorobenzene	100,000					
TCLP BNA (ppb)						
Pyridine	5,000				81 J	
1,4–Dichlorobenzene	7,500					
2–Methylphenol	200,000					
3– and/or 4–Methylphenol	200,000					
Hexachloroethane	3,000					
Nitrobenzene	2,000					
Hexachlorobutadiene	500					
2,4,6–Trichlorophenol	2,000					
2,4,5–Trichlorophenol	400,000					
2,4–Dinitrotoluene	10,000					
Hexachlorobenzene	130					
Pentachlorophenol	100,000					

TABLE 4
TOXICITY CHARACTERISTIC LEACHING PROCEDURE DATA
TANKS 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	REGULATORY	B1615	B172	B2016	B215	B239
SAMPLE DEPTH (FT):	LIMIT	28–30	2–4	30–32	8–10	16–18
		Tank 53	Tank 53	Tank 53	Tank 53	Tank 53
TCLP PESTICIDES (ppb)						
Gamma–BHC (Lindane)	400					
Heptachlor	8					
Heptachlor Epoxide	8					
Endrin	20					
Methoxychlor	10,000					
Alpha–Chlordane	30					
Gamma–Chlordane	30					
Toxaphene	500					
TCLP METALS (ppb)						
Silver	5,000					
Arsenic	5,000					
Barium	100,000		414			
Cadmium	1,000					
Chromium	5,000					
Mercury	200					
Lead	5,000					
Selenium	1,000					

TABLE 4
TOXICITY CHARACTERISTIC LEACHING PROCEDURE DATA
TANKS 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	REGULATORY	B273	B2717	B431	B442	B504	B521
SAMPLE DEPTH (FT);	LIMIT	4–6	32–34	0–2	2–4	14–16	0–2
		Tank 53	Tank 53	Tank 53	Tank 53	Background	Background
TCLP VOLATILE ORGANICS (ppb)							
Vinyl Chloride	200						
1,1–Dichloroethene	700						
Chloroform	6,000	11 JB					
1,2–Dichloroethane	500						
2–Butanone	200,000						
Carbon Tetrachloride	500						
Trichloroethene	700						
Benzene	500						
Tetrachloroethene	700						
Chlorobenzene	100,000						
TCLP BNA (ppb)							
Pyridine	5,000						
1,4–Dichlorobenzene	7,500						
2–Methylphenol	200,000						
3– and/or 4–Methylphenol	200,000						
Hexachloroethane	3,000						
Nitrobenzene	2,000						
Hexachlorobutadiene	500						
2,4,6–Trichlorophenol	2,000						
2,4,5–Trichlorophenol	400,000						
2,4–Dinitrotoluene	10,000						
Hexachlorobenzene	130						
Pentachlorophenol	100,000			64 J			

TABLE 4
TOXICITY CHARACTERISTIC LEACHING PROCEDURE DATA
TANKS 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	REGULATORY	B273	B2717	B431	B442	B504	B521
SAMPLE DEPTH (FT):	LIMIT	4–6	32–34	0–2	2–4	14–16	0–2
		Tank 53	Tank 53	Tank 53	Tank 53	Background	Background
TCLP PESTICIDES (ppb)							
Gamma–BHC (Lindane)	400						
Heptachlor	8						
Heptachlor Epoxide	8						
Endrin	20						
Methoxychlor	10,000						
Alpha–Chlordane	30						
Gamma–Chlordane	30						
Toxaphene	500						
TCLP METALS (ppb)							
Silver	5,000						
Arsenic	5,000						
Barium	100,000			572			
Cadmium	1,000						
Chromium	5,000						
Mercury	200						
Lead	5,000						
Selenium	1,000						

TABLE 5
TCL BNA, TCL PESTICIDE/PCB AND TAL METALS DATA
TANK 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	B501	B502	B503	B511	B512	B513
SAMPLE DEPTH (FT):	0-2	2-4	14-16	0-2	2-4	14-16
	Background	Background	Background	Background	Background	Background
BNA COMPOUNDS						
Phenol						
bis(2-Chloroethyl)ether						
2-Chlorophenol						
1,3-Dichlorobenzene						
1,4-Dichlorobenzene						
1,2-Dichlorobenzene						
2-Methylphenol						
2,2'-oxybis(2-chloropropane)						
4-Methylphenol						
N-Nitroso-di-n-propylamine						
Hexachloroethane						
Nitrobenzene						
Isophorone						
2-Nitrophenol						
2,4-Dimethylphenol						
bis(2-Chloroethoxy)methane						
2,4-Dichlorophenol						
1,2,4-Trichlorobenzene						
Napthalene						
4-Chloroaniline						
Hexachlorocyclopentadiene						
2,4,6-Trichlorophenol						
2,4,5-Trichlorophenol						
2-Chloronaphthalene						
2-Nitroaniline						
Dimethylnapthalene						
Acenaphthalene						
2,6-Dinitrotoluene						
3-Nitroaniline						
Acenaphthene						
2,4-Dinitrophenol						
4-Nitrophenol						
Dibenzofuran						
2,4-Dinitrotoluene						
Diethylphthalate						
4-Chlorophenyl-phenylether						
Fluorene						
4-Nitroaniline						
4,6-Dinitro-2-methylpenol						
N-Nitrosodipheylamine						
4-Bromophenyl-phenylether						
Hexachlorobenzene						
Pentachlorophenol						
Phenanthrene						
Carbazole						
Di-n-butylphthalate	59 JB	53 JB	83 JB	72 JB	54 JB	79 JB
Flouranthene						
Pyrene						
Butylbenzylphthalate						
3,3'-Dichlorobenzidine						
Benzo(a)anthracene						
Chrysene						
bis(2-Ethylhexyl)phthalate	41 JB	53 JB	99 JB	56 JB	44 JB	65 JB
Di-n-octyl phthalate						
Benzo(b)fluoranthene						
Benzo(k)fluoranthene						
Benzo(a)pyrene						
Ideno(1,2,3-cd)pyrene						
Dibenz(a,h)anthracene						
Benzo(g,h,i)perylene						

TABLE 5
TCL BNA, PESTICIDE/PCB AND METALS DATA
TANK 53 AND 56 SOIL INVESTIGATION

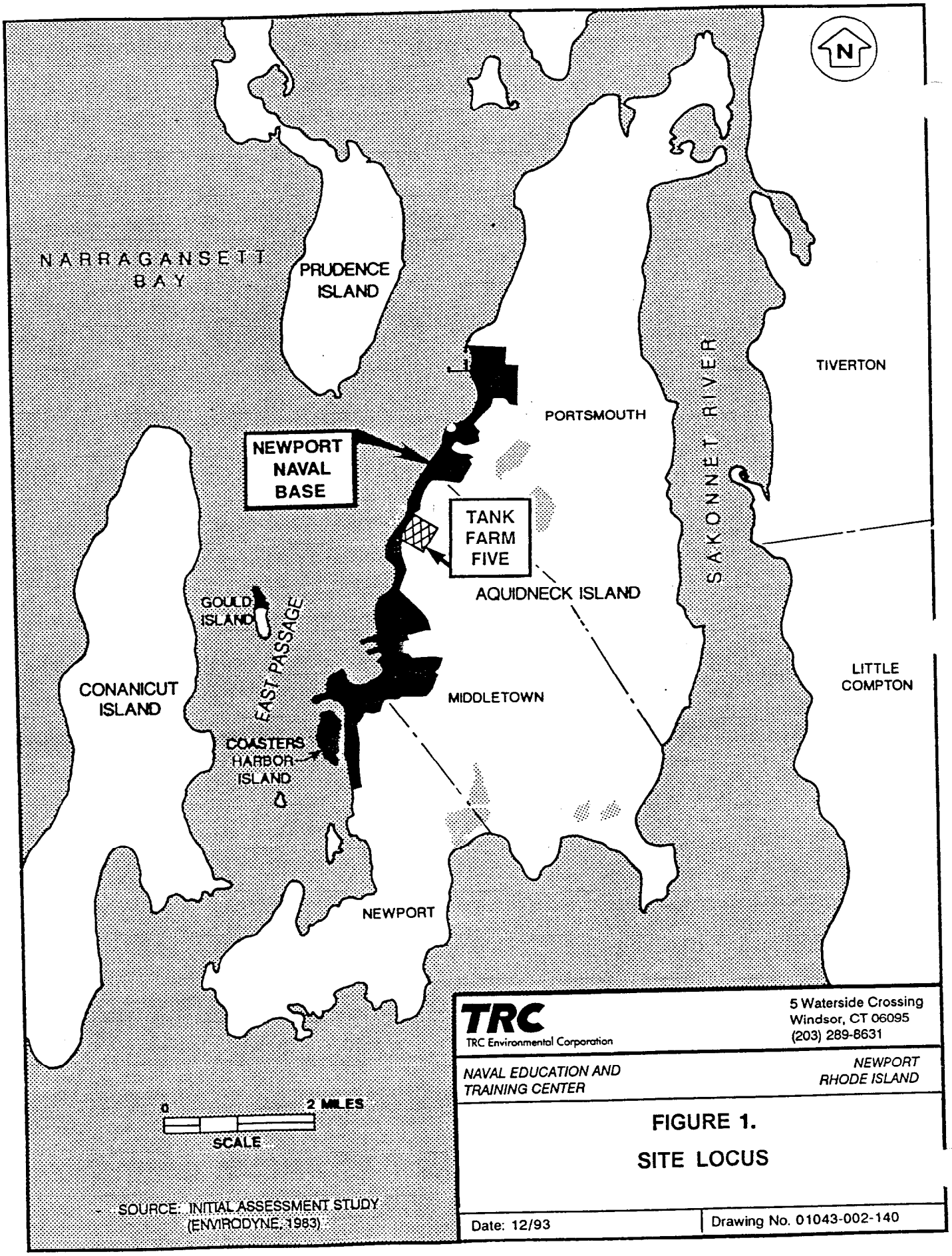
SAMPLE IDENTIFICATION	B501	B502	B503	B511	B512	B513
SAMPLE DEPTH (FT):	0–2	2–4	14–16	0–2	2–4	14–16
	Background	Background	Background	Background	Background	Background
PESTICIDES/PCBs						
Alpha–BHC						
Beta–BHC						
Delta–BHC						
Gamma–BHC (Lindane)						
Heptachlor						
Aldrin						
Heptachlor Epoxide						
Endosulfan I						
Dieldrin						
4,4'–DDE						
Endrin						
Endosulfan II						
4,4'–DDD						
Endosulfan sulfate						
4,4'–DDT						
Methoxychlor						
Endrin ketone						
Endrin aldehyde						
Alpha–Chlordane						
Gamma–Chlordane						
Toxaphene						
Aroclor–1016						
Aroclor–1221						
Aroclor–1232						
Aroclor–1242						
Aroclor–1248						
Aroclor–1254						
Aroclor–1260						
INORGANICS						
Aluminum	7,320	4,270	5,340	6,790	7,960	5,280
Antimony						
Arsenic	–	–	–	–	–	–
Barium	18.4 B	9.2 B		15.4 B	3.8 B	12.0 B
Beryllium	18.4 B	0.32 B	0.22 B	0.32 B	0.23 B	0.43 B
Cadmium						
Calcium	–	–	–	–	–	–
Chromium	9.5	9.0 B	9.6	9.8	15.6	11.3
Cobalt	15.8	18.9	23.2	14.0	20.7	14.5
Copper	14.8	19.5	28.8	13.7	25.2	25.1
Iron	23,200	25,800	17,100	21,100	32,700	35,100
Lead	22.4	6.5	1.5	28.5	7.1	5.1
Magnesium	1,830 J	1,550 J	1,980 J	1,470 J	3,770 J	1,900 J
Manganese	422	452	272	387	346	349
Mercury						
Nickel	23.4	24.7	18.2	15.9	34.5	21.5
Potassium						322.8
Selenium						
Silver					–	–
Sodium	31.8 B					34.5 B
Thallium						
Vanadium	–			–		
Zinc	59	59	33.5	43.6	71.8	55.8

TABLE 5
TCL BNA, PESTICIDE/PCB AND METALS DATA
TANK 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	B514	B521	B522	B523	FB-1	FB-2	FB-3	SW-1
SAMPLE DEPTH (FT);	0-2	0-2	2-4	16-18	-	-	-	-
	Duplicate	Background	Background	Background	Field Blank	Field Blank	Field Blank	Source Water
BNA COMPOUNDS								
Phenol								
bis(2-Chloroethyl)ether								
2-Chlorophenol								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
1,2-Dichlorobenzene								
2-Methylphenol								
2,2'-oxybis(2-chloropropane)								
4-Methylphenol								
N-Nitroso-di-n-propylamine								
Hexachloroethane								
Nitrobenzene								
Isophorone								
2-Nitrophenol								
2,4-Dimethylphenol								
bis(2-Chloroethoxy)methane								
2,4-Dichlorophenol								
1,2,4-Trichlorobenzene								
Napthalene								
4-Chloroaniline								
Hexachlorocyclopentadiene								
2,4,6-Trichlorophenol								
2,4,5-Trichlorophenol								
2-Chloronaphthalene								
2-Nitroaniline								
Dimethylnapthalene								
Acenaphthalene								
2,6-Dinitrotoluene								
3-Nitroaniline								
Acenaphthene								
2,4-Dinitrophenol								
4-Nitrophenol								
Dibenzofuran								
2,4-Dinitrotoluene								
Diethylphthalate								
4-Chlorophenyl-phenylether								
Fluorene								
4-Nitroaniline								
4,6-Dinitro-2-methylpenol								
N-Nitrosodipheylamine								
4-Bromophenyl-phenylether								
Hexachlorobenzene								
Pentachlorophenol								
Phenanthrene								
Carbazole								
Di-n-butylphthalate	77 JB	71 JB	29 JB	62 JB	2 JB	3 JB		3 JB
Flouranthene								
Pyrene								
Butylbenzylphthalate								
3,3'-Dichlorobenzidine								
Benzo(a)anthracene								
Chrysene								
bis(2-Ethylhexyl)phthalate	50 JB	-	26 JB	65 JB	2 JB	2 JB	1 JB	0.8 JB
Di-n-octyl phthalate								
Benzo(b)fluoranthene								
Benzo(k)fluoranthene								
Benzo(a)pyrene								
Ideno(1,2,3-cd)pyrene								
Dibenz(a,h)anthracene								
Benzo(g,h,i)perylene								

TABLE 5
TCL BNA, PESTICIDE/PCB AND METALS DATA
TANK 53 AND 56 SOIL INVESTIGATION

SAMPLE IDENTIFICATION	B514	B521	B522	B523	FB-1	FB-2	FB-3	SW-1
SAMPLE DEPTH (FT):	0-2	0-2	2-4	16-18	-	-	-	-
	Duplicate	Background	Background	Background	Field Blank	Field Blank	Field Blank	Source Water
PESTICIDES/PCBs								
Alpha-BHC								
Beta-BHC								
Delta-BHC								
Gamma-BHC (Lindane)								
Heptachlor								
Aldrin								
Heptachlor Epoxide								
Endosulfan I								
Dieldrin								
4,4'-DDE								
Endrin								
Endosulfan II								
4,4'-DDD								
Endosulfan sulfate								
4,4'-DDT								
Methoxychlor								
Endrin ketone								
Endrin aldehyde								
Alpha-Chlordane								
Gamma-Chlordane								
Toxaphene								
Aroclor-1016								
Aroclor-1221								
Aroclor-1232								
Aroclor-1242								
Aroclor-1248								
Aroclor-1254								
Aroclor-1260								
INORGANICS								
Aluminum	4970	5790	4960	7700				63.6 B
Antimony								
Arsenic								
Barium	12.1 B	21.3 B	10.7 B	3.6 B				
Beryllium	0.28 B	0.32 B		.74 B				
Cadmium								
Calcium	239 B	135 B	145 B	1050 B	74.7 B		313 B	20,900
Chromium	6.7	3.5	3.2	13.9				
Cobalt	10.9 B	3.1 B	3.1 B	27.6				
Copper	13.0	4.3 B	2.7 B	43.2				12.3 B
Iron	15,500	6830	5670	43,400	93.4 B	37.8 B	353	43.4 B
Lead	15.1	10	5.4	6.3				
Magnesium	795 B	397 B	473 B	3020	95.3 B		145 B	3800 B
Manganese	298	280	124	601	5 B		21.5	4.7 B
Mercury								
Nickel	12.4			42.4				
Potassium								2410 B
Selenium								
Silver				2.9				
Sodium							206 B	20300
Thallium								
Vanadium	2.7 B	2.1 B	2.2 B					
Zinc	36.1	16.8	14.4	89.3	12.7 B	8.2 B	10.5 B	8.5 B



SOURCE: INITIAL ASSESSMENT STUDY (ENVIRODYNE, 1983)

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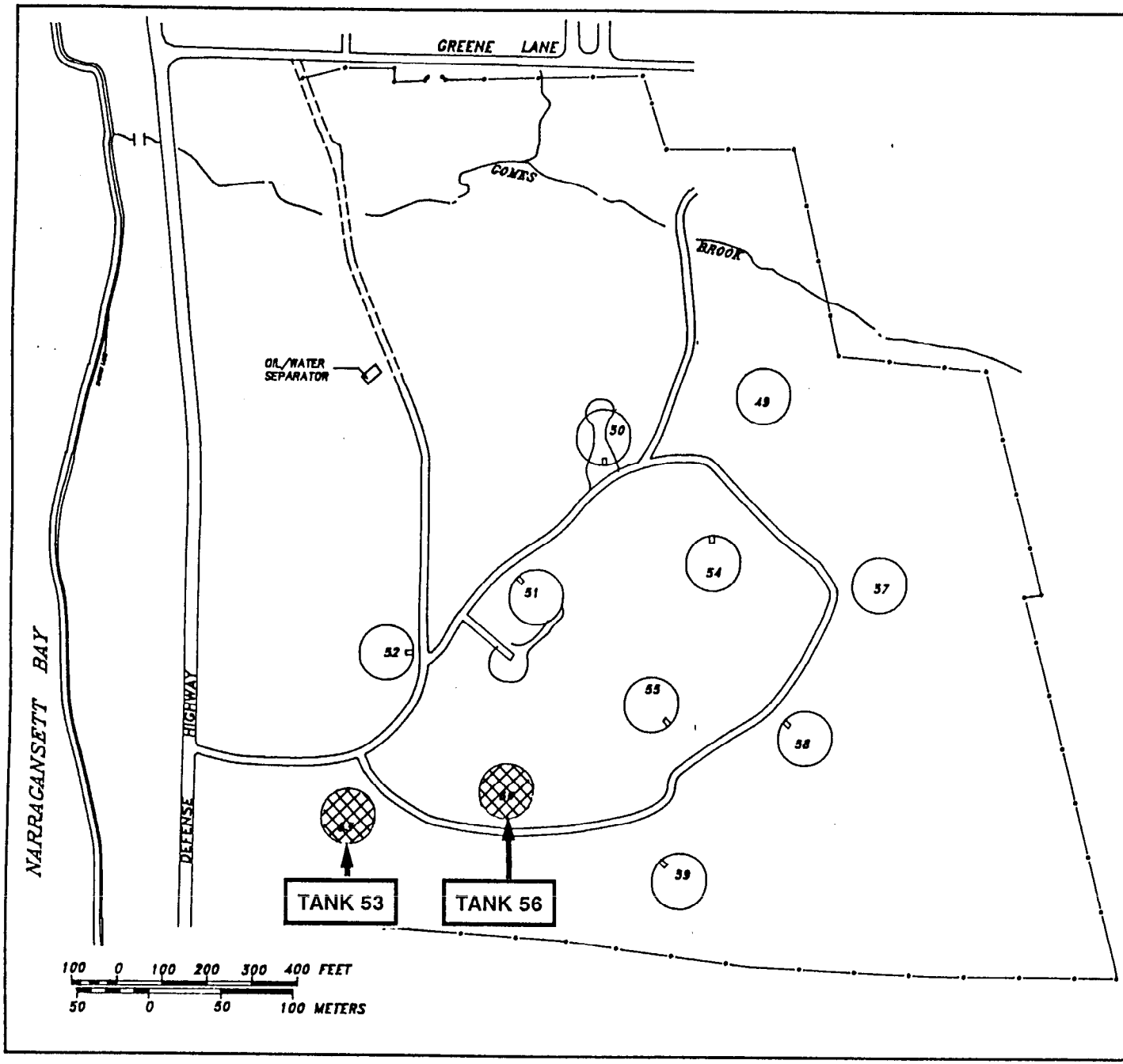
FIGURE 1.

SITE LOCUS

Date: 12/93

Drawing No. 01043-002-140



LEGEND

57 UNDERGROUND STORAGE TANK

FENCE

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SITE 13 - TANK FARM FIVE

FIGURE 2.
SITE PLAN

Date: 12/93

Drawing No. 01043-002-140

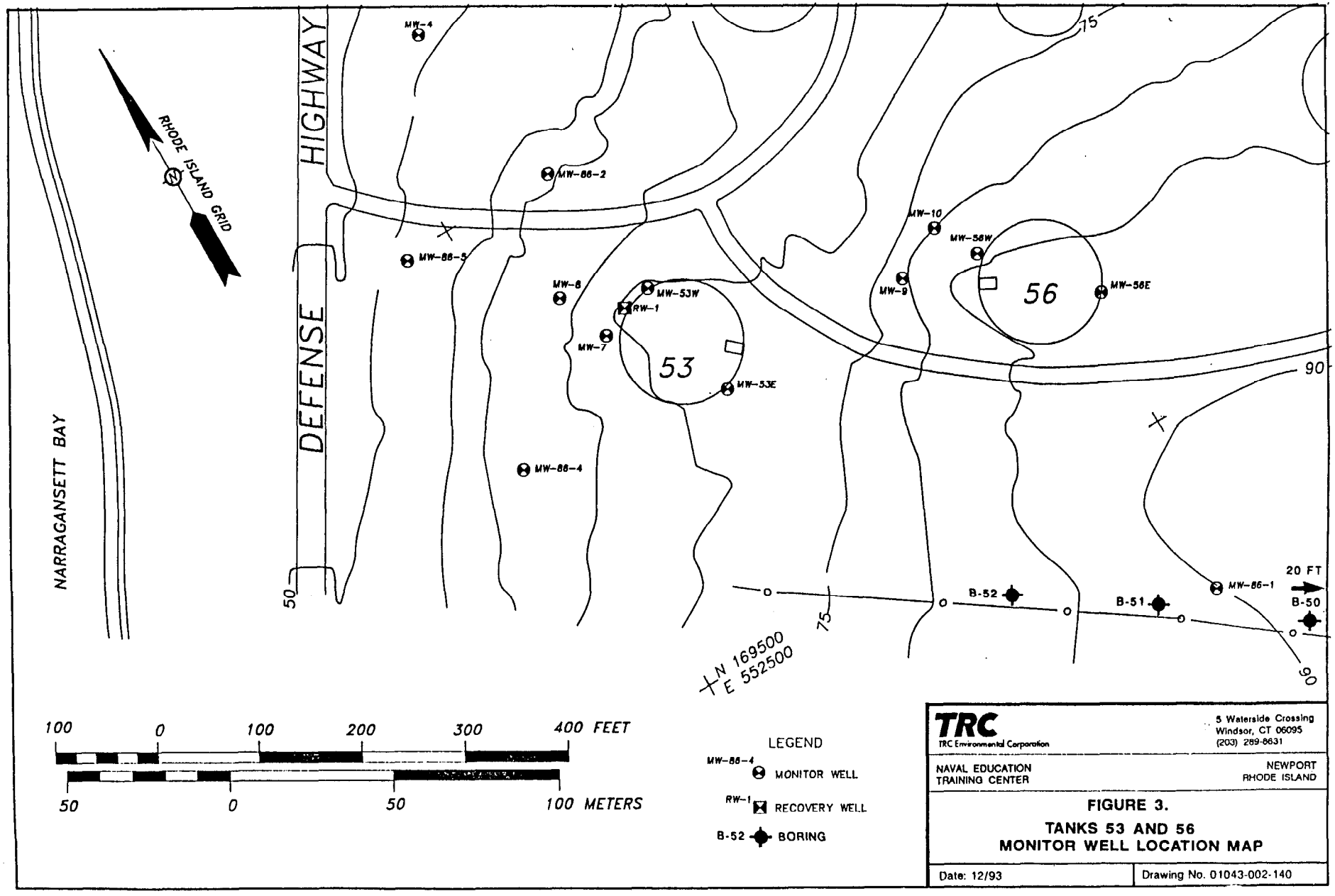

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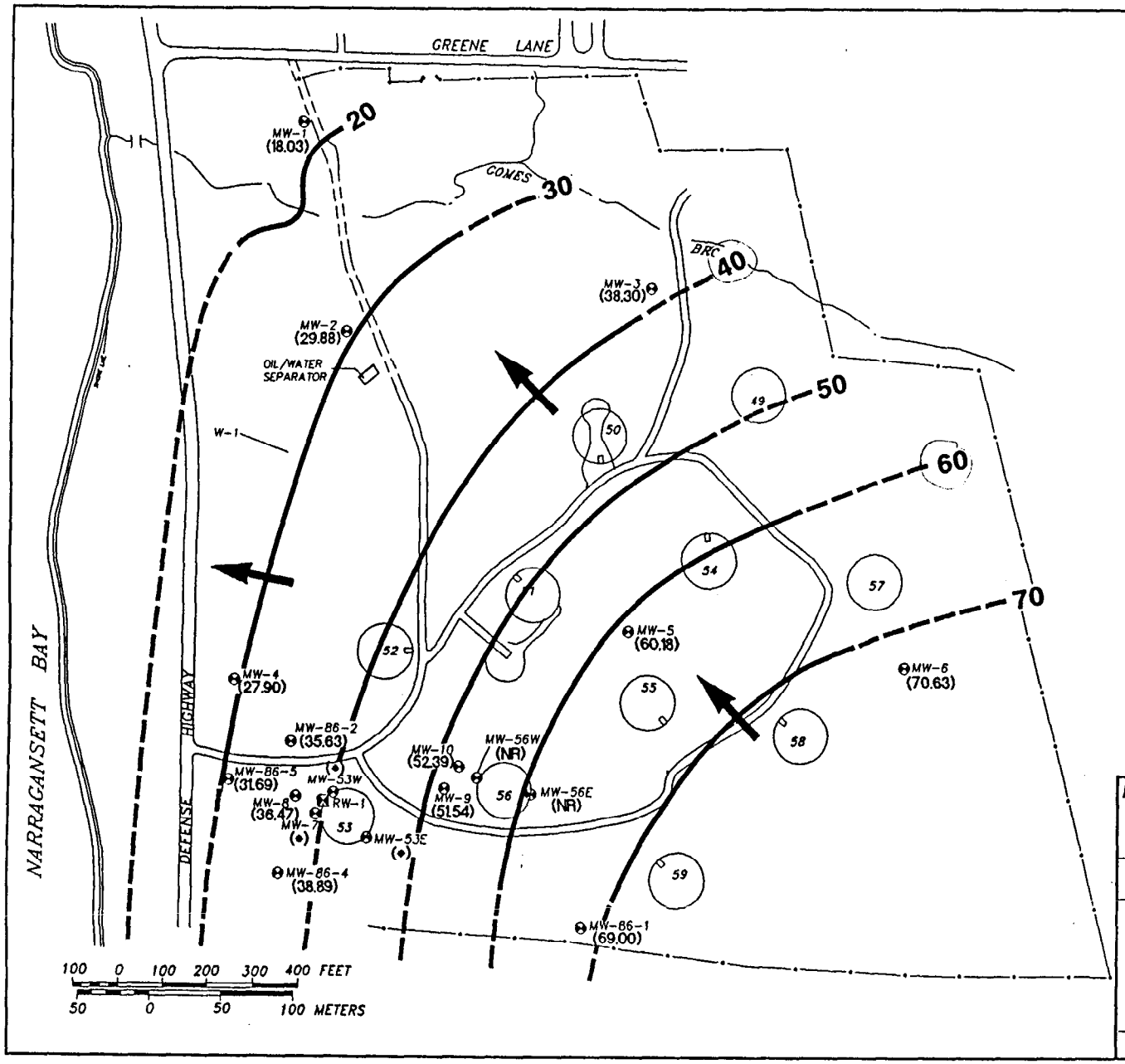
FIGURE 3.

TANKS 53 AND 56 MONITOR WELL LOCATION MAP

Date: 12/93

Drawing No. 01043-002-140



LEGEND

MW-6 ⊖ MONITORING WELL LOCATION

(70.63) GROUND WATER ELEVATION (feet above mean low level)

—20 GROUND WATER CONTOUR

← GROUND WATER FLOW DIRECTION

NOTES:

1. (DATUM) – MLW: MEAN LOW WATER
2. (•) WATER LEVEL NOT USED IN DEVELOPING SITE CONTOUR MAP
3. (NR) WATER LEVEL NOT RECORDED – DRY WELL

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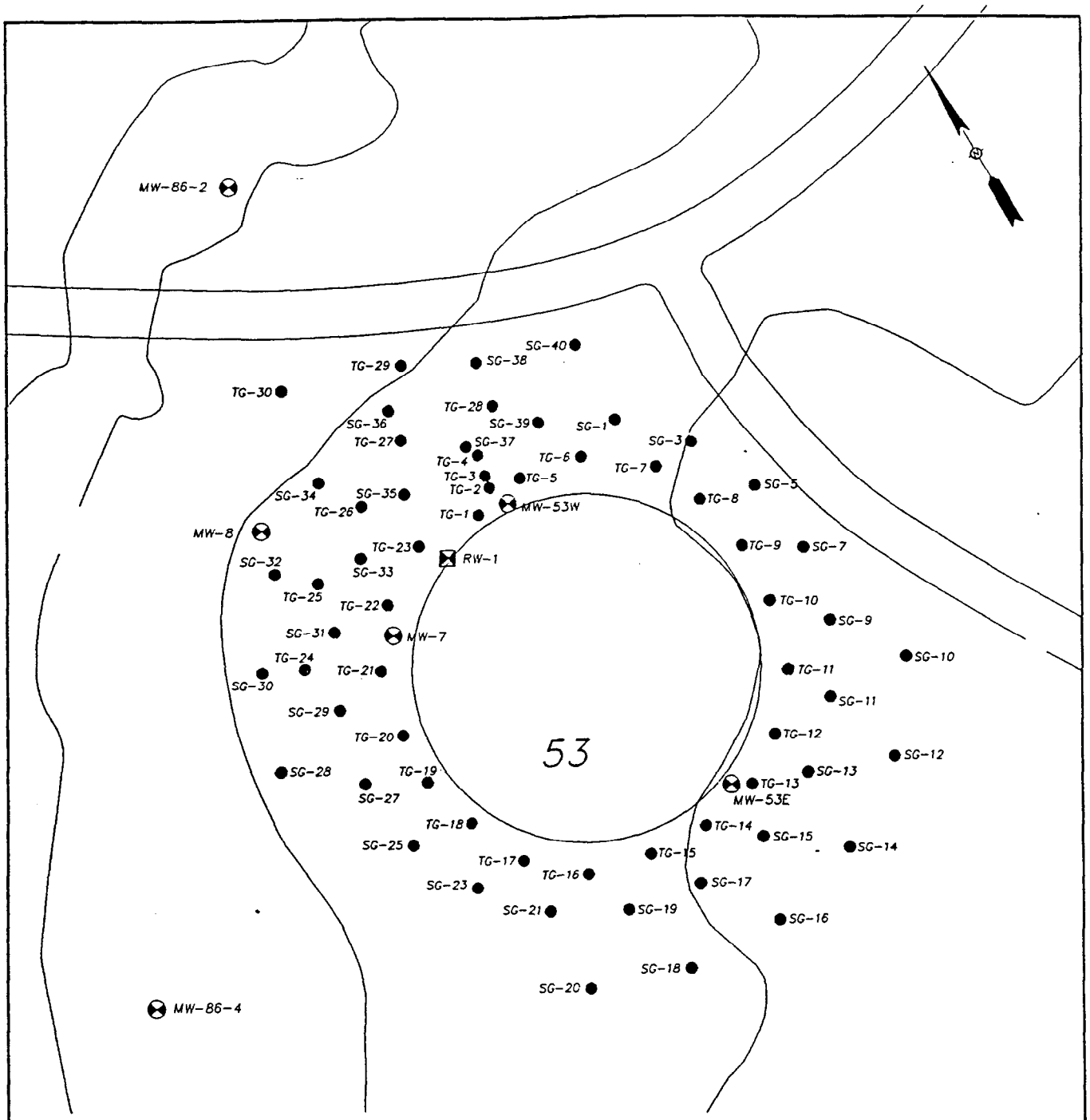
FIGURE 4.

GROUND WATER TABLE CONTOUR MAP - TANK FARM 5
5/6/92

Date: 12/93

Drawing No. 01043-002-140



0 50 100 FEET

0 10 20 30 METERS

LEGEND

MW-7 RECOVERY WELL

RW-1 MONITOR WELL

53 UNDERGROUND STORAGE TANK

SG-20 SOIL GAS POINT LOCATION

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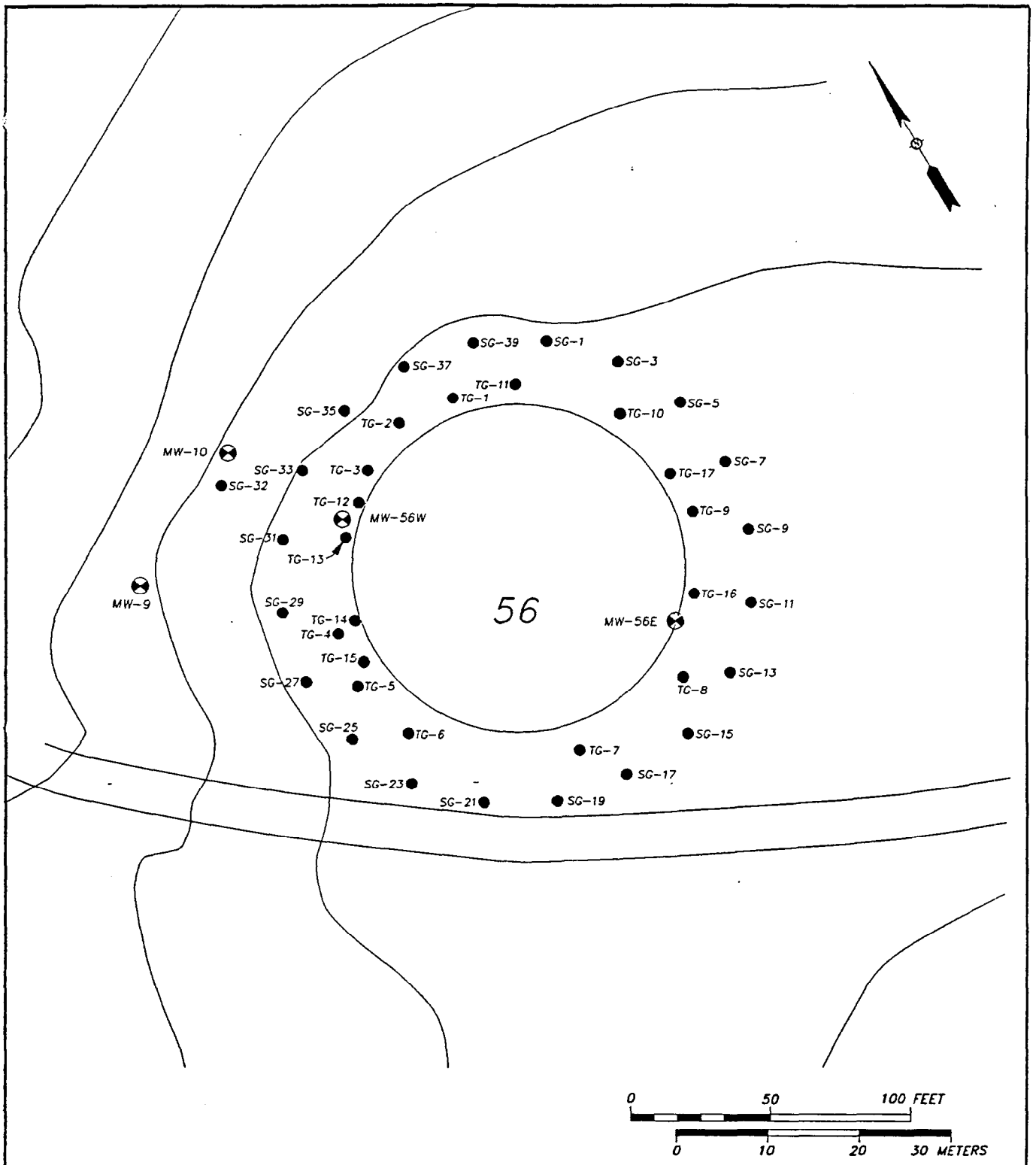
SITE 13 - TANK FARM FIVE

FIGURE 5.

TANK 53
SOIL GAS POINT LOCATIONS

Date: 12/93

Drawing No. 01043-002-140



LEGEND

- MW-9 MONITOR WELL
- 56 UNDERGROUND STORAGE TANK
- SG-39 SOIL GAS POINT LOCATION

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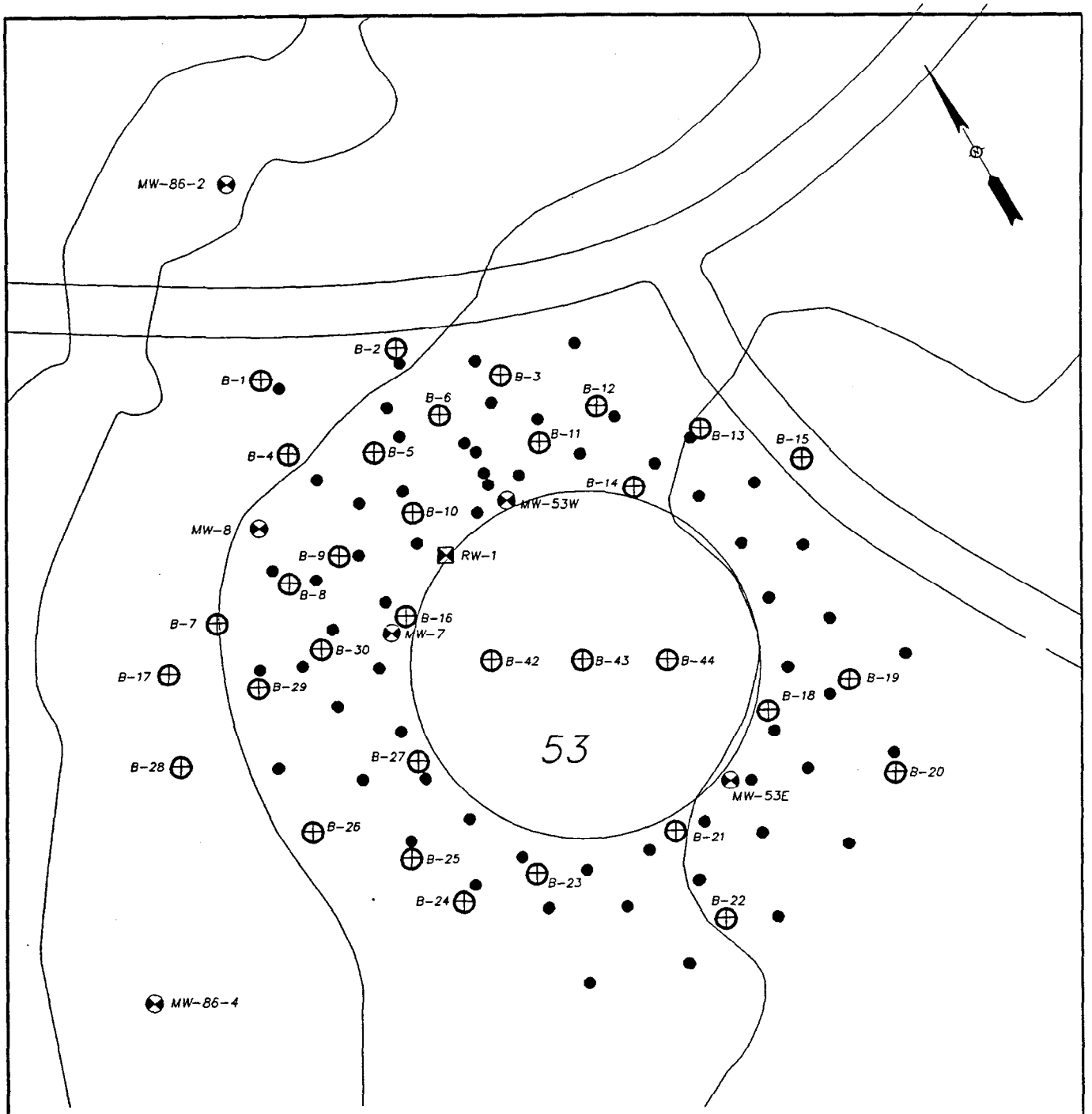
SITE 13 - TANK FARM FIVE

FIGURE 6.
TANK 56
SOIL GAS POINT LOCATIONS

Date: 12/93

Drawing No. 01043-002-140



0 50 100 FEET

0 10 20 30 METERS

LEGEND

- MW-7 RECOVERY WELL
- RW-1 MONITOR WELL
- 53 UNDERGROUND STORAGE TANK
- SG-20 SOIL GAS POINT LOCATION
- B-2 SOIL BORING LOCATION

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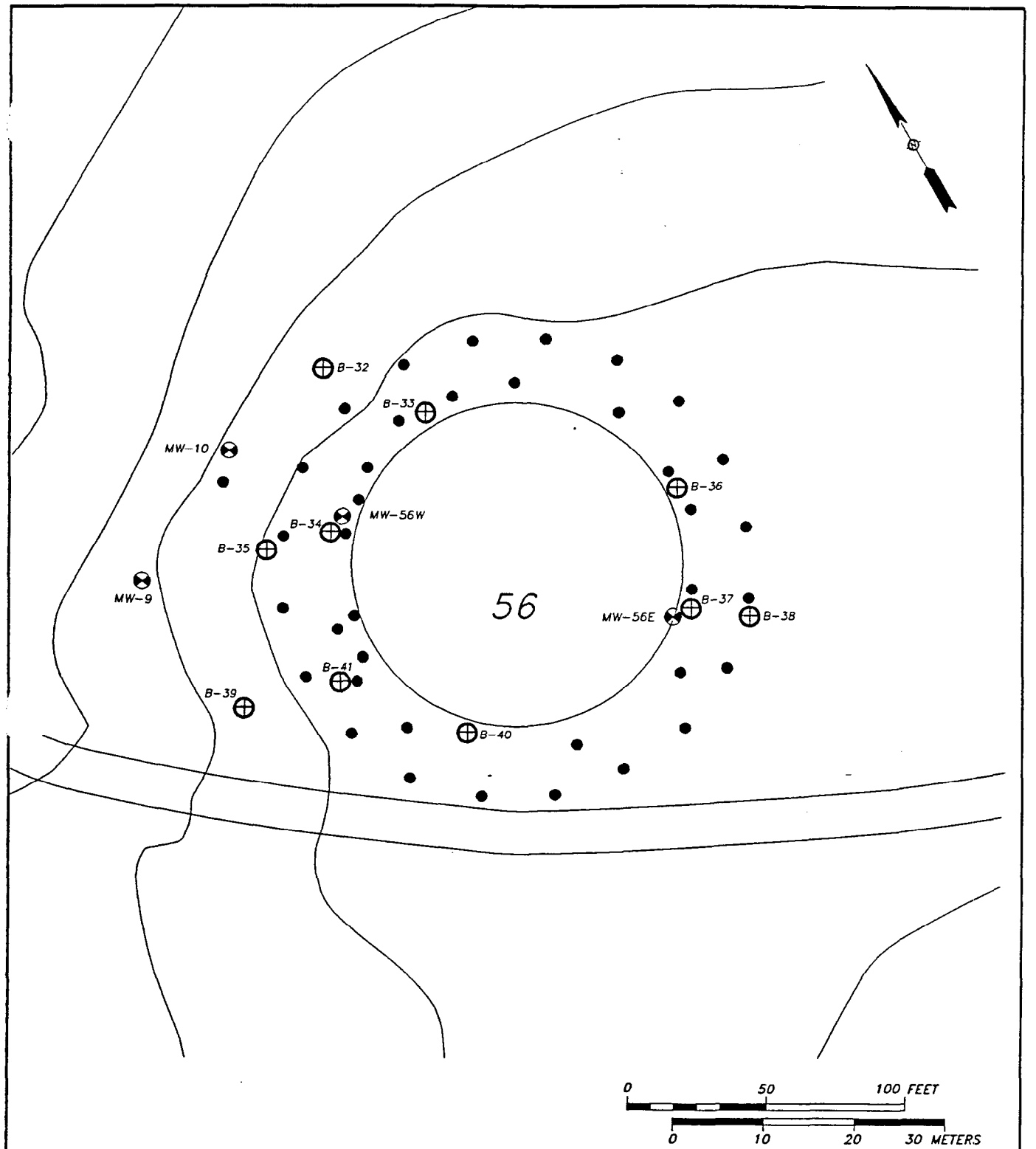
SITE 13 - TANK FARM FIVE

FIGURE 7.

TANK 53
SOIL BORING LOCATIONS

Date: 12/93

Drawing No. 01043-002-140



LEGEND

- MW-9 MONITOR WELL
- 56 UNDERGROUND STORAGE TANK
- SG-39 SOIL GAS POINT LOCATION
- B-39 SOIL BORING LOCATION

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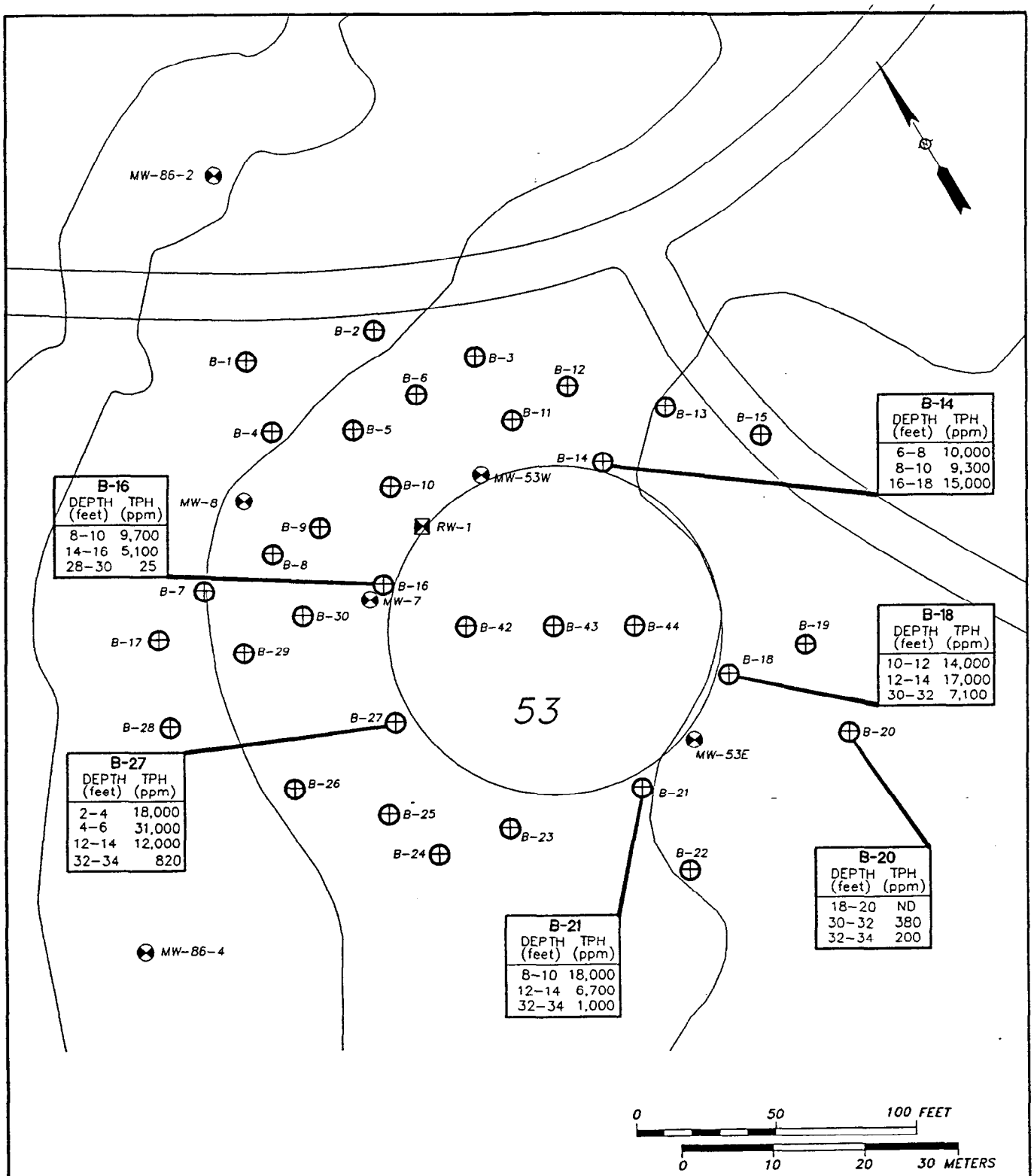
SITE 13 - TANK FARM FIVE

FIGURE 8.

TANK 56
SOIL BORING LOCATIONS

Date: 12/93 | Drawing No. 01043-002-140



LEGEND

- RECOVERY WELL
- MONITOR WELL
- 53 UNDERGROUND STORAGE TANK
- B-2 SOIL BORING LOCATION

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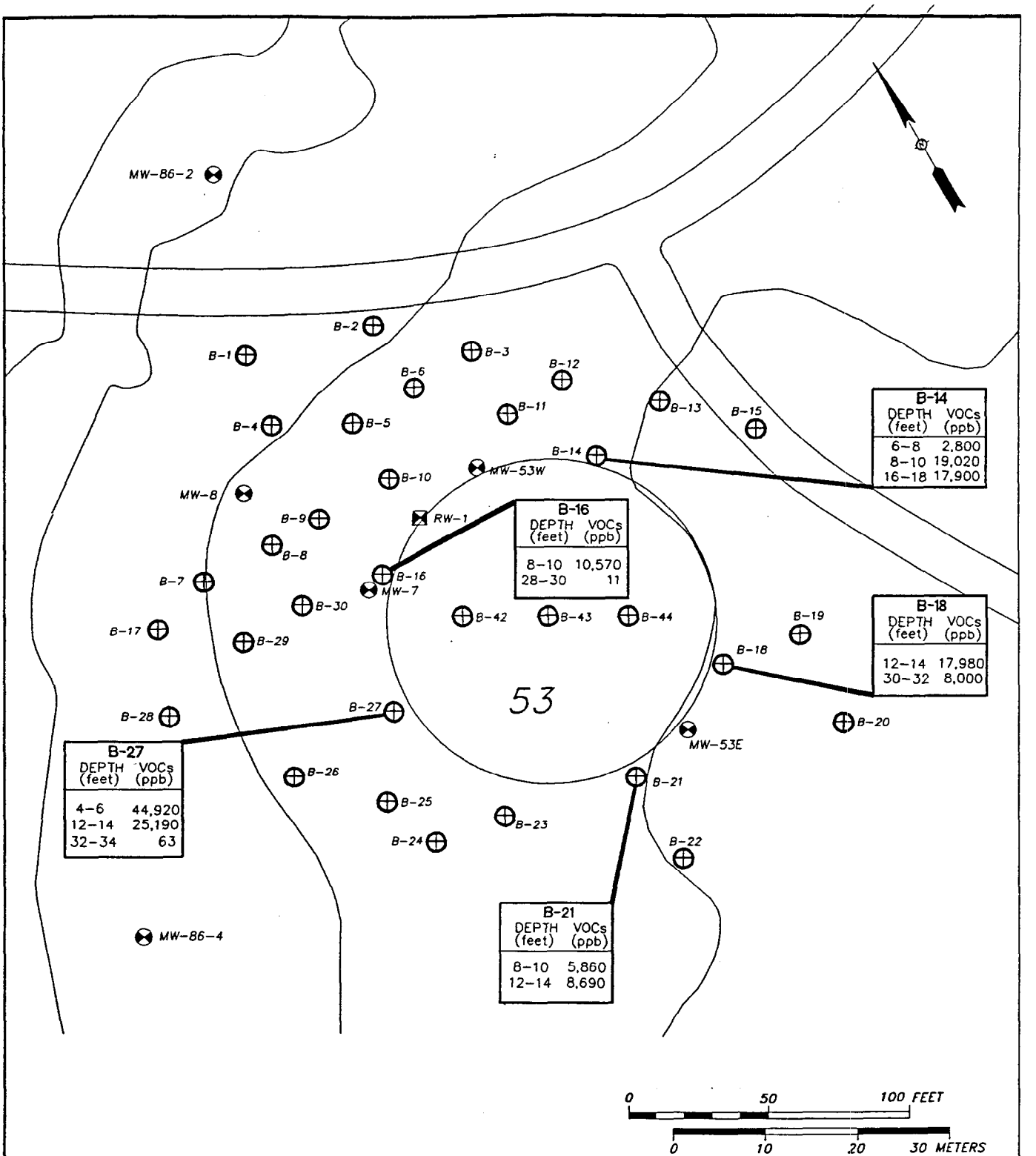
SITE 13 - TANK FARM FIVE

FIGURE 9.

TANK 53
ELEVATED SOIL TPH RESULTS (mg/kg)

Date: 12/93 | Drawing No. 01043-002-140



LEGEND

- RECOVERY WELL
- MONITOR WELL
- 53 UNDERGROUND STORAGE TANK
- B-2 SOIL BORING LOCATION

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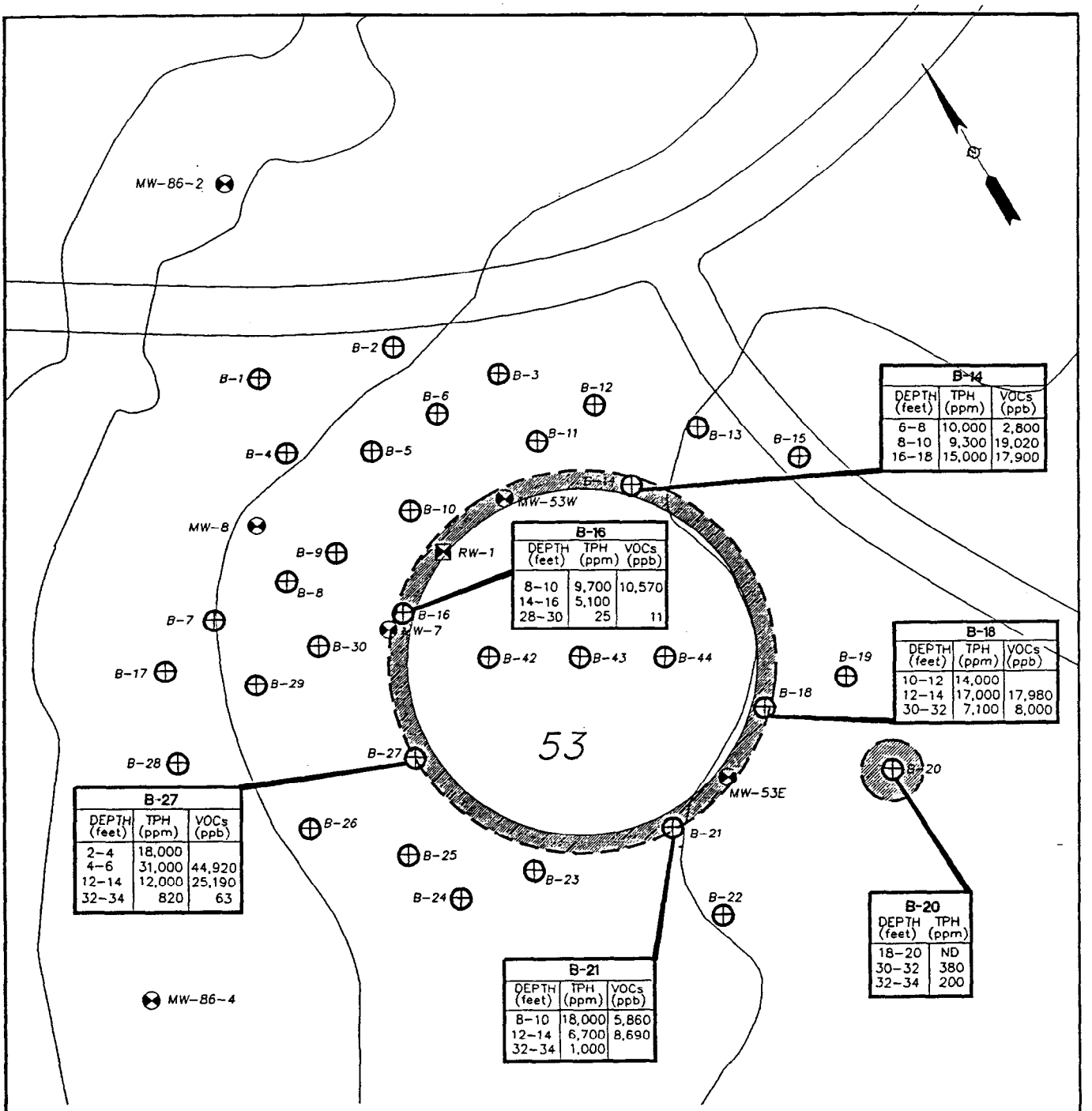
SITE 13 - TANK FARM FIVE

FIGURE 10.

TANK 53
ELEVATED SOIL VOC RESULTS (µg/kg)

Date: 12/93

Drawing No. 01043-002-140



B-14		
DEPTH (feet)	TPH (ppm)	VOCs (ppb)
6-8	10,000	2,800
8-10	9,300	19,020
16-18	15,000	17,900

B-16		
DEPTH (feet)	TPH (ppm)	VOCs (ppb)
8-10	9,700	10,570
14-16	5,100	
28-30	25	11

B-18		
DEPTH (feet)	TPH (ppm)	VOCs (ppb)
10-12	14,000	
12-14	17,000	17,980
30-32	7,100	8,000

B-27		
DEPTH (feet)	TPH (ppm)	VOCs (ppb)
2-4	18,000	
4-6	31,000	44,920
12-14	12,000	25,190
32-34	820	63

B-20	
DEPTH (feet)	TPH (ppm)
18-20	ND
30-32	380
32-34	200

B-21		
DEPTH (feet)	TPH (ppm)	VOCs (ppb)
8-10	18,000	5,860
12-14	6,700	8,690
32-34	1,000	

LEGEND

- RECOVERY WELL
- MONITOR WELL
- (53) UNDERGROUND STORAGE TANK
- B-2 SOIL BORING LOCATION
- PRELIMINARY EXTENT OF SOIL CONTAMINATION

0 50 100 FEET

0 10 20 30 METERS

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SITE 13 - TANK FARM FIVE

FIGURE 11.

TANK 53
SOIL CONTAMINATION - PLAN VIEW

Date: 12/93

Drawing No. 01043-002-140

RISK-BASED PRIORITIZATION OF CLEANUP SITE WORK

SITE: NETC-Newport UST SITE 03 Coaster's Harbor Island (Structure 74)

ANALYTICAL DATA

Pathway	Reference
Groundwater	Free floating petroleum product in MW-103 No other samples Environmental Investigation (EI) December 1993 Sec. 2.20
Surface Soil	
Surface Water	
Sediment	
Notes	HNu readings of MW-103 & MW-104 0.2 to 3 ppm EI Sec 3.20 No other samples

QUALITATIVE QUESTIONS

Circle Choice	**Migration Pathway Factor**
1.	Physical evidence and/or analytical data indicate off-site migration.
2.	No current indication of off-site migration, but potential exists.
3.	Present engineering structures and/or physical/chemical properties of detected constituents greatly restrict potential for migration.
Reference	
Notes	

SITE: NETC-Newport UST SITE Coaster's Harbor Island (Structure 74)

Receptor Factor

Circle Choice	**Groundwater**
1.	Groundwater is currently used for human activities (i.e., drinking, agriculture, recreation).
2.	Groundwater not currently used for human activities (i.e., drinking, agriculture, recreation), but potential exists.
3.	No future potential for groundwater to be used for human activities (i.e., drinking, agriculture, recreation).
Reference	
Notes	

Circle Choice	**Surface Soil** (0 to 6 inches in depth)
1.	Sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) present and/or area routinely used by non-sensitive receptor (i.e., working, training).
2.	Potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area occasionally used by non-sensitive receptors (i.e., working, training)
3.	No potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area not used by non-sensitive receptor (i.e., working, training)
Reference	
Notes	

SITE: NETC-Newport UST SITE Coaster's Island Harbor (Structure 74)

Circle Choice	**Surface Water**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	

SITE: NETC-Newport UST SITE Coaster's Island Harbor (Structure 74)

Circle Choice	**Sediment**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	

ENVIRONMENTAL INVESTIGATION
STRUCTURE 74
(Contract # N62472-93-M-7067)
NAVAL EDUCATION TRAINING CENTER
NEWPORT, RHODE ISLAND

PREPARED FOR:
Naval Education and Training Center
Newport, Rhode Island

PREPARED BY:
GZA GeoEnvironmental, Inc.
Providence, Rhode Island

December 1993
File No. 31329

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1.00 INTRODUCTION

In accordance with our proposal dated September 22, 1993 and your contract # N62472-93-M-7067 dated September 29, 1993, GZA GeoEnvironmental, Inc. (GZA) has conducted an environmental investigation of Structure 74 at the Naval Education Training Center (NETC) in Newport, Rhode Island. The scope of services of this investigation included:

- the installation of five groundwater monitoring wells;
- the field screening of drill cuttings for total volatile organic compounds (VOCs);
- the collection of groundwater level, and free-phase product thickness data from the monitoring wells;
- the performance of an elevation survey to evaluate the direction of groundwater flow; and
- the preparation of this report.

The findings and conclusions presented in this report are subject to the Limitations and Terms and Conditions of Engagement presented in Section 5.00 and Appendix A.

1.10 SITE AND AREA DESCRIPTION

Structure 74, also referred to as underground storage tanks (USTs) Nos. 9 and 10, is a 500,000 gallon, two compartment, concrete tank used for the storage of No. 4 fuel oil. The tanks were also used in the past for the storage of No. 6 fuel. Fuel oil from the tanks is transferred via an underground pipe line to boilers housed in Building 86, located 450 feet west of Structure 74. It is GZA's understanding that the underground pipeline is located in a self contained vault.

Structure 74 is located in the central portion of Coasters Harbor Island in Newport, Rhode Island. Narragansett Bay is located 700 feet west, 1,500 feet north, 900 feet east, and 1,500 feet south of the tanks. The tanks are surrounded by grass lawns and paved parking areas. The nearest naval facility buildings are located 150 feet east, 180 feet north and 350 feet west of the tanks. Refer to Figure 1 for a site locus plan.

The tanks were installed below ground on the northwest side of a bedrock hill. A ten foot vertical rock cut, to the south and east of the tanks, was made to install the tanks. The ground surface slopes moderately downward to the north and west of the tanks.

1.20 PREVIOUS STUDY

In August of 1993, Tracer Research Company (Tracer) performed leak testing on Structure 74. That effort involved the inoculation of the fuel in the tank with a VOC tracer, the installation of 22 sampling probes (to depths of 5 to 13 feet below grade), and the collection of soil gas samples for on-site tracer and total volatile hydrocarbon analysis (TVHC). Based on soil gas tracer concentrations of 0.02 to 0.3 ug/l at four of the sampling points, and TVHC concentrations of 22 to 420 ug/l at five of the sampling points, Tracer concluded that Structure 74 failed the leak test.

2.00 FIELD EXPLORATION PROGRAM

GZA completed a field exploration program which consisted of the installation of five groundwater monitoring wells around the perimeter of Structure 74, the screening of drill cuttings for total VOCs, an elevation survey, and groundwater and product thickness measurements.

2.10 MONITORING WELL INSTALLATIONS

Five groundwater monitoring wells (MW-101 to MW-105) were installed by D.L. Maher Drilling Company between October 21 and 26, 1993. The borings were advanced using a truck mounted Barber dual air rotary drilling rig. This rig uses compressed air as a drilling fluid, instead of water, to advance the 8-inch diameter drill bit. The boring depths ranged from 35 to 50 feet below ground surface.

Groundwater monitoring wells were installed in each of the borings. The wells consisted of 30 to 40 foot lengths of 4-inch diameter slotted (0.020 inch) PVC well screen connected to solid PVC riser pipe which extends to ground surface. The well screens were set to span above and below the groundwater table to allow measurements for the possible presence and thickness of free phase floating product. All PVC connections were threaded, not glued. The annular spaces surrounding the well screens were backfilled with a gravel pack, and a bentonite clay seal was placed above the gravel pack. The wells were completed with either a 1-foot long flush mounted roadbox, or a 4-foot long protective steel casing, grouted in place. Refer to Figure 2 for the location of the monitoring wells and to Appendix B for the boring/well installation logs.

During a concurrent study, GZA installed two groundwater monitoring wells (GZ-2 and GZ-3) to the southwest of Structure 74. See Figure 2 for well locations. These two inch diameter groundwater monitoring wells were installed to depths of approximately 30 feet below ground surface. Well installation logs are provided in Appendix B.

2.20 FIELD TVOC SCREENING

Soil and rock samples were obtained from the air rotary rig's drill cuttings. A portion of each sample was collected in a clean glass jar and then screened in the field for total VOCs using an HNU Model PI-101 PID, which measures relative levels of VOCs referenced to a benzene in air standard. Samples were screened using a PID with a 10.2 electron volt (eV) lamp. Although the PID screening cannot be directly used to quantify VOC concentrations, or identify individual compounds, the results can serve as a relative indicator of the total level of VOCs in each sample. The HNU screening results are presented on the boring logs in Appendix B.

2.30 GROUNDWATER MEASUREMENTS AND ELEVATION SURVEY

Groundwater levels were measured in the monitoring wells on November 17, 1993 (three weeks after well installations) using an electronic oil/water interface probe. This device is capable of measuring water table levels and floating product thickness measurements to the nearest 0.01 feet. The groundwater levels and product thickness measurements are summarized on Table 1.

GZA performed an elevation survey of the top of the PVC well casing of each well using a surveyor's rod and level. The survey was performed relative to an arbitrarily assumed bench mark of 100.00 feet for the top of the PVC well casing at monitoring well MW-101. The survey data was used to determine groundwater elevations, which are summarized on Table 1.

3.00 FIELD EXPLORATION RESULTS

The following sections summarize the soil, bedrock, and groundwater conditions encountered in the explorations.

3.10 SUBSURFACE CONDITIONS

The subsurface conditions generally consisted of 0.5 to 6 feet of granular soil underlain by shale and/or conglomerate (bedrock). See boring logs in Appendix B for additional details. A petroleum-like odor was noted in the soil/rock cuttings during the drilling of monitoring wells MW-103 and MW-104. No olfactory evidence of contamination was noted during the drilling of the other monitoring wells.

The groundwater levels recorded in the monitoring wells on November 17, 1993 varied from 8.2 to 23.8 feet below ground surface. These water levels are located within bedrock (below the overburden soil). Free phase floating petroleum product was detected in monitoring MW-103, with a thickness of 0.04 feet. No floating petroleum product was observed in the remaining wells. Refer to Table 1 for a summary of water levels, product thickness measurements, and groundwater elevations.

The groundwater level data was used to construct groundwater contours which are depicted on Figure 2. The contours indicate that groundwater flow, in the vicinity of the USTs, is to the northwest (note that groundwater flows perpendicular to the groundwater contour lines from high groundwater elevations to low groundwater elevations). It also should be noted that heterogeneous bedrock fracturing may result in contaminant migration in a direction that is different from the groundwater flow direction. The hydraulic gradient of the water table is approximately 6.7 feet per 100 feet.

3.20 FIELD TVOC SCREENING RESULTS

The soil/rock cuttings generated during drilling were screened in the field for total volatile organic compounds (TVOCs) using an HNU meter. The HNU screening results are presented on the boring logs in Appendix B. The HNU readings of the drill cuttings generated from monitoring wells MW-101, MW-102, and MW-105 were below the instrument detection limit of 0.1 parts per million (ppm). The HNU readings of the drill cuttings generated from monitoring wells MW-103 and MW-104 varied from 0.2 to 3 ppm. These drill cuttings, with HNU readings, were also observed to exhibit petroleum-like odors. It should be noted that some loss of VOCs in the drill cuttings have occurred due to the large usage of compressed air in the drilling method.

4.00 SUMMARY AND CONCLUSIONS

Seven bedrock groundwater monitoring wells were installed around the perimeter of Structure 74. The direction of groundwater flow, based on water level readings from these wells, is from the southeast to the northwest. Olfactory evidence of petroleum contamination (and field HNU readings) were noted during drilling of two of the downgradient monitoring well (MW-103 and MW-104). In addition, 0.04 feet of petroleum product was detected floating on the groundwater table in monitoring well MW-103. Based on these findings, and Tracer's opinion that the USTs failed a leak test, it is GZA's opinion that a release of petroleum product into the subsurface environment has occurred from Structure 74.

5.00 LIMITATIONS

GZA's investigation was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same geographical area, and we observed that degree of care and skill generally exercised by other consultants under similar circumstances and conditions. Our findings and conclusions must be considered not as scientific certainties, but rather as our professional opinion concerning the significance of the limited data gathered during the course of the environmental investigation. No other warranty, express or implied, is made. Specifically, GZA does not and cannot represent that the site contains no hazardous material, oil, or other latent condition beyond that observed by GZA during our site evaluation. This report is also subject to the specific limitations contained in Appendix A.

TABLE 1

GROUNDWATER LEVELS, ELEVATIONS AND PRODUCT THICKNESS MEASUREMENTS (1) (2)

Monitoring Well	Reference[3] Elevation (ft)	Depth to[3] Water (ft)	Depth to[3] Product (ft)	Product Thickness (ft)	Relative Groundwater Elevation (ft)
MW-101	100.00	20.97	NA[4]	0.00	79.03
MW-102	102.00	23.84	NA	0.00	78.16
MW-103	80.98	11.40	11.36	0.04	69.62
MW-104	76.75	8.16	NA	0.00	68.59
MW-105	84.94	15.02	NA	0.00	9.92
GZ-2	87.11	13.64	NA	0.00	73.47
GZ-3	83.39	12.06	NA	0.00	71.33

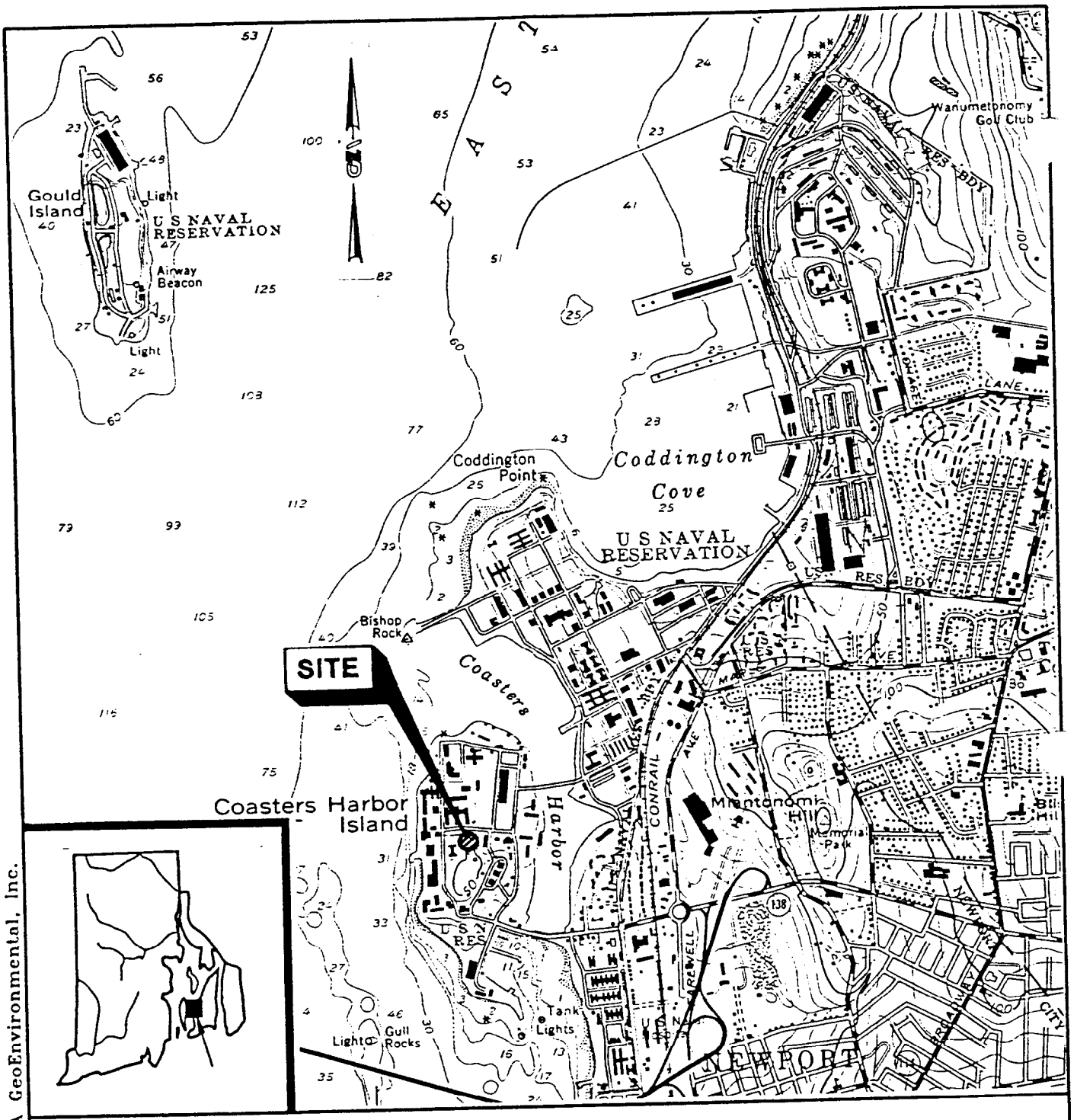
Notes:

-1- Groundwater levels were measured by GZA personnel using an electronic oil/water interface probe on November 17, 1993.

-2- The elevations are relative to an arbitrarily assumed datum of 100.00 feet for the top of the PVC well casing of Well MW-101.

-3- Relative to top of the PVC well casing. Survey performed by GZA personnel on November 5, 1993.

-4- NA indicates not applicable.



FROM USGS PRUDENCE ISLAND, RI QUADRANGLE MAP

APPROXIMATE SCALE IN FEET

0' 1000' 2000' 4000'

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File No. 31329

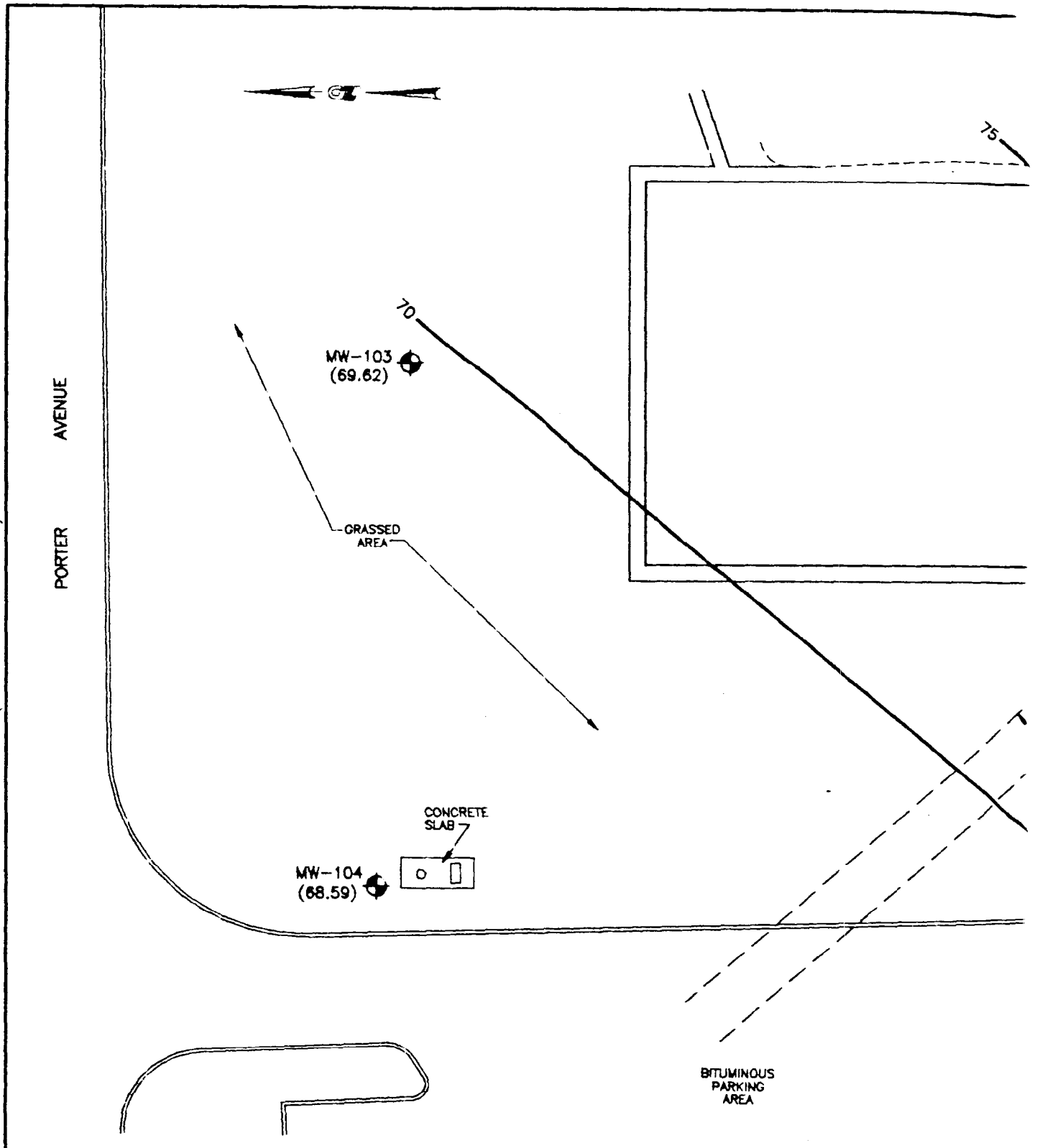
GZA

NAVAL EDUCATION & TRAINING CENTER
STRUCTURE 74
NEWPORT, RHODE ISLAND

LOCUS PLAN

NOVEMBER 1993

FIGURE NO. 1



LEGEND:

MW-101 — MONITORING WELLS INSTALLED BY D.L. MAHER DRILLING COMPANY BETWEEN 10/21 AND 10/26/93, OBSERVED BY GZA PERSONNEL

GZ-2 — MONITORING WELLS INSTALLED BY GZA DRILLING, INC. BETWEEN 10/20 AND 10/22/93, OBSERVED BY GZA PERSONNEL

(79.03)—INDICATES RELATIVE GROUNDWATER ELEVATION RECORDED ON 11/17/93

70 — GROUNDWATER ELEVATION CONTOUR (IN FEET)

NOTES:

1. THE BASE MAP WAS C.H.I., DATED 3/6/8
2. THE LOCATIONS OF T MAN-MADE FEATURES
3. WATER LEVEL READIN BEEN REVIEWED AND THE GROUNDWATER A TIME MEASUREMENTS
4. GROUNDWATER CONT

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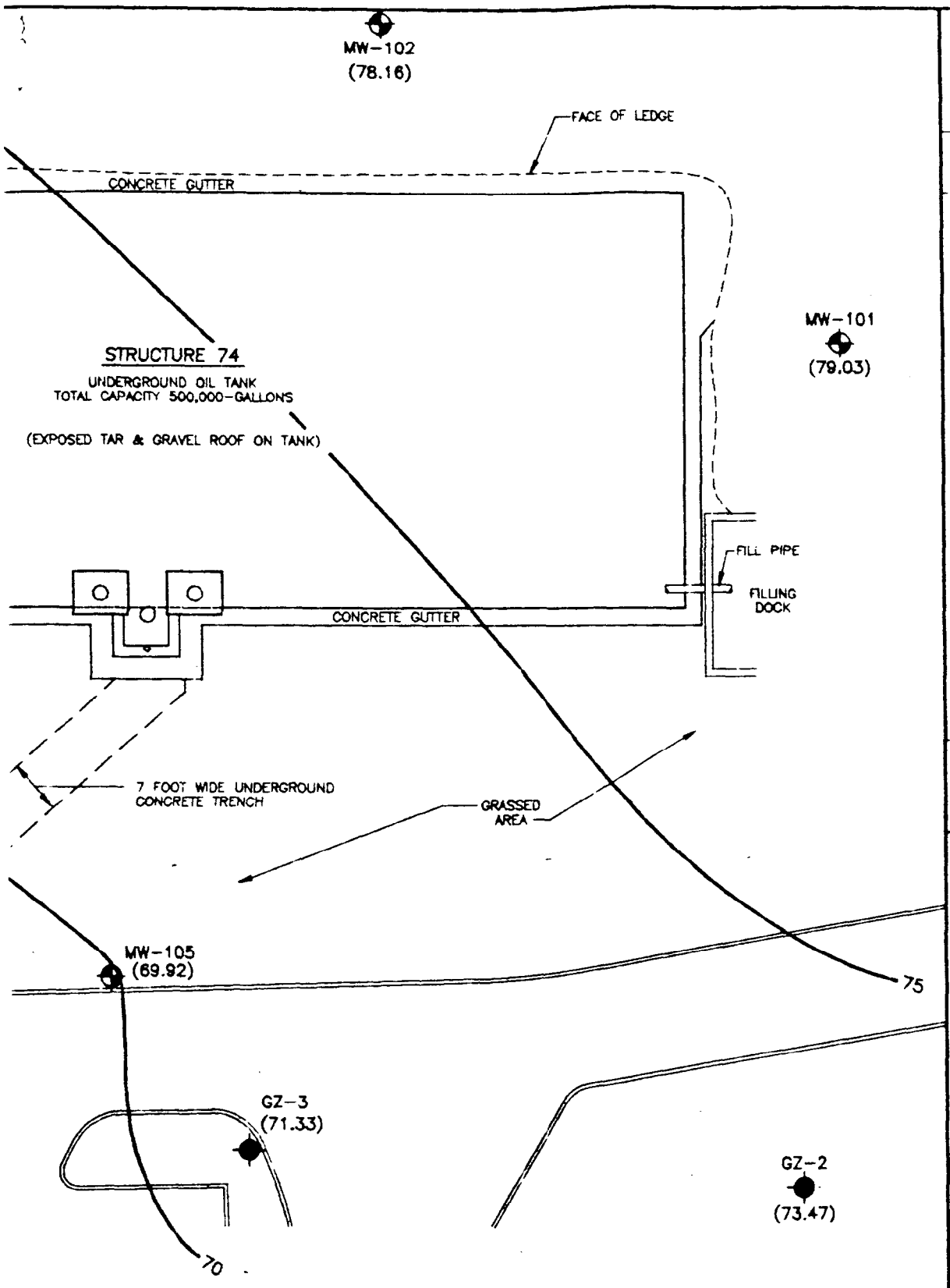
(CAD FILE: 31329.DWG)



S DEVELOPED FROM A PLAN PROVIDED BY THE NAVAL EDUCATION & TRAINING CENTER ENTITLED "LEAK DETECTION, TANK NO. 74 '89, ORIGINAL SCALE 1"=10'.

THE MONITORING WELLS WERE APPROXIMATELY DETERMINED BY TAPE MEASUREMENTS FROM EXISTING TOPOGRAPHIC AND ES. THIS DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

INGS HAVE BEEN MADE IN THE MONITORING WELLS AT THE TIMES AND UNDER CONDITIONS STATED ON THE LOGS. THIS DATA HAS D INTERPRETATIONS MADE IN THE TEXT OF THE REPORT. HOWEVER, IT MUST BE STATED THAT FLUCTUATIONS IN THE LEVEL OF MAY OCCUR DUE TO VARIATIONS IN RAINFALL, TEMPERATURE AND OTHER FACTORS DIFFERENT FROM THOSE PRESENT AT THE S WERE MADE.

ITOURS ARE BASED ON DATA FROM WIDELY SPACED EXPLORATIONS AND MAY NOT REFLECT ACTUAL SUBSURFACE CONDITIONS.

REV. No.	DESCRIPTION	BY	DATE

PROJ. MGR. ABU
CHECKED BY: ABU
REVIEWED BY: JPH

DRAWN BY: BAW
SCALE: 1"=20'
DATE: DEC., 1993

GZA GeoEnvironmental, Inc.

SCALE IN FEET
0' 10' 20' 40'

NAVAL EDUCATION & TRAINING CENTER, STRUCTURE 74
NEWPORT, RHODE ISLAND

EXPLORATION LOCATION PLAN

PROJECT No. 31329

FIGURE No. 2

RISK-BASED PRIORITIZATION OF CLEANUP SITE WORK

SITE: NETC-Newport UST SITE 04 Building 7 Power Plant

ANALYTICAL DATA

Pathway	Reference
Groundwater	
Surface Soil	
Surface Water	
Sediment	
Notes	Soil/rock cuttings from MWs 101, 102, 103 showed HNu readings of 0.4 to 5 ppm No other samples

Environmental Investigation Dec 1993 Sec. 3.20

QUALITATIVE QUESTIONS

Circle Choice	**Migration Pathway Factor**
1.	Physical evidence and/or analytical data indicate off-site migration.
2.	No current indication of off-site migration, but potential exists.
3.	Present engineering structures and/or physical/chemical properties of detected constituents greatly restrict potential for migration.
Reference	
Notes	

SITE: NETC-Newport UST SITE Bldg 7 Power Plant

Receptor Factor

Circle Choice	**Groundwater**
1.	Groundwater is currently used for human activities (i.e., drinking, agriculture, recreation).
2.	Groundwater not currently used for human activities (i.e., drinking, agriculture, recreation), but potential exists.
3.	No future potential for groundwater to be used for human activities (i.e., drinking, agriculture, recreation).
Reference	
Notes	

Circle Choice	**Surface Soil** (0 to 6 inches in depth)
1.	Sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) present and/or area routinely used by non-sensitive receptor (i.e., working, training).
2.	Potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area occasionally used by non-sensitive receptors (i.e., working, training)
3.	No potential for sensitive receptors (i.e., children, elderly, hospital patients, pregnant women) to be present and/or area not used by non-sensitive receptor (i.e., working, training)
Reference	
Notes	

SITE: NETC-Newport UST SITE Bldg 7 Power Plant

Circle Choice	**Surface Water**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	

SITE: NETC-Newport UST SITE Building 7 Power Plant

Circle Choice	**Sediment**
1.	Identified--Evidence exists that habitats containing federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist on or proximal to the site.
2.	Potential--Habitats containing federal and or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) have not yet been identified on or proximal to the site but may exist.
3.	Limited--It is unlikely that federal and/or state threatened and listed endangered species, wetland areas, migratory bird habitats (etc.) exist; or if existent, are protected by natural conditions (e.g., hydraulic gradient, attenuation, dilution).
Reference	
Notes	

ENVIRONMENTAL INVESTIGATION
USTs AT BUILDING NO. 7
(CONTRACT # N62472-94-M-1715)
NAVAL EDUCATION TRAINING CENTER
MIDDLETOWN, RHODE ISLAND

PREPARED FOR:
Naval Education and Training Center
Newport, Rhode Island

PREPARED BY:
GZA GeoEnvironmental, Inc.
Providence, Rhode Island

File No. 31344
December 1993

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1.00 INTRODUCTION

In accordance with our proposal dated October 22, 1993 and your Contract # 62472-94M-1715, GZA GeoEnvironmental, Inc. (GZA) has conducted an environmental investigation of the underground storage tanks (USTs) located west of Building No. 7 at the Naval Education Training Center (NETC) in Middletown, Rhode Island. The scope of services of this investigation included:

- the installation of four groundwater monitoring wells;
- the field screening of drill cuttings for total volatile organic compounds (VOCs) using a photoionization detector (PID);
- the measurement of groundwater level, and free-phase product thicknesses in the monitoring wells;
- the performance of an elevation survey in order to evaluate the direction of groundwater flow; and
- the preparation of this report.

The findings and conclusions presented in this report are subject to the Limitations and Terms and Conditions of Engagement presented in Section 5.00 and Appendix A.

1.10 SITE AND AREA DESCRIPTION

Six, 20,000 gallon No. 4 fuel oil and one 1,000 gallon No. 2 fuel oil USTs are located to the west of Building No. 7 at the NETC. The fuel oil stored in the tanks is used to fuel boilers housed in Building No. 7. Refer to Figure 1 for a Site Locus Plan.

As shown on Figure No 2, the USTs are abutted by Building 7 to the east, paved areas to the south and west, and a small strip of vegetated land to the north. In the vicinity of the tanks, there are railroad tracks 40 feet to the west, a public works shop building 35 feet to the south, and a paved unnamed roadway 20 feet to the north.

The ground surface topography is relatively flat in the vicinity of the tanks, and slopes gently downward to the west toward Coddington Cove, which is located approximately 500 feet away.

1.20 PREVIOUS STUDY

In August of 1993, Tracer Research Company (Tracer) performed leak testing on the six 20,000 gallon No. 4 fuel oil USTs (Tank Nos. 1 to 6). That effort involved the inoculation of the fuel in the tank with a volatile organic compound (VOC) tracer, the installation of 21 sampling probes (to depths of 5 to 13 feet below grade), and the collection of soil gas samples for on-site tracer and total volatile hydrocarbon (TVHC) analysis. Based on soil gas tracer concentrations of 0.002 to 0.2 ug/l at six of the sampling points, and TVHC concentrations of 3 to 1,200 ug/l at three of the sampling points, Tracer concluded that Tanks No. 1, No. 3 and No. 6 failed the leak test, and Tanks No. 2, 4 and 5 passed the tightness test.

2.00 FIELD EXPLORATION PROGRAM

GZA completed a field exploration program which consisted of the installation of four groundwater monitoring wells in locations assumed to be downgradient of the tanks, the screening of drill cuttings for total VOCs, an elevation survey, and groundwater and product thickness measurements.

2.10 MONITORING WELL INSTALLATIONS

Four groundwater monitoring wells (MW-101 to MW-104) were installed by D.L. Maher Drilling Company between October 26 and 29, 1993. The borings were advanced using a truck mounted Barber dual air rotary drilling rig. This rig uses compressed air as a drilling fluid, instead of water, to advance the 8-inch diameter drill bit. The borings were performed to depths of approximately 25 feet below ground surface.

Groundwater monitoring wells were installed in each of the borings. The wells consisted of 20 foot lengths of four-inch diameter slotted (0.020 inch) PVC well screen connected to 5 feet of solid PVC riser pipe. The well screens were set to span above and below the groundwater table to allow measurements for the possible presence and thickness of free phase floating product. All PVC connections were threaded, not glued. The annular spaces surrounding the well screens were backfilled with a gravel pack, and a bentonite clay seal was placed above the gravel pack. The wells were completed with a one foot long flush mounted roadbox grouted in place. Refer to Figure 2 for the location of the monitoring wells and to Appendix B for the boring/well installation logs.

It should be noted that overhead and underground utilities limited the placement of monitoring wells around the tanks. Specifically, numerous overhead wires are located to the north of the tanks, and an overhead steam pipe rack and two underground sewer lines are situated to the west of the tanks. Furthermore, one of the sewer lines was

inadvertently encountered during the drilling of monitoring well MW-102. The 16-inch diameter sewer line (which was encountered at a depth of 8 feet) was subsequently repaired and the monitoring well was redrilled at a nearby location.

2.20 FIELD TVOC SCREENING

Soil and rock samples obtained from the drill cuttings were collected in a clean glass jar and screened in the field for total VOCs using an HNU Model PI-101 PID, which measures relative levels of VOCs referenced to a benzene in air standard. Samples were screened using a PID with a 10.2 electron volt (eV) lamp. Although the PID screening cannot be directly used to quantify VOC concentrations, or identify individual compounds, the results can serve as a relative indicator of the total level of VOCs in each sample. The HNU screening results are presented on the boring logs in Appendix B.

2.30 GROUNDWATER MEASUREMENTS AND ELEVATION SURVEY

Groundwater levels were measured in the monitoring wells on November 17, 1993 (approximately three weeks after well installations) using an electronic oil/water interface probe. This device is capable of measuring water table levels and floating product thickness measurements to the nearest 0.01 feet. The groundwater levels and product thickness measurements are summarized on Table 1.

GZA performed an elevation survey of the top of the PVC well casing of each well using a survey rod and level. The survey was performed relative to an arbitrarily assumed bench mark of 100.00 feet for the top of the PVC well casing at monitoring well MW-102. The survey data was used to determine groundwater elevations, which are summarized on Table 1.

3.00 FIELD EXPLORATION RESULTS

The following sections summarize the soil, bedrock, and groundwater conditions encountered in the explorations.

3.10 SUBSURFACE CONDITIONS

The subsurface conditions, based on visual characteristics of the drill cuttings, generally consisted of 6 to 14 feet of granular soil underlain by shale (bedrock). See boring logs in Appendix B for additional details. A petroleum-like odor was noted in the soil/rock cuttings during the drilling of monitoring wells MW-101 to MW-103 (those wells installed in close proximity to the USTs). No olfactory evidence of contamination was noted during the drilling of monitoring well MW-104 (installed approximately 60 feet downgradient of the USTs).

The groundwater levels recorded in the monitoring wells on November 17, 1993 varied from 9.0 to 13.1 feet below ground surface. The water table was measured above the bedrock in monitoring wells MW-101 and MW-104, at the bedrock surface in monitoring well MW-102, and below the bedrock surface in monitoring well MW-103. Free phase floating petroleum product was detected in monitoring wells MW-101 and MW-102, with a thickness of 0.06 and 0.02 feet, respectively. No floating petroleum product was observed in the remaining wells. Refer to Table 1 for a summary of water levels, product thickness measurements, and groundwater elevations.

The groundwater level data was used to construct groundwater table elevation contours which are depicted on Figure 2. The contours indicate that groundwater flow, in the vicinity of the USTs, is, as expected, to the west toward Coddington Cove (note that groundwater in a homogeneous media flows perpendicular to the groundwater contour lines from high groundwater elevations to low groundwater elevations). It also should be noted that heterogeneous bedrock fracturing may result in contaminant migration in a direction that is different from the groundwater flow direction. The hydraulic gradient of the water table is approximately 5.5 feet per 100 feet.

3.20 FIELD TVOC SCREENING RESULTS

The soil/rock cuttings generated during drilling were screened in the field for total volatile organic compounds (TVOCs) using an HNU meter. The HNU screening results are presented on the boring logs in Appendix B. The HNU readings of the drill cuttings generated from monitoring wells MW-101, MW-102, and MW-103 (closest to the USTs) varied from 0.4 to 5 parts per million (ppm). These drill cuttings also exhibited petroleum-like odors. The HNU readings of the drill cuttings generated from monitoring well MW-104 were below the HNU detection limit of 0.1 ppm. It should be noted that some loss of VOCs in the drill cuttings may have occurred due to the large usage of compressed air in the drilling method.

4.00 SUMMARY AND CONCLUSIONS

Four groundwater monitoring wells were installed to the west of the USTs. The inferred direction of groundwater flow, based on water level readings from these wells, is from the east to the west. Olfactory evidence of petroleum contamination (and field HNU readings) were noted during the drilling of three of the monitoring wells (MW-101 to MW-103). In addition, petroleum product was detected floating on the groundwater table in monitoring wells MW-101 and MW-102. Based on these findings, and Tracer's opinion that three of the USTs failed a leak test, it is GZA's opinion that a release of petroleum product into the subsurface environment has occurred from these tanks.

5.00 LIMITATIONS

GZA's investigation was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same geographical area, and we observed that degree of care and skill generally exercised by other consultants under similar circumstances and conditions. Our findings and conclusions must be considered not as scientific certainties, but rather as our professional opinion concerning the significance of the limited data gathered during the course of the environmental investigation. No other warranty, express or implied, is made. Specifically, GZA does not and cannot represent that the site contains no hazardous material, oil, or other latent condition beyond that observed by GZA during our site evaluation. This report is also subject to the specific limitations contained in Appendix A.

TABLE 1

GROUNDWATER LEVELS, ELEVATIONS AND PRODUCT THICKNESS MEASUREMENTS (1) (2)

Monitoring Well	Reference[3] Elevation (ft)	Depth to[3] Water (ft)	Depth to[3] Product (ft)	Product Thickness (ft)	Relative Groundwater Elevation (ft)
MW-101	100.57	9.00	8.94	0.06	91.63
MW-102	100.00	9.03	9.01	0.02	90.99
MW-103	99.63	8.84	NA[4]	0.00	90.79
MW-104	101.32	13.06	NA	0.00	88.26

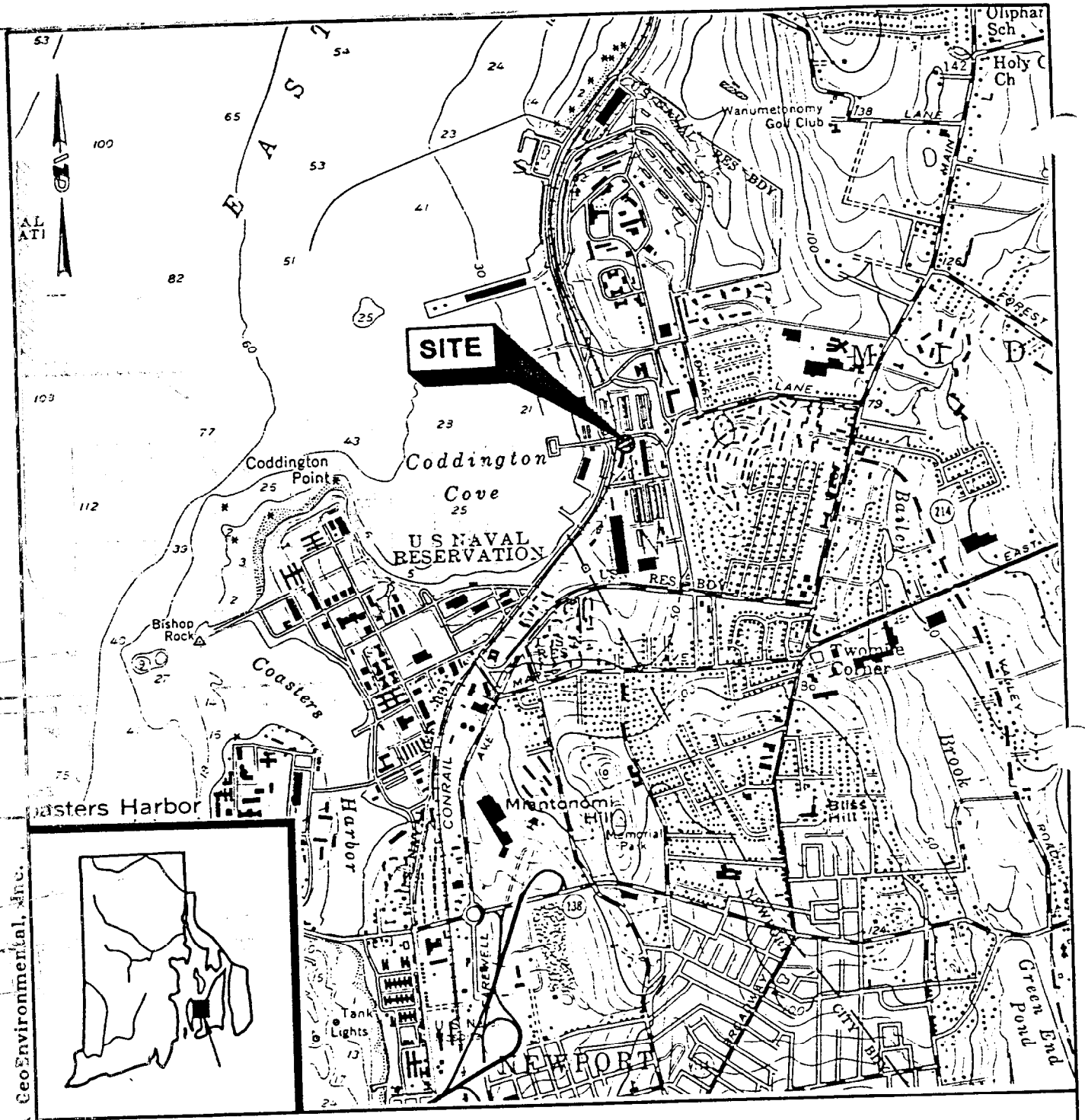
Notes:

-1- Groundwater levels were measured by GZA personnel using an electronic oil/water interface probe on November 17, 1993.

-2- The elevations are relative to an arbitrarily assumed datum of 100.00 feet for the top of the PVC well casing of Well MW-102.

-3- Relative to top of the PVC well casing. Survey performed by GZA personnel on November 5, 1993.

-4- NA indicates not applicable.



FROM USGS PRUDENCE ISLAND, RI QUADRANGLE MAP

APPROXIMATE SCALE IN FEET

0' 1000' 2000' 4000'

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File No. 31344

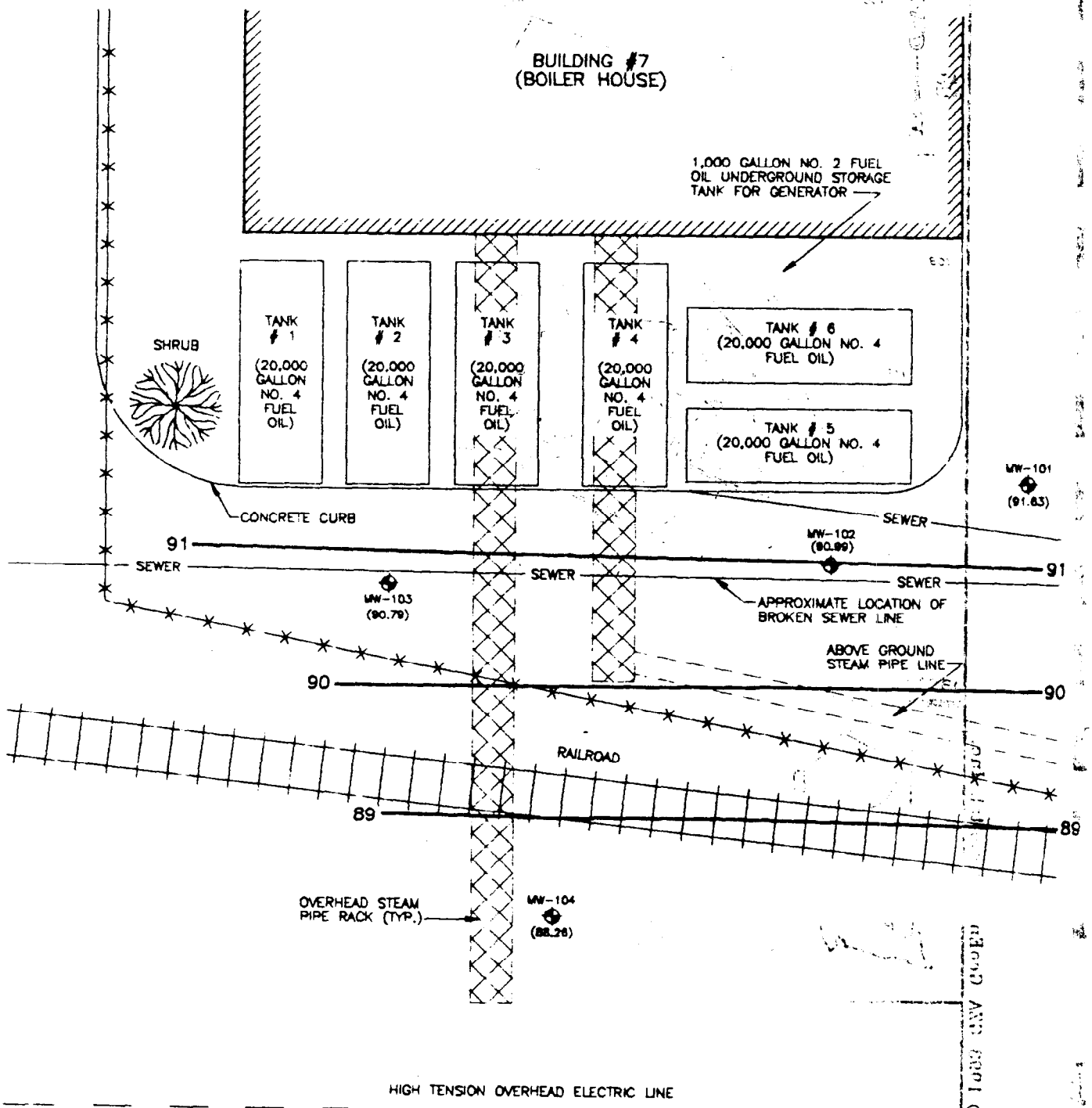
GZA

NAVAL EDUCATION & TRAINING CENTER
BUILDING NO. 7
(BOILER HOUSE)
NEWPORT, RHODE ISLAND

LOCUS PLAN

NOVEMBER 1993

FIGURE NO. 1



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CAD FILE: 31344.DWG

NOTES:

1. THE BASE MAP WAS DEVELOPED FROM A PLAN PROVIDED BY THE NAVAL EDUCATION & TRAINING CENTER ENTITLED "INSTALL FUEL OIL MANIFOLD, BUILDING 7, CC SITE PLAN, LEGEND AND DETAILS", DATED 4/23/85, ORIGINAL SCALE 1"=8'.
2. THE LOCATIONS OF THE MONITORING WELLS WERE APPROXIMATELY DETERMINED BY TAPE MEASUREMENTS FROM EXISTING TOPOGRAPHIC AND MAN-MADE FEATURES. THIS DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.
3. WATER LEVEL READINGS HAVE BEEN MADE IN THE MONITORING WELLS AT THE TIMES AND UNDER CONDITIONS STATED ON THE LOGS. THIS DATA HAS BEEN REVIEWED AND INTERPRETATIONS MADE IN THE TEXT OF THE REPORT. HOWEVER, IT MUST BE STATED THAT FLUCTUATIONS IN THE LEVEL OF THE GROUNDWATER MAY OCCUR DUE TO VARIATIONS IN RAINFALL, TEMPERATURE AND OTHER FACTORS DIFFERENT FROM THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.
4. GROUNDWATER CONTOURS ARE BASED ON DATA FROM WIDELY SPACED EXPLORATIONS AND MAY NOT REFLECT ACTUAL SUBSURFACE CONDITIONS.

MW-101
(91.63)

91

90

89

LEGEND:

MW-101 — MONITORING WELLS INSTALLED BY D.L. MAHER DRILLING COMPANY BETWEEN 10/26 AND 10/29/93, OBSERVED BY GZA PERSONNEL

(91.63) — INDICATES RELATIVE GROUNDWATER ELEVATION RECORDED ON 11/17/93

90 ——— GROUNDWATER ELEVATION CONTOUR (IN FEET)

REV. No.	DESCRIPTION	BY	DATE

SCALE IN FEET: 0' 10' 20' 40'

PROJ. MGR. ABU
CHECKED BY: ABU
REVIEWED BY: JPH

DRAWN BY: BAW
SCALE: 1"=20'
DATE: DEC., 1993

GZA GeoEnviro ptal, Inc.

NAVAL EDUCATION & TRAINING CENTER, BLDG. #7 (BOILER HOUSE)
NEWPORT, RHODE ISLAND

EXPLORATION LOCATION PLAN

PROJECT No. 31344

FIGURE No. 2