1995 Monitoring Program
Environmental Surveillance:

On-site Groundwater

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
Maintenance Shop Leach Fields (SSWMU #5) **WNW** **0501** U **0502** Low-level Waste Storage Area (SSWMU #6) **WNW** **0601** **0602** **0603** U **0604** **0605** **8607** U **8608** U **8609** U Chemical Process Cell Waste Storage Area (SSWMU #7) **WNW** **0701** U **0702** C **0703** **0704** **0705** C **0706** U **0707**	Groundwater monitoring wells around site super solid waste management units (SSWMUs)* Reported in: • SER • Quarterly Groundwater Reports	Grab liquid Direct field measurement of sample discharge water	See Tables 3-1, 3-2, and Appendix E	See Tables 3-1, 3-2, and Appendix E	See Tables 3-1, 3-2, and 3-3

NOTE: "U" designates upgradient, "B" designates background, and "C" designates crossgradient wells; the remainder are downgradient.

* The groundwater monitoring program was revised in May 1995 after a review of results from previous years of sampling. The program in place at the end of 1995 is presented in the "Groundwater Monitoring Plan" (WVDP-239).

	Sampling Rationale
On-site Groundwater	DOE Order 5400.1, IV.9; DOE/EH-0173T, 5.10.1.3; RCRA 3008(h) Order on Consent. The on-site WVDP groundwater monitoring program focuses on radiological and chemical surveillance of both active and inactive super solid waste management units (SSWMUs). The program allows for the determination of water quality. In addition, using wells situated hydraulically upgradient (background) and downgradient of SSWMUs allows for both detection of groundwater contamination and evaluation of the effects associated with the individual SSWMUs. Groundwater protection is addressed in WVDP-091, "Groundwater Protection Management Program." Groundwater monitoring as detailed in WVDP-239, "Groundwater Monitoring Plan," is applicable to the 1996 program.
SSWMU #5	Maintenance shop sanitary leach field, formerly used by NFS and WVNS to process domestic sewage generated by the maintenance shop.
SSWMU #6	The low-level waste storage area includes metal and fabric structures housing low-level radioactive wastes being stored for future disposal.
SSWMU #7	The chemical process cell (CPC) waste storage area contains packages of pipes, vessels, and debris from decontamination and cleanup of the chemical process cell in the former reprocessing plant.

1995 Monitoring Program
Environmental Surveillance:

On-site Groundwater

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
Construction and Demolition Debris Landfill (CDDL) (SSWMU #8) WNW **0801 U** **0802** **0803** **0804** **8603 U** **8612** **WNGSEEP** **WNDMPNE** NRC-licensed Disposal Area (NDA) (SSWMU #9) WNW **0901 U** **0902 U** **0903** **0904** **0905** **0906** **0907** **0908 U** **0909** **0910** **8610** **8611** **WNNDATR** IRTS Drum Cell (SSWMU #10) WNW **1001 U** **1002** **1003** **1004** **1005 U** **1006** **1007** **1008b B** **1008c B**	Groundwater monitoring wells around site super solid waste management units (SSWMUs)* Reported in: • SER • Quarterly Groundwater Reports	Grab liquid Direct field measurement of sample discharge water	See Tables 3-1, 3-2, and Appendix E	See Tables 3-1, 3-2, and Appendix E	See Tables 3-1, 3-2, and 3-3

NOTE: "U" designates upgradient, "B" designates background, and "C" designates crossgradient wells; the remainder are downgradient.

* The groundwater monitoring program was revised in May 1995 after a review of results from previous years of sampling. The program in place at the end of 1995 is presented in the "Groundwater Monitoring Plan" (WVDP-239).

	Sampling Rationale
On-site Groundwater	DOE Order 5400.1, IV.9; DOE/EH-0173T, 5.10.1.3; RCRA 3008(h) Order on Consent. The on-site WVDP groundwater monitoring program focuses on radiological and chemical surveillance of both active and inactive super solid waste management units (SSWMUs). The program allows for the determination of water quality. In addition, using wells situated hydraulically upgradient (background) and downgradient of SSWMUs allows for both detection of groundwater contamination and evaluation of the effects associated with the individual SSWMUs. Groundwater protection is addressed in WVDP-091, "Groundwater Protection Management Program." Groundwater monitoring as detailed in WVDP-239, "Groundwater Monitoring Plan," is applicable to the 1996 program.
SSWMU #8	Construction and demolition debris landfill (CDDL), used by NFS and the WVDP to dispose of nonhazardous and nonradioactive materials.
SSWMU #9	The NRC-licensed disposal area (NDA) contains radioactive wastes generated by NFS and the WVDP.
SSWMU #10	The integrated radioactive waste system (IRTS) treatment drum cell stores cement-stabilized low-level radioactive waste.

1995 Monitoring Program
Environmental Surveillance:

On-site Groundwater

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
State-licensed Disposal Area (SSWMU #11) **WNW** **1101a** U **1101b** U **1101c** U **1102a** **1102b** **1103a** **1103b** **1103c** **1104a** **1104b** **1104c** **1105a** **1105b** **1106a** U **1106b** U **1107a** **1108a** U **1109a** U **1109b** U **1110a** **1111a**	Groundwater monitoring points around site super solid waste management units (SSWMUs) Reported in: • SER	Grab liquid	Per NYSERDA*	Per NYSERDA*	Per NYSERDA*
Fuel Storage Area (Not a SSWMU) **WNW** **8613A** C **8613B** C **8613C**	Reported in: • SER • Quarterly Groundwater Reports	Grab liquid Direct field measurement of sample discharge water	See Tables 3-1, 3-2, and Appendix E	See Tables 3-1, 3-2, and Appendix E	See Tables 3-1, 3-2, and 3-3
Well Points (Not in a SSWMU) **WP-A** **WP-C** **WP-D** **WP-E** **WP-F** **WP-G** **WP-H**	Well points downgradient of main plant Reported in: • SER	Grab liquid	See Tables 3-1, 3-2, and Appendix E	See Tables 3-1, 3-2, and Appendix E	See Tables 3-1, 3-2, and 3-3

NOTE: "U" designates upgradient, "B" designates background, and "C" designates crossgradient wells; the remainder are downgradient.

* SDA wells are sampled by NYSERDA; therefore, frequencies and analyses are not included in this summary of the WVDP program. Data are presented in Appendix F.

	Sampling Rationale
On-site Groundwater	DOE Order 5400.1, IV.9; DOE/EH-0173T, 5.10.1.3; RCRA 3008(h) Order on Consent. The on-site WVDP groundwater monitoring program focuses on radiological and chemical surveillance of both active and inactive super solid waste management units (SSWMUs). The program allows for the determination of water quality. In addition, using wells situated hydraulically upgradient (background) and downgradient of SSWMUs allows for both detection of groundwater contamination and evaluation of the effects associated with the individual SSWMUs. Groundwater protection is addressed in WVDP-091, "Groundwater Protection Management Program." Groundwater monitoring as detailed in WVDP-239, "Groundwater Monitoring Plan," is applicable to the 1996 program.
SSWMU #11	The state-licensed disposal area (SDA) was operated by NFS as a commercial low-level disposal facility; it also received wastes from NFS reprocessing operations.
Fuel Storage Area	Monitors groundwater in the vicinity of the underground fuel storage tanks; this is not included in any of the SSWMUs.
Well Points	Monitor groundwater of known contamination in the north plateau area. All well points are downgradient of the main plant.

1995 Monitoring Program
Environmental Surveillance:

Off-site Surface Water

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
WFBCTCB Buttermilk Creek, upstream of Cattaraugus Creek confluence at Thomas Corners Road	Restricted surface waters receiving plant effluents Reported in: • MTAR • QEMDR • SER	Timed continuous composite liquid	→ Weekly	→ 52	→ pH, conductivity
				Weekly samples composited to 12	→ Monthly composite for gross alpha/beta, H-3
				Weekly samples composited to 4	→ Quarterly composite for gamma isotopic and Sr-90
WFFELBR Cattaraugus Creek at Felton Bridge	Unrestricted surface waters receiving plant effluents Reported in: • MTAR • QEMDR • SER	Timed continuous composite liquid	→ Weekly	→ 52	→ Gross alpha/beta, H-3, pH
				Weekly samples composited to 12	→ Flow-weighted monthly composite for gamma isotopic and Sr-90, gross alpha/beta, H-3
WFBCBKG Buttermilk Creek near Fox Valley (background)	Unrestricted surface water background Reported in: • MTAR • QEMDR • SER	Timed continuous composite liquid	→ Weekly	→ 52	→ pH, conductivity
				Weekly samples composited to 12	→ Monthly composite for gross alpha/beta, H-3
				Weekly samples composited to 4	→ Quarterly composite for gamma isotopic, Sr-90, C-14, I-129, Pu/U isotopic, total U, Am-241, Tc-99
		Grab liquid	→ Semiannual	→ 2	→ NPOC, TOX, Ca, Mg, Na, K, Ba, Mn, Fe, Cl, SO_4, NO_3-NO_2-N, F, HCO_3, CO_3
WFBIGBR Cattaraugus Creek at Bigelow Bridge (background)	Unrestricted surface water background Reported in: • MTAR • QEMDR • SER	Grab liquid	→ Monthly	→ 12	→ Gross alpha/beta, H-3, Sr-90, and gamma isotopic

Monthly composite at **WFBCTCB, WFBCBKG,** and **WFFELBR** is also sent to NYSDOH.

	Sampling Rationale
WFBCTCB	DOE/EH-0173T, 5.10.1.1. Buttermilk Creek is the surface water receiving all WVDP effluents. **WFBCTCB** monitors the potential influence of WVDP drainage into Buttermilk Creek upstream of confluence with Cattaraugus Creek.
WFFELBR	DOE/EH-0173T, 5.10.1.1. Because Buttermilk Creek is the surface water that receives all WVDP effluents and empties into Cattaraugus Creek, **WFFELBR** monitors the potential influence of WVDP drainage into Cattaraugus Creek directly downstream of the confluence with Buttermilk Creek.
WFBCBKG	DOE/EH-0173T, 5.10.1.1. Monitors background conditions of Buttermilk Creek upstream of the WVDP. Allows comparison to downstream conditions.
WFBIGBR	DOE/EH-0173T, 5.10.1.1. Monitors background conditions of Cattaraugus Creek at Bigelow Bridge, upstream of the WVDP. Allows comparison to downstream conditions.

1995 Monitoring Program
Environmental Surveillance:

Off-site Drinking Water

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
WFWEL series wells near the WVDP outside the WNYNSC perimeter **WFWEL01** 3.0 km WNW **WFWEL02** 1.5 km NW **WFWEL03** 4.0 km NW **WFWEL04** 3.0 km NW **WFWEL05** 2.5 km SW **WFWEL06** (background) 29 km S **WFWEL07** 4.0 km NNE **WFWEL08** 2.5 km ENE **WFWEL09** 3.0 km SE **WFWEL10** 7.0 km N	Drinking water supply; groundwater near facility* Reported in: • MTAR • QEMDR • SER	→ Grab liquid	→ Annual	→ 1 each location	→ Gross alpha/beta, H-3, gamma isotopic, pH, conductivity

* Off-site drinking water wells are not affected by the potential migration of contaminants in the subsurface at the WVDP.

Sampling Rationale	
Off-site Drinking Water **WFWEL** Series	DOE 5400.1, IV.9; DOE/EH-0173T, 5.10.1.2. Eight of the ten listed off-site private residential drinking water wells represent the nearest unrestricted uses of groundwater close to the WVDP. The ninth sample (**WFWEL10**) is from a public water supply from deep wells. The tenth drinking water well, **WFWEL06**, is located 29 kilometers south of the Project and is considered a background drinking water source.

1995 Monitoring Program
Environmental Surveillance:

Off-site Air

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
AFFXVRD 3.0 km SSE at Fox Valley **AFTCORD** 3.7 km NNW at Thomas Corners Road **AFRT240*** 2.0 km NE on Route 240 **AFSPRVL** 7 km N at Springville **AFWEVAL** 6 km SSE at West Valley **AFDNKRK**** 50 km W at Dunkirk (background) **AFNASHV**** 37 km W at village of Nashville, town of Hanover (background) **AFBOEHN** 2.3 km SW on Dutch Hill Road **AFRSPRD** 1.5 km NW on Rock Springs Road **AFGRVAL** 29 km S at Great Valley (background) **AFBLKST** Bulk Storage Warehouse 2.2 km ESE at Buttermilk Road	Particulate air samples around the WNYNSC perimeter Reported in: • MTAR • QEMDR • SER	Continuous air particulate filter	→ Weekly	→ 52 each location Weekly filters composited to 4 each location	→ Gross alpha/beta → Quarterly composite for Sr-90, gamma isotopic Total U, U/Pu isotopic, and Am-241 for **AFRSPRD** and **AFGRVAL** only
		Continuous desiccant column for water vapor collection	→ Weekly	→ 52 each location (**AFRSPRD** and **AFGRVAL** only)	→ H-3
		Continuous charcoal cartridge	→ Monthly	→ 12 composited to 4 each location (**AFRSPRD** and **AFGRVAL** only)	→ Quarterly composite for I-129

* Filter from duplicate sampler sent to NYSDOH.
** AFNASHV replaced AFDNKRK in 1995.

Sampling Rationale	
AFFXVRD **AFTCORD** **AFRT240**	DOE/EH-0173T, 5.7.4. Air samplers put into service by NFS as part of the site's original monitoring program. Perimeter locations chosen to obtain data from places most likely to provide highest concentrations, based on meteorological data.
AFSPRVL	DOE/EH-0173T, 5.7.4; DOE/EP-0023, 4.2.3. Off-site (remote) sampler located on private property in nearby community within 15 kilometers of the site (north).
AFWEVAL	DOE/EH-0173T, 5.7.4; DOE/EP-0023, 4.2.3. Off-site (remote) sampler located on private property in nearby community within 15 kilometers of the site (southeast).
AFDNKRK	DOE/EH-0173T, 5.7.4; DOE/EP-0023, 4.2.3. Off-site (remote) sampler considered to be representative of natural background radiation. Located 50 kilometers west of the site (upwind) on privately owned property. Location discontinued in 1995.
AFNASHV	DOE/EH-0173T, 5.7.4; DOE/EP-0023, 4.2.3. Off-site (remote) sampler considered to be representative of natural background radiation. Located 37 kilometers west of the site (upwind) on privately owned property. Location replaced AFDNKRK in 1995.
AFBOEHN	DOE/EH-0173T, 5.7.4; DOE/EP-0023, 4.2.3. Perimeter location chosen to obtain data from the place most likely to provide highest elevated release concentrations based on meteorological data. AFBOEHN is located on NYSERDA property at the perimeter.
AFRSPRD	DOE/EH-0173T, 5.7.4. Perimeter location chosen to obtain data from the place most likely to provide highest ground-level release concentrations based on meteorological data. AFRSPRD is on WVDP property but outside the main plant operations fence line. I-129 and H-3 are sampled here because the sampling trains were easy to incorporate and the location was most likely to receive effluent releases.
AFGRVAL	DOE/EH-0173T, 5.7.4; DOE/EP-0023, 4.2.3. Off-site (remote) sampler considered to be representative of natural background radiation. Located on privately owned property 29 kilometers south of the site (typically upwind). I-129 and H-3 sampled here also.
AFBLKST	DOE/EH-0173T, 5.7.4. Off-site monitoring of bulk storage warehouse, near site perimeter.

1995 Monitoring Program
Environmental Surveillance:

Fallout, Sediment, and Soil

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
AFDHFOP 2.3 km SW **AFFXFOP** 3.0 km SSE **AFTCFOP** 3.7 km NNW **AF24FOP** 2.0 km NE **ANRGFOP** Met tower on-site	Collection of fallout particulate and precipitation around WNYNSC perimeter Reported in: • MTAR • QEMDR • SER	Integrated precipitation	→ Monthly	→ 12 each location	→ Gross alpha/beta, H-3, pH, gamma isotopic
SF Soil Series Surface Soil (at each of ten air samplers)	Long-term fallout accumulation Reported in: • MTAR • QEMDR • SER	Surface plug composite soil	→ Annual	→ 1 each location	→ Gross alpha/beta, gamma isotopic, Sr-90, Pu-239, Am-241, plus U-isotopic and total U at **SFRSPRD**, **SFBOEHN**, and **SFGRVAL**
SFCCSED Cattaraugus Creek at Felton Bridge **SFSDSED** Cattaraugus Creek at Springville Dam **SFBISED** Cattaraugus Creek at Bigelow Bridge (background) **SFTCSED** Buttermilk Creek at Thomas Corners Road **SFBCSED** Buttermilk Creek at Fox Valley Road (background)	Deposition in sediment downstream of facility effluents Reported in: • MTAR • QEMDR • SER	Grab stream sediment	→ Annual (Split of **SFSDSED and SFBCSED** to **NYSDOH**)	→ 1 each location	→ Gross alpha/beta, gamma isotopic, Sr-90, U/Pu isotopic, total U, Am-241
SN On-site Soil Series: **SNSW74A** (Near WNSW74A) **SNSWAMP** (Near WNSWAMP) **SNSP006** (Near WNSP006)	Reported in: • MTAR • QEMDR • SER	Surface plug or grab	→ Annual	→ 1 each location	→ Gross alpha/beta, gamma isotopic, Sr-90, Pu-239, Am-241, U-isotopic, total U, Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn

	Sampling Rationale
AFDHFOP **AFFXFOP** **AFTCFOP** **AF24FOP**	DOE/EP-0023, 4.7. Collection of fallout particles and precipitation around the site perimeter at established air sampling locations. AFDHFOP (Dutch Hill at Boehn road), AFFXFOP (Fox Valley Road), AFTCFOP (Thomas Corners), AF24FOP (Route 240). Indicates short-term effects.
ANRGFOP	Collection of fallout particles and precipitation on-site at the meteorological tower. Indicates short-term effects.
SF Soil Series	DOE/EH-0173T, 5.9.1. Off-site soils collected at air sampling locations. **SFWEVAL** (West Valley), **SFFXVRD** (Fox Valley Road), **SFSPRVL** (Springville), **SFTCORD** (Thomas Corners), **SFRT240** (Route 240), **SFNASHV** (Nashville), **SFBOEHN** (Boehn Road-Dutch Hill), **SFGRVAL** (Great Valley), **SFRSPRD** (Rock Springs Road), **SFBLKST** (bulk storage warehouse): Collection of long-term fallout data at established air sampler locations via soil sampling.
SFCCSED	DOE/EH-0173T, 5.12.1. Sediment deposition in Cattaraugus Creek at Felton Bridge. Location is first access point of Cattaraugus Creek downstream of the confluence with Buttermilk Creek.
SFSDSED	DOE/EH-0173T, 5.12.1. Sediment deposition in Cattaraugus Creek at Springville Dam. Reservoir provides ideal settling and collection location for sediments downstream of Buttermilk Creek confluence. Located downstream of **SFCCSED**.
SFBISED	DOE/EH-0173T, 5.12.1. Sediment deposition in Cattaraugus Creek at Bigelow Bridge. Location is upstream of the Buttermilk Creek confluence and serves as a Cattaraugus Creek background location.
SFTCSED	DOE/EH-0173T, 5.12.1. Sediment deposition in Buttermilk Creek at Thomas Corners immediately downstream of all facility liquid effluents.
SFBCSED	DOE/EH-0173T, 5.12.1. Sediment deposition in Buttermilk Creek upstream of facility effluents (background).
SN Soil Series	DOE/EH-0173T, 5.9.1. On-site soil. (Samples may be partially composed of sediments.)
SNSW74A	Surface soil near **WNSW74A**. Location to be specifically defined by geographic coordinates. Corresponds to site drainage pattern flow (i.e., most likely area of radiological deposition/accumulation).
SNSWAMP	Surface soil near **WNSWAMP**. Location to be specifically defined by geographic coordinates. Corresponds to site drainage pattern flow (i.e., most likely area of radiological deposition/accumulation).
SNSP006	Surface soil near **WNSP006**. Location to be specifically defined by geographic coordinates. Corresponds to site drainage pattern flow (i.e., most likely area of radiological deposition/accumulation).

1995 Monitoring Program
Environmental Surveillance:

Off-site Biological

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
BFFCATC Cattaraugus Creek downstream of the Buttermilk Creek confluence **BFFCTRL** Control sample from nearby stream not affected by the WVDP (7 km or more upstream of site effluent point; background) **BFFCATD** Cattaraugus Creek downstream of Springville Dam	Fish in waters up- and downstream of facility effluents Reported in: • MTAR • QEMDR • SER	Individual collection, biological	Semiannual (Samples at **BFFCATC** and **BFFCTRL** shared with NYSDOH)	→ 20 fish each location	→ Gamma isotopic and Sr-90 in edible portions of each individual fish
			Annual (**BFFCATD** only)	→ 10 fish	→ Gamma isotopic and Sr-90 in edible portions of each individual fish
BFMREED Dairy farm, 3.8 km NNW **BFMCOBO** Dairy farm, 9 km WNW **BFMCTLS** Control location 25 km S (background) **BFMCTLN** Control location 30 km N (background) **BFMWIDR** Dairy farm, 3.5 km SE of site **BFMSCHT*** Dairy farm 4.8 km S	Milk from animals foraging around facility perimeter and at background sites Reported in: • MTAR • QEMDR • SER	Grab biological	→ Monthly (**BFMREED, BFMCOBO, BFMCTLS, BFMCTLN.** Samples at **BFMREED** and **BFMCOBO** shared with NYSDOH)	→ 12 monthly samples composited to 4 each location	→ Quarterly composite for gamma isotopic, Sr-90, H-3, and I-129
			Annual (**BFMWIDR, BFMSCHT**)	→ 1 each location	→ Gamma isotopic, Sr-90, H-3, and I-129

* BFMSCHT replaces former location (BFMHAUR), which no longer provides milk commercially.

	Sampling Rationale
BFFCATC **BFFCATD**	DOE/EH-0173T, 5.11.1.1. Radioactivity may enter a food chain in which fish are a major component and are consumed by the local population.
BFFCTRL	Control fish sample to provide background data for comparison with fish caught downstream of facility effluents.
BFMREED **BFMCOBO** **BFMWIDR** **BFMSCHT**	DOE/EH-0173T, 5.8.2.1. Milk from animals foraging around facility perimeter. Milk is consumed by all age groups and is frequently the most important food that could contribute to the radiation dose. Dairy animals pastured near the site and at two background locations allow adequate monitoring.
BFMCTLS **BFMCTLN**	Control milk samples collected far from site to provide background data for comparison with near-site milk.

1995 Monitoring Program
Environmental Surveillance:

Off-site Biological

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
BFVNEAR* Nearby locations **BFVCTRL*** Remote locations (16 km or more from facility; background) **BFHNEAR** Beef cattle/milk cow forage from near-site location	Fruit and vegetables grown near facility perimeter, downwind if possible Reported in: • MTAR • QEMDR • SER	Grab biological (fruits and vegetables)	→ Annual, at harvest (**BFVNEAR** and **BFVCTRL**)	→ 3 each (split with NYSDOH)	→ Gamma isotopic and Sr-90 analysis of edible portions, H-3 in free moisture
BFHCTLS or **BFHCTLN** Beef cattle/milk cow forage from control location south or north (background)		Grab biological	→ Annual (**BFHNEAR**, **BFHCTLS**, or **BFHCTLN**)	→ 1 each location	→ Gamma isotopic, Sr-90
BFBNEAR Beef animal from nearby farm in downwind direction **BFBCTRL** Beef animal from control location 16 km or more from facility (background)	Meat (beef foraging near facility perimeter, downwind if possible) Reported in: • MTAR • QEMDR • SER	Grab biological	→ Semiannual	→ 2 each location	→ Gamma isotopic and Sr-90 analysis of meat, H-3 in free moisture
BFDNEAR Deer in vicinity of the site **BFDCTRL** Control deer 16 km or more from facility (background)	Meat (deer foraging near facility perimeter) Reported in: • MTAR • QEMDR • SER	Individual collection biological	→ Annual, during hunting season (**BFDNEAR** sample split with NYSDOH)	→ 3	→ Gamma isotopic and Sr-90 analysis of meat, H-3 in free moisture
			During year as available (**BFDCTRL** sample split with NYSDOH)	→ 3	→ Gamma isotopic and Sr-90 analysis of meat, H-3 in free moisture

* Corn, apple, and bean samples are identified specifically as follows: corn = BFVNEAC and BFVCTRC; apples = BFVNEAA and BFCTRA; beans = BFVNEAB and BFVCTRB.

	Sampling Rationale
BFVNEAR	DOE/EH-0173T, 5.8.2.2. Fruits and vegetables (corn, apples, and beans) collected from areas near the site. Collected, if possible, from areas near the site predicted to have worst case downwind concentrations of radionuclides in air and soil. Sample analysis reflects steady state/chronic uptake or contamination of foodstuffs as a result of site activities. Possible pathway to humans or indirectly through animals.
BFVCTRL	DOE/EH-0173T, 5.8.2.2. Fruits and vegetables collected from area remote from the site. Background fruits and vegetables collected for comparison with near-site samples. Collected in area(s) of no possible site impact.
BFHNEAR	DOE/EH-0173T, 5.8.2.2. Hay collected from areas near the site. Same as for near-site fruits and vegetables (**BFVNEAR**). Indirect pathway to humans through animals. Collected with either beef or milk sample location.
BFHCTLS **BFHCTLN**	DOE/EH-0173T, 5.8.2.2. Hay collected from areas remote from the site. Background hay collected for comparison with near-site samples. Collected in area(s) of no possible site impact.
BFBNEAR	DOE/EH-0173T, 5.8.2.3. Beef collected from animals raised near the site. Following the rationale for vegetable matter collected near site (**BFVNEAR** and **BFHNEAR**), edible flesh portion of beef animals is analyzed to determine possible radionuclide content passable directly to humans. For animals foraging downwind in areas of maximum probable site impact.
BFBCTRL	DOE/EH-0173T, 5.8.2.3. Beef collected from animals raised far from the site. Background beef collected for comparison with near-site samples. Collected in area(s) of no possible site impact.
BFDNEAR	DOE/EH-0173T, 5.8.3. Venison from deer herd found living near the site. Same as for beef (**BFBNEAR**).
BFDCTRL	DOE/EH-0173T, 5.8.3. Venison from deer herd living far from the site. Background deer meat collected for comparison with near-site samples. Collected in area(s) of no possible site impact.

1995 Monitoring Program
Environmental Surveillance:

Off-site Direct Radiation

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
DFTLD Series Thermolumine-scent Dosimetry (TLD) Off-site: **#1-16** At each of 16 compass sectors, at nearest accessible perimeter point **#17** "5 Points" landfill, 19 km SW (background) **#20** 1,500 m NW (downwind receptor) **#21** Springville 6 km N **#22** West Valley 6 km SSE **#23** Great Valley 29 km S (background) **#37** Dunkirk 50 km NW - early 1995 (background) Nashville 37 km NW - late 1995 (background) **#41** Sardinia-Savage Road 24 km NE (background)	Direct radiation around facility Reported in: • QEMDR • SER	Integrating LiF TLD	→ Quarterly	→ 5 TLDs at each of 23 locations collected 4 times per year	→ Quarterly gamma radiation exposure

	Sampling Rationale
DOSIMETRY Off-site	DOE/EH-0173T, 5.5 and DOE/EP-0023, 4.6.3. TLDs offer continuous integrated environmental gamma-ray monitoring and have been deployed systematically about the site. Off-site TLDs are used to verify that site activities have not adversely affected the surrounding environs. In addition to general NRC crosschecks at selected sites, a biennial HPIC gamma radiation measurement is completed at all TLD locations.

1995 Monitoring Program
Environmental Surveillance:

On-site Direct Radiation

Sample Location Code	Monitoring/Reporting Requirements	Sampling Type/Medium	Collection Frequency	Total Annual Sample Collections	Analyses Performed/ Composite Frequency
DNTLD Series Thermoluminescent Dosimetry (TLD) On-site: **#18, #19, #33** At three corners of SDA **#24, #26-32, #34** (9) At security fence around site **#35, #36, #38-40** (5) On-site near operational areas **#25** Rock Springs Road 500 m NNW of plant **#42** SDA T-1 Building **#43** SDA West Perimeter Fence	Direct radiation on facility grounds Reported in: • QEMDR • SER	Integrating LiF TLD	→ Quarterly	→ 5 TLDs at each of 20 sites collected 4 times per year	→ Quarterly gamma radiation exposure

	Sampling Rationale
DOSIMETRY On-site	DOE/EH-0173T, 5.4 and 5.5. On-site TLDs monitor waste management units and verify that the potential dose rate to the general public (i.e., Rock Springs Road) is below 100 mrem/annum (1 mSv/annum) from site activities. In addition to general NRC crosschecks at selected sites, a biennial HPIC gamma radiation measurement is completed at all locations. Potential TLD sampling locations are continually evaluated with respect to site activities.

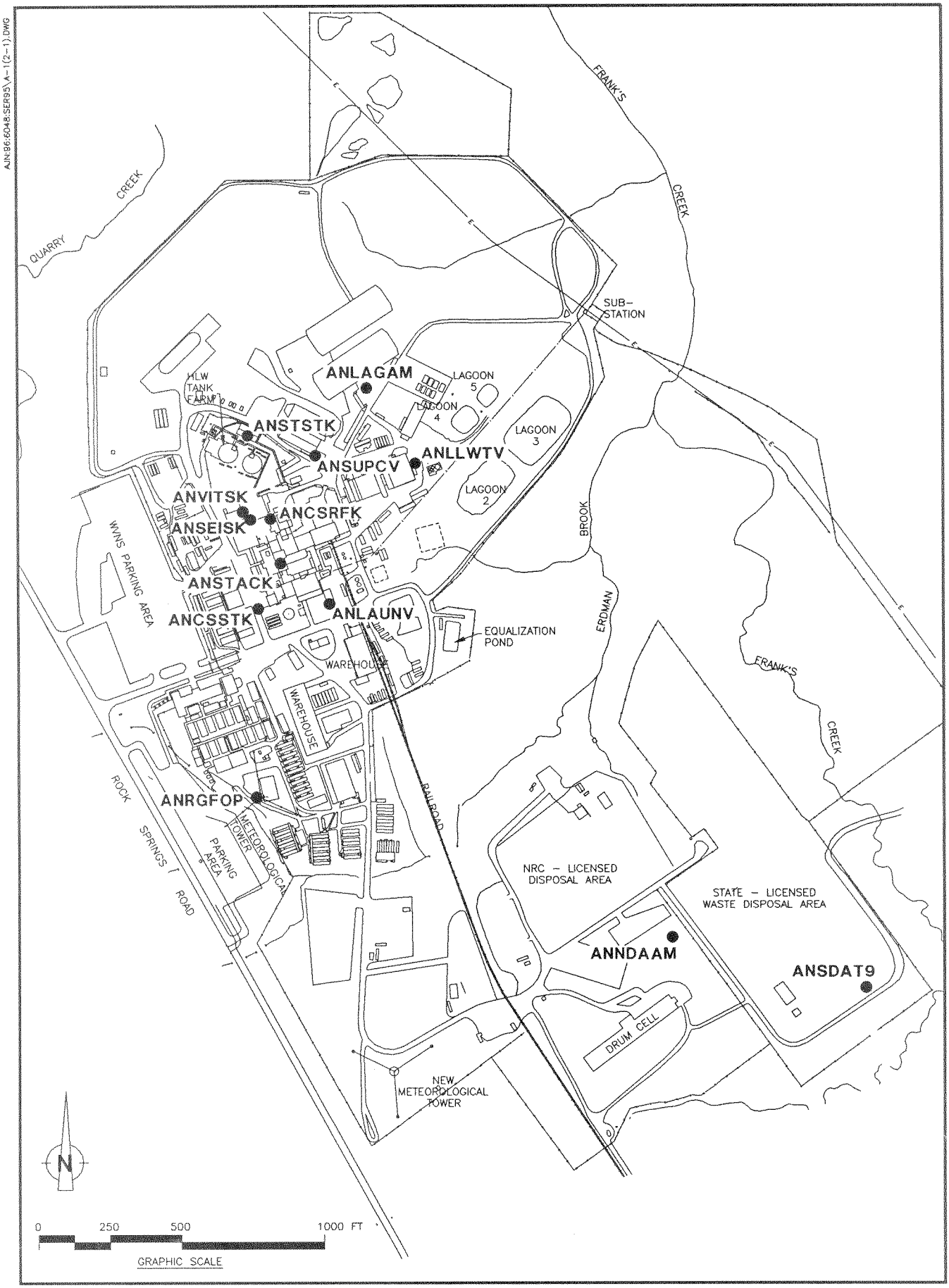

Figure A-1. On-site Air Monitoring and Sampling Points.

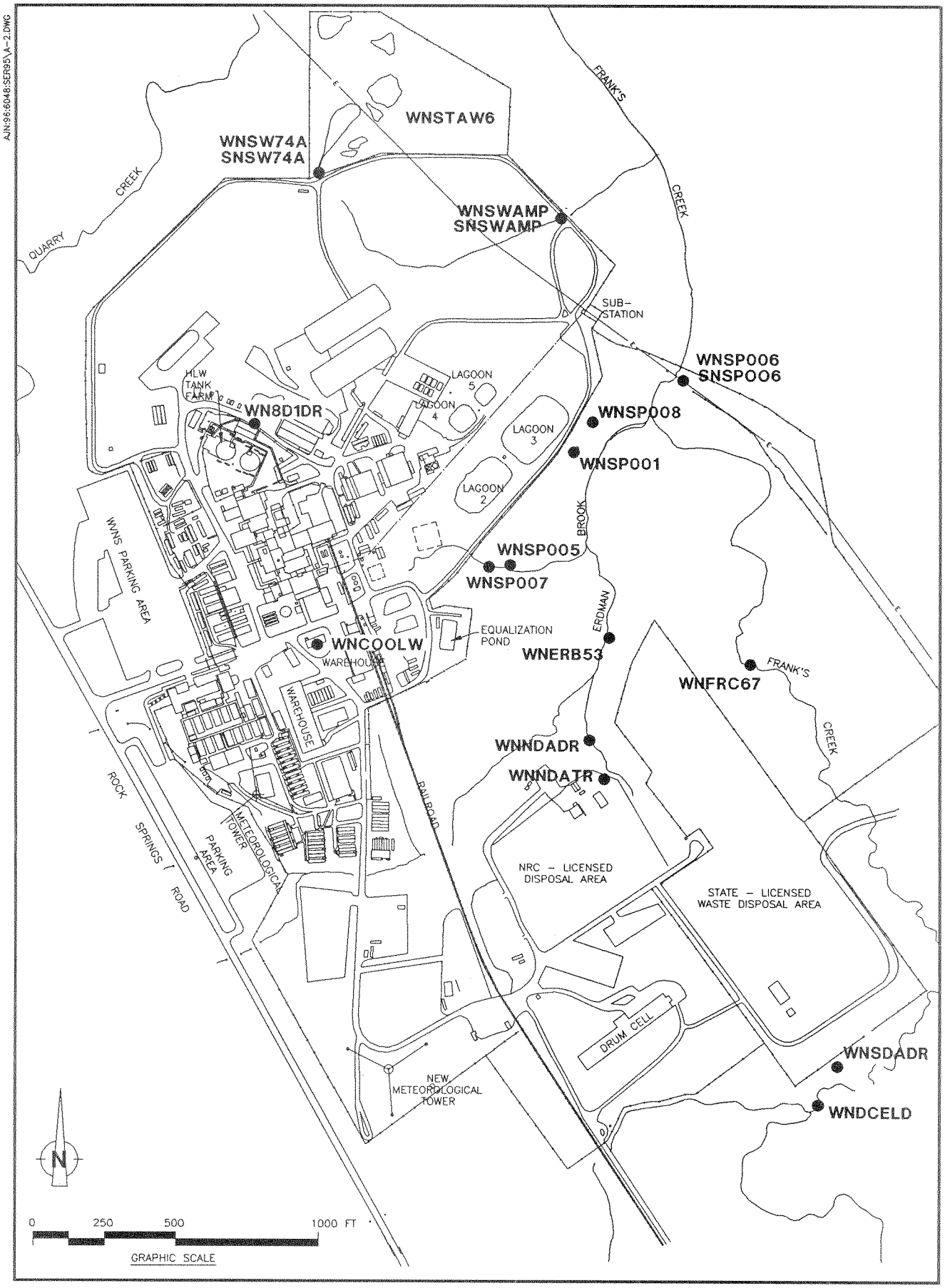

Figure A-2. Sampling Locations for On-site Surface Water and Soil.

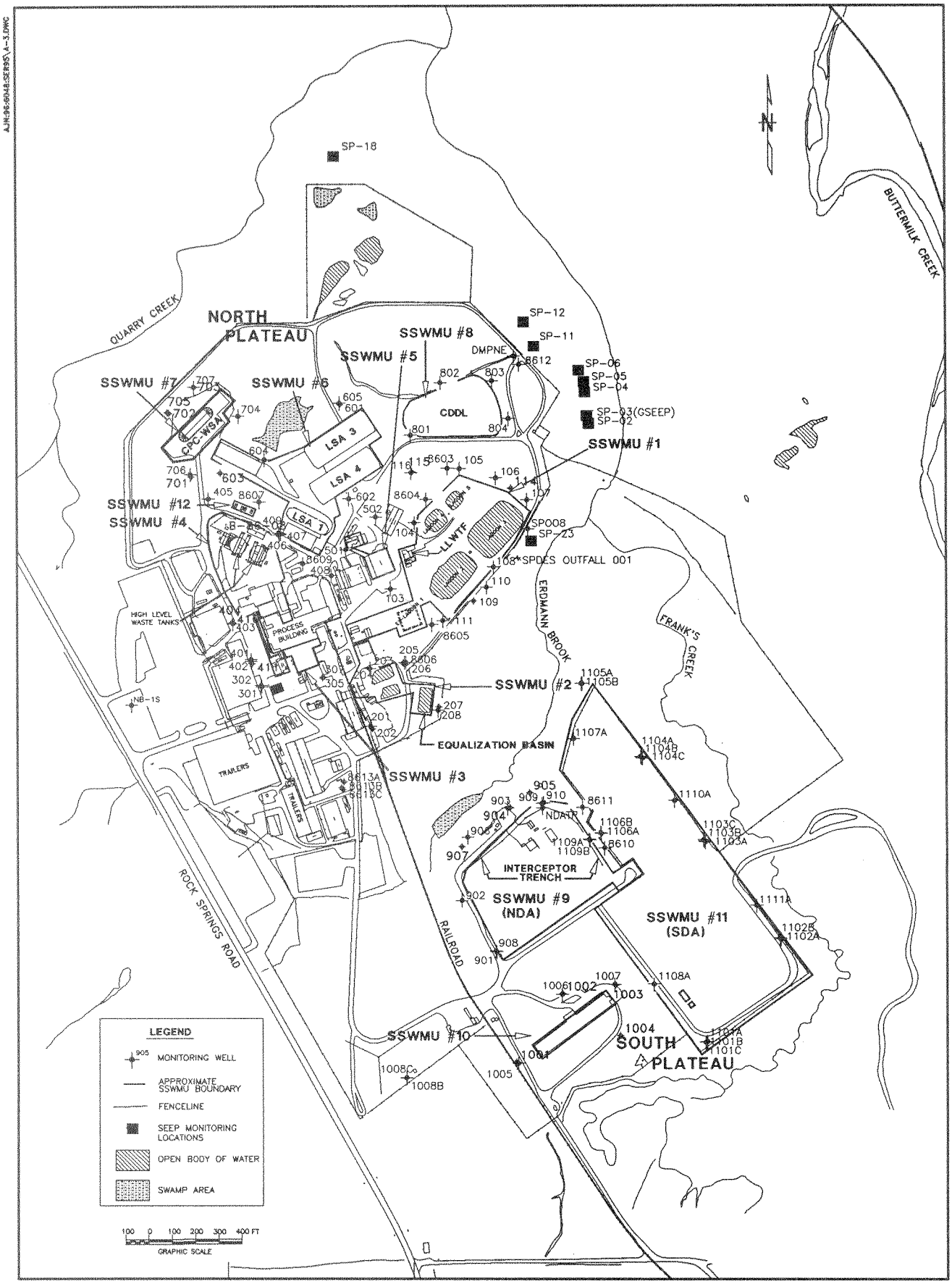

Figure A-3. On-Site Groundwater Monitoring Network *(Includes wells not actively monitored following May 1995 but retained for water level measurements).*

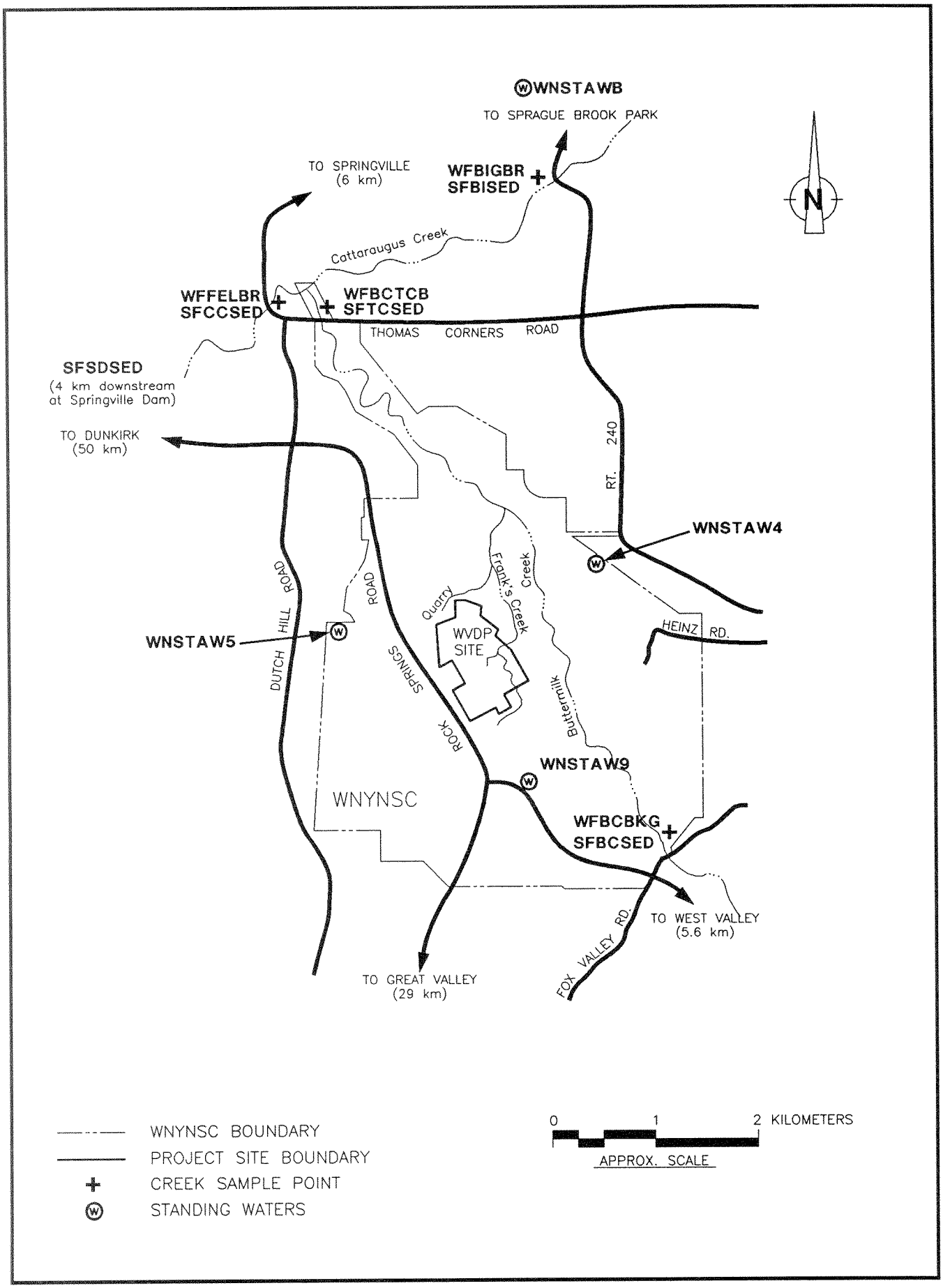

Figure A-4. Location of Off-site Surface Water and Sediment Samples.

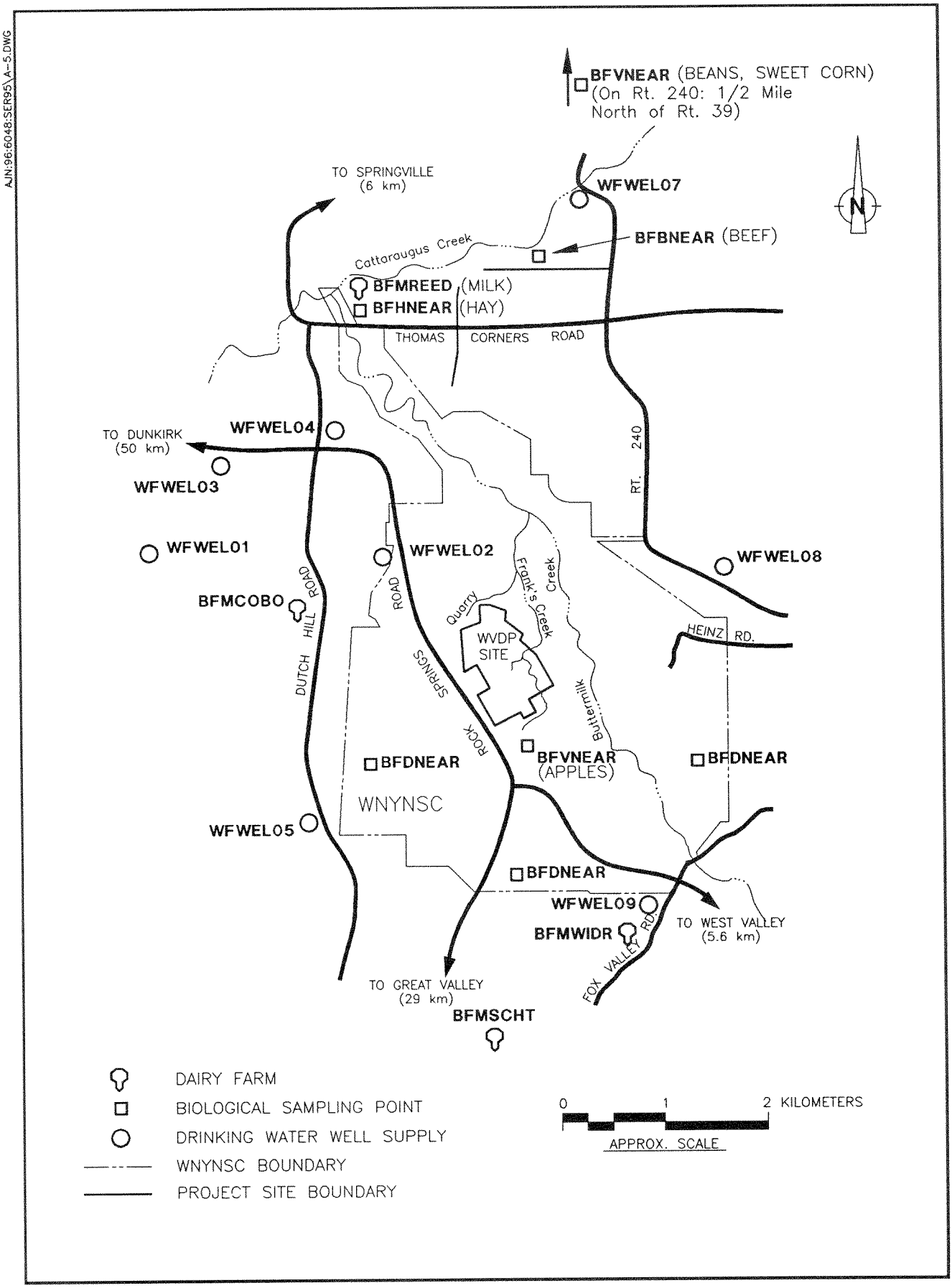

Figure A-5. Near-site Drinking Water and Biological Sample Points.

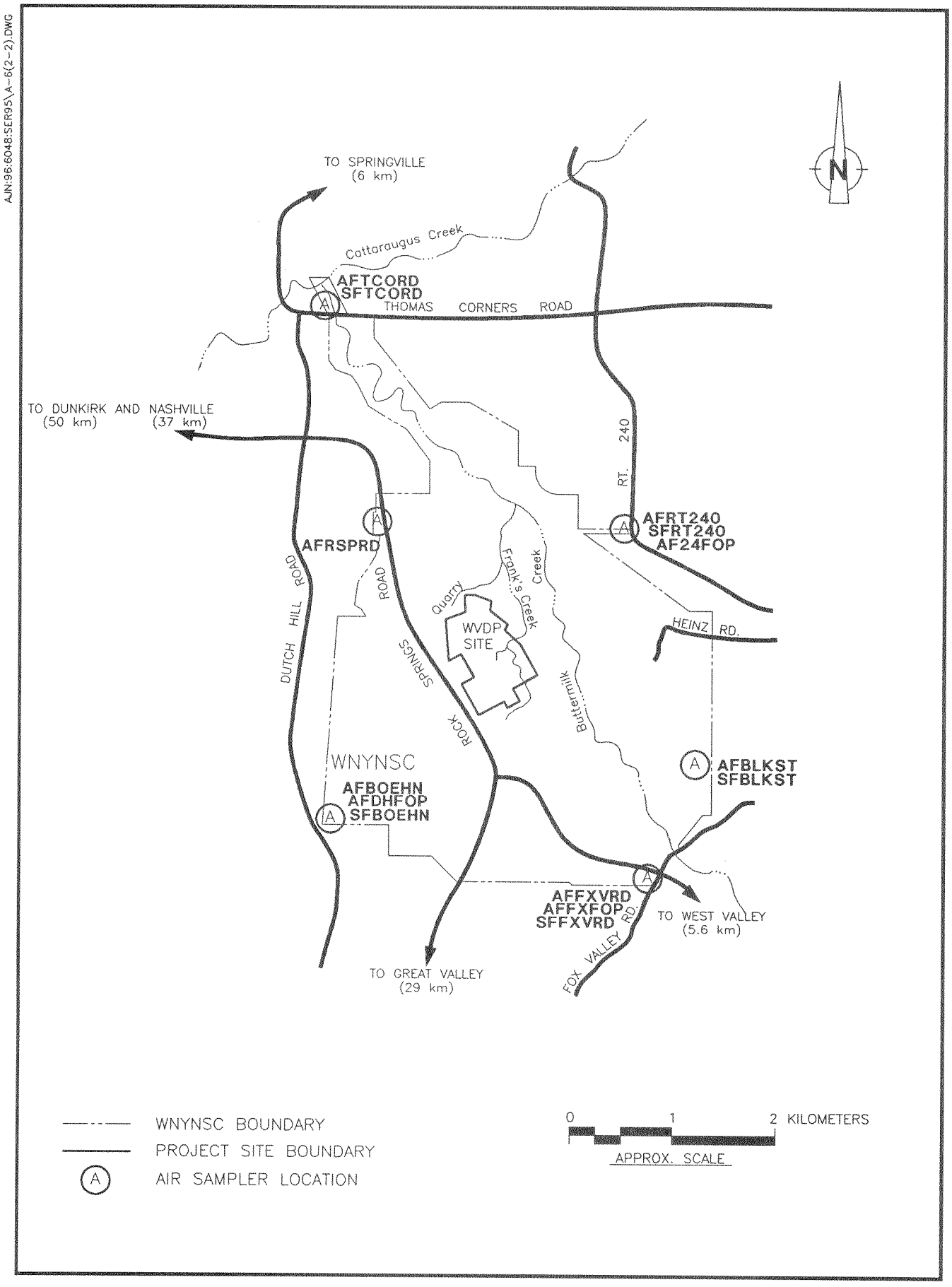

Figure A-6. Location of Perimeter Air, Soil, and Fallout Sampling Points.

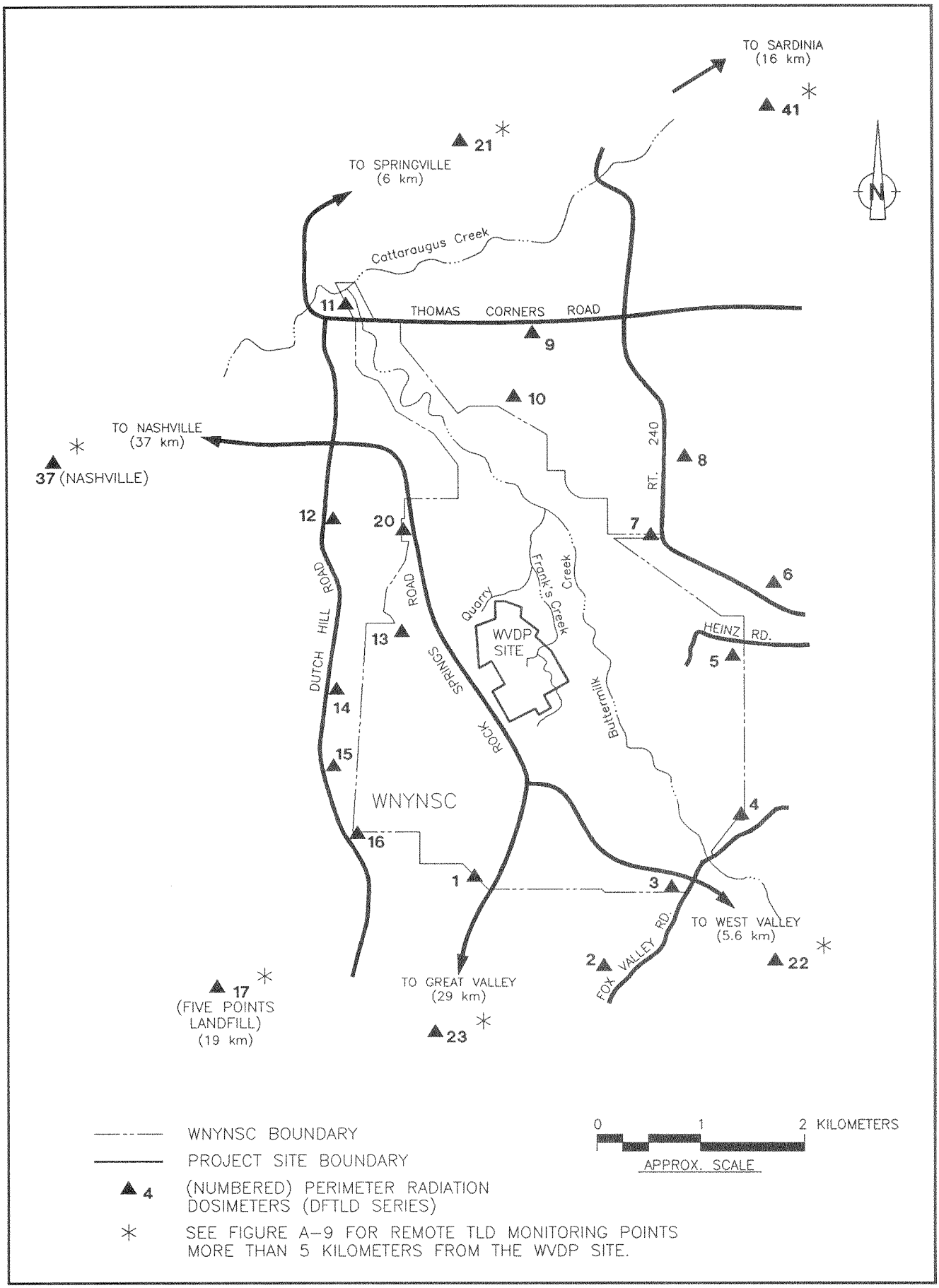

Figure A-7. Location of Off-site Thermoluminescent Dosimeters (TLDs).

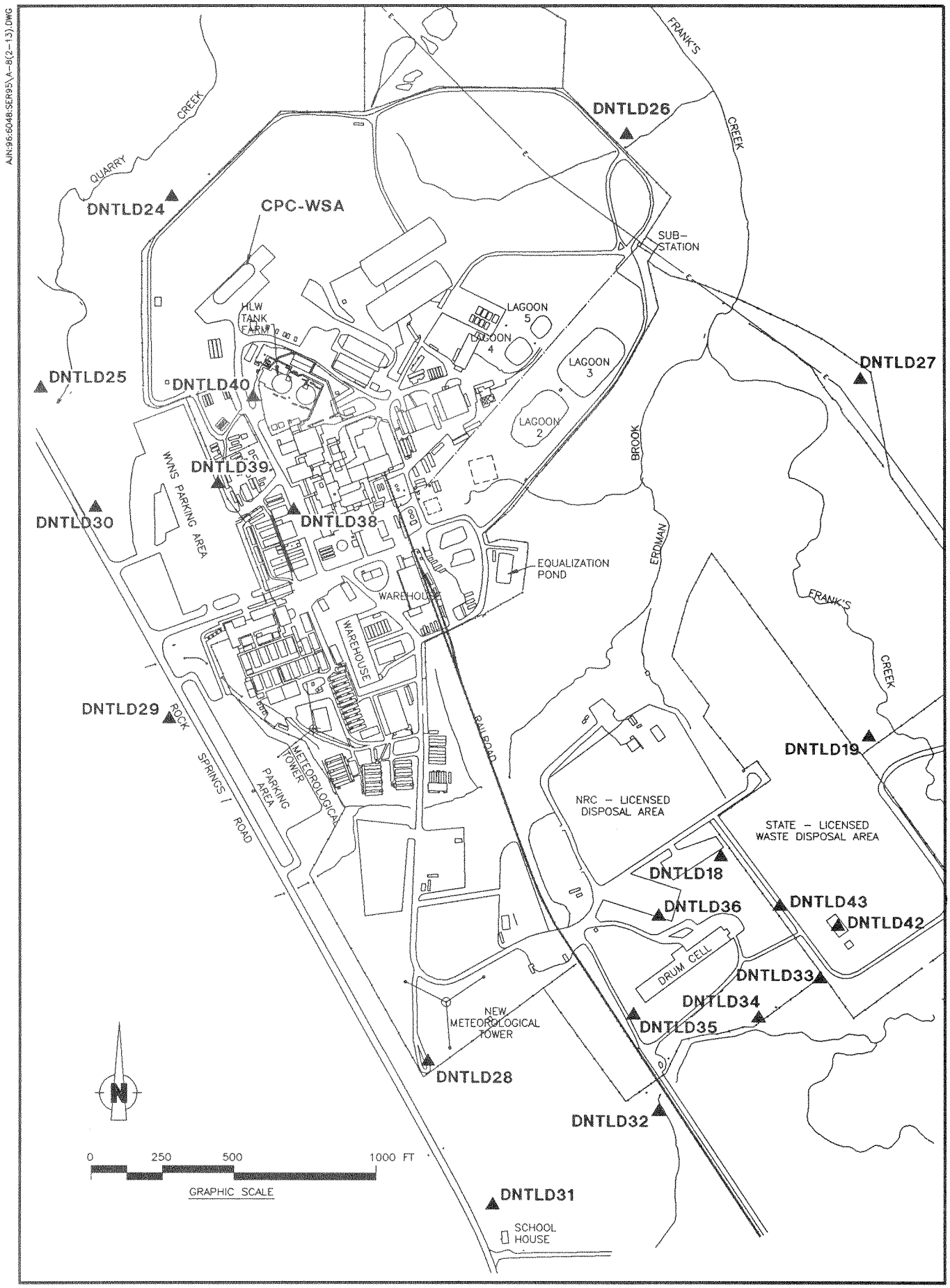

Figure A-8. Location of On-site Thermoluminescent Dosimeters (TLDs).

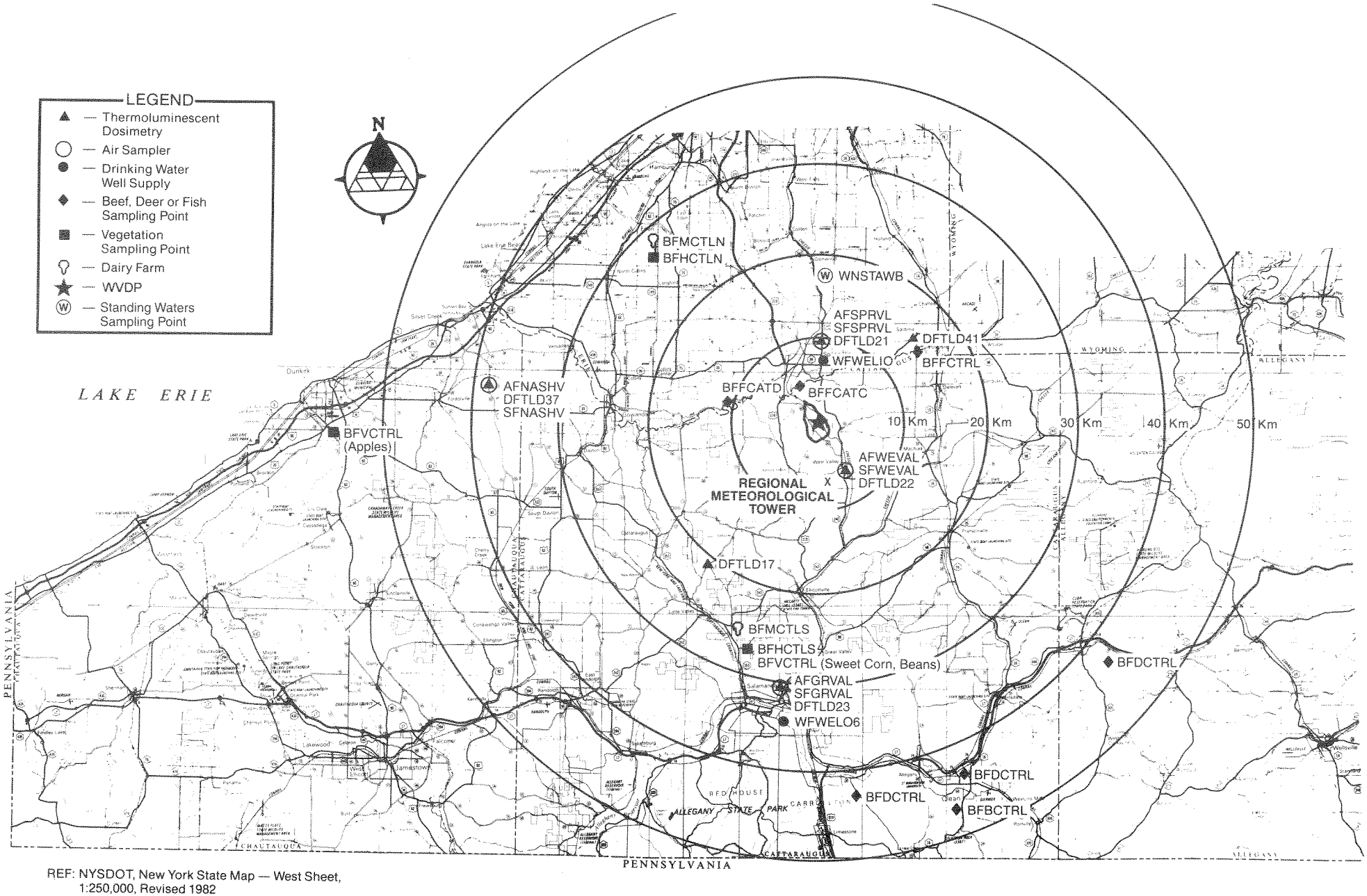

Figure A-9. Environmental Sample Points more than 5 kilometers from the WVDP Site.