

# Pacific Northwest National Laboratory

Operated by Battelle for the  
U.S. Department of Energy

## Environmental Surveillance Master Sampling Schedule

L. E. Bisping

January 1997

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Prepared for the U.S. Department of Energy  
under Contract DE-AC06-76RLO 1830

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MASTER SAMPLING SCHEDULE

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**MASTER**

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Pacific Northwest National Laboratory  
Richland, Washington 99352

## SUMMARY

Environmental surveillance of the Hanford Site and surrounding areas is conducted by the Pacific Northwest National Laboratory (PNNL)<sup>(a)</sup> for the U.S. Department of Energy (DOE). This document contains the planned 1997 schedules for routine collection of samples for the Surface Environmental Surveillance Project (SESP) and Drinking Water Monitoring Project. In addition, Section 3.0, Biota, also reflects a rotating collection schedule identifying the year a specific sample is scheduled for collection.

The purpose of these monitoring projects is to evaluate levels of radioactive and nonradioactive pollutants in the Hanford environs, as required in DOE Order 5400.1, "General Environmental Protection Program," and DOE Order 5400.5, "Radiation Protection of the Public and the Environment." The sampling methods will be the same as those described in the Environmental Monitoring Plan, United States Department of Energy, Richland Operations Office, DOE/RL91-50, Rev. 1, U.S. Department of Energy, Richland, Washington.

### SESP SAMPLING

Samples of environmental media are routinely collected for the SESP and analyzed to determine the quality of air, surface water, sediment, wildlife, foodstuffs, and farm products at locations on the Hanford Site and in the surrounding communities. Data from these samples are compiled in the SESP computerized database. In some cases, the location names in this document have been abbreviated. These abbreviated names are exactly like the names used in the SESP database.

### DRINKING WATER MONITORING PROJECT SAMPLING

The responsibility for monitoring onsite drinking water falls outside the scope of the SESP. The operators of the onsite drinking water systems are responsible for monitoring the drinking water quality as defined in the National Drinking Water Standards. PNNL conducts radiological monitoring of onsite drinking water for DynCorp. PNNL conducts the drinking water monitoring project concurrent with the SESP to promote efficiency and consistency, utilize

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expertise developed over the years, and reduce costs associated with management, procedure development, data management, quality control, and reporting.

#### SCHEDULE CHANGES

This schedule is subject to modification during the year in response to changes in Site operations, program requirements, and the nature of the observed results. Operational limitations such as weather, mechanical failures, sample availability, etc., may also impact scheduled sampling. Therefore, this document may not be an accurate record of samples collected during the year.

#### SPLIT SAMPLES

Environmental samples that are split and analyzed by both PNNL and the Washington State Department of Health (DOH) are indicated in the schedule as are environmental samples that are split and analyzed by both PNNL and the U.S. Food and Drug Administration (FDA).

#### ADDITIONAL INFORMATION

Questions relating to the content of this document can be directed to Roger Dirkes, Manager, Surface Environmental Surveillance Project, (509) 376-8177 or R. W. (Bill) Hanf, Manager, Drinking Water Monitoring Project (509) 376-8264. The sampling and analysis schedule for groundwater monitoring is no longer included in this document. Groundwater monitoring activities for surveillance, Resources Conservation and Recovery Act (RCRA), and operational monitoring have been consolidated under the Hanford Groundwater Project within PNNL. The monitoring for this consolidated project is on a fiscal year schedule. Questions relating to the sampling schedule for the Hanford Groundwater Project, should be addressed to Stuart Luttrell, Monitoring Task Manager, Hanford Groundwater Project (509) 376-6023.

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## ABBREVIATIONS

### FREQUENCY SYMBOLS USED

A	annually
BE	biennial (every 2 years)
BW	biweekly (every 2 weeks)
M	monthly
M Comp.	monthly composite
Q	quarterly
Q Comp.	quarterly composite
SA	semiannually
TE	triennial (occurring every 3rd year)
W	weekly

### ANALYTICAL SYMBOLS USED

Generally, standard element, chemical, and isotope designations are used to indicate the analyses performed. Other analytical designations used are:

Alpha	total alpha activity of sample
Anions	major anions-generally Cl, F, NO <sub>2</sub> , NO <sub>3</sub> , SO <sub>4</sub>
Beta	total beta activity of sample
Comp. Only	sample analyzed as part of composite only
Gamma Scan	analysis of photon energy spectrum for individual photon-emitting radionuclides, including <sup>60</sup> Co, <sup>65</sup> Zn, <sup>106</sup> Ru, and <sup>137</sup> Cs
HTO	tritiated water ( <sup>3</sup> H <sup>1</sup> H <sup>16</sup> O)
ICP-u, ICP-3	major metals by inductively coupled plasma spectrometry - samples unfiltered
LEP	samples analyzed by Low Energy Photon Spectrometry
Lo <sup>3</sup> H	analytical procedure includes electrolytic enrichment
NRA	not routinely analyzed
Pu	Isotopic plutonium ( <sup>238</sup> Pu, <sup>239,240</sup> Pu)
U	Isotopic uranium ( <sup>234</sup> U, <sup>235</sup> U, <sup>238</sup> U)

## ABBREVIATIONS

### PORTABLE INSTRUMENT SYMBOLS USED

BICRON	Microrem meter
GM	Geiger-Moeller counter
PIC	Pressurized Ionization Chamber

# 1.0 AIR SURVEILLANCE

## 1.1 AIR - PARTICULATE FILTER

Location	Individual Samples			Composited Sample		
	Location Number <sup>(a)</sup>	Frequency	Analyses	Composite Group	Frequency	Analyses
<u>Onsite</u>						
100 K Area	1	BW	Beta, Alpha	100 Areas	Q	Gamma Scan 90Sr, Pu <sup>(b)</sup>
100 N-1325 Crib	2	BW	Beta, Alpha		A	
100 D Area	3	BW	Beta, Alpha			
N of 200 E	4	BW	Beta	N of 200 E	A	Gamma Scan
E of 200 E	5	BW	Beta, Alpha	200 E Area	Q	Gamma Scan 90Sr, Pu <sup>(b)</sup> , U <sup>(c)</sup>
200 ESE	6	BW	Beta, Alpha		A	
S of 200 E	7	BW	Beta, Alpha			
B Pond	8	BW	Beta, Alpha	B Pond	Q	Gamma Scan 90Sr, Pu <sup>(b)</sup> , U <sup>(c)</sup>
B Pond	8	BW	Comp. Only		A	
Army Loop Camp	9	BW	Beta, Alpha	200 W South and East	Q	Gamma Scan 90Sr, Pu <sup>(b)</sup> , U <sup>(c)</sup>
200 Tel. Exchange	10	BW	Beta, Alpha		A	
200 W SE	11	BW	Beta, Alpha	200 West	Q	Gamma Scan 90Sr, Pu <sup>(b)</sup> , U <sup>(c)</sup>
200 W SE	11	BW	Comp. Only		A	
300 Water Intake	12	BW	Beta	300 Area	Q	Gamma Scan 90Sr, Pu <sup>(b)</sup> , U <sup>(c)</sup>
300 South Gate	13	BW	Beta, Alpha		A	
300 Trench <sup>(d)</sup>	14	BW	Beta, Alpha	300 Trench	Q	Gamma Scan 90Sr, Pu <sup>(b)</sup> , U <sup>(c)</sup>
300 NE <sup>(d)</sup>	15	BW	Beta, Alpha	300 NE	Q	
400 E	16	BW	Beta, Alpha	400 Area	Q	Gamma Scan 90Sr, Pu <sup>(b)</sup>
400 W	17	BW	Beta, Alpha		A	
400 S	18	BW	Beta, Alpha			
400 N	19	BW	Beta, Alpha			
Wye Barricade	20	BW	Beta, Alpha	Wye Barricade	Q	Gamma Scan 90Sr, Pu <sup>(b)</sup> , U <sup>(c)</sup>
Wye Barricade	20	BW	Comp. Only		A	
<u>Perimeter</u>						
Ringold Met Tower	21	BW	Beta, Alpha	Ringold Met Tower	Q	Gamma Scan 90Sr, Pu <sup>(b)</sup>
					A	
W End of Fir Rd	22	BW	Beta, Alpha	W End of Fir Road	Q	Gamma Scan 90Sr, Pu <sup>(b)</sup> , U <sup>(c)</sup>
W End of Fir Rd	22	BW	Comp. Only		A	
Dogwood Met Tower	23	BW	Beta, Alpha	Dogwood Met Tower	Q	Gamma Scan 90Sr, Pu <sup>(b)</sup> , U <sup>(c)</sup>
Dogwood Met Tower	23	BW	Comp. Only		A	
Byers Landing	24	BW	Beta, Alpha	Byers Landing	Q	Gamma Scan 90Sr, Pu <sup>(b)</sup> , U <sup>(c)</sup>
					A	

# 1.1 AIR - PARTICULATE FILTER (contd)

Location	Individual Samples			Composited Sample		
	Location Number (a)	Frequency	Analyses	Composite Group	Frequency	Analyses
<u>Perimeter</u>						
Battelle Complex	25	BW	Beta	Battelle Complex	A	Gamma Scan
Horn Rapids Substa	26	BW	Beta, Alpha	Prosser Barricade	Q	Gamma Scan 90Sr, Pu(b), U(c)
Prosser Barricade	27	BW	Comp. Only		A	
Yakima Barricade	28	BW	Beta, Alpha	Yakima Barricade	Q	Gamma Scan 90Sr, Pu(b)
Yakima Barricade	28	BW	Comp. Only		A	
Wahluke Slope	29	BW	Beta, Alpha	Wahluke Slope	Q	Gamma Scan 90Sr, Pu(b)
Wahluke Slope	29	BW	Comp. Only		A	
<u>Community(e)</u>						
Basin City School	30	BW	Beta, Alpha	Basin City School	Q	Gamma Scan 90Sr, Pu(b), U(c)
Basin City School	30	BW	Comp. Only		A	
Leslie Groves-Rchlnd	31	BW	Beta, Alpha	Leslie Groves-Richland	Q	Gamma Scan 90Sr, Pu(b), U(c)
Leslie Groves-Rchlnd	31	BW	Comp. Only		A	
Pasco	32	BW	Beta	Tri-Cities	Q	Gamma Scan 90Sr, Pu(b)
Kennewick-Ely Street	33	BW	Beta, Alpha		A	
Benton City	34	BW	Beta	Benton City	A	Gamma Scan
Edwin Markham School	35	BW	Beta, Alpha	Edwin Markham School	Q	Gamma Scan 90Sr, Pu(b), U(c)
Mattawa	36	BW	Beta	Mattawa	A	Gamma Scan
Othello	37	BW	Beta	Othello	A	Gamma Scan
<u>Distant</u>						
Yakima	38	BW	Beta, Alpha	Yakima	Q	Gamma Scan 90Sr, Pu(b), U(c)
Toppenish(e)	39	BW	Beta, Alpha	Toppenish	Q	Gamma Scan 90Sr, Pu(b), U(c)

(a) Refer to Figure 1.1, Air Sampling locations.

(b) Isotopic plutonium.

(c) Isotopic uranium.

(d) Location is collected biweekly and composited for quarterly analysis. Quarterly composites for 300 Trench and 300 NE are then composited to form one Annual composite.

(e) Community-Operated Environmental Surveillance Stations.

## 1.2 AIR - GASES AND VAPOR

<u>Location</u>	<u>Location Number</u> <sup>(a)</sup>	<u>Fre-quency</u> <sup>(b)</sup>	<u>Analyses</u>	<u>Fre-quency</u>	<u>Analyses</u> <sup>(c)</sup>
<u>Onsite</u>					
100 K Area	1			M	3 <sub>H</sub>
100 N-1325 Crib	2			M	3 <sub>H</sub>
200 ESE	6	Q Comp	129 <sub>I</sub>	M	3 <sub>H</sub>
200 Tel. Exchange	10			M	3 <sub>H</sub>
300 South Gate	13			M	3 <sub>H</sub>
300 Trench <sup>(d)</sup>	14			M	3 <sub>H</sub>
300 NE	15			M	3 <sub>H</sub>
400 E	16			M	3 <sub>H</sub>
<u>Perimeter</u>					
Ringold Met Tower	21	Q Comp	129 <sub>I</sub>	M	3 <sub>H</sub>
Dogwood Met Tower	23			M	3 <sub>H</sub>
Byers Landing	24	Q Comp	129 <sub>I</sub>	M	3 <sub>H</sub>
Prosser Barricade	27			M	3 <sub>H</sub>
Wahluke Slope	29			M	3 <sub>H</sub>
<u>Community</u> <sup>(e)</sup>					
Basin City School	30			M	3 <sub>H</sub>
Leslie Groves-RchLnd	31			M	3 <sub>H</sub>
Edwin Markham School	35			M	3 <sub>H</sub>
<u>Distant</u>					
Yakima	38	Q Comp	129 <sub>I</sub>	M	3 <sub>H</sub>
Toppenish <sup>(e)</sup>	39			M	3 <sub>H</sub>

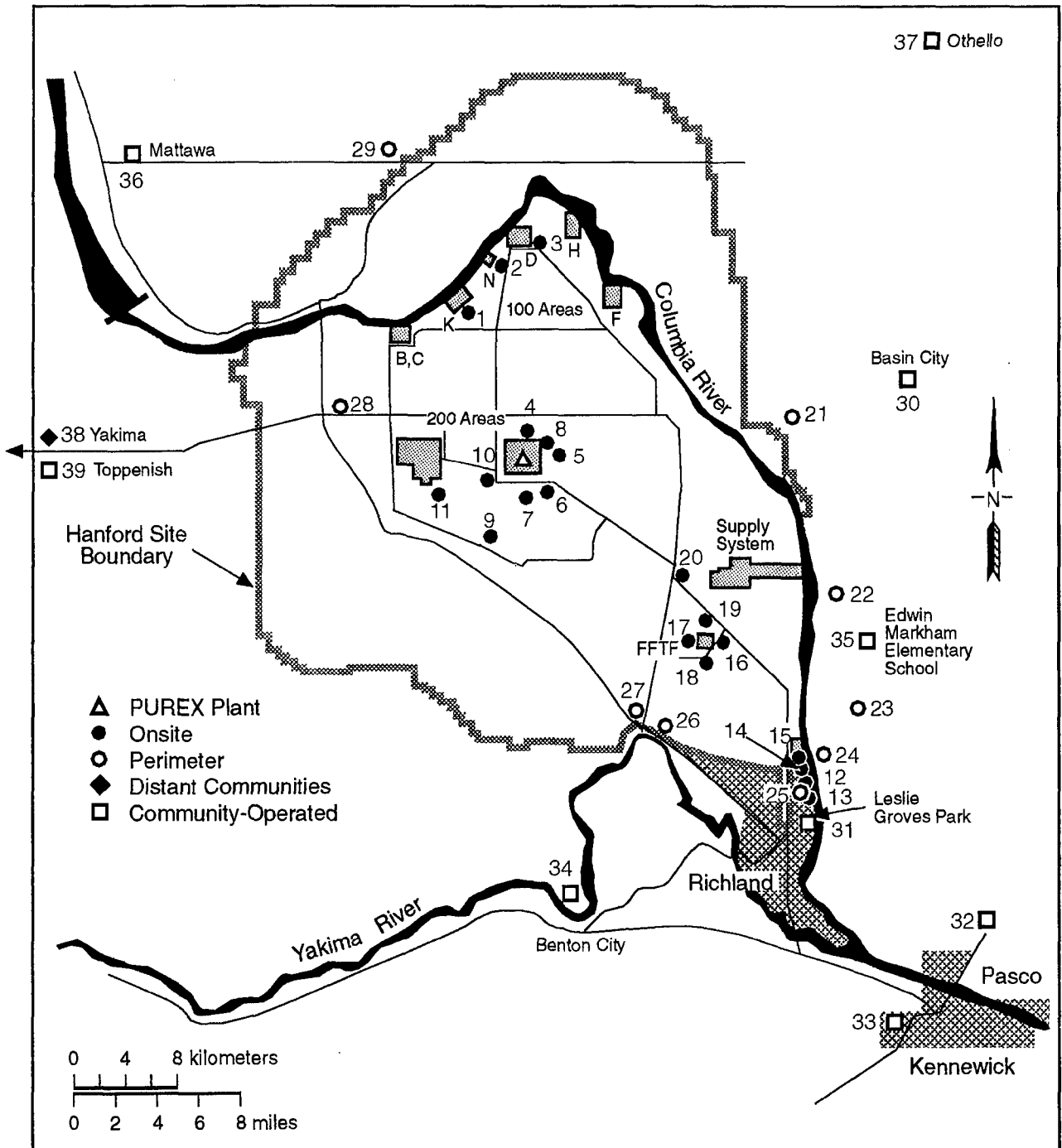
(a) Refer to Figure 1.1, Air Sampling locations.

(b) Samples are collected monthly and composited for quarterly analyses.

(c) as HTO

(d) Two silica gel samples are collected from this location. One is submitted to the analytical lab on the date it is collected and the second is archived for one month and then submitted to the analytical lab.

(e) Community-Operated Environmental Surveillance Stations.



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Figure 1.1. 1997 Air Sampling Locations

## 2.0 SURFACE-WATER SURVEILLANCE

### 2.1 WATER - COLUMBIA RIVER

Location <sup>(a)</sup>	Sample Type	Frequency	Analyses
Priest Rapids Dam	Cumulative	M Comp. <sup>(b)</sup> Q Comp. <sup>(b)</sup>	Alpha, Beta, Lo <sup>3</sup> H, Gamma Scan, <sup>90</sup> Sr, <sup>99</sup> Tc, U <sup>(c)</sup> , DOH <sup>(d)</sup> <sup>129</sup> I
	Particulate (filter)	Q Comp. <sup>(e)</sup>	Pu <sup>(f)</sup> , Gamma Scan
	Soluble (resin)	Q Comp. <sup>(e)</sup>	Pu <sup>(f)</sup> , Gamma Scan
Vernita	Grab	Q	USGS-NASQAN <sup>(g)</sup>
	Grab (Transect) <sup>(h)</sup>	Q A	Lo <sup>3</sup> H, <sup>90</sup> Sr, U <sup>(c)</sup> , Volatile Organics, ICP-3, Anions Cyanide, Mercury, DOH <sup>(i)</sup>
100 N	Grab (Transect) <sup>(j)</sup>	A	Lo <sup>3</sup> H, <sup>90</sup> Sr, U <sup>(c)</sup> , Volatile Organics, ICP-3, Anions, DOH <sup>(i)</sup>
100 F	Grab (Transect) <sup>(j)</sup>	A	Lo <sup>3</sup> H, <sup>90</sup> Sr, U <sup>(c)</sup> , Volatile Organics, ICP-3, Anions, Mercury
Hanford Townsite	Grab (Transect) <sup>(j)</sup>	A	Lo <sup>3</sup> H, <sup>90</sup> Sr, U <sup>(c)</sup> , Volatile Organics, ICP-3, Anions
300 Area	Grab (Transect) <sup>(j)</sup>	A	Lo <sup>3</sup> H, <sup>90</sup> Sr, U <sup>(c)</sup> , Volatile Organics, ICP-3, Anions
Richland Pump house	Cumulative	W	Alpha, Beta
	Cumulative	M Comp. <sup>(b)</sup> Q Comp. <sup>(b)</sup>	Alpha, Beta, Lo <sup>3</sup> H, Gamma Scan, <sup>90</sup> Sr, <sup>99</sup> Tc, U <sup>(c)</sup> <sup>129</sup> I
	Particulate (filter)	Q Comp. <sup>(e)</sup>	Pu <sup>(f)</sup> , Gamma Scan
	Soluble (resin)	Q Comp. <sup>(e)</sup>	Pu <sup>(f)</sup> , Gamma Scan
	Grab (Transect) <sup>(j)</sup>	Q A	Lo <sup>3</sup> H, <sup>90</sup> Sr, U <sup>(c)</sup> , Volatile Organics, ICP-3, Anions Cyanide, Mercury, DOH <sup>(i)</sup>
	Grab	Q	USGS-NASQAN <sup>(g)</sup>

(a) Refer to Figure 2.1, Surface Water and Drinking Water Sampling Locations.

(b) Cumulative sample is collected weekly and composited for monthly or quarterly analysis.

(c) Isotopic uranium.

(d) Split co-samples with the Washington State Department of Health (January and June only).

(e) Sample is collected biweekly and composited for quarterly analysis.

(f) Isotopic plutonium.

(g) Analyses are performed by the United States Geological Survey (USGS) in conjunction with the National Stream Quality Accounting Network (NASQAN) Program, and includes: Conductance, pH, Temperature, Turbidity, Dissolved Oxygen, Coliform, Streptococcus, Hardness, Ca, Mg, Na, K, Alkalinity, Carbonates, Sulfate, Cl, F, Si, Solids, NH<sub>4</sub>-N, NO<sub>3</sub>+NO<sub>2</sub>, N-Kjeldahl, P, Al, Ba, Cr, Co, Fe, Li, Mn, Mo, Ni, Se, Ag, Sr, V, Dissolved Organic Carbon.

(h) 4 samples collected along cross-section.

(i) Split co-samples annually with the Washington State Department of Health collected at five sample sites along transect.

(j) 10 samples collected along cross-section.



## 2.2 RIVERBANK SPRINGS

Location <sup>(a)</sup>	Sample Type	Frequency	Analyses
100-B Spring	Grab	A	Alpha, Beta, $^3\text{H}$ , $^{90}\text{Sr}$ , $^{99}\text{Tc}$ , Gamma Scan, Volatile Organics, ICP-3, Anions
100-K Spring	Grab	A	Alpha, Beta, $^3\text{H}$ , $^{90}\text{Sr}$ , Gamma Scan, Volatile Organics, ICP-3, Anions
100-N Spring	Grab	A	Alpha, Beta, $^3\text{H}$ , $^{90}\text{Sr}$ , Gamma Scan, Volatile Organics, ICP-3, Anions
100-D Spring	Grab	A	Alpha, Beta, $^3\text{H}$ , $^{90}\text{Sr}$ , Gamma Scan, Volatile Organics, ICP-3, Anions, DOH <sup>(b)</sup>
100-H Spring	Grab	A	Alpha, Beta, $^3\text{H}$ , $^{90}\text{Sr}$ , $^{99}\text{Tc}$ , U <sup>(c)</sup> , Gamma Scan, Volatile Organics, ICP-3, Anions, DOH <sup>(b)</sup>
100-F Spring	Grab	A	Alpha, Beta, $^3\text{H}$ , $^{90}\text{Sr}$ , U <sup>(c)</sup> , Gamma Scan, Volatile Organics, ICP-3, Anions
Hanford Spring 28-2	Grab	A	Alpha, Beta, $^3\text{H}$ , $^{99}\text{Tc}$ , U <sup>(c)</sup> , $^{129}\text{I}$ , Gamma Scan, Volatile Organics, ICP-3, Anions
300 Area Spring 42-2	Grab	A	Alpha, Beta, $^3\text{H}$ , $^{99}\text{Tc}$ , U <sup>(c)</sup> , $^{129}\text{I}$ , Gamma Scan, Volatile Organics, ICP-3, Anions, DOH <sup>(b)</sup>

(a) Refer to Figure 2.1, Surface Water and Drinking Water Sampling Locations.

(b) Split co-samples with the Washington State Department of Health.

(c) Isotopic uranium.

## 2.3 ONSITE PONDS

Location <sup>(a)</sup>	Sample Type	Frequency	Analyses
West Lake	Grab	Q	Alpha, Beta, $^3\text{H}$ , $^{90}\text{Sr}$ , $^{99}\text{Tc}$ , U <sup>(b)</sup> , Gamma Scan
B Pond Extension	Grab	Q	Alpha, Beta, $^3\text{H}$ , $^{90}\text{Sr}$ , Gamma Scan
FFTF Pond	Grab	Q	Alpha, Beta, $^3\text{H}$ , Gamma Scan

(a) Refer to Figure 2.1, Surface Water and Drinking Water Sampling Locations.

(b) Isotopic uranium.

## 2.4 OFFSITE WATER SYSTEMS

Location (a)	Sample Type	Frequency	Analyses
Riverview Canal	Grab	3 (May-Sept)	Alpha, Beta, Lo $^3\text{H}$ , $^{90}\text{Sr}$ , $\text{U}^{(b)}$ , Gamma Scan

(a) Refer to Figure 2.1, Surface Water and Drinking Water Sampling Locations.  
 (b) Isotopic uranium.

## 2.5 ONSITE DRINKING WATER

Location (a)	Sample Type	Frequency	Analyses
100 B Area-River	Grab	Q	Alpha, Beta, Lo $^3\text{H}$ , $^{90}\text{Sr}$
100 D Area-River	Grab	Q	Alpha, Beta, $^3\text{H}$ , $^{90}\text{Sr}$
Yakima Barricade	Grab	A <sup>(b)</sup>	Alpha, Beta, $^3\text{H}$ , $^{90}\text{Sr}$
FFTF	Grab	Q	Alpha, Beta, $^3\text{H}$ , $^{90}\text{Sr}$ , DOH <sup>(c)</sup>
300 Area	Cumulative	Q Comp. <sup>(d)</sup>	Alpha, Beta, Lo $^3\text{H}$ , $^{90}\text{Sr}$ , $^{99}\text{Tc}$ , $\text{U}^{(e)}$ , Gamma Scan
Firing Range	Grab	A <sup>(b)</sup>	Alpha, Beta, $^3\text{H}$ , $^{90}\text{Sr}$ , DOH <sup>(c)</sup>

(a) Refer to Figure 2.1, Surface Water and Drinking Water Sampling Locations.  
 (b) Grab sample is collected quarterly and composited for annual analysis.  
 (c) Split co-samples during 2nd quarter with Washington State Department of Health.  
 (d) Cumulative sample is collected monthly and composited for quarterly analysis.  
 (e) Isotopic uranium.

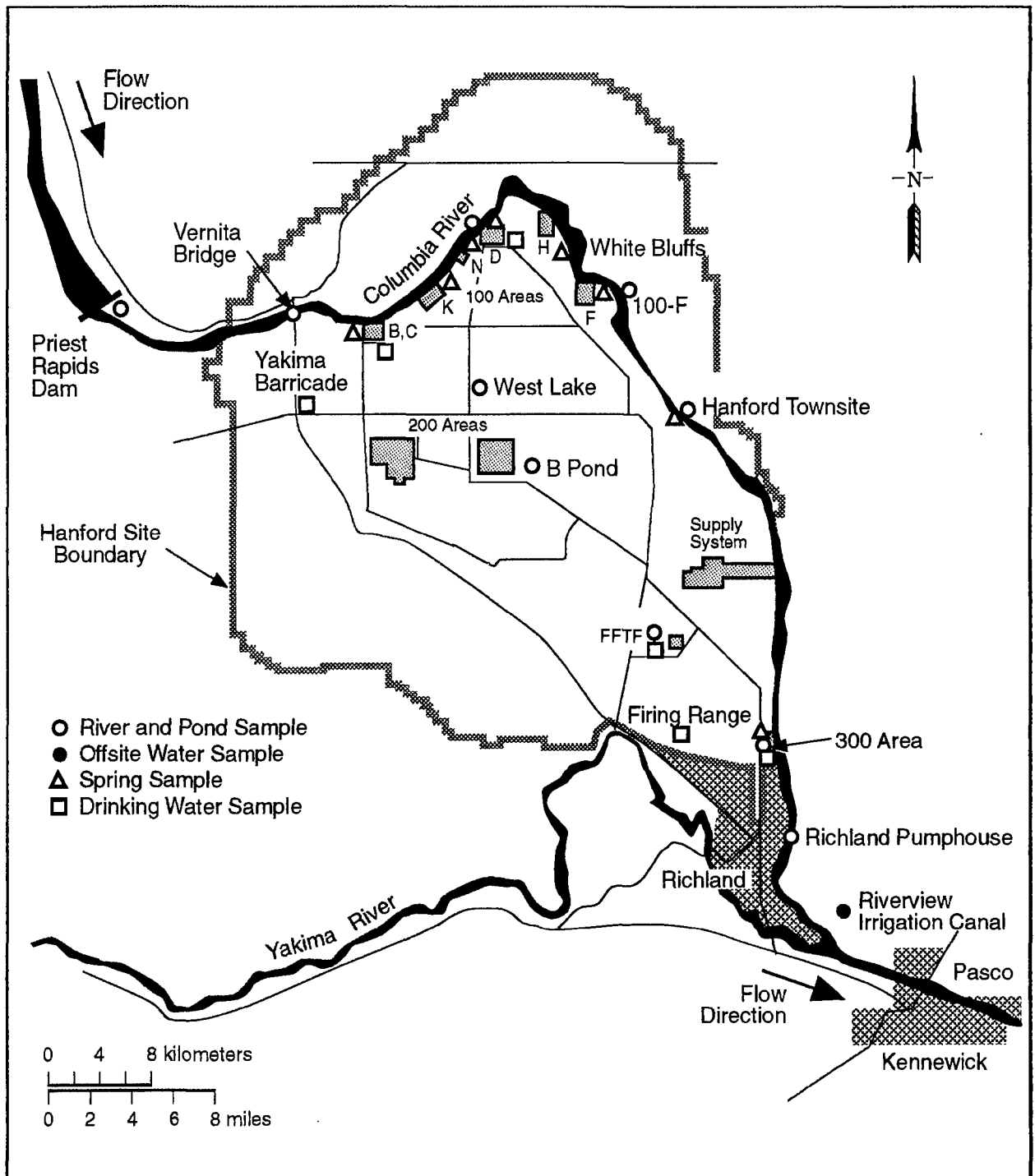


Figure 2.1. 1997 Surface Water and Drinking Water Sampling Locations

### 3.0 BIOTA

#### 3.1 FOODSTUFFS AND FARM PRODUCTS

##### 3.1.1 WHOLE MILK

<u>Location<sup>(a)</sup></u>	<u>Frequency</u>	<u>Analyses</u>
East Wahluke Area <sup>(b)</sup>	Q SA	<sup>90</sup> Sr, Gamma Scan <sup>129</sup> I
Sagemoor Composite <sup>(b)</sup>	Q SA	<sup>90</sup> Sr, Gamma Scan <sup>129</sup> I
Sunnyside Area	Q SA	<sup>90</sup> Sr, Gamma Scan <sup>129</sup> I

(a) Refer to Figure 3.1, 1997 Food and Farm Product Sampling Locations.  
 (b) Sample composited from three dairies in each area.

##### 3.1.2 LEAFY VEGETABLES

<u>Location<sup>(a)(b)</sup></u>	<u>Frequency<sup>(c)</sup></u>	<u>Analyses</u>
Riverview Area	A	<sup>90</sup> Sr, Gamma Scan, FDA <sup>(d)</sup>
Sunnyside Area	A	<sup>90</sup> Sr, Gamma Scan, FDA <sup>(d)</sup> , DOH <sup>(e)</sup>
Sagemoor Area	BE (1997)	<sup>90</sup> Sr, Gamma Scan, DOH <sup>(e)</sup>
East Wahluke Area	BE (1998)	<sup>90</sup> Sr, Gamma Scan, DOH <sup>(e)</sup>

(a) Refer to Figure 3.1, 1997 Food and Farm Product Sampling Locations.  
 (b) Two samples collected within each area.  
 (c) Samples are collected in 1997 according to their specified frequency unless otherwise noted.  
 (d) Split samples sent to U.S. Food and Drug Administration.  
 (e) Split co-samples with the Washington State Department of Health.

##### 3.1.3 VEGETABLES

<u>Location<sup>(a)(b)</sup></u>	<u>Sample Type</u>	<u>Frequency<sup>(c)</sup></u>	<u>Analyses</u>
Riverview Area	Potatoes	A	<sup>90</sup> Sr, Gamma Scan
Sunnyside Area	Potatoes	A	<sup>90</sup> Sr, Gamma Scan, FDA <sup>(d)</sup>
East Wahluke Area	Potatoes	A	<sup>90</sup> Sr, Gamma Scan
Sagemoor Area	Potatoes	TE (1997)	<sup>90</sup> Sr, Gamma Scan, FDA <sup>(d)</sup>
Horn Rapids Area <sup>(e)</sup>	Potatoes	TE (1999)	<sup>90</sup> Sr, Gamma Scan, FDA <sup>(d)</sup>

(a) Refer to Figure 3.1, 1997 Food and Farm Product Sampling Locations.  
 (b) Two samples of each type collected within each area.  
 (c) Samples are collected in 1997 according to their specified frequency unless otherwise noted.  
 (d) Split samples sent to U.S. Food and Drug Administration.  
 (e) Since crop was not planted in 1996 when originally scheduled for collection, will attempt to collect in 1997 if available.

### 3.1.4 FRUIT

Location <sup>(a)(b)</sup>	Sample Type	Frequency <sup>(c)</sup>	Collection Period	Analyses
Sagemoor Area	Apples	TE (1997)	September	<sup>90</sup> Sr, Gamma Scan, FDA <sup>(d)</sup> , DOH <sup>(e)</sup>
	Concord Grapes <sup>(f)</sup>	TE (1998)	September	<sup>90</sup> Sr, Gamma Scan
	Cherries	TE (1999)	June	<sup>90</sup> Sr, Gamma Scan, FDA <sup>(d)</sup>
Sunnyside Area	Apples	TE (1997)	September	<sup>90</sup> Sr, Gamma Scan
	Concord Grapes <sup>(f)</sup>	TE (1998)	September	<sup>90</sup> Sr, Gamma Scan
	Cherries	TE (1999)	June	<sup>90</sup> Sr, Gamma Scan, FDA <sup>(d)</sup>
Riverview Area	Apples	TE (1997)	September	<sup>90</sup> Sr, Gamma Scan, FDA <sup>(d)</sup>
	Concord Grapes <sup>(f)</sup>	TE (1998)	September	<sup>90</sup> Sr, Gamma Scan
	Cherries	TE (1999)	June	<sup>90</sup> Sr, Gamma Scan
Mattawa Area	Apples	TE (1997)	September	<sup>90</sup> Sr, Gamma Scan, DOH <sup>(e)</sup>
Cold Creek Area	Concord Grapes <sup>(f)</sup>	TE (1998)	September	<sup>90</sup> Sr, Gamma Scan
East Wahluke Area	Cherries	TE (1999)	June	<sup>90</sup> Sr, Gamma Scan

(a) Refer to Figure 3.1, 1997 Food and Farm Product Sampling Locations.

(b) Two samples of each type collected within each area.

(c) Samples are collected in 1997 according to their specified frequency unless otherwise noted.

(d) Split samples sent to the U.S. Food and Drug Administration.

(e) Split co-samples with the Washington State Department of Health.

(f) Concord grapes preferred; table grapes acceptable if concord grapes are unavailable.

### 3.1.5 WINE

Location <sup>(a)(b)</sup>	Sample Type	Frequency <sup>(c)</sup>	Collection Period	Analyses
Columbia Basin	White	A	December	<sup>3</sup> H, Gamma Scan, DOH <sup>(d)</sup>
	Red	A	December	<sup>3</sup> H, Gamma Scan, DOH <sup>(d)</sup>
Yakima Valley	White	A	December	<sup>3</sup> H, Gamma Scan, DOH <sup>(d)</sup>
	Red	A	December	<sup>3</sup> H, Gamma Scan, DOH <sup>(d)</sup>

(a) Refer to Figure 3.1, 1997 Food and Farm Product Sampling Locations.

(b) Two samples of each type collected within each area.

(c) Samples are collected in 1997 according to their specified frequency unless otherwise noted.

(d) Split co-samples with the Washington State Department of Health.

### 3.1.6 ALFALFA

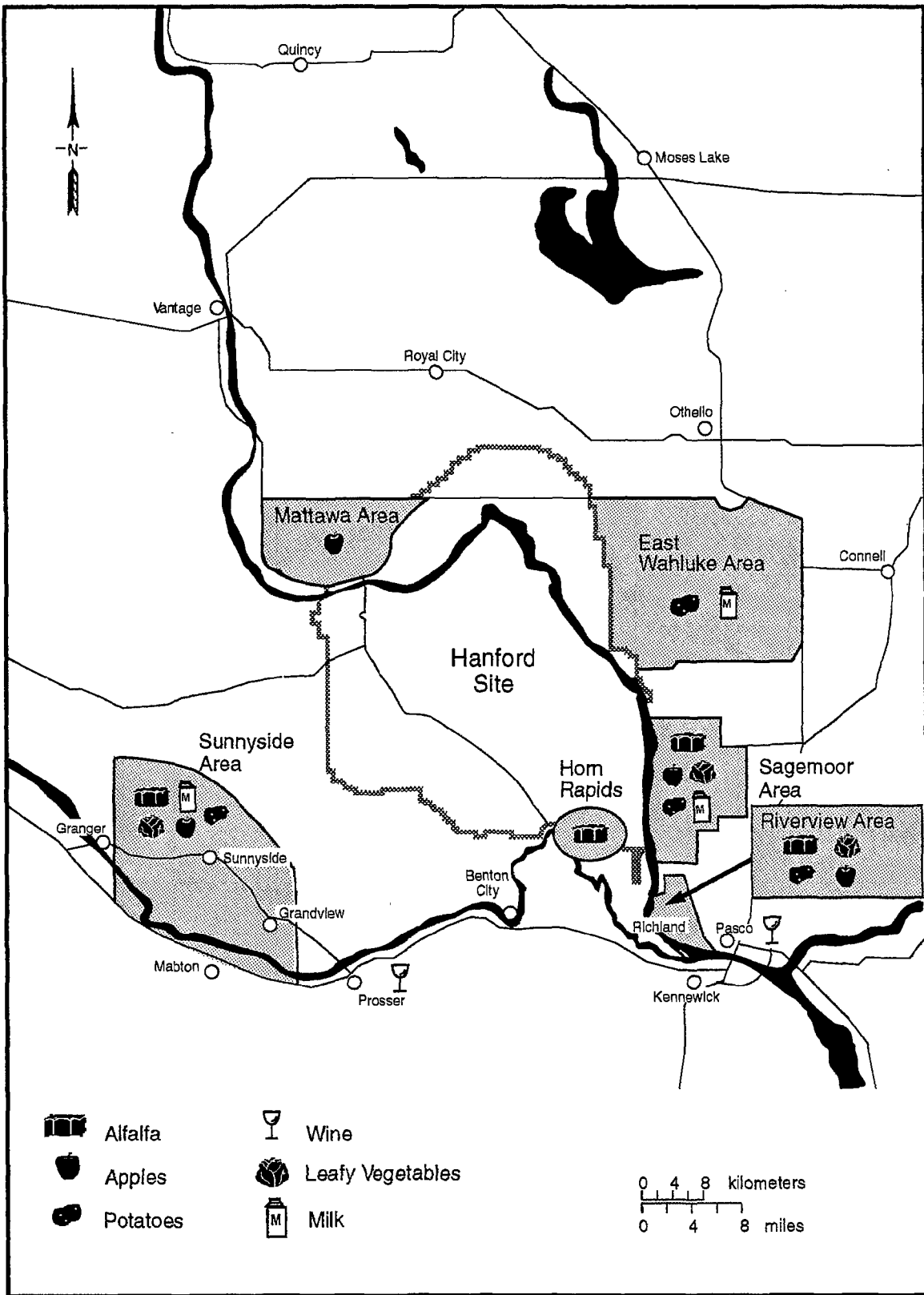
Location <sup>(a)(b)</sup>	Sample Type	Frequency <sup>(c)</sup>	Collection Period	Analyses
Sagemoor Area	Alfalfa	BE (1997)	May	<sup>90</sup> Sr, Gamma Scan
Riverview Area	Alfalfa	BE (1997)	May	<sup>90</sup> Sr, Gamma Scan, DOH <sup>(d)</sup>
Sunnyside Area	Alfalfa	BE (1997)	May	<sup>90</sup> Sr, Gamma Scan
Horn Rapids Area	Alfalfa	BE (1997)	May	<sup>90</sup> Sr, Gamma Scan, DOH <sup>(d)</sup>

(a) Refer to Figure 3.1, 1997 Food and Farm Product Sampling Locations.

(b) Two samples collected within each area.

(c) Samples are collected in 1997 according to their specified frequency unless otherwise noted.

(d) Split co-samples with the Washington State Department of Health.



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Figure 3.1. 1997 Food and Farm Product Sampling Locations

### 3.2 WILDLIFE

#### 3.2.1 AQUATIC BIOTA

<u>Location<sup>(a)</sup></u>	<u>Species/ Sample</u>	<u>Number of Samples</u>	<u>Fre-<sup>(b)</sup> quency</u>	<u>Collection Period</u>	<u>Analyses</u>
100 N Area to 100 D Area	Whitefish				
	Fillet	5	BE (1997)	January	Gamma Scan, DOH <sup>(c)</sup> 90Sr, DOH <sup>(c)</sup>
	Carcass	5	BE (1997)	January	
	Squawfish <sup>(e)</sup>	1	A	June	90Sr, Gamma Scan, DOH
	Carp				
Fillet	5	BE (1998)	June	Gamma Scan 90Sr, U <sup>(d)</sup>	
Carcass	5	BE (1998)	June		
100 F Slough	Bass				
	Fillet	5	TE (1999)	May-June	Gamma Scan 90Sr, U <sup>(d)</sup>
	Carcass	5	TE (1999)	May-June	
Hanford Slough	Bass				
	Fillet	5	TE (1999)	May-June	Gamma Scan 90Sr, U <sup>(d)</sup>
	Carcass	5	TE (1999)	May-June	
300 Area	Whitefish				
	Fillet	5	BE (1997)	January	Gamma Scan, DOH <sup>(c)</sup> 90Sr, DOH <sup>(c)</sup>
	Carcass	5	BE (1997)	January	
	Squawfish <sup>(e)</sup>	1	A	June	90Sr, Gamma Scan, DOH
	Carp				
Fillet	5	BE (1998)	June	Gamma Scan 90Sr, U <sup>(d)</sup>	
Carcass	5	BE (1998)	June		
Vantage	Bass				
	Fillet	5	TE (1999)	June	Gamma Scan 90Sr, U <sup>(d)</sup>
	Carcass	5	TE (1999)	June	
	Carp				
	Fillet	5	BE (1998)	June	Gamma Scan 90Sr, U <sup>(d)</sup>
Carcass	5	BE (1998)	June		

(a) Refer to Figure 3.2, 1997 Wildlife Sampling Areas.

(b) Samples are collected in 1997 according to their specified frequency unless otherwise noted.

(c) Split five co-samples with the Washington State Department of Health.

(d) Isotopic uranium.

(e) Sample collected by PNNL and provided to Washington State Department of Health.

### 3.2.2 GEESE

<u>Location</u> <sup>(a)</sup>	<u>Species/ Sample</u>	<u>Number of Samples</u>	<u>Fre- quency</u> <sup>(b)</sup>	<u>Collection Period</u>	<u>Analyses</u>
100 N Area to 100 D Area	Western Canadian Goose				
	Muscle	5	BE (1997)	August	<sup>90</sup> Sr, Gamma Scan <sup>90</sup> Sr
Bone	5	BE (1997)	August		
Hanford Townsite	Western Canadian Goose				
	Muscle	5	BE (1997)	August	<sup>90</sup> Sr, Gamma Scan <sup>90</sup> Sr
Bone	5	BE (1997)	August		

(a) Refer to Figure 3.2, 1997 Wildlife Sampling Areas.

(b) Samples are collected in 1997 according to their specified frequency unless otherwise noted.

### 3.2.3 GAME BIRDS

<u>Location</u>	<u>Species/ Sample</u> <sup>(a)</sup>	<u>Number of Samples</u>	<u>Fre- quency</u> <sup>(b)</sup>	<u>Collection Period</u>	<u>Analyses</u>
100 D Area to 100 H Area	Pheasant				
	Muscle	4	BE (1998)	October	Gamma Scan, DOH <sup>(c)</sup> NRA <sup>(d)</sup> <sup>90</sup> Sr, DOH <sup>(c)</sup>
	Liver	4	BE (1998)	October	
Bone	4	BE (1998)	October		
100 H Area to 100 F Area	Pheasant				
	Muscle	6	BE (1998)	October	Gamma Scan, DOH <sup>(c)</sup> NRA <sup>(d)</sup> <sup>90</sup> Sr, DOH <sup>(c)</sup>
	Liver	6	BE (1998)	October	
Bone	6	BE (1998)	October		

(a) Pheasant preferred; chukar or quail acceptable if pheasant is unavailable.

(b) Samples are collected in 1997 according to their specified frequency unless otherwise noted.

(c) Split co-samples with the Washington State Department of Health.

(d) Not Routinely Analyzed (NRA) - Retain liver to be analyzed for isotopic plutonium and <sup>90</sup>Sr, respectively, if <sup>137</sup>Cs exceeds 100 pCi/g (wet weight) in muscle.



### 3.2.4 RABBITS

<u>Location</u> <sup>(a)</sup>	<u>Species/ Sample</u>	<u>Number of Samples</u>	<u>Fre- quency</u> <sup>(b)</sup>	<u>Collection Period</u>	<u>Analyses</u>
100 N Area	Cottontail or Jack Rabbit				
	Muscle	4	BE (1997)	April	Gamma Scan, DOH <sup>(c)</sup> 90Sr, DOH <sup>(b)</sup>
	Bone	4	BE (1997)	April	
200 E Area	Jack Rabbit				
	Muscle	4	BE (1997)	April	Gamma Scan 90Sr
	Bone	4	BE (1997)	April	
200 West	Jack Rabbit				
	Muscle	4	BE (1997)	April	Gamma Scan 90Sr
	Bone	4	BE (1997)	April	

(a) Refer to Figure 3.2, 1997 Wildlife Sampling Areas.

(b) Samples are collected in 1997 according to their specified frequency unless otherwise noted.

(c) Split one co-sample with the Washington State Department of Health.

### 3.2.5 DEER

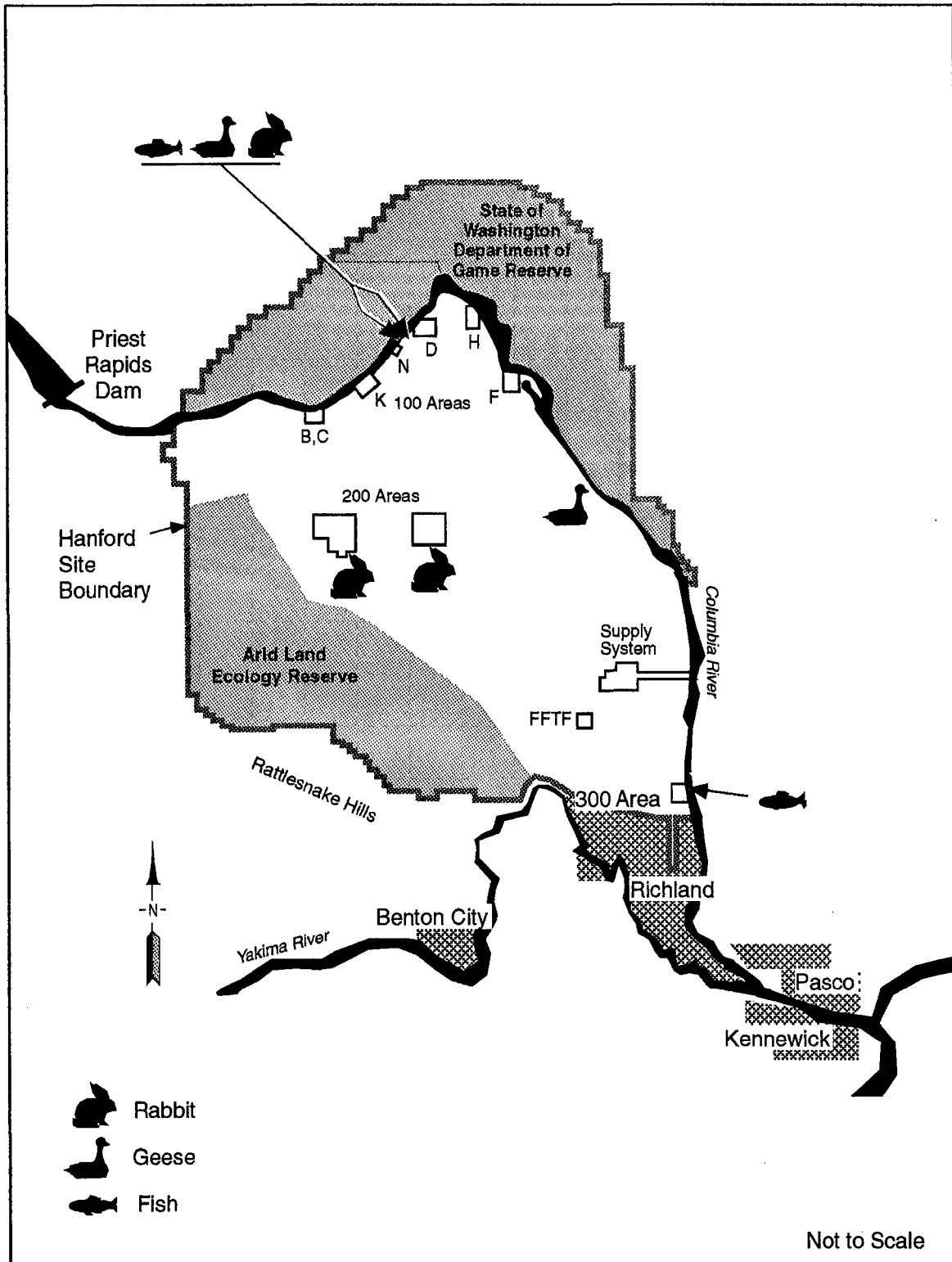
<u>Location</u>	<u>Species/ Sample</u>	<u>Number of Samples</u>	<u>Fre- quency</u> <sup>(a)</sup>	<u>Collection Period</u>	<u>Analyses</u>
100 N Area	Mule				
	Muscle	2	BE (1998)	December	Gamma Scan 90Sr
	Bone	2	BE (1998)	December	
200 Ponds	Mule				
	Muscle	2	BE (1998)	December	Gamma Scan, DOH <sup>(b)</sup> 90Sr, DOH <sup>(b)</sup>
	Bone	2	BE (1998)	December	
Road Kill at Onsite Locations <sup>(c)</sup>	Mule				
	Muscle	6	BE (1998)	As Available	Gamma Scan
Background <sup>(c)</sup>	Mule				
	Muscle	2	(1999) <sup>(d)</sup>	October	Gamma Scan 90Sr
	Bone	2	(1999) <sup>(d)</sup>	October	

(a) Samples are collected in 1997 according to their specified frequency unless otherwise noted.

(b) Split co-samples with the Washington State Department of Health.

(c) As available, according to location.

(d) One deer from the west side of the state will be provided to PNNL by Washington State Department of Health.



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Figure 3.2. 1997 Wildlife Sampling Areas

## 4.0 SOIL AND VEGETATION

### 4.1 SOIL

Location (a)	Frequency Reevaluation (b)	Analyses
100 K Area	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
NE of 100 N Area	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
E of 100 N Area	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d), DOH(e)
100N Shore Above HGP	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
100N Spring Shoreline	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
Above 100D Pumphouse	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
100 Area Fire Stat	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
200 ENC	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
E of 200 E	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
200 ESE	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d), <sup>241</sup> Am
S of 200 E	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
SW of B/C Cribs	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d), <sup>241</sup> Am
E of 200 W Gate DOH(e)	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d), <sup>241</sup> Am,
S of 200 W	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
Rattlesnake Springs	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
Yakima Barricade	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
400 E	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
SE Side of FFTF	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
North 300 Area	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
South 300 Area	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
Hanford Townsite	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
Wye Barricade	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
Prosser Barricade	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
ALE Field Lab	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
N End Vernita Bridge	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
Wahluke Slope	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
Berg Ranch	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
Ringold Area	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
W End of Fir Road	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
Taylor Flats No. 2	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
Sagemoor Farm DOH(e)	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d), <sup>241</sup> Am,
Byers Landing	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
Riverview-Harris	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d), DOH(e)
Benton City	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
Sunnyside	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d), <sup>241</sup> Am
Mc Nary Dam	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
Walla Walla	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
Washtucna	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)
Yakima	1998	Gamma Scan, <sup>90</sup> Sr, U(c), Pu(d)

(a) Refer to Figure 4.1, Soil and Vegetation Sampling Locations.

(b) Samples are collected once every 3 to 5 years and will be reevaluated in 1998. No samples are scheduled for

collection in 1997.

(c) <sup>235</sup>U-LEP, <sup>238</sup>U-LEP.

(d) Isotopic plutonium.

(e) Split co-samples with the Washington State Department of Health.

## 4.2 VEGETATION

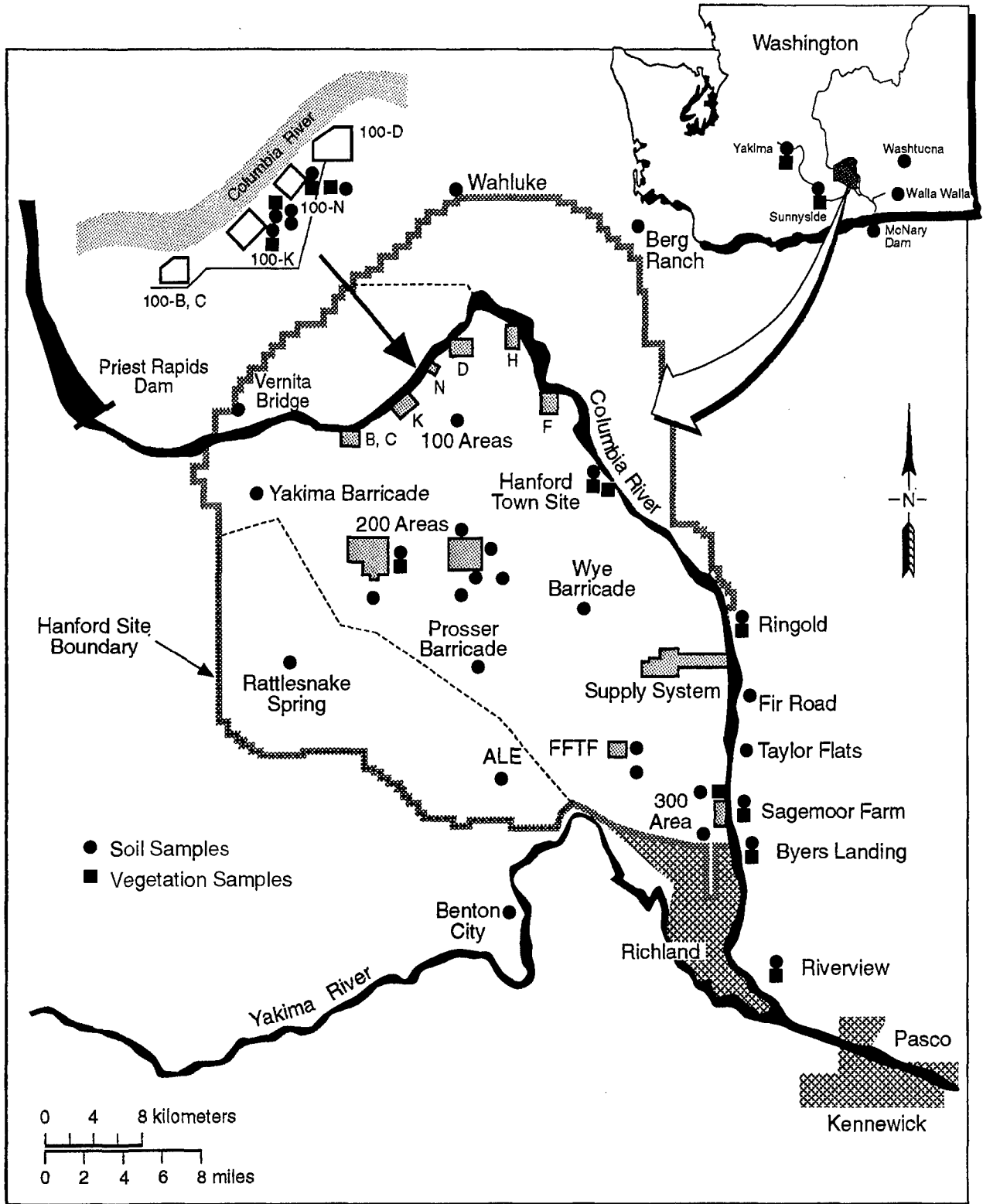
<u>Location (a)</u>	<u>Frequency Reevaluation (b)</u>	<u>Analyses</u>
100 K Area	1998	Gamma Scan, <sup>90</sup> Sr, U, Pu(c)
NE of 100 N Area	1998	Gamma Scan, <sup>90</sup> Sr, U, Pu(c)
E of 100 N Area	1998	Gamma Scan, <sup>90</sup> Sr, U, Pu(c), DOH(d)
100N Spring Shoreline	1998	Gamma Scan, <sup>90</sup> Sr, U, Pu(c)
E of 200 W Gate	1998	Gamma Scan, <sup>90</sup> Sr, U, Pu(c), DOH(d)
300 Area Shoreline	1998	Gamma Scan, <sup>90</sup> Sr, U, Pu(c)
Hanford Townsite	1998	Gamma Scan, <sup>90</sup> Sr, U, Pu(c)
Hanfrd Twnsite HRM28	1998	Gamma Scan, <sup>90</sup> Sr, U, Pu(c), <sup>99</sup> Tc
Ringold	1998	Gamma Scan, <sup>90</sup> Sr, U, Pu(c)
Sagemoor Farm	1998	Gamma Scan, <sup>90</sup> Sr, U, Pu(c), DOH(d)
Byers Landing	1998	Gamma Scan, <sup>90</sup> Sr, U, Pu(c)
Riverview-Harris	1998	Gamma Scan, <sup>90</sup> Sr, U, Pu(c), DOH(d)
Sunnyside	1998	Gamma Scan, <sup>90</sup> Sr, U, Pu(c)
Yakima	1998	Gamma Scan, <sup>90</sup> Sr, U, Pu(c)

(a) Refer to Figure 4.1, Soil and Vegetation Sampling Locations.

(b) Samples are collected once every 3 to 5 years and will be reevaluated in 1998. No samples are scheduled for collection in 1997.

(c) Isotopic plutonium.

(d) Split co-samples with the Washington State Department of Health.



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Figure 4.1. Soil and Vegetation Sampling Locations

## 5.0 SEDIMENT

<u>Location</u> <sup>(a)</sup>	<u>Frequency</u>	<u>Analyses</u>
<u>River</u>		
McNary Dam		
McNary Oregon Shore	A	Gamma Scan, <sup>90</sup> Sr, U(b), Pu(c), ICP-u, DOH(d)
McNary-1/3 OR. Shore	A	Gamma Scan, <sup>90</sup> Sr, U(b), Pu(c), ICP-u, DOH(d)
McNary-2/3 OR. Shore	A	Gamma Scan, <sup>90</sup> Sr, U(b), Pu(c), ICP-u, DOH(d)
McNary-Wash. Shore	A	Gamma Scan, <sup>90</sup> Sr, U(b), Pu(c), ICP-u, DOH(d)
<u>Priest Rapids Dam</u>		
PRD-Grant County	A	Gamma Scan, <sup>90</sup> Sr, U(b), Pu(c), ICP-u, DOH(d)
PRD-1/3 Grant Shore	A	Gamma Scan, <sup>90</sup> Sr, U(b), Pu(c), ICP-u, DOH(d)
PRD-2/3 Grant Shore	A	Gamma Scan, <sup>90</sup> Sr, U(b), Pu(c), ICP-u, DOH(d)
PRD-Yakima Cnty Shor	A	Gamma Scan, <sup>90</sup> Sr, U(b), Pu(c), ICP-u, DOH(d)
White Bluffs Slough	A	Gamma Scan, <sup>90</sup> Sr, U(b), Pu(c), ICP-u
100 F Slough	A	Gamma Scan, <sup>90</sup> Sr, U(b), Pu(c), ICP-u
Hanford Slough	A	Gamma Scan, <sup>90</sup> Sr, U(b), Pu(c), ICP-u
Richland	A	Gamma Scan, <sup>90</sup> Sr, U(b), Pu(c), ICP-u
<u>Springs</u>		
100-B Spring	A	Gamma Scan, <sup>90</sup> Sr, U(b), ICP-u
100 N Spring 8-13	A	Gamma Scan, <sup>90</sup> Sr, U(b), ICP-u
Hanford Spring 28-2	A	Gamma Scan, <sup>90</sup> Sr, U(b), ICP-u
300 Area Spring 42-2	A	Gamma Scan, <sup>90</sup> Sr, U(b), ICP-u
100-K Spring	A	Gamma Scan, <sup>90</sup> Sr, U(b), ICP-u, DOH(d)
100-F Spring	A	Gamma Scan, <sup>90</sup> Sr, U(b), ICP-u

(a) Refer to Figure 5.1, 1997 Sediment Sampling Locations.

(b) <sup>235</sup>U-LEP, <sup>238</sup>U-LEP.

(c) Isotopic plutonium.

(d) Split co-samples with the Washington State Department of Health.

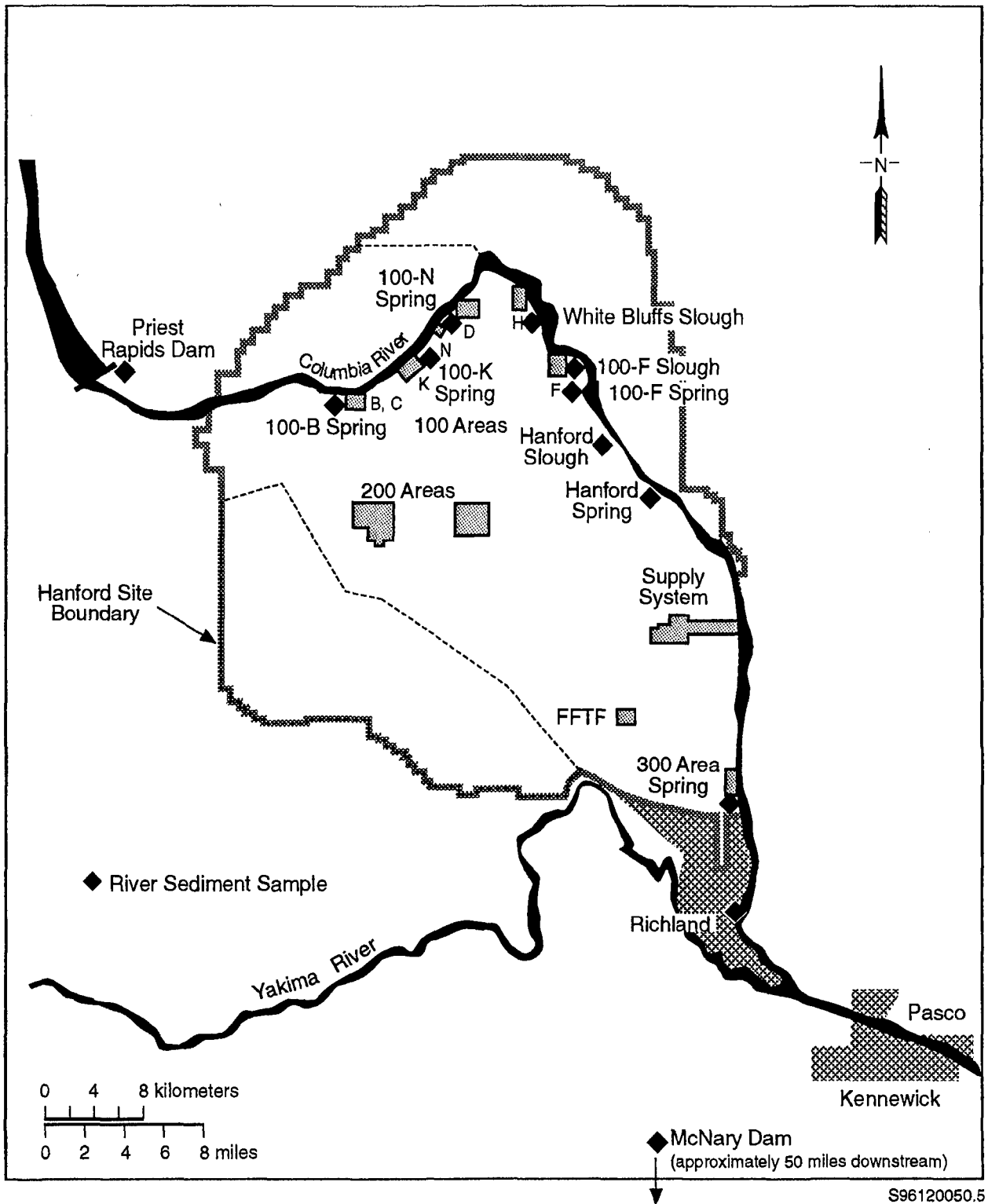


Figure 5.1. 1997 Sediment Sampling Locations

## 6.0 EXTERNAL RADIATION

### 6.1 THERMOLUMINESCENT DOSIMETERS (TLDs)

#### 6.1.1 Terrestrial Locations

<u>Location</u>	<u>Location Number</u>	<u>Frequency</u>	<u>Measurement</u>	<u>Instrument</u>
<u>Onsite (a)</u>				
100 K Area <sup>(b)</sup>	1	Q	Ambient Dose	
100 D Area <sup>(b)</sup>	2	Q	Ambient Dose	
N of 200 E <sup>(b)</sup>	3	Q	Ambient Dose, DOH <sup>(c)</sup>	
200 Tel. Exchange <sup>(b)</sup>	4	Q	Ambient Dose	
200 W SE <sup>(b)</sup>	5	Q	Ambient Dose	
S of 200 E <sup>(b)</sup>	6	Q	Ambient Dose, DOH <sup>(c)</sup>	
B Pond <sup>(b)</sup>	7	Q	Ambient Dose	
E of 200 E <sup>(b)</sup>	8	Q	Ambient Dose, DOH <sup>(c)</sup>	
200 ESE <sup>(b)</sup>	9	Q	Ambient Dose, DOH <sup>(c)</sup>	
3705 Bldg. 300 Area	10	Q	Ambient Dose	
300 Water Intake <sup>(b)</sup>	11	Q	Ambient Dose	
300 Southwest Gate	12	Q	Ambient Dose	
300 South Gate <sup>(b)</sup>	13	Q	Ambient Dose	
300 Trench <sup>(b)</sup>	14	Q	Ambient Dose	
300 NE <sup>(b)</sup>	15	Q	Ambient Dose	
400 E <sup>(b)</sup>	16	Q	Ambient Dose	
400 W <sup>(b)</sup>	17	Q	Ambient Dose	
400 S <sup>(b)</sup>	18	Q	Ambient Dose	
400 N <sup>(b)</sup>	19	Q	Ambient Dose	
US Ecology NE Corner	20	Q	Ambient Dose, DOH <sup>(c)</sup>	
US Ecology SE Corner	21	Q	Ambient Dose, DOH <sup>(c)</sup>	
US Ecology NW Corner	22	Q	Ambient Dose, DOH <sup>(c)</sup>	
US Ecology SW Corner	23	Q	Ambient Dose, DOH <sup>(c)</sup>	
WPPSS 1; S of WNP 2	24	Q	Ambient Dose, DOH <sup>(c)</sup>	
<u>Perimeter (d)</u>				
Ringold Met Tower <sup>(b)</sup>	1	Q	Ambient Dose	
Byers Landing <sup>(b)</sup>	2	Q	Ambient Dose	
WPPSS 4; WPS Warehse	3	Q	Ambient Dose, DOH <sup>(c)</sup>	
WPPSS 8; Fir Road	4	Q	Ambient Dose, DOH <sup>(c)</sup>	
<u>Community (d)(e)</u>				
Basin City School <sup>(b)</sup>	5	Q	Ambient Dose	PIC
Pasco <sup>(b)</sup>	6	Q	Ambient Dose	
Kennewick-Ely Street <sup>(b)</sup>	7	Q	Ambient Dose	
Benton City <sup>(b)</sup>	8	Q	Ambient Dose	
Mattawa <sup>(b)</sup>	9	Q	Ambient Dose	
Othello <sup>(b)</sup>	10	Q	Ambient Dose, DOH <sup>(c)</sup>	
Edwin Markham School <sup>(b)</sup>	11	Q	Ambient Dose	PIC
Leslie Groves Rchld <sup>(b)</sup>	12	Q	Ambient Dose	PIC
<u>Distant (d)</u>				
Toppenish <sup>(b)(e)</sup>	13	Q	Ambient Dose, DOH <sup>(c)</sup>	PIC
Yakima <sup>(b)</sup>	14	Q	Ambient Dose, DOH <sup>(c)</sup>	

(a) Refer to Figure 6.1, 1997 Thermoluminescent Dosimeter (TLD) Locations on the Hanford Site.

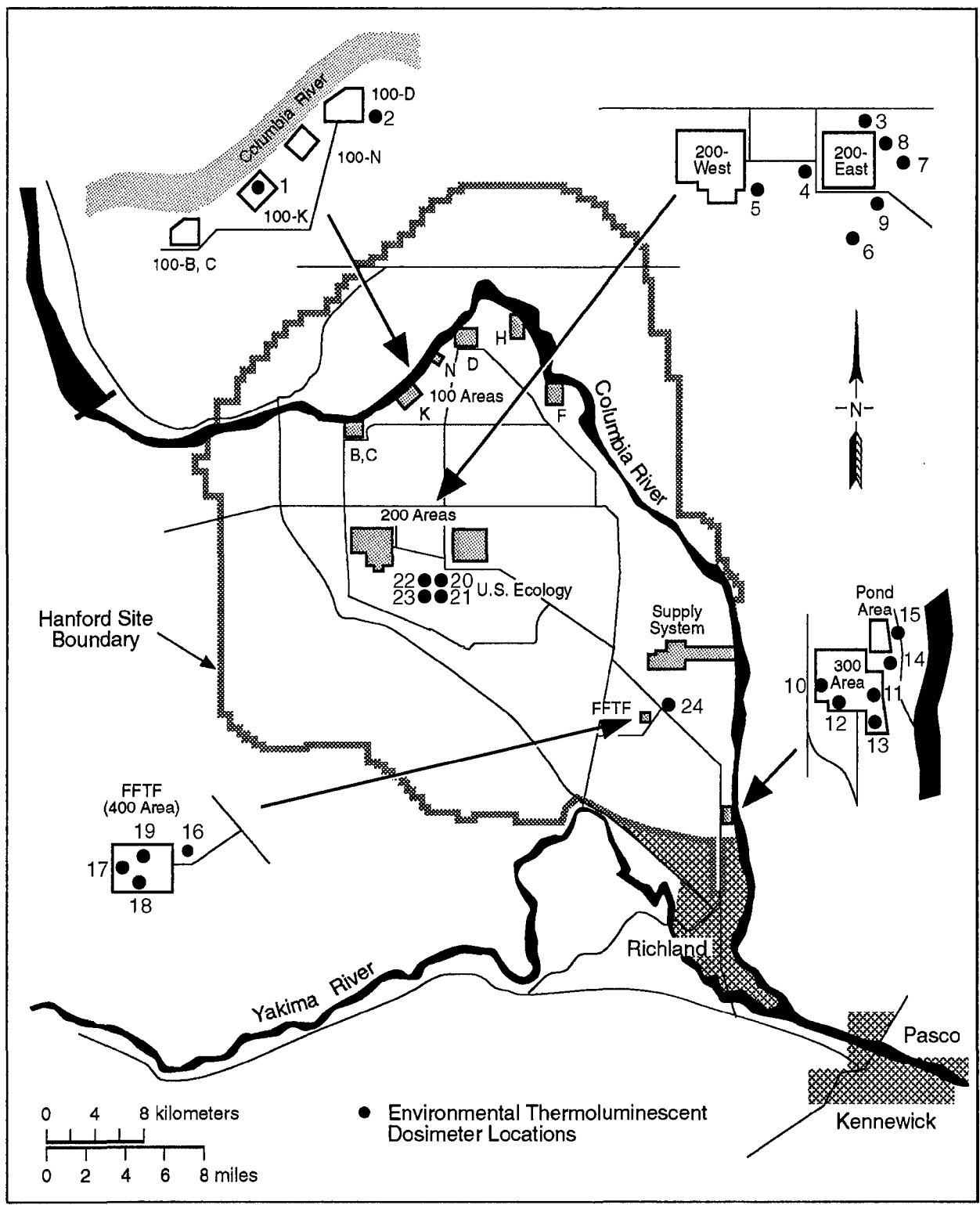
(b) Located at air sampling station.

(c) Washington State Department of Health TLDs also at these locations.

(d) Refer to Figure 6.2, Thermoluminescent Dosimeter (TLD) Locations for Perimeter and Community Sites.

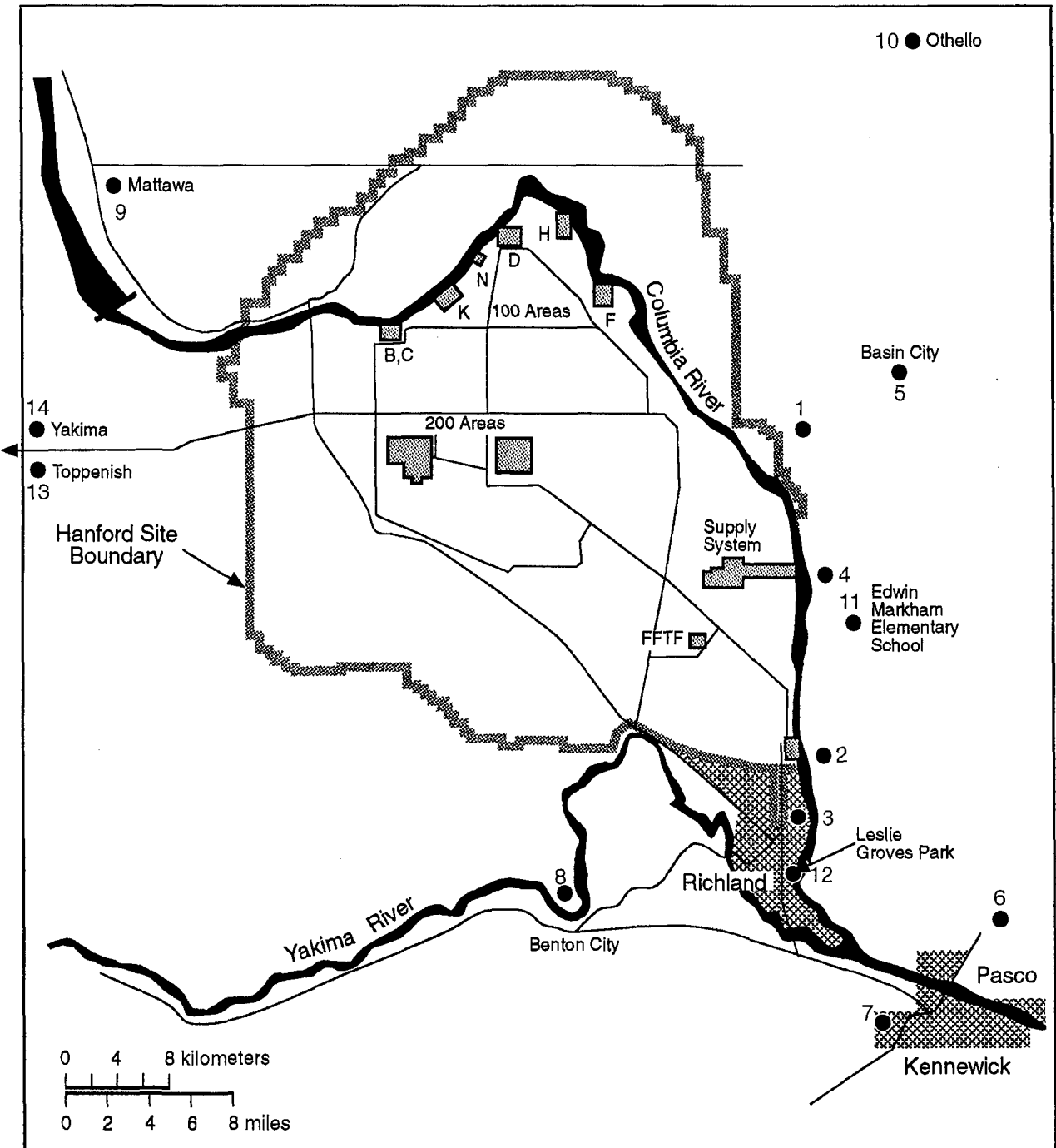
(e) Community-Operated Environmental Surveillance Stations.





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Figure 6.1. 1997 Thermoluminescent Dosimeter (TLD) Locations on the Hanford Site



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Figure 6.2. 1997 Thermoluminescent Dosimeter (TLD) Locations for Perimeter and Community Sites

## 6.1.2 Columbia River Shoreline Locations

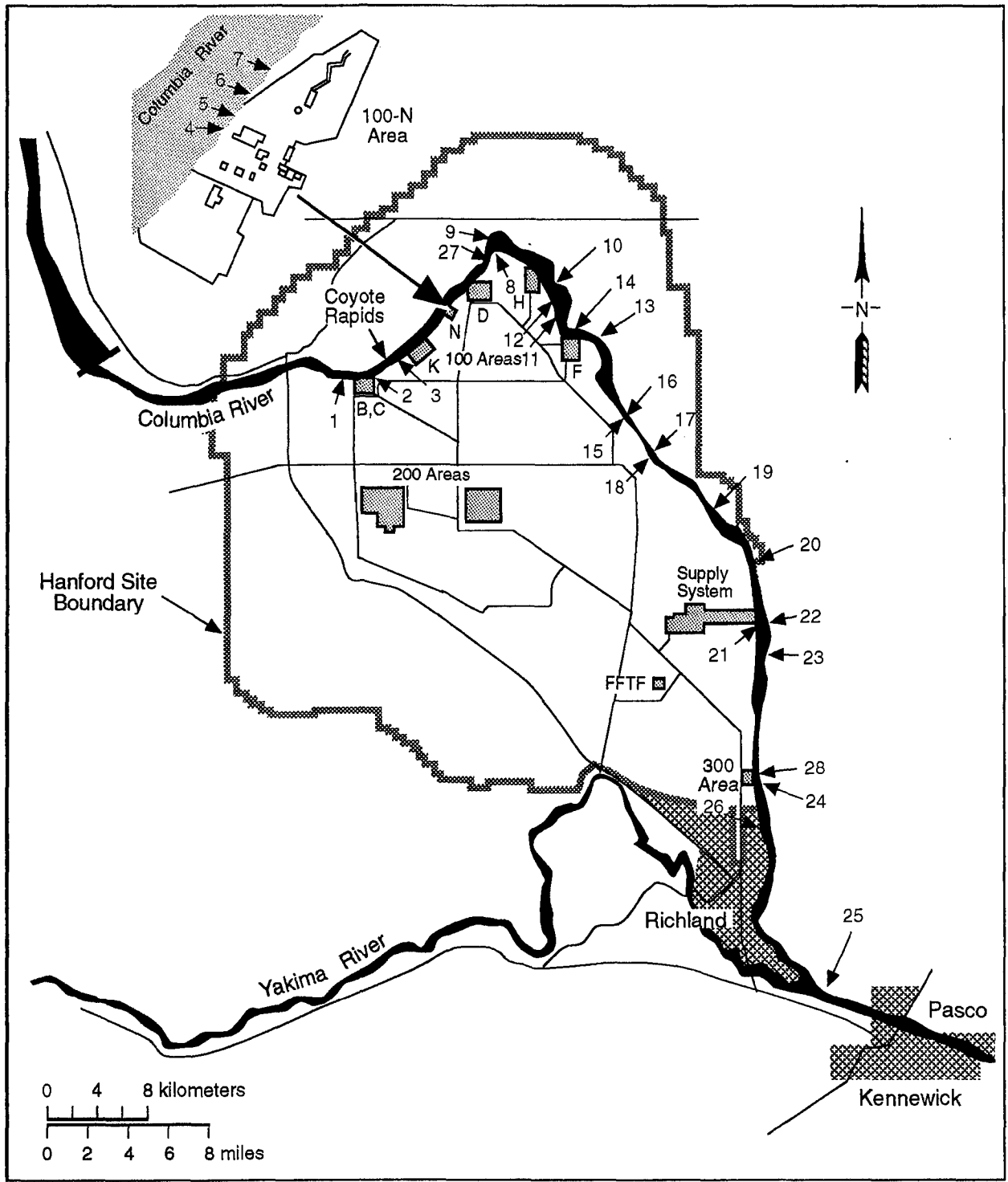
<u>Location (a)</u>	<u>Location Number</u>	<u>Frequency</u>	<u>Measurement</u>
Above 100 B Area	1	Q	Ambient Dose
Below 100 B Ret Basin	2	Q	Ambient Dose
Above 1K Boat Ramp	3	Q	Ambient Dose
Below 100N Outfall	4	Q	Ambient Dose
Below 100N Stack	5	Q	Ambient Dose
Above Tip 100N Berm	6	Q	Ambient Dose
100 N Trench Spring	7	Q	Ambient Dose
Below 100 D Area	8	Q	Ambient Dose
Below Opp 100 D	9	Q	Ambient Dose
Lo End Locke Isl	10	Q	Ambient Dose
White Bluffs Fy Lnd.	11	Q	Ambient Dose
White Bluffs Slough	12	Q	Ambient Dose
100 F Floodplain	13	Q	Ambient Dose
Below 100 F	14	Q	Ambient Dose
Hanford Slough	15	Q	Ambient Dose
Hanf Powerline Xing	16	Q	Ambient Dose
Hanford Ferry Lnd	17	Q	Ambient Dose
Hanford RR Track	18	Q	Ambient Dose
Savage Isl Slough	19	Q	Ambient Dose
Ringold Island	20	Q	Ambient Dose
Powerline Crossing	21	Q	Ambient Dose
N End Wooded Island	22	Q	Ambient Dose
S End Wooded Island	23	Q	Ambient Dose
Island Near 300 Area	24	Q	Ambient Dose
Isl DS Bateman Isl	25	Q	Ambient Dose
Port of Benton-River	26	Q	Ambient Dose
100-D Island	27	Q	Ambient Dose
Islnd Above 300 Area	28	Q	Ambient Dose

(a) Refer to Figure 6.3, 1997 Thermoluminescent Dosimeter (TLD) Locations on the Hanford Reach of the Columbia River.

## 6.2 COLUMBIA RIVER SHORELINE RADIATION SURVEYS

<u>Location<sup>(a)</sup></u>	<u>Location Number</u>	<u>Frequency</u>	<u>Measurement</u>	<u>Instrument</u>
Above 1K Boat Ramp	3	Q	Exposure, Surface contamination	BICRON, GM
Below 100N Outfall	4	Q	Exposure, Surface contamination	BICRON, GM
Below 100N Stack	5	Q	Exposure, Surface contamination	BICRON, GM
Above Tip 100N Berm	6	Q	Exposure, Surface contamination	BICRON, GM
100 N Trench Springs	7	Q	Exposure, Surface contamination	BICRON, GM
Below Opp 100 D	9	Q	Exposure, Surface contamination	BICRON, GM
Lo End Locke Isl	10	Q	Exposure, Surface contamination	BICRON, GM
White Bluffs Fy Lnd.	11	Q	Exposure, Surface contamination	BICRON, GM
Below 100 F	14	Q	Exposure, Surface contamination	BICRON, GM
Hanf Powerline Xing	16	Q	Exposure, Surface contamination	BICRON, GM
Hanford Ferry Lnd.	17	Q	Exposure, Surface contamination	BICRON, GM
Hanford RR Track	18	Q	Exposure, Surface contamination	BICRON, GM
Ringold Island	20	Q	Exposure, Surface contamination	BICRON, GM
Powerline Crossing	21	Q	Exposure, Surface contamination	BICRON, GM
100-D Island	27	Q	Exposure, Surface contamination	BICRON, GM
Isl Above 300 Area	28	Q	Exposure, Surface contamination	BICRON, GM

(a) Refer to Figure 6.3, 1997 Thermoluminescent Dosimeter (TLD) Locations on the Hanford Reach of the Columbia River.



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Figure 6.3. 1997 Thermoluminescent Dosimeter (TLD) Locations on the Hanford Reach of the Columbia River

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