5.18 SWMU 28: INACTIVE LANDFILL (NORTHEAST CORNER)

5.18.1 Site Description and Waste Generation

SWMU 28 (Figure 5.18-1) is an inactive landfill located in the northeast portion of TEAD-S, approximately 1,000 ft southwest of the administrative area. In 1972, the landfill was filled to grade and revegetated. The landfill was used for solid waste, paper, and building debris disposal between 1963 and 1972 (USAEHA 1986). Reportedly, no noxious or hazardous materials were disposed of in this SWMU (USATHAMA 1979). However, as in SWMU 26, asbestos-contaminated building materials may be present.

EPIC (1982) noted that in 1974 the area (designated as site 21) adjacent to and northeast of SWMU 28 consisted of an off-loading area for coal from bottom-discharging rail cars using a raised rail spur that stands over a stained platform. Vehicle tracks led from the platform to a trench to the southwest (SWMU 28). A pile of debris (probably scrap metal although unidentified in the EPIC study) was adjacent to this trench. Another such pile existed by the rail spur just northwest of the off-loading area. This second pile of scrap metal (SWMU 32) was removed in late 1989 or early 1990. By 1981, the platform appeared even more stained and the trench had been filled and graded, leaving a disturbed area larger than the original trench.

5.18.2 Site Hydrogeology

SWMU 28 slopes gently to the southwest and is underlain by coarse alluvial gravels of Quaternary age. Subsurface lithologic descriptions are based on field boring logs (Appendix A) for each monitoring well in the SWMU (S-32-90, S-33-90, S-34-90). Surface soil at this SWMU is loose, dark yellowish-brown, sandy silt with some gravel (ML). The unsaturated zone is approximately 220 ft thick and is composed of pale brown to dark gray, silty and sandy gravel (GP, GW). The saturated zone was characterized from approximately 225 to 240 ft and is composed of pale brown, gravelly clay and silty gravel (CL, GM). The screened interval was 20 ft in wells S-32-90, S-33-90, and S-34-90, from 215 to 235 ft, 220 to 240 ft, and 209 to 229 ft, respectively. One monitoring well was installed north of SWMU 28 (S-32-90), and two monitoring wells were installed south of SWMU 28 (S-33-90, S-34-90). The depth to groundwater in July 1990 was 219 ft in well S-32-90, 207 ft in well S-33-90, and 209 ft in well S-34-90. The groundwater elevation is 5,105 ft msl in all three wells, indicating a flat hydraulic gradient. This flat gradient indicates that groundwater may be static in this area or may flow only at very low velocities. The direction of flow is indeterminate; however, groundwater flows west or southwest from other sites along the west side of Montgomery Road.

5.18.3 Previous Sampling and RFI-Phase I Sampling Results

No sampling of groundwater or soil was conducted at SWMU 28 prior to the RFI-Phase I. No soil or fill samples were collected from the SWMU 28 landfill during the RFI-Phase I. Currently, the landfill is inactive and revegetated. The three monitoring wells installed at this SWMU during the RFI-Phase I were analyzed for the complete suite of groundwater analytes listed in Section 3.10. Because of suspect detections of cyclohexanone and explosives after the original Phase I sampling, these three wells were resampled during the interim sampling program.

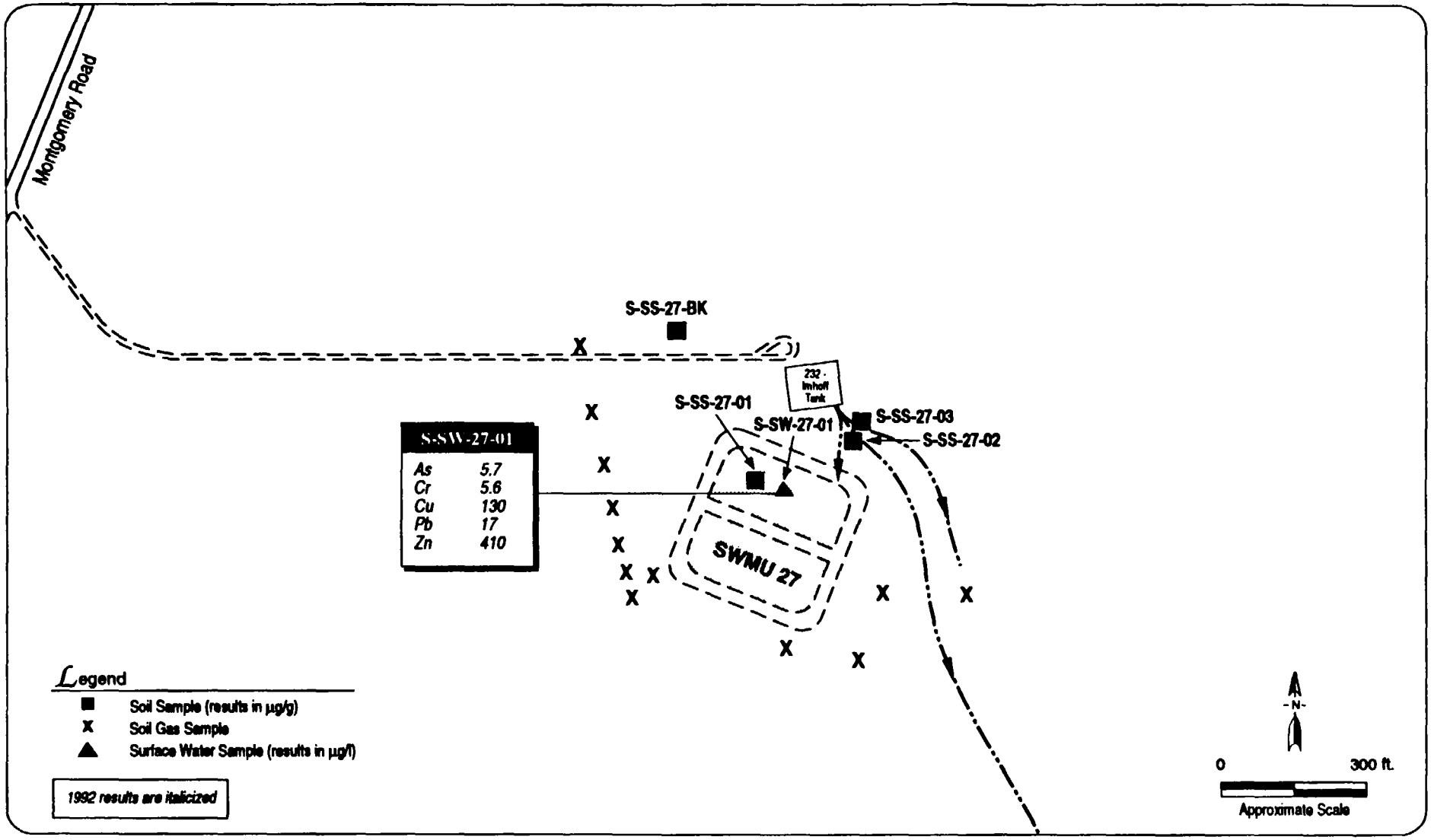

Figure 5.17-4
SWMU 27 - Sewage Treatment Plant
Metals

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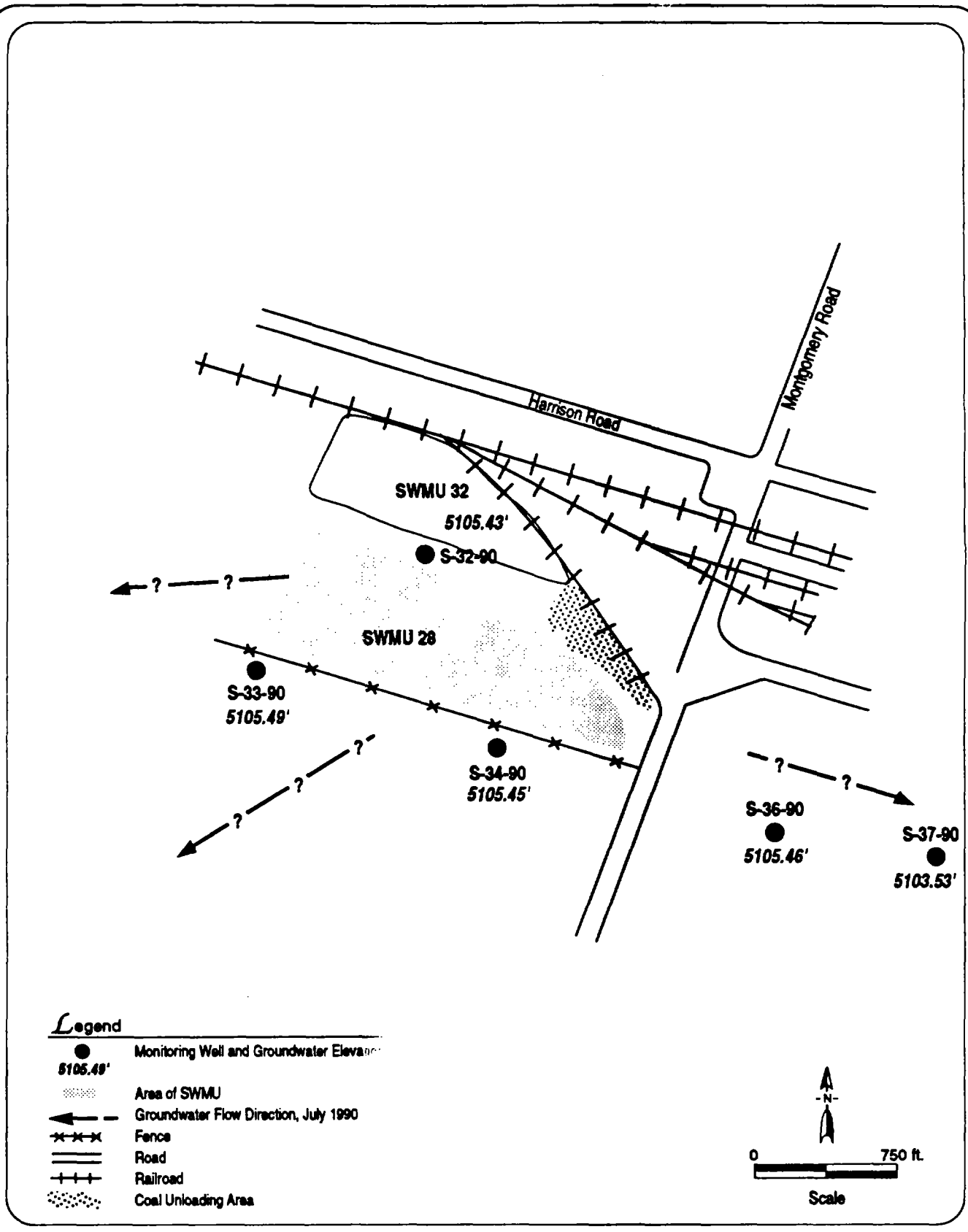

Source:

EBASCO Field Measurement
Basic Information Maps 1985
EPIC 1982

Figure 5.18-1

Site Map

SWMU 28 - Inactive Landfill (Northeast Corner)

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Table 5.18-1 summarizes the detected concentrations in the RFI-Phase I samples. The well locations, compounds detected, and concentrations are also presented in Figures 5.18-2 through 5.18-6.

5.18.4 Contamination Assessment

Cyclohexanone, chloroform, methylene chloride, RDX, and tetryl were the organic compounds identified in groundwater samples collected in the vicinity of SWMU 28. Cyclohexanone, a semivolatile organic compound used as a metal degreaser, was identified in well S-33-90 at 40 µg/l and well S-34-90 at 20 µg/l during the original Phase I sampling program. Cyclohexanone is also a preservative of methylene chloride, and may, therefore, be a laboratory contaminant. It was not detected in samples collected in the additional sampling program. Methylene chloride was detected in groundwater samples from all three wells at low concentrations; however, it was also detected in the method blank for the samples at a similar concentration and is, therefore, considered a laboratory contaminant (EPA 1990). The low-level detection of chloroform is most likely a result of recharge from a chlorinated water supply. Concentrations of the explosive compounds RDX and tetryl do not exceed 1 µg/l and are reported in samples from wells S-32-90 and S-34-90. The low concentrations of these compounds may imply a release of contaminants from the SWMU 28 landfill; however, these detections were not repeated during interim sampling. The groundwater flow direction in this area is indefinite, but is expected to be to the southwest.

All wells at SWMU 28 are included in groundwater quality zone I. Inorganic groundwater quality data from each well was compared to concentrations typical of this zone to determine whether any analytes occurred at elevated concentrations. No inorganic analytes were detected at elevated concentrations at SWMU 28.

5.18.5 Recommendations

The low concentration detections of cyclohexanone and explosives in groundwater at SWMU 28 were not repeated in the interim sampling program and do not warrant further delineation. Any migration of these low concentrations would likely result in dilution of the contaminants to levels below detection limits. However, the three wells at this SWMU should be resampled annually since wastes will be left buried in this SWMU.

TABLE 5.18-1 **Summary of RFI-Phase I Investigations for SWMU 28 and SWMU 32: Inactive Landfill (Northeast Corner) and Railroad Scrap Yard**

GROUNDWATER (µg/l)

Analytical Groups and Analytes Detected	S-32-90 Phase I	S-32-90 June 1992	S-33-90 Phase I	S-33-90 June 1992	S-34-90 Phase I	S-34-90 June 1992
Volatile Organics:						
Chloroform (CHCL3)	LT 0.83	LT 0.83	LT 0.83	0.59	LT 0.83	LT 0.83
Methylene chloride(CH2CL2)	LT 5.4	7.2*	LT 5.4	13*	LT 5.4	7.1*
Unknowns					4.0	
Semivolatile Organics:						
Cyclohexanone (CHONE)	ND	ND	40	ND	20	ND
Unknowns				5.0		
Metals:		NA		NA		NA
Mercury (Hg)	LT 0.24		LT 0.24		0.27	
Sodium (Na)	35,000		77,000		59,000	
Zinc (Zn)	LT 21		68		LT 21	
Anions:		NA		NA		NA
Bromide (Br)	130		LT 1,000		250	
Chloride (Cl)	170,000		480,000		260,000	
Explosives:						
Hexahydro-1,3,5-trinitro-1,3,4-triazine (RDX)	0.85	LT 0..62	LT 0.62	LT 0.62	0.78	LT 0.62
N-Methyl-N,2,4,6-tetranitroaniline (TETRYL)	LT 0.19	LT 0.19	LT 0.19	LT 0.19	0.21	LT 0.19
Radionuclides (pCi/l):		NA		NA		NA
Gross alpha (ALPHAG)	64*		120*		31*	
Uranium (U)	22*		11*		8.9*	

* Detected in associated method blank
NA Not analyzed
ND Not detected
LT Less than
pCi/l Picocurie per liter
µg/l Microgram per liter

TOOELE/SWMU 28 GW Table 5.18-1
10/1/92 4:18 PM skm

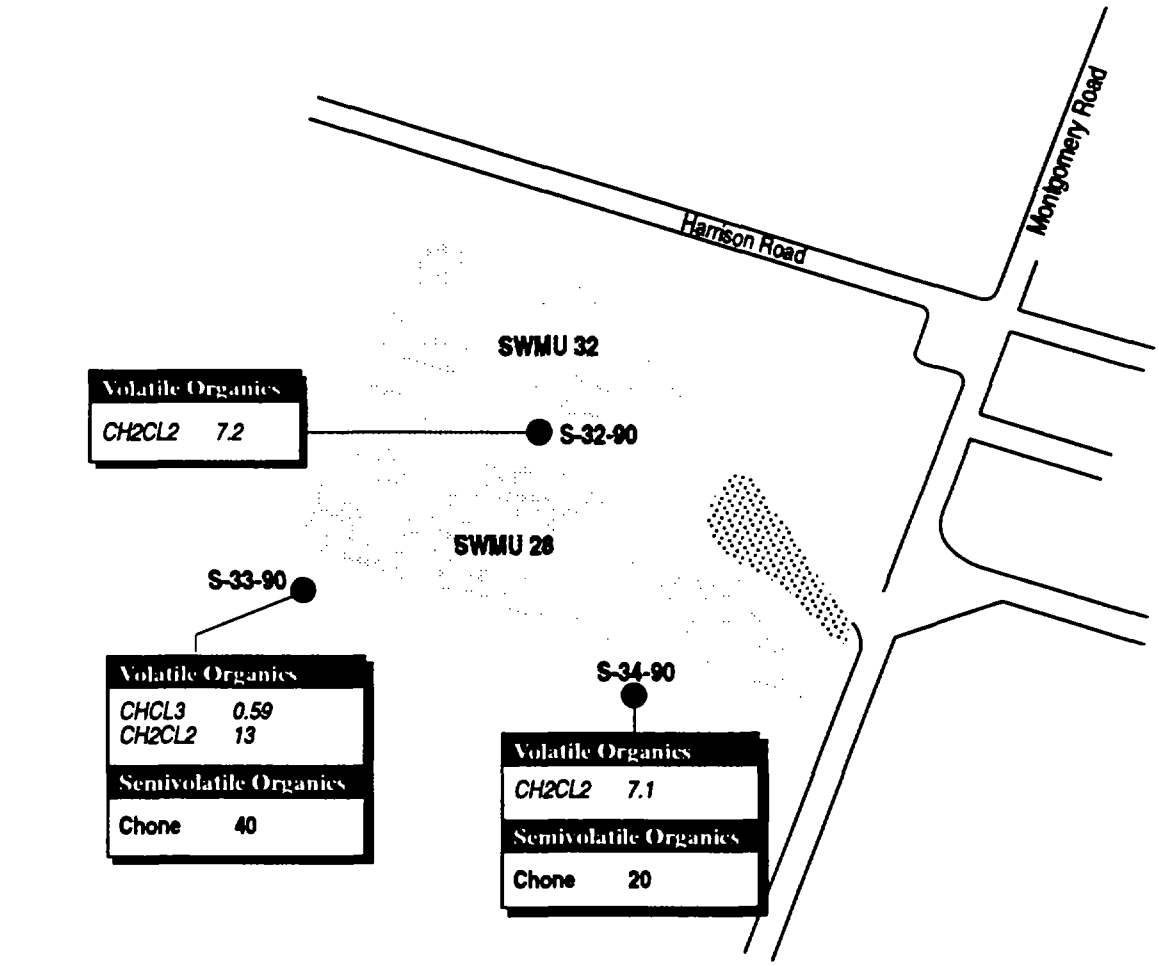

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Figure 5.18-2
SWMU 28 - Inactive Landfill (Northeast Corner) and SWMU 32 - Railroad Scrap Yard
Organics

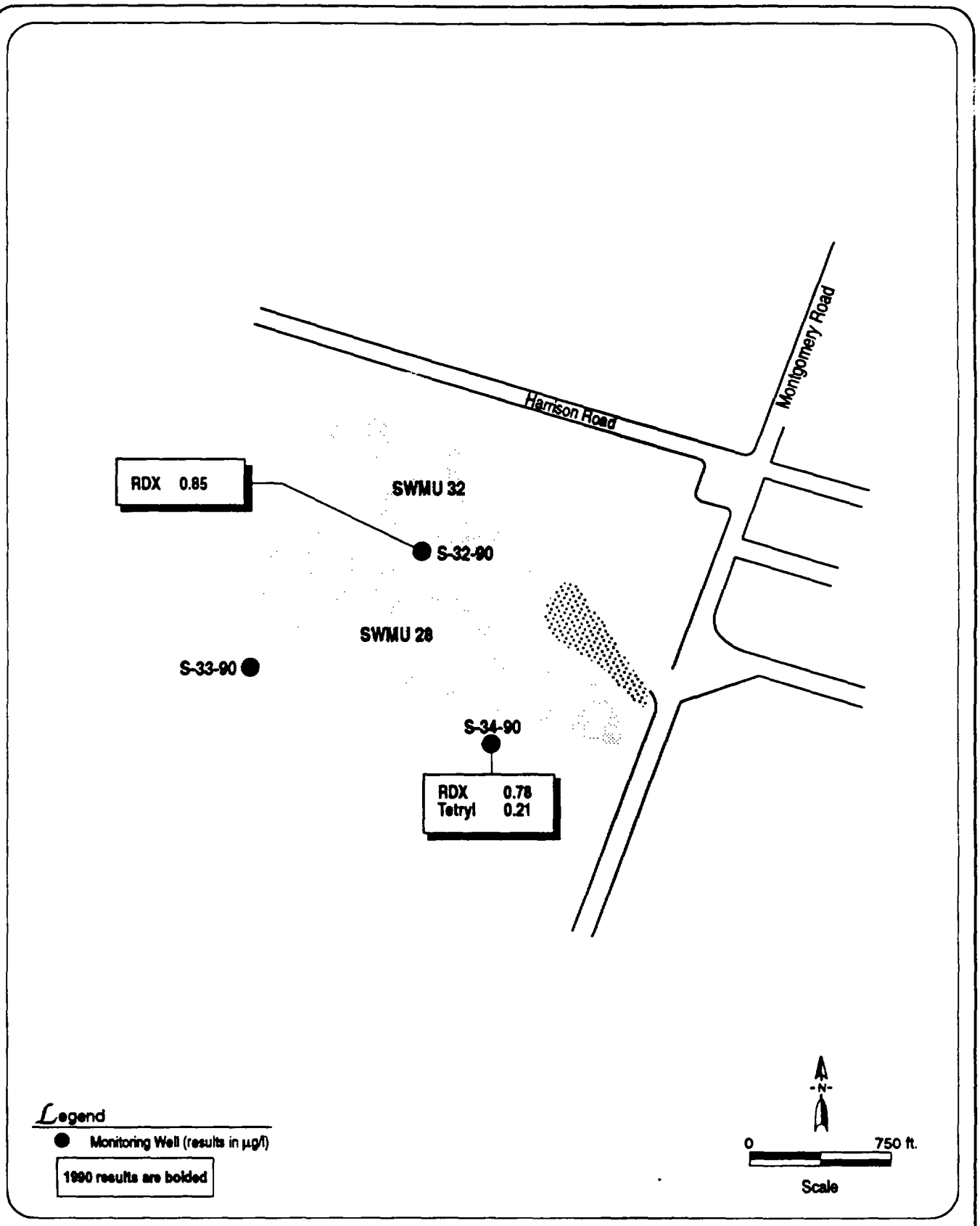

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Figure 5.18-3
SWMU 28 - Inactive Landfill (Northeast Corner) and SWMU 32 - Railroad Scrap Yard
Explosives

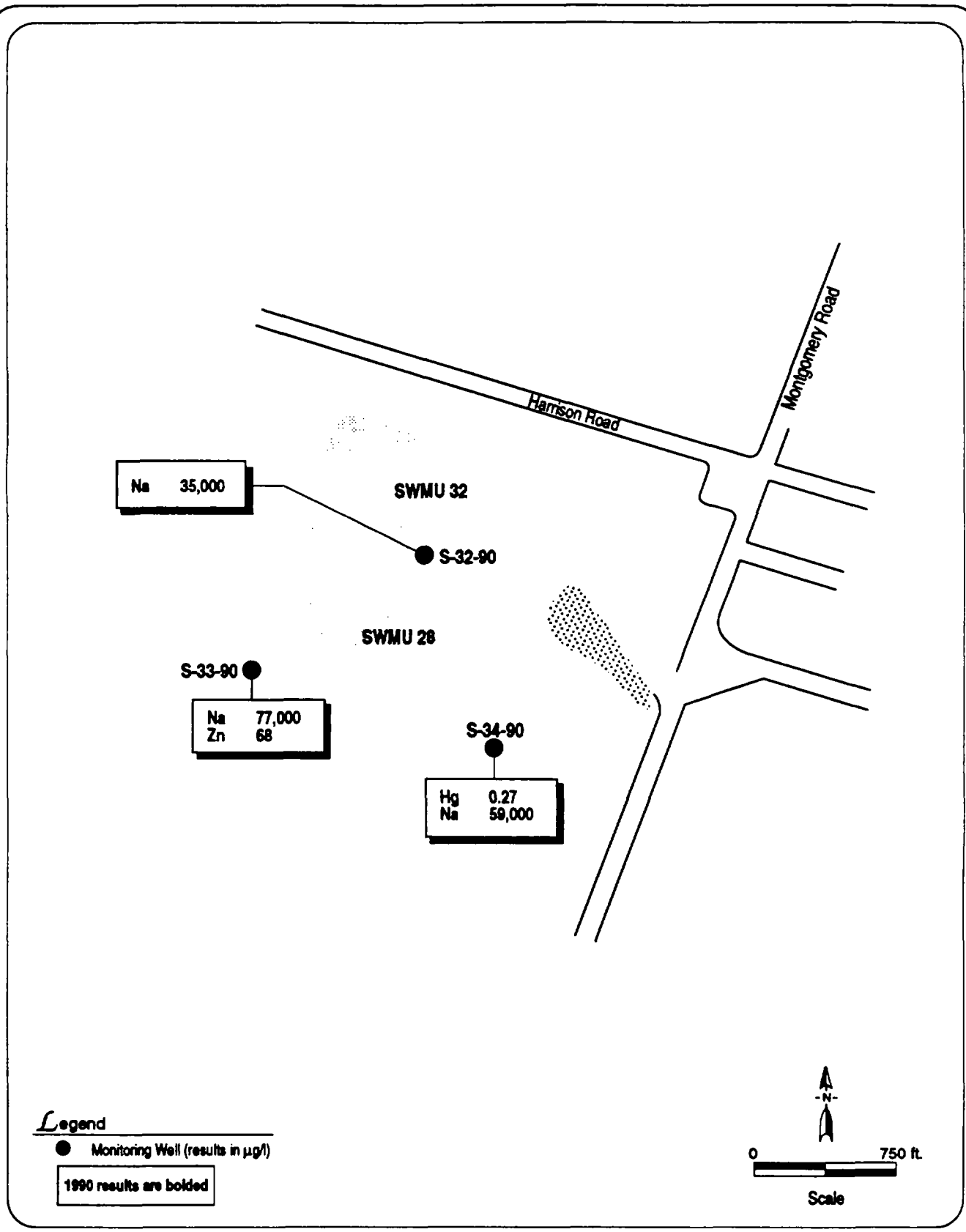

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Figure 5.18-4
SWMU 28 - Inactive Landfill (Northeast Corner) and SWMU 32 - Railroad Scrap Yard
Metals

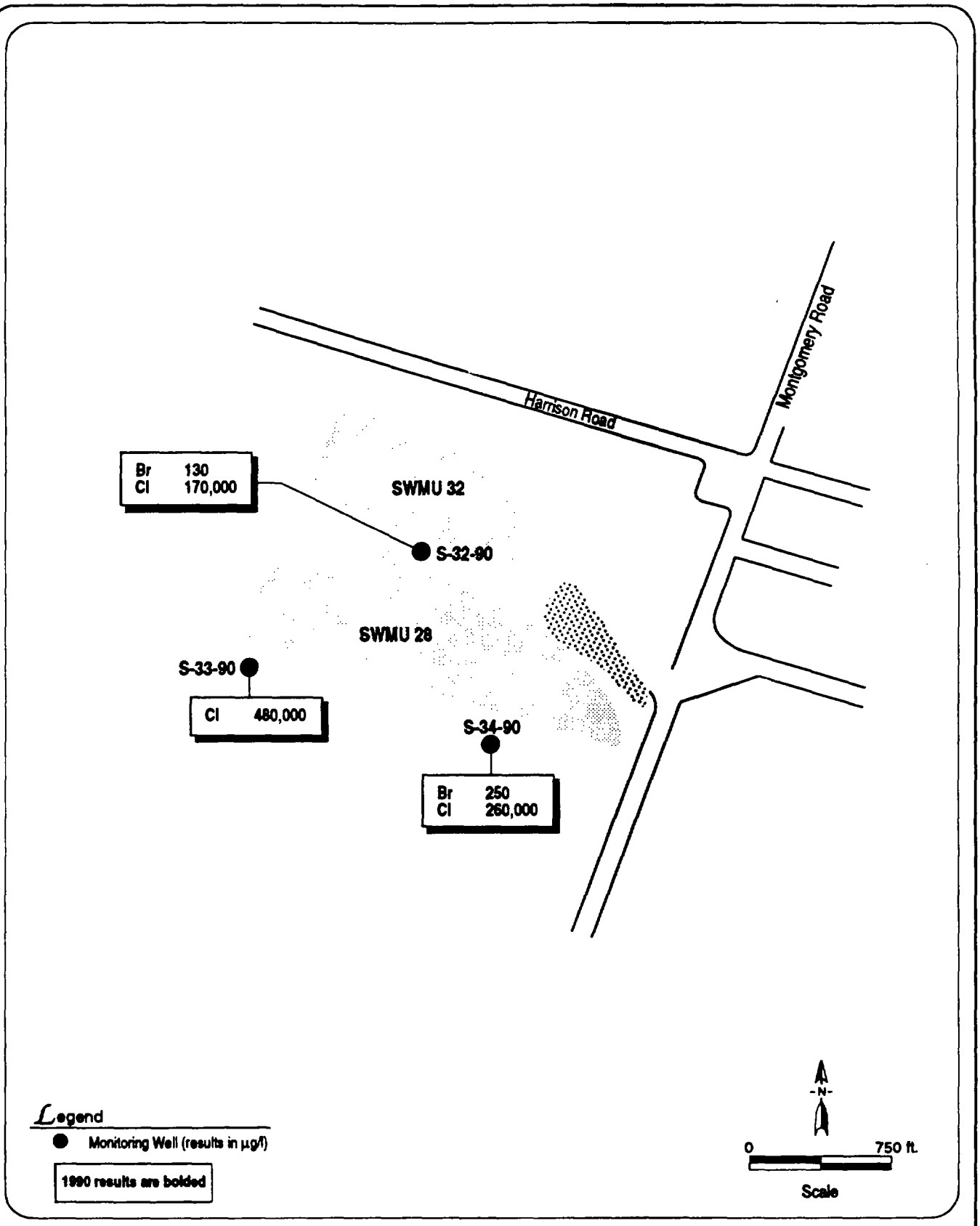

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Figure 5.18-5
SWMU 28 - Inactive Landfill (Northeast Corner) and SWMU 32 - Railroad Scrap Yard
Anions

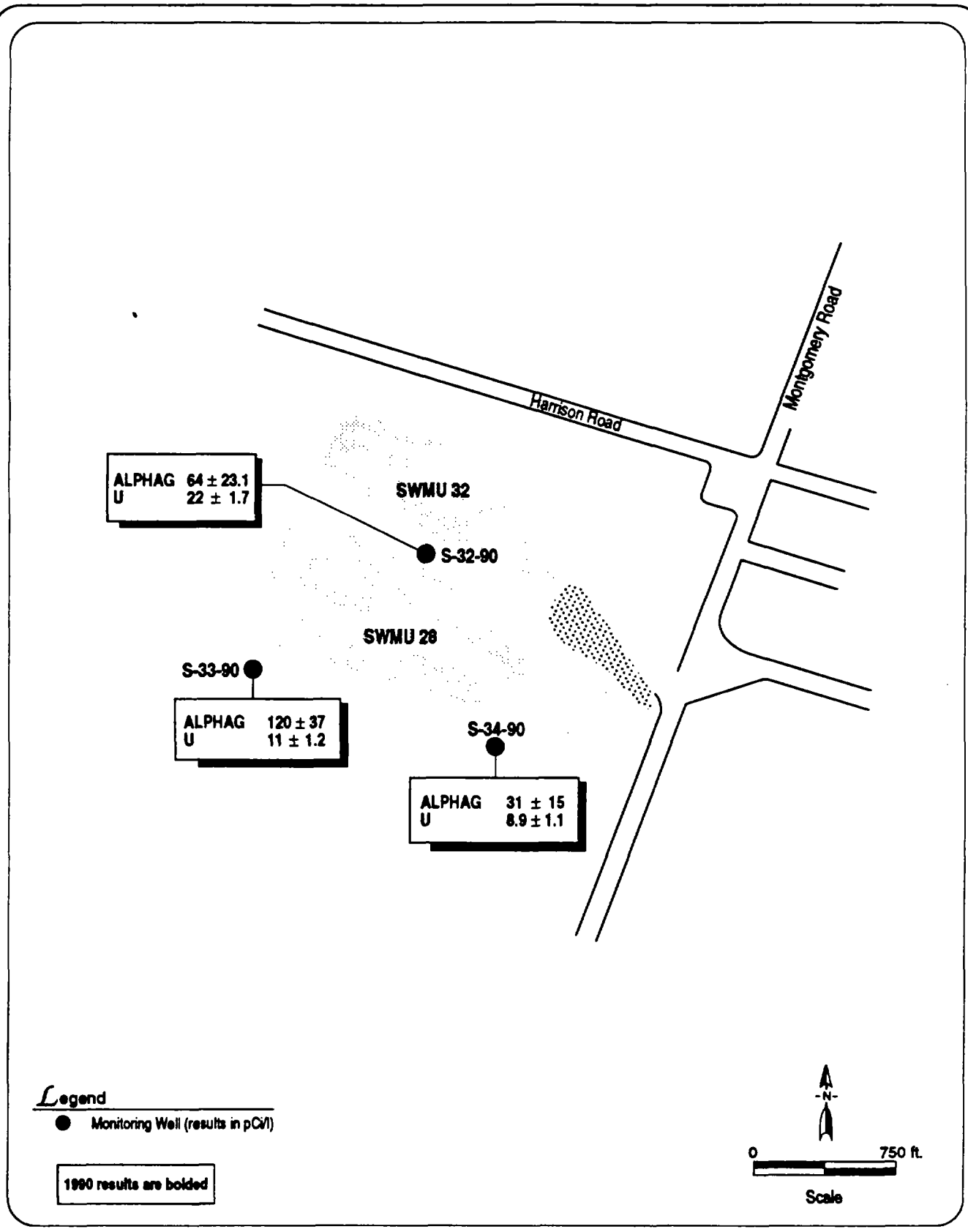

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Figure 5.18-6
SWMU 28 - Inactive Landfill (Northeast Corner) and SWMU 32 - Railroad Scrap Yard
Radionuclides