Environmental Surveillance Master Sampling Schedule

L. E. Bisping

February 1994

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

**Pacific Northwest Laboratory
Operated for the U.S. Department of Energy
by Battelle Memorial Institute**

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Pacific Northwest Laboratory
Richland, Washington 99352

MASTER

THIS DOCUMENT CONTAINS UNCLASSIFIED INFORMATION

AB

SUMMARY

Environmental surveillance of the Hanford Site and surrounding areas is conducted by the Pacific Northwest Laboratory (PNL)^(a) for the U.S. Department of Energy (DOE). This document contains the planned 1994 schedules for routine collection of samples for the Surface Environmental Surveillance Project (SESP), Drinking Water Project, and Ground-Water Surveillance Project.

Samples are routinely collected for the SESP and analyzed to determine the quality of air, surface water, soil, sediment, wildlife, vegetation, foodstuffs, and farm products at Hanford Site and surrounding communities.

The responsibility for monitoring the onsite drinking water falls outside the scope of the SESP. The Hanford Environmental Health Foundation is responsible for monitoring the nonradiological parameters as defined in the National Drinking Water Standards while PNL conducts the radiological monitoring of the onsite drinking water. PNL conducts the drinking water monitoring project concurrent with the SESP to promote efficiency and consistency, utilize the expertise developed over the years, and reduce costs associated with management, procedure development, data management, quality control and reporting.

The ground-water sampling schedule identifies ground-water sampling events used by PNL for environmental surveillance of the Hanford Site. Some of these samples are collected and analyzed by other ground-water monitoring programs at Hanford (e.g. Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), or Operational). They are indicated by a number in the analysis column of the ground-water tables and a project designation in the CERCLA or RCRA/OPER column. The distribution of wells sampled by the different programs is shown in Section 6.0, Well Distribution According to Program. Additional detail on the rationale for ground-water sampling is presented in Ground-Water Sample Collection and Analysis Plan for the Hanford Site Ground-Water Surveillance Project, R. W. Bryce, J. C. Evans, and K. C. Olsen, 1991, PNL-7872, Pacific Northwest Laboratory, Richland, Washington.

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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 require schedule modifications. Changes will be documented in the respective project files, but this schedule will not be reissued and, therefore, may not represent an accurate reflection of the samples collected during the year.

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 Field Office, DOE/RL 91-50, U.S. Department of Energy, Richland, Washington.

Environmental and ground-water samples that are split with the Washington State Department of Health are indicated in the schedule as well as environmental samples that are split with the U.S. Food and Drug Administration.

Questions can be directed to Rodger Woodruff, Manager, Surface Environmental Surveillance Project; Roger Dirkes, Manager, Drinking Water Monitoring Project; and Stuart Luttrell, Manager, Ground-Water Surveillance Project.

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ABBREVIATIONS

FREQUENCY SYMBOLS USED

A	annually
BA	biannually (every 2 years)
BM	bimonthly (every 2 months)
BW	biweekly (every 2 weeks)
M	monthly
M Comp	monthly composite
Q	quarterly
Q Comp	quarterly composite
SA	semiannually
W	weekly
Numbers	The numbers in the ground-water tables indicate the estimated number of samples to be collected by other projects.

ANALYSIS SYMBOLS USED

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

Alk	alkalinity
Alpha	total alpha activity of sample
Anion	major anions-generally Cl, F, NO ₂ , NO ₃ , SO ₄
Beta	total beta activity of sample
CN ⁻	cyanide
Comp. Only	sample analyzed as part of composite only
DO	dissolved oxygen
DS	dissolved solids
Gamma Scan	analysis of photon energy spectrum for individual photon-emitting radionuclides, including ⁶⁰ Co, ⁶⁵ Zn, ¹⁰⁶ Ru, and ¹³⁷ Cs
HTO	tritiated water (³ H ¹ H ¹⁶ O)
ICP-f	major metals by inductively coupled plasma spectrometry - samples filtered in the field
ICP-u	major metals by inductively coupled plasma spectrometry - samples unfiltered

ABBREVIATIONS (contd)

Isotopic uranium	^{234}U , ^{235}U , ^{238}U
Isotopic plutonium	^{238}Pu , $^{239-240}\text{Pu}$
LEP	samples analyzed by Low Energy Photon System
Lo ^3H	analytical procedure includes electrolytic enrichment
NRA	not routinely analyzed
SS	suspended solids
TOC	total organic carbon
U	natural uranium
VOA	volatile organic analytes
WQ	water quality - nonradiological

NOTES ABBREVIATIONS USED

The abbreviations in the table for the Ground-Water Surveillance section are as designated:

CAS	well sampled as part of a confined aquifer study
DOH	wells co-sampled with the Washington State Department of Health
DWS	water supply wells and wells near water supplies
LERF	liquid effluent retention facility
LLBG	low-level burial ground
LLWMA	low-level waste management area
NRDWL	non-radioactive dangerous waste landfill
SWL	solid waste landfill
SST	single shell tanks

PORTABLE INSTRUMENT SYMBOLS USED

BICRON	Micro rem meter
GM	Geiger-Müller counter
PIC	Pressurized Ionization Chamber

PART I. HANFORD SURFACE ENVIRONMENTAL SURVEILLANCE

1.0 AIR SURVEILLANCE

1.1 AIR - PARTICULATE FILTER

Location	Individual Samples			Composite Group	Composited Sample	
	Location Number(a)	Frequency	Analyses		Frequency	Analyses
Onsite						
100-K Area	1	BW	Beta, Alpha	100 Areas	Q	Gamma Scan 90Sr, Pu(b)
100-N 1325 Crib	2	BW	Beta, Alpha		A	
100-D Area	3	BW	Beta, Alpha			
N of 200-E	4	BW	NRA	200 E Area	Q	Gamma Scan 90Sr, Pu(b), U(c), 241Am
N of 200-E No. 2	4	BW	NRA		A	
E of 200-E	5	BW	Beta, Alpha			
200-ESE	6	BW	Beta, Alpha	B Pond	Q	Gamma Scan 90Sr, Pu(b), U(c)
S of 200-E	7	BW	Beta, Alpha		A	
B Pond	8	BW	Beta, Alpha			
B Pond No. 2	8	BW	Comp. Only	200 W South and East	Q	Gamma Scan 90Sr, Pu(b), U(c)
Army Loop Camp	9	BW	Beta, Alpha		A	
200 Tel. Exchange	10	BW	Beta, Alpha			
200-W SE	11	BW	Beta, Alpha	200 West	Q	Gamma Scan 90Sr, Pu(b), U(c)
200-W SE No. 2	11	BW	Comp. Only		A	
300 Water Intake	12	BW	Beta	300 Area	Q	Gamma Scan 90Sr, Pu(b), U(c)
300 South Gate	13	BW	Beta, Alpha		A	
300 Trench	14	BW	Beta, Alpha	300 NE	Q	Gamma Scan 90Sr, Pu(b), U(c)
300 NE	15	BW	Beta, Alpha		A	
400-E	16	BW	Beta, Alpha	400 Area	Q	Gamma Scan 90Sr, Pu(b)
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(b), U(c), 241Am
Wye Barricade No. 2	20	BW	Comp. Only		A	
Perimeter						
Berg Ranch	21	BW	NRA	Ringold Met Tower	Q	Gamma Scan 90Sr, Pu(b)
Ringold Met Tower	22	BW	Beta, Alpha		A	
W End of Fir Rd	23	BW	Beta, Alpha	W. End of Fir Road	Q	Gamma Scan 90Sr, Pu(b), U(c), 241Am
W End of Fir Rd No. 2	23	BW	Comp. Only		A	
Dogwood Met Tower	24	BW	Beta, Alpha	Dogwood Met. Tower	Q	Gamma Scan 90Sr, Pu(b), U(c), 241Am
Dogwood Met Tower No. 2	24	BW	Comp. Only		A	

1.1 AIR - PARTICULATE FILTER (contd)

Individual Samples				Composited Sample		
Location	Location Number(a)	Fre- quency	Analyses	Composite Group	Fre- quency	Analyses
<u>Perimeter</u>						
Byers Landing	25	BW	Beta, Alpha	Byers Landing	Q	Gamma Scan 90Sr, Pu(b), U(c), 241Am
Battelle Complex	26	BW	NRA		A	
Horn Rapids Substation	28	BW	Beta, Alpha	Prosser Barricade	Q	Gamma Scan 90Sr, Pu(b), U(c)
Prosser Barricade	28	BW	Comp. Only		A	
Yakima Barricade	29	BW	Beta, Alpha	Yakima Barricade	Q	Gamma Scan 90Sr, Pu(b)
Yakima Barricade No. 2	29	BW	Comp. Only		A	
Wahluke Slope	30	BW	Beta, Alpha	Wahluke Slope	Q	Gamma Scan 90Sr, Pu(b)
Wahluke Slope No. 2	30	BW	Comp. Only		A	
<u>Community</u>						
Basin City School(d)	31	BW	Beta, Alpha	Basin City School	Q	Gamma Scan 90Sr, Pu(b), U(c)
Basin City No. 2(d)	31	BW	Comp. Only		A	
Leslie Groves-Richland(d)	32	BW	Beta, Alpha	Leslie Groves-Richland	Q	Gamma Scan 90Sr, Pu(b), U(c)
Leslie Groves-Rich. No. 2(d)	32	BW	Comp. Only		A	
Pasco	33	BW	Beta	Tri-Cities	Q	Gamma Scan 90Sr, Pu(b)
Kennewick-Ely Street	34	BW	Beta, Alpha		A	
Benton City	35	BW	NRA	Edwin Markham School	Q	Gamma Scan 90Sr, Pu(b), U(c), 241Am
Benton City No. 2	35	BW	NRA		A	
Edwin Markham School(d)	36	BW	Beta, Alpha	Mattawa	Q	Gamma Scan 90Sr, Pu(b), U(c), 241Am
Mattawa	37	BW	NRA		A	
Mattawa No. 2	37	BW	NRA	Sunnyside	Q	Gamma Scan 90Sr, Pu(b), U(c)
					A	
<u>Distant</u>						
Sunnyside	38	BW	Beta, Alpha	Sunnyside	Q	Gamma Scan 90Sr, Pu(b), U(c)
Sunnyside No. 2	38	BW	Comp. Only		A	
Yakima	39	BW	Beta, Alpha	Yakima	Q	Gamma Scan 90Sr, Pu(b), U(c), 241Am

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

(b) Isotopic plutonium.

(c) Isotopic uranium.

(d) Community-Operated Environmental Surveillance Station.

1.2 AIR - GASES AND VAPOR

<u>Location</u>	<u>Location Number (a)</u>	<u>Fre-quency</u>	<u>Analyses</u>	<u>Fre-quency (b)</u>	<u>Analyses</u>	<u>Fre-quency</u>	<u>Analyses</u>
<u>Onsite</u>							
100-K Area	1					M	³ H (as HTO)
100-N 1325 Crib	2					M	³ H (as HTO)
200-ESE	6			Q Comp	129 _I	M	³ H (as HTO)
200 Tel. Exchange	10					M	³ H (as HTO)
300 South Gate	13					M	³ H (as HTO)
300 Trench	14					M	³ H (as HTO)
300-NE	15					M	³ H (as HTO)
400-E	16					M	³ H (as HTO)
<u>Perimeter</u>							
Ringold Met. Tower	22	BW	131 _I	Q Comp	129 _I	M	³ H (as HTO)
Dogwood Rd. Met. Tower	24					M	³ H (as HTO)
Byers Landing	25	BW	131 _I	Q Comp	129 _I	M	³ H (as HTO)
Prosser Barricade	28					M	³ H (as HTO)
Wahluke Slope	30					M	³ H (as HTO)
<u>Community</u>							
Basin City School (c)	31					M	³ H (as HTO)
Leslie Groves-Richland (c)	32					M	³ H (as HTO)
Edwin Markham School (c)	36	BW	131 _I			M	³ H (as HTO)
<u>Distant</u>							
Sunnyside	38					M	³ H (as HTO)
Yakima	39	BW	131 _I	Q Comp	129 _I	M	³ H (as HTO)

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

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

(c) Community-Operated Environmental Surveillance Station.

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Figure 1.1. Air Sampling Locations

2.0 SURFACE-WATER SURVEILLANCE

2.1 WATER - COLUMBIA RIVER

<u>Location^(a)</u>	<u>Sample Type</u>	<u>Frequency</u>	<u>Analyses</u>
Priest Rapids Dam	Cumulative	M Comp ^(b)	Alpha, Beta, Lo ³ H, Gamma Scan, ⁹⁰ Sr, ⁹⁹ Tc, U ^(c) , DOH ^(d)
	Particulate (filter)	M Comp ^(e) Q Comp	Gamma Scan Pu ^(f)
	Soluble (resin)	M Comp ^(e) Q Comp	Gamma Scan ¹²⁹ I, Pu ^(f)
Vernita	Grab	Q	WQ-NASQAN ^(g) : Temp, DO, Turbidity, pH, Fecal Coliform, SS, DS, Cond, Hardness as CaCO ₃ , P, Cr, N-Kjeldahl, TOC, Fe, NH ₃ -N
	Grab (Transect) ^(h)	Q	Lo ³ H, ⁹⁰ Sr, U ^(c) , Volatile Organics, ICP-u, Anions
100-N	Grab (Transect) ⁽ⁱ⁾	A	Alpha, Beta, Lo ³ H, ⁹⁰ Sr, ⁹⁹ Tc, U ^(c) , Gamma Scan, Volatile Organics, ICP-u, Anions, DOH ^(j)
100-F	Grab (Transect) ⁽ⁱ⁾	A	Lo ³ H, ⁹⁰ Sr, U ^(c) , Volatile Organics, ICP-u, Anions
Hanford Townsite	Grab (Transect) ⁽ⁱ⁾	A	Lo ³ H, ⁹⁰ Sr, ⁹⁹ Tc, U ^(c) , Volatile Organics, ICP-u, Anions
300 Area	Grab (Transect) ⁽ⁱ⁾	A	Lo ³ H, ⁹⁰ Sr, U ^(c) , Volatile Organics, ICP-u, Anions
Richland Pumphouse	Cumulative	W	Alpha, Beta
	Cumulative	M Comp ^(b)	Alpha, Beta, Lo ³ H, Gamma Scan, ⁹⁰ Sr, ⁹⁹ Tc, U ^(c)
	Particulate (filter)	M Comp ^(e) Q Comp	Gamma Scan Pu ^(f)
	Soluble (resin)	M Comp ^(e) Q Comp	Gamma Scan ¹²⁹ I, Pu ^(f)
	Grab (Transect) ⁽ⁱ⁾	Q	Lo ³ H, ⁹⁰ Sr, U ^(c) , Volatile Organics, ICP-u, Anions
	Grab	Q	WQ-NASQAN ^(g) : Temp, DO, Turbidity, pH, Fecal Coliform, SS, DS, Cond, Hardness as CaCO ₃ , P, Cr, N-Kjeldahl, TOC, Fe, NH ₃ -N

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

(b) Composite of weekly samples.

(c) Isotopic uranium.

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

(e) Composite of biweekly sample.

(f) Isotopic plutonium.

(g) Numerous water quality (WQ) analyses are performed by the United States Geological Survey (USGS) in conjunction with the National Stream Quality Accounting Network (NASQAN) Program.

(h) 4 samples collected along cross-section.

(i) 10 samples collected along cross-section.

(j) Duplicate samples with the Washington State Department of Health collected at three sample sites along transect.

2.2 RIVERBANK SPRINGS

<u>Location^(a)</u>	<u>Sample Type</u>	<u>Frequency</u>	<u>Analyses</u>
100-B Spring	Grab	2 (Aug-Sept)	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(c)}$, Gamma Scan, Volatile Organics, ICP-u, Anions
100-K Spring	Grab	2 (Aug-Sept)	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(c)}$, Gamma Scan, Volatile Organics, ICP-u, Anions
100-N Spring 8-13	Grab	2 (Aug-Sept)	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(c)}$, Gamma Scan, Volatile Organics, ICP-u, Anions, DOH ^(d)
100-D Spring	Grab	2 (Aug-Sept)	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(c)}$, Gamma Scan, Volatile Organics, ICP-u, Anions
100-H Spring	Grab	2 (Aug-Sept)	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(c)}$, Gamma Scan, Volatile Organics, ICP-u, Anions
100-F Spring	Grab	2 (Aug-Sept)	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(c)}$, Gamma Scan, Volatile Organics, ICP-u, Anions
Hanford Spring 28-2	Grab	2 (Aug-Sept)	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(c)}$, ^{129}I , Gamma Scan, Volatile Organics, ICP-u, Anions
300 Area Spring 42-2	Grab	2 (Aug-Sept)	Alpha, Beta, ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(c)}$, ^{129}I , Gamma Scan, Volatile Organics, ICP-u, Anions

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

(b) Collected twice a year during low river flow season.

(c) Isotopic uranium.

(d) Duplicate sample with the Washington State Department of Health.

2.3 ONSITE PONDS

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

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

(b) Isotopic uranium.

(c) Duplicate samples with the Washington State Department of Health.

2.4 OFFSITE WATER SYSTEMS

Location ^(a)	Sample Type	Frequency	Analyses
Ringold Hatchery	Grab	A	Alpha, Beta, ^3H , $\text{U}^{(b)}$, Gamma Scan
Mathews Corner	Grab	A	Alpha, Beta, ^3H , $\text{U}^{(b)}$, Gamma Scan
White Bluffs Shallow	Grab	A	Alpha, Beta, ^3H , $\text{U}^{(b)}$, Gamma Scan
White Bluffs Deep	Grab	A	Alpha, Beta, ^3H , $\text{U}^{(b)}$, Gamma Scan
Alexander Farm	Grab	A	Alpha, Beta, ^3H , $\text{U}^{(b)}$, Gamma Scan
Riverview Canal	Grab	3 (May-Sept)	Alpha, Beta, ^3H , ^{90}Sr , $\text{U}^{(b)}$, Gamma Scan, DOH ^(c)

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

(b) Isotopic uranium.

(c) Duplicate samples with the Washington State Department of Health.

2.5 ONSITE DRINKING WATER

Location ^(a)	Sample Type	Frequency	Analyses
100-B River	Grab	Q	Alpha, Beta, Lo ^3H , ^{90}Sr , Gamma Scan
100-D River	Grab	Q	Alpha, Beta, ^3H , ^{90}Sr , Gamma Scan
Yakima Barricade	Grab	Q	Alpha, Beta, ^3H , ^{90}Sr , Gamma Scan
Observatory	Grab	Q	Alpha, Beta, ^3H , ^{90}Sr , Gamma Scan
FFTF	Grab	M	^3H
		Q	Alpha, Beta, ^{90}Sr , Gamma Scan
		A	^{129}I
300 Area	Cumulative	Q Comp ^(b)	Alpha, Beta, Lo ^3H , ^{90}Sr , ^{99}Tc , $\text{U}^{(c)}$, Gamma Scan
Firing Range	Grab	Q	Alpha, Beta, ^3H , ^{90}Sr , Gamma Scan
ALE Headquarters	Grab	Q	Alpha, Beta, ^3H , ^{90}Sr , Gamma Scan

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

(b) Composite of monthly cumulative samples.

(c) Isotopic uranium.

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Figure 2.1. Surface Water and Drinking Water Sampling Locations

3.0 FOODSTUFFS AND FARM PRODUCTS

3.1 WHOLE MILK

<u>Location^(a)</u>	<u>Frequency</u>	<u>Analyses</u>
East Wahluke Area Composite ^(b)	Q SA	^3H , ^{90}Sr , Gamma Scan ^{129}I
Sage Moor Area Composite ^(b)	M Q SA	^3H , Gamma Scan ^{90}Sr ^{129}I
Sunnyside Area	Q SA	^3H , ^{90}Sr , Gamma Scan ^{129}I

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

3.2 POULTRY AND EGGS

<u>Location^(a)</u>	<u>Sample Type</u>	<u>Frequency</u>	<u>Analyses</u>
Sage Moor Area	Chicken Eggs	A A	^{90}Sr , Gamma Scan ^{90}Sr , Gamma Scan, DOH ^(b)
Sunnyside Area	Chicken Eggs	A A	^{90}Sr , Gamma Scan ^{90}Sr , Gamma Scan, DOH ^(b)

(a) Refer to Figure 3.1, Food and Farm Product Sampling Locations.
(b) Duplicate samples with the Washington State Department of Health.

3.3 BEEF

<u>Location^(a)</u>	<u>Frequency</u>	<u>Analyses</u>
Sage Moor Area	A	^{90}Sr , Gamma Scan
Riverview Area	A	^{90}Sr , Gamma Scan
Sunnyside Area	A	^{90}Sr , Gamma Scan

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

3.4 LEAFY VEGETABLES

<u>Location^(a)</u>	<u>Frequency^(b)</u>	<u>Analyses</u>
East Wahuake Area	BA	⁹⁰ Sr, Gamma Scan
Sagemoor Area	A	⁹⁰ Sr, Gamma Scan, ¹²⁹ I-LEP
Riverview Area	A	⁹⁰ Sr, ⁹⁹ Tc, Gamma Scan, FDA ^(c)
Sunnyside Area	A	⁹⁰ Sr, Gamma Scan, FDA ^(c)

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

(b) Three samples collected within each area. Biannual samples will next be collected in 1994.

(c) Duplicate samples sent to U.S. Food and Drug Administration.

3.5 VEGETABLES

<u>Location^(a)</u>	<u>Sample Type</u>	<u>Frequency^(b)</u>	<u>Analyses</u>
Riverview Area	Potatoes	A	⁹⁰ Sr, Gamma Scan, FDA ^(c)
	Tomatoes	A	³ H, ⁹⁰ Sr, Gamma Scan
	Carrots	A	⁹⁰ Sr, Gamma Scan, DOH ^(d)
	Asparagus	A	⁹⁰ Sr, Pu ^(e) , U ^(f) , Gamma Scan
Horn Rapids	Potatoes	A	⁹⁰ Sr, ⁹⁹ Tc, Pu ^(f) , U ^(f) , Gamma Scan, DOH ^(d)
	Onions (if available)	A	⁹⁰ Sr, ⁹⁹ Tc, Pu ^(f) , U ^(f) , Gamma Scan, DOH ^(g)
Sagemoor Area	Potatoes	A	⁹⁰ Sr, Pu ^(e) , Gamma Scan, FDA ^(c)
	Asparagus	A	⁹⁰ Sr, Pu ^(e) , U ^(f) , Gamma Scan, DOH ^(d)
Sunnyside Area	Potatoes	A	⁹⁰ Sr, Pu ^(e) , U ^(f) , ⁹⁹ Tc, Gamma Scan, FDA ^(c)
	Asparagus	A	⁹⁰ Sr, Pu ^(e) , U ^(f) , Gamma Scan, DOH ^(h)
Harrah/Wapato Area	Carrots	A	³ H, ⁹⁰ Sr, Gamma Scan, DOH ^(h)
East Wahuake Area	Potatoes	BA	⁹⁰ Sr, Gamma Scan

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

(b) Three samples of each type collected within each area. Biannual samples will next be collected in 1994.

(c) Duplicate samples sent to U.S. Food and Drug Administration.

(d) Duplicate samples with the Washington State Department of Health.

(e) Isotopic plutonium.

(f) Isotopic uranium.

(g) If potatoes are unavailable, collect duplicate onion samples for the Washington State Department of Health.

(h) Samples provided to PNL by Washington State Department of Health.

3.6 FRUIT

<u>Location^(a)</u>	<u>Sample Type</u>	<u>Fre- quency^(b)</u>	<u>Collection Period</u>	<u>Analyses</u>
Sagemoor Area	Apples	A	September	^3H , ^{90}Sr , $\text{Pu}^{(c)}$, Gamma Scan, FDA ^(d)
	Cherries	A	June	^3H , ^{90}Sr , Gamma Scan
	Concord Grapes ^(e)	A	September	^3H , ^{90}Sr , Gamma Scan, ^{129}I -LEP
	Peaches or Pears	A	August	^3H , ^{90}Sr , Gamma Scan, DOH ^(f)
Cold Creek Area	Apples	BA	September	^3H , ^{90}Sr , Gamma Scan
	Concord Grapes ^(e)	BA	September	^3H , ^{90}Sr , Gamma Scan
Sunnyside Area	Apples	A	September	^3H , ^{90}Sr , $\text{Pu}^{(c)}$, Gamma Scan, DOH ^(g)
	Cherries	A	June	^3H , ^{90}Sr , Gamma Scan
	Concord Grapes ^(e)	A	September	^3H , ^{90}Sr , Gamma Scan, ^{129}I -LEP
	Peaches or Pears	A	August	^3H , ^{90}Sr , Gamma Scan, DOH ^(g)
Riverview Area	Apples	A	September	^3H , ^{90}Sr , Gamma Scan, FDA ^(d)
	Concord Grapes ^(e)	A	September	^3H , ^{90}Sr , Gamma Scan
	Melons	A	August	^3H , ^{90}Sr , Gamma Scan
Ringold Area	Apples	A	September	^3H , ^{90}Sr , $\text{Pu}^{(c)}$, Gamma Scan, DOH ^(f)
	Cherries	A	June	^3H , ^{90}Sr , Gamma Scan
Mattawa Area	Apples	BA	September	^3H , ^{90}Sr , Gamma Scan
	Concord Grapes ^(e)	BA	September	^3H , ^{90}Sr , Gamma Scan
East Wauke Area	Apples	BA	September	^3H , ^{90}Sr , Gamma Scan, FDA ^(d)

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

(b) Three samples of each type collected within each area. Biannual samples will next be collected in 1994.

(c) Isotopic plutonium.

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

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

(f) Duplicate samples with the Washington State Department of Health.

(g) Samples provided to PNL by Washington State Department of Health.

3.7 WINE

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

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

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

(c) Duplicate samples with the Washington State Department of Health.

3.8 WHEAT AND ALFALFA

<u>Location^(a)</u>	<u>Sample Type</u>	<u>Frequency^(b)</u>	<u>Collection Period</u>	<u>Analyses</u>
East Wauke Area	Wheat	BA	July	⁹⁰ Sr, Gamma Scan
	Alfalfa	BA	May	⁹⁰ Sr, Gamma Scan
Sagemoor Area	Wheat	A	July	⁹⁰ Sr, Pu ^(c) , Gamma Scan, FDA ^(d)
	Alfalfa	A	May	⁹⁰ Sr, Gamma Scan
Riverview Area	Wheat	A	July	⁹⁰ Sr, Gamma Scan
	Alfalfa	A	May	⁹⁰ Sr, Gamma Scan
Benton City Area	Wheat	A	July	⁹⁰ Sr, Gamma Scan
	Alfalfa	A	May	⁹⁰ Sr, Gamma Scan, DOH ^(e)
Sunnyside Area	Wheat	A	July	⁹⁰ Sr, Pu ^(c) , Gamma Scan
	Alfalfa	A	May	⁹⁰ Sr, Gamma Scan, DOH ^(e)
Battelle Field	Alfalfa	A	May	⁹⁰ Sr, Gamma Scan
Horn Rapids	Alfalfa	A	May	⁹⁰ Sr, Gamma Scan

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

(b) Three samples of each type collected within each area. Biannual samples will next be collected in 1994.

(c) Isotopic plutonium.

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

(e) Duplicate samples with the Washington State Department of Health.

Figure 3.1. Food and Farm Product Sampling Locations S9312057.2

4.0 WILDLIFE

4.1 AQUATIC BIOTA

<u>Location^(a)</u>	<u>Species/ Sample</u>	<u>Number of Samples</u>	<u>Collection Period</u>	<u>Analyses</u>
100-N to 100-D	Whitefish			
	Fillet	10	January	⁹⁰ Sr, Gamma Scan
	Carcass	10	January	⁹⁰ Sr
	Carp			
	Fillet	5	June	⁹⁰ Sr, Gamma Scan
	Carcass	5	June	⁹⁰ Sr
100-F Slough	Bass			
	Fillet	5	May-June	⁹⁰ Sr, Gamma Scan
	Carcass	5	May-June	⁹⁰ Sr
300 Area	Whitefish			
	Fillet	10	November	⁹⁰ Sr, U ^(b) , ⁹⁹ Tc, Gamma Scan
	Carcass	10	November	⁹⁰ Sr
	Carp			
	Fillet	5	June	⁹⁰ Sr, Gamma Scan
	Carcass	5	June	⁹⁰ Sr
	Clam			
	Whole Body	1	Aug-Sept	⁹⁰ Sr, U ^(b) , ⁹⁹ Tc, Gamma Scan, DOH ^(c)
	Shell	1	Aug-Sept	⁹⁰ Sr
Vantage ^(d)	Carp			
	Fillet	10	June	⁹⁰ Sr, U ^(b) , Gamma Scan
	Carcass	10	June	⁹⁰ Sr
Kettle River ^(e)	Whitefish			
	Fillet	10	November	⁹⁰ Sr, U ^(b) , ⁹⁹ Tc, Gamma Scan
	Carcass	10	November	⁹⁰ Sr
Sunnyside ^(f)	Bass			
	Fillet	10	June	⁹⁰ Sr, U ^(b) , Gamma Scan
	Carcass	10	June	⁹⁰ Sr

(a) Refer to Figure 4.1, Wildlife Sampling Areas.

(b) Isotopic uranium.

(c) Duplicate samples with the Washington State Department of Health.

(d) Background samples to be collected at least once every 5 years and will next be collected in 1994.

(e) Background samples to be collected at least once every 5 years and will next be collected in 1995.

(f) Background samples to be collected at least once every 5 years and will next be collected in 1996.

4.2 DUCKS

<u>Location^(a)</u>	<u>Species/^(b) Sample</u>	<u>Number of Samples</u>	<u>Collection Period</u>	<u>Analyses</u>
100-N Area	Mallard			
	Muscle	4	August	⁹⁰ Sr, Gamma Scan
	Liver	4	August	NRA ^(c)
	Bone	4	August	⁹⁰ Sr
B Pond	Mallard			
	Muscle	10	August	⁹⁰ Sr, ⁹⁹ Tc, Gamma Scan
	Liver	10	August	NRA ^(c)
	Bone	10	August	NRA ^(c)
West Lake ^(d)	Mallard			
	Muscle	4	August	⁹⁰ Sr, Gamma Scan
	Liver	4	August	NRA ^(c)
	Bone	4	August	NRA ^(c)
Vantage ^(d)	Mallard			
	Muscle	10	August	⁹⁰ Sr, U ^(e) , ⁹⁹ Tc, Gamma Scan
	Liver	10	August	Pu ^(f)
	Bone	10	August	⁹⁰ Sr

(a) Refer to Figure 4.1, Wildlife Sampling Areas.

(b) Mallard preferred; other puddle ducks acceptable if mallard is unavailable.

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

(d) As available.

(e) Isotopic uranium.

(f) Isotopic plutonium.

4.3 GAME BIRDS

<u>Location^(a)</u>	<u>Species/^(b) Sample</u>	<u>Number of Samples</u>	<u>Collection Period</u>	<u>Analyses</u>
Near 100-N	Pheasant			
	Muscle	3	January	⁹⁰ Sr, Gamma Scan
	Liver	3	January	NRA ^(c)
	Bone	3	January	⁹⁰ Sr
100-D to 100-H	Pheasant			
	Muscle	4	January	Gamma Scan
	Liver	4	January	NRA ^(c)
	Bone	4	January	⁹⁰ Sr
100-H to 100-F	Pheasant			
	Muscle	6	January	Gamma Scan
	Liver	6	January	NRA ^(c)
	Bone	6	January	⁹⁰ Sr
Yakima County ^(d)	Pheasant			
	Muscle	10	September	⁹⁰ Sr, U ^(e) , Gamma Scan, DOH ^(f)
	Liver	10	September	Pu ^(g)
	Bone	10	September	⁹⁰ Sr

(a) Refer to Figure 4.1, Wildlife Sampling Areas.

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

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

(d) Background samples to be collected at least every 5 years and will next be collected in 1994.

(e) Isotopic uranium.

(f) Duplicate samples with the Washington State Department of Health.

(g) Isotopic plutonium.

4.4 DEER

<u>Location^(a)</u>	<u>Species/ Sample</u>	<u>Number of Samples</u>	<u>Collection Period</u>	<u>Analyses</u>
100-N Area	Mule			
	Muscle	2	December	Gamma Scan
	Liver	2	December	pu ^(b)
	Bone	2	December	90Sr
200 Ponds	Mule			
	Muscle	2	December	Gamma Scan
	Liver	2	December	pu ^(b)
	Bone	2	December	90Sr
Road Kill at Onsite Locations ^(c)	Mule			
	Muscle	6	Annual	Gamma Scan
	Liver	6	Annual	pu ^(b)
Background ^(c)	Mule			
	Muscle	2	October	Gamma Scan
	Liver	2	October	pu ^(b)
	Bone	2	October	90Sr
Background ^(d)	Mule			
	Muscle	1	Annual	Gamma Scan, DOH
	Liver	1	Annual	pu ^(b) , DOH
	Bone	1	Annual	90Sr, DOH

(a) Refer to Figure 4.1, Wildlife Sampling Areas.

(b) Isotopic plutonium.

(c) As available, according to location.

(d) One west side deer will be provided to PNL by Washington State Department of Health.

4.5 RABBITS

<u>Location^(a)</u>	<u>Type/ Sample</u>	<u>Number of Samples</u>	<u>Collection Period</u>	<u>Analyses</u>
100-N Area	Cottontail			
	Muscle	4	April	Gamma Scan
	Liver	4	April	pu ^(b)
	Bone	4	April	90Sr
200-E Area	Jack Rabbit			
	Muscle	4	April	Gamma Scan
	Liver	4	April	pu ^(b)
	Bone	4	April	90Sr
200-W Area	Jack Rabbit			
	Muscle	4	April	Gamma Scan
	Liver	4	April	pu ^(b)
	Bone	4	April	90Sr
N of 300 Area	Cottontail			
	Muscle	4	April	Gamma Scan
	Liver	4	April	pu ^(b)
	Bone	4	April	90Sr

4.5 RABBITS (contd)

<u>Location^(a)</u>	<u>Type/ Sample</u>	<u>Number of Samples</u>	<u>Collection Period</u>	<u>Analyses</u>
Boardman, OR ^(c)	Jack Rabbit			
	Muscle	10	April	Gamma Scan
	Liver	10	April	Pu ^(b)
	Bone	10	April	⁹⁰ Sr
Boardman, OR ^(c)	Cottontail			
	Muscle	10	April	Gamma Scan
	Liver	10	April	Pu ^(b)
	Bone	10	April	⁹⁰ Sr

(a) Refer to Figure 4.1, Wildlife Sampling Areas.

(b) Isotopic plutonium.

(c) Background samples to be collected at least every 5 years and will next be collected in 1995.

Figure 4.1. Wildlife Sampling Areas

S9312057.1a

5.0 SOIL AND VEGETATION

5.1 SOIL

Location ^(a)	Fre- quency ^(b)	Collection Period	Analyses
100 K Area	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
NE of 100 N Area	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
E of 100 N Area	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
100N Shore Above HGP	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
100N Spring Shoreline	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
Above 100D Pumphouse	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
100 Area Fire Station	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
200-ENC	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
E of 200-E	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
200-ESE	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d), ²⁴¹ Am
S of 200-E	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
SW of B/C Cribs	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d), ²⁴¹ Am
E of 200-W Gate	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d), ²⁴¹ Am
S of 200-W	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
Rattlesnake Springs	1/3 yr	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
Yakima Barricade	1/3 yr	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
400-E	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
SE Side of FFTF	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
N of 300 Area	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
S of 300 Area	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
Hanford townsite	1/3 yr	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
Wye Barricade	1/3 yr	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
Prosser Barricade	1/3 yr	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
ALE Field Lab	1/3 yr	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
N End Vernita Bridge	1/3 yr	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
Wahluke Slope	1/3 yr	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
Berg Ranch	1/3 yr	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
Ringold	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
W End of Fir Road	1/3 yr	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
Taylor Flats No. 2	1/3 yr	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
Sagemoor Farm	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d), ²⁴¹ Am
Byers Landing	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
Riverview - Harris	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
Benton City	1/3 yr	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
Sunnyside	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d), ²⁴¹ Am
McNary Dam	1/5 yr	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
Walla Walla	1/5 yr	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
Washtucna	1/5 yr	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
Yakima	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)

(a) Refer to Figure 5.1, Soil and Vegetation Sampling Locations.

(b) Specified samples are collected once every 3 or 5 years, respectively. Sampling frequency will be reevaluated in 1994 and in effect in 1995.

(c) ²³⁵U-LEP, ²³⁸U-LEP.

(d) Isotopic plutonium.

5.2 VEGETATION

<u>Location^(a)</u>	<u>Fre- quency^(b)</u>	<u>Collection Period</u>	<u>Analyses</u>
100 K Area	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
NE of 100 N Area	A	July	Gamma Scan, ⁹⁰ Sr, U, Pu(d)
E of 100-N Area	A	July	Gamma Scan, ⁹⁰ Sr, U, Pu(d)
100N Spring Shoreline	A	July	Gamma Scan, ⁹⁰ Sr, U, Pu(d)
E of 200-W Gate	A	July	Gamma Scan, ⁹⁰ Sr, U, Pu(d)
300 Area (Shoreline)	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)
Hanford Townsite	1/3 yr	July	Gamma Scan, ⁹⁰ Sr, U, Pu(d)
Hanford Townsite (shoreline)	A	July	Gamma Scan, ⁹⁰ Sr, U, Pu(d), ⁹⁹ Tc
Ringold	A	July	Gamma Scan, ⁹⁰ Sr, U, Pu(d)
Sagemoor Farm	A	July	Gamma Scan, ⁹⁰ Sr, U, Pu(d)
Byers Landing	A	July	Gamma Scan, ⁹⁰ Sr, U, Pu(d)
Riverview - Harris	A	July	Gamma Scan, ⁹⁰ Sr, U, Pu(d)
Sunnyside	A	July	Gamma Scan, ⁹⁰ Sr, U, Pu(d)
Yakima	A	July	Gamma Scan, ⁹⁰ Sr, U(c), Pu(d)

(a) Refer to Figure 5.1, Soil and Vegetation Sampling Locations.

(b) Specified samples are collected once every 3 years (1/3 yr). Sampling frequency will be reevaluated in 1994 and in effect in 1995.

(c) Isotopic uranium.

(d) Isotopic plutonium.

S9212076.8a

Figure 5.1. Soil and Vegetation Sampling Locations

6.0 SEDIMENT

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

(a) Refer to Figure 6.1, Sediment Sampling Locations.

(b) ²³⁵U-LEP, ²³⁸U-LEP.

(c) Isotopic plutonium.

(d) Duplicate samples with the Washington State Department of Health.

S9212076.10a

Figure 6.1. Sediment Sampling Locations

7.0 EXTERNAL RADIATION

7.1 THERMOLUMINESCENT DOSIMETERS (TLDs)

7.1.1 Terrestrial Locations

<u>Location</u>	<u>Location Number</u>	<u>Frequency</u>	<u>Measurement</u>	<u>Instrument</u>
<u>Onsite (a)</u>				
100-K(b)	1	Q	Ambient Dose	
100-N (WPPSS)	2	Q	Ambient Dose	
100-D(b)	3	Q	Ambient Dose	
N of 200-g(b)	4	Q	Ambient Dose, DOH(c)	
200 Tel. Exchange(b)	5	Q	Ambient Dose, DOH(c)	
200 W SE(b)	6	Q	Ambient Dose	
S of 200-g(b)	7	Q	Ambient Dose, DOH(c)	
S Pond(b)	8	Q	Ambient Dose	
E of 200-g(b)	9	Q	Ambient Dose, DOH(c)	
200-EG(b)	10	Q	Ambient Dose, DOH(c)	
3705 Building	11	Q	Ambient Dose	
300 Water Intake(b)	12	Q	Ambient Dose	
300 Southwest Gate	13	Q	Ambient Dose	
300 South Gate(b)	14	Q	Ambient Dose	
300 Trench(b)	15	Q	Ambient Dose	
300 NG(b)	16	Q	Ambient Dose	
400-g(b)	17	Q	Ambient Dose	
400-u(b)	18	Q	Ambient Dose	
400-s(b)	19	Q	Ambient Dose	
400-N(b)	20	Q	Ambient Dose	
Wye Barricade(b)	21	Q	Ambient Dose, DOH(c)	
US Ecology NE Corner	22	Q	Ambient Dose, DOH(c)	
US Ecology SE Corner	23	Q	Ambient Dose, DOH(c)	
US Ecology NW Corner	24	Q	Ambient Dose, DOH(c)	
US Ecology SW Corner	25	Q	Ambient Dose, DOH(c)	
WPPSS 1 S of WNP 2	26	Q	Ambient Dose, DOH(c)	
<u>Perimeter (d)</u>				
Ringold Met. Tower(b)	1	Q	Ambient Dose	
Byers Landing(b)	2	Q	Ambient Dose	
Battelle Complex(b)	3	Q	Ambient Dose	
WPPSS 4 WPPSS Warehouse	4	Q	Ambient Dose, DOH(c)	
WPPSS 8 Fir Road	5	Q	Ambient Dose, DOH(c)	
<u>Community (d)</u>				
Basin City(b)(e)	6	Q	Ambient Dose	PIC(f)
Pasco(b)	7	Q	Ambient Dose	
Kennawick(b)	8	Q	Ambient Dose	
Benton City(b)	9	Q	Ambient Dose	
Mattawa(b)	10	Q	Ambient Dose	
Edwin Markham(b)(e)	11	Q	Ambient Dose	PIC(f)
Richland (LGP)(b)(e)	12	Q	Ambient Dose	PIC(f)

7.1.1 Terrestrial Locations (contd)

<u>Location</u>	<u>Location Number</u>	<u>Frequency</u>	<u>Measurement</u>	<u>Instrument</u>
<u>Distant</u> ^(d)				
Sunnyside ^(b)	13	Q	Ambient Dose, DOH ^(c)	
Yakima ^(b)	14	Q	Ambient Dose, DOH ^(c)	

(a) Refer to Figure 7.1, 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 7.2, Thermoluminescent Dosimeter (TLD) Locations for Perimeter and Community Sites.

(e) Community-Operated Environmental Surveillance Station.

(f) PIC data (in mR/H) collected monthly.

S9212076.3a

Figure 7.1. Thermoluminescent Dosimeter (TLD) Locations on the Hanford Site

S9212076.1a

Figure 7.2. Thermoluminescent Dosimeter (TLD) Locations for Perimeter and Community Sites

7.1.2 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 Retention Basin	2	Q	Ambient Dose
Above 100-K Boat Ramp	3	Q	Ambient Dose
Below 100-N Outfall	4	M	Ambient Dose
Below 100-N Stack	5	M	Ambient Dose
Above Tip 100-N Berm	6	M	Ambient Dose
100-N Trench Spring	7	M	Ambient Dose
Below 100-D Area	8	Q	Ambient Dose
Below Opposite 100-D	9	Q	Ambient Dose
Lower End Locke Island	10	Q	Ambient Dose
White Bluffs Ferry Landing	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
Hanford Powerline Crossing	16	Q	Ambient Dose
Hanford Ferry Landing	17	Q	Ambient Dose
Hanford RR Track	18	Q	Ambient Dose
Savage Island 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
Island DS Bateman Island	25	Q	Ambient Dose
Port of Benton	26	Q	Ambient Dose
100-D Island	27	Q	Ambient Dose
Island Above 300 Area	28	Q	Ambient Dose

(a) Refer to Figure 7.3, Thermoluminescent Dosimeter (TLD) Locations on the Hanford Reach of the Columbia River.

7.2 COLUMBIA RIVER SHORELINE RADIATION SURVEYS

<u>Location (a)</u>	<u>Location Number</u>	<u>Frequency</u>	<u>Measurement</u>	<u>Instrument</u>
Above 100-K Boat Ramp	3	Q	Exposure, Surface contamination	BICRON, GM
Below 100-N Outfall	4	M	Exposure, Surface contamination	BICRON, GM
Below 100-N Stack	5	M	Exposure, Surface contamination	BICRON, GM
Above Tip 100-N Berm	6	M	Exposure, Surface contamination	BICRON, GM
100-N Trench Springs	7	M	Exposure, Surface contamination	BICRON, GM
Below Opposite 100-D	9	Q	Exposure, Surface contamination	BICRON, GM
Lower End Locke Island	10	Q	Exposure, Surface contamination	BICRON, GM
White Bluffs Ferry Landing	11	Q	Exposure, Surface contamination	BICRON, GM
Below 100-F	14	Q	Exposure, Surface contamination	BICRON, GM
Hanford Powerline Crossing	16	Q	Exposure, Surface contamination	BICRON, GM
Hanford Ferry Landing	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
Island Above 300 Area	28	Q	Exposure, Surface contamination	BICRON, GM

(a) Refer to Figure 7.3, Thermoluminescent Dosimeter (TLD) Locations on the Hanford Reach of the Columbia River.

Figure 7.3. Thermoluminescent Dosimeter (TLD) Locations on the Hanford Reach of the Columbia River S9212076.2a

7.3 ONSITE AERIAL RADIATION SURVEYS

<u>Description</u>	<u>Trip Number</u>	<u>Frequency</u> (a)	<u>Instrument</u> (b)
Project Perimeter	3	A	Aerial Monitor

- (a) Survey is performed either annually or at an appropriate frequency determined for maintaining emergency preparedness support or post-accident characterization (currently the only purposes for it).
- (b) The instrument used for aerial monitoring consists of sodium iodide detectors with associated electronics which function as gross-gamma counters.

PART II. HANFORD GROUND-WATER SURVEILLANCE

1.0 100 AREA WELLS

1.1 100-B AREA WELLS^(a)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
199-B2-12	2			2			2				2	2	2				100-BC-5		
199-B2-13	2			2			2				2	2	2				100-BC-5		
199-B3-1	2			2			2				2	2	2				100-BC-5		
199-B3-2P	A		A				A		A		A	A	A		A				CAS
199-B3-46	2			2			2				2	2	2				100-BC-5		
199-B3-47	2			2			2				2	2	2				100-BC-5		
199-B4-1	2			2			2				2	2	2				100-BC-5		
199-B4-2			A			A	A	A	A		A	A	A		A	A			
199-B4-4	2			2			2				2	2	2			A	100-BC-5		
199-B4-5	2			2			2				2	2	2			A	100-BC-5		
199-B4-7	2			2			2				2	2	2				100-BC-5		
199-B4-8	2			2			2				2	2	2				100-BC-5		
199-B4-9	2			2			2				2	2	2			A	100-BC-5		
199-B5-1	2			2			2				2	2	2			A	100-BC-5		
199-B5-2	2			2			2				2	2	2			A	100-BC-5		
199-B8-6	2			2			2				2	2	2			A	100-BC-5		
199-B9-1	2			2			2				2	2	2			A	100-BC-5		
199-B9-2	2		A	2		A	2		A		A	2	A	2			100-BC-5		
199-B9-3	2			2			2				2	2	2				100-BC-5		

1.2 100-D AREA WELLS^(b)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
199-D2-5	2						2						2				100-HR-3		
199-D2-6	2						2						2				100-HR-3		
199-D5-12	2		A				A	2			A	2	A	2	A	A	100-HR-3		
199-D5-13		2		2	2		2		2				2					1000	
199-D5-14	2						2					2	2				100-HR-3		
199-D5-15	2						2					2	2				100-HR-3		
199-D5-16	2						2					2	2				100-HR-3		
199-D5-17	2		A				A	2			A		A	2	A	A	100-HR-3		
199-D5-18	2						2		A				A	2			100-HR-3		
199-D5-19	2						2						2				100-HR-3		
199-D5-20	2						2						2				100-HR-3		
199-D8-3	2		A				A	2			A	2	A	2	A	A	100-HR-3		
199-D8-4		2		2	2		2		2				2					1000	
199-D8-5		2		2	2		2		2				2					1000	
199-D8-53	2						2					2	2				100-HR-3		
199-D8-54A	2		A				A	2			A	2	A	2	A	A	100-HR-3		
199-D8-54B	2						2						2				100-HR-3		

1.0 100 AREA WELLS

1.3 100-F AREA WELLS^(c)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
199-D8-55	2						2				2		2				100-HR-3		
199-D8-6		2	2	2			2	2					2						100D
199-F1-2		2	2	2	2	2	2	2		2	2	A	2		A	2	2 100-FR-3		
199-F5-1		2	A	2	2	2	2	2		2	A	2	2	A	2		2 100-FR-3		
199-F5-3		2	A	2	2	2	2	2	A	2	A	2	2		A	2	A 2 100-FR-3		
199-F5-4		2	2	2	2	2	2	2		2	2	2	2			2	2 100-FR-3		
199-F5-42		2	2	2	2	2	2	2		2	2	2	2			2	2 100-FR-3		
199-F5-43A		2	2	2	2	2	2	2		2	2	2	2			2	2 100-FR-3		
199-F5-44		2	2	2	2	2	2	2		2	2	2	2			2	2 100-FR-3		
199-F5-45		2	A	2	2	2	2	2	A	2	A	2	A	2		A	2 100-FR-3		
199-F5-46		2	2	2	2	2	2	2		2	2	2	2			2	2 100-FR-3		
199-F5-47		2	2	2	2	2	2	2		2	2	2	2			2	2 100-FR-3		
199-F5-48		2	2	2	2	2	2	2		2	2	2	2			2	2 100-FR-3		
199-F5-6		2	2	2	2	2	2	2		2	2	2	2			2	2 100-FR-3		
199-F6-1		2	2	2	2	2	2	2		2	2	2	2			2	2 100-FR-3		
199-F7-1		2	A	2	2	2	2	2		2	A	2	2	A	2		A 2 100-FR-3		
199-F7-2		2	2	2	2	2	2	2		2	2	2	2			2	2 100-FR-3		
199-F7-3		2	A	2	2	2	2	2	A	2	A	2	A	2		A	2 100-FR-3		
199-F8-1			A								A		A			A			
199-F8-3		2	2	2	2	2	2	2		2	2	2	2			2	2 100-FR-3		
199-F8-4		2	2	2	2	2	2	2		2	2	2	2			2	2 100-FR-3		

1.4 100-H AREA WELLS^(d)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
199-H3-1	2						2						A				100-HR-3		
199-H3-2A		4	4	4				4	A				4	A		4		183H	
199-H3-2B							A		A			A	A						
199-H3-2C		4	4	4				4	A				4	A		4		183H	
199-H4-10	2						2										100-HR-3		
199-H4-11		4	4	4				4					4			4		183H	
199-H4-12A		4	4	4				4	A				4	A		4		183H	
199-H4-12B			A				A		A			A	A						
199-H4-12C		4	4	4				4	A				4	A		4		183H	
199-H4-13	2						2				2			2			100-HR-3		
199-H4-14		4	4	4				4				4				4		100-HR-3	183H
199-H4-15A	2	4	4	4			2	4			2	4	2			4		100-HR-3	183H
199-H4-15B																			
199-H4-16	2						2				2		A				100-HR-3		
199-H4-17	2	4	4	4			2	4				4	A			4		100-HR-3	183H

1.0 100 AREA WELLS

1.4 100-H AREA WELLS^(d) (contd)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
199-H4-18		4	4	4				4				4	A		4			183M	
199-H4-2	A		A				A												CAS
199-H4-3		12	12	12			8	12				4			4		100-HR-3	183M	
199-H4-4	A	Q 12	Q 12	Q 12		Q	SA 8	12	A			Q 4	Q		Q 4	A		183M	DOM
199-H4-45	2						2				2			2			100-HR-3		
199-H4-46	2						2				2			2			100-HR-3		
199-H4-47	2						2				2			2					
199-H4-48	2						2				2			2			100-HR-3		
199-H4-49	2						2				2			2			100-HR-3		
199-H4-5		4	4	4				4				4			4		100-HR-3	183M	
199-H4-6		4	4	4				4				4			4		100-HR-3	183M	
199-H4-7		4	4	4				4				4	A		4			183M	
199-H4-8		4	4	4				4				4	A		4			183M	
199-H4-9		12	12	12			8	12				4	A		4			183M	
199-H5-1A	2						2		A		2		A	2		A	100-HR-3		
199-H6-1	2		A				2		A		2	A	A	2		A	100-HR-3		

1.5 100-K AREA WELLS^(e)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes	
199-K-11	2	4	4	4	2	4	4	2			2	2	2	14		2	2	100-KR-4	OPER	
199-K-13	2	2	2	2	2	A	2	2	A		2	A	2	14		2	2	100-KR-4	OPER	
199-K-18	2	2	A	2	2	2	2	2	2	A	2	A	2	A	2		2	100-KR-4		
199-K-19	2	4	4	4	2	A	4	4	2	A	2	A	2	14		2	2	100-KR-4	OPER	
199-K-20	2	4	4	4	2	4	4	2			2	A	2	4		2	2	100-KR-4	OPER	
199-K-21	2	2	A	2	2	2	2	2			2	A	2	A	2		2	100-KR-4		
199-K-22	2	4	4	4	2	4	4	2			2	2	2	4		2	2	100-KR-4	OPER	
199-K-23	2	2	A	2	2	2	2	2	A		2	A	2	A	14		2	100-KR-4		
199-K-27	A	2	Q	6	Q	6	Q	6	2	A	A	2	Q	2	A	2	Q	14		DOM
199-K-28		4	4	4		4	4		A		A			12					OPER	
199-K-29		4	4	4		4	4		A		A			12		A			OPER	
199-K-30	2	6	6	6	2	6	6	2	A		2	A	2	A	14		2	100-KR-4	OPER	
199-K-31	2	2	2	2	2	2	2	2			2	2	2	2		2	2	100-KR-4		
199-K-32A	2	2	A	2	2	2	2	2			2	A	2	A	2	A	2	100-KR-4		
199-K-32B	2	2	2	2	2	A	2	2			2	A	2	A	2		A	2	100-KR-4	
199-K-33	2	2	2	2	2	A	2	2			2	A	2	A	2		A	2	100-KR-4	

1.0 100 AREA WELLS

1.5 100-K AREA WELLS^(e)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
199-K-34	2	2	A 2	2	2	A 2	2	2	A	2	A 2	A 2	A 2	A	2	A 2	100-KR-4		
199-K-35	2	2	A 2	2	2	A 2	2	2		2	A 2	A 2	A 2	A	2	2	100-KR-4		
199-K-36	2	2	A 2	2	2	A 2	2	2		2	A 2	A 2	A 2	A	2	A 2	100-KR-4		
199-K-37	2	2	2	2	2	2	2	2		2	2	2	2		2	2	100-KR-4		

1.6 100-N AREA WELLS^(f)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
199-N-14	A	Q	4	Q 4	Q 4	Q 4	A 4	A 4	A		Q 4	A	Q 4	Q				1301	DON
199-N-16		2	A 2	2	2	2	2	2			2		A 2			A	100-NR-2		
199-N-17		2		2	2	A 2					A 2		2				100-NR-2		
199-N-18																	100-NR-2		
199-N-19			A								A		A				100-NR-2		
199-N-2		4	4	4	4	4	4	4			4		4					1301	
199-N-20																	100-NR-2		
199-N-21		2	A	2	2	2	2	2			A 2		A 2				100-NR-2		
199-N-23		2	2	2	2	2	2	2			2		2				100-NR-2		
199-N-25		2	2	2	2	2	2	2			2		2				100-NR-2		
199-N-26		2	2	2	2	2	2	2			2		2				100-NR-2		
199-N-27		2	2	2	2	2	2	2			2		2					1325	
199-N-28			A			A	2	2	A		A	A	A	2				1325	
199-N-29		2	2	2	2	2	2	2			2		2						
199-N-3	SA	4	A 4	SA 4	4	SA 4	4	4	A		SA 4	A	SA 4				100-NR-2	1301	DON
199-N-31			A			A	3	3	3		A		A	3					
199-N-32		3	3	3	3	3	3	3			3		3				100-NR-2	1325	
199-N-33						A					A								
199-N-34		4	4	4	4	4	4	4			4		4					1301	
199-N-36			A			A	A	A			A		A						
199-N-41		2	2	2	2	2	2	2			2		2					1325	
199-N-43		2	2	2	2	2	2	2			2		2					1325	
199-N-49		2	A 2	2	2	2	2	2			A 2		A 2				100-NR-2		
199-N-5			A								A		A						
199-N-50		2	A 2	2	2	2	2	2			A 2		A 2				100-NR-2		
199-N-51		2	A 2	2	2	2	2	2			A 2		A 2				100-NR-2		
199-N-52			A								A		A						
199-N-54		2	A	2	2	A 2					A 2		A 2				100-NR-2		

1.0 100 AREA WELLS

1.6 100-N AREA WELLS^(f)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
199-N-57		4	4	4		4	4	4			4		4					1301	
199-N-59	4		4				4	4								4		1324	
199-N-64		2	A	2	2	2	A	2	A	2	A	2	A	2			100-MR-2	1301	
199-N-67		4	4	4	4	4	4	4	4	4	4	4	4	4				1301	
199-N-69		4	4	4	4	4	4	4	4	4	4	4	4	4				1301	
199-N-70		2	2	2	2	2	2	2	2	2	2	2	2	2				1325	
199-N-71	4		A	4			4	4					A			4		1324	
199-N-72	4		4				4	4	4	4						4		1324	
199-N-73	4		4				4	4					A			4		1324	
199-N-74		2	2	2	2	2	2	2	2	2	2	2	2	2				1325	
199-N-75		4	4	4	4	4	4	4	4	4	4	4	4	4				1301	
199-N-76	A	SA	4	SA	4	SA	4	A	4	4	SA	4	A	SA	4	A		1301	DOM
199-N-77	4		4				4	4	4	4						4		1324	
199-N-80		2	A	2	2	A	2	A	2	A	2	2	A	2	A	A	100-MR-2	1325	
199-N-81		3	3	3	3	3	3	3	3	3	3	3	3	3					

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- (a) Refer to Figure 1.1, 100-B Area Well Locations.
 - (b) Refer to Figure 1.2, 100-D Area Well Locations.
 - (c) Refer to Figure 1.3, 100-F Area Well Locations.
 - (d) Refer to Figure 1.4, 100-H Area Well Locations.
 - (e) Refer to Figure 1.5, 100-K Area Well Locations.
 - (f) Refer to Figure 1.6, 100-N Area Well Locations.

S9401003.11h

Figure 1.1. 100-B Area Well Locations

S9401003.12h

Figure 1.2. 100-D Area Well Locations

S9401003.10h

Figure 1.3. 100-F Area Well Locations

S9401003.9

Figure 1.4. 100-H Area Well Locations

S9401003.8h

Figure 1.5. 100-K Area Well Locations

S9401003.7h

Figure 1.6. 100-N Area Well Locations

2.0 200 AREA WELLS

2.1 200-EAST AREA WELLS^(a)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
299-E13-14			A										A						
299-E13-5			A			A						A	A						
299-E16-1	1	1	1	1					A			A	1						OPER
299-E16-2	1	1	1	1		1	1				1	A	1		1				OPER
299-E17-1			1			2		1	A		A	A	2			2	2		A-10
299-E17-12	2	2	2	2			2		1		A	A	2						OPER
299-E17-13	2	2	2	2			2		A			A	2						OPER
299-E17-14			1			2		2	A			A	2						A-36B
299-E17-15	4	5	4			2	4	6	A			A	6						A-29/A-36B
299-E17-16			1			2		2	A			A	2						A-36B
299-E17-17			1			2		2	A			A	2						A-36B
299-E17-18			1			2		2	A			A	2						A-36B
299-E17-19			1			2		1	A			A	2			2	2		A10
299-E17-2		A							A		A	A	A						
299-E17-20	4	5	4			2	4	5	A		A	A	6			2	2		A-29
299-E17-5			1			2		2	A		A	A	2						A-36B
299-E17-6			A			A							A						
299-E17-8			A						A		A	A	A						
299-E17-9			1			2		2	A			A	2						A36-B
299-E18-1	6	2	6			1	2	6					4			1			B-POND/2101-M
299-E18-2	2	2	2				2	2								1			2101-M POND
299-E18-3	2	2	2				2	2								1			2101-M POND
299-E18-4	2	2	2				2	2								1			2101-M POND
299-E23-1	1	1	1						A		A	A	1						OPER
299-E24-1		A							A		A		A						
299-E24-11		A							A				A						
299-E24-12		A							A				A						
299-E24-13	4	4	4			1	4		A			1	4		1				OPER
299-E24-16		1				2		1	A		A	A	2			2	2		A-10
299-E24-17		1				2		1	A		A	A	2			2	2		A-10
299-E24-18		1				2		1	A		A	A	2			2	2		A-10
299-E24-19	3	2	3			2	1	1	2	2	2	2	3		2				SST-A-AX/OPER
299-E24-2		1				2		1					2			2	2		A-10
299-E24-20	2	1	2			2	1	1	2	2	2	2	2		2				SST-A-AX
299-E24-4	1	1	1						A			A	1						OPER
299-E24-5	1	1	1						A				1						OPER
299-E24-7	1	1	1						A		A		1						OPER
299-E24-8		A							A				A						
299-E25-1000	4	4	4				4	4					4				1		GROUT
299-E25-11	9	9	9			1	9	8	A			1	9		1				A29/OPER
299-E25-17	1	1	1						A				1						OPER
299-E25-18	8	8	8				8	8					8						A29/OPER

2.0 200 AREA WELLS

2.1 200-EAST AREA WELLS^(a) (contd)

Well	Alk	Alpha	Anion	Beta	CN	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
299-E25-19		4	4	4			4	4					4					A29	
299-E25-20		8	9	8		2	8	9	A			A	10		2	2		A29/OPER	
299-E25-21		4	4	4			4	4	A				4					A29	
299-E25-22		2	2	2		2	2				2		2		2			OPER	
299-E25-23		A											A						
299-E25-24		2	2	2		2	2	A			2		2		2			OPER	
299-E25-25		2	1	2			2	2				2	2					GROUT	
299-E25-26		4	4	4			4	4	A				4					A-29	
299-E25-28		4	4	4			4	4	A				4					A-29	
299-E25-29P		2	1	2			2	2				2	2					GROUT	
299-E25-3		A						A				A	A						
299-E25-30P		2	1	2			2	2				2	2					GROUT	
299-E25-31		6	5	6			6	6	A			2	6					GROUT/A-29	
299-E25-32P		6	5	6			6	6				2	6					GROUT/A-29	
299-E25-33		3	2	3			2	2				2	3					GROUT/OPER	
299-E25-34		4	4	4			4	4	A			A	4					A-29	
299-E25-35		4	4	4			4	4				A	4					A-29	
299-E25-36		4	5	4		2	4	5	A			A	6		2	2		A-29	
299-E25-37		3	2	3			2	2	A			2	3					GROUT/OPER	
299-E25-38		2	1	2			2	2				2	2					GROUT	
299-E25-39		3	2	3			2	2	A			A	2	3				GROUT/OPER	
299-E25-40		2	1	2		2	1	1		2	2	2	2		2			SST-A-AX	
299-E25-41		3	2	3		2	1	1		2	2	2	3		2			SST-A-AX	
299-E25-42		4	4	4			4	4	A				4					A-29	
299-E25-43		4	4	4			4	4	A				4					A-29	
299-E25-44		2	1	2			2	2				2	2					GROUT	
299-E25-45		2	1	2			2	2				2	2					GROUT	
299-E25-46		2	1	2		2	1	1		2	2	2	2		2			SST-A-AX	
299-E25-47		4	4	4			4	4	A			A	4					A-29	
299-E25-48		4	4	4			4	4	A				4					A-29	
299-E25-49		4	4	4			4	4				4	4				1	GROUT	
299-E25-50		4	4	4			4	4				4	4				1	GROUT	
299-E25-6		2	2	2		2	2		A		2		2		2		2	OPER	
299-E25-9		1	1	1		1	1		A		1	A	1		1		1	LERF	
299-E26-10	2		2				2	2	A				3				3	LERF	
299-E26-11	2	1	3	1			2	2					4				3	LERF	
299-E26-12		4	4	4			4	4	A				4					A-29	
299-E26-13		4	4	4			4	4	A				4					A-29	
299-E26-2		1	1	1									1					OPER	
299-E26-4		A						A					A						
299-E26-6		2	2	2			2		A			A	2					OPER	
299-E26-8		1	A	1	1								A	1				OPER	CAS

2.0 200 AREA WELLS

2.1 200-EAST AREA WELLS^(a) (contd)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
299-E26-9	1	1	2	1			1	1					3				2	LERF	
299-E27-10		2	2	2	2		2	2	A			A	2		2		2	LLWMA2	
299-E27-11		2	3	2	2		2	4		2			4		2	2	4	B-63/LLWMA2	
299-E27-12		2	1	2		2	1	1	2	2	2	2	2		2			SST-C	
299-E27-13		2	1	2		2	1	1	2	2	2	2	2		2			SST-C	
299-E27-14		3	2	3		2	1	1	2	2	2	2	3		2			SST-C/OPER	
299-E27-15		3	2	3		2	1	1	2	2	2	2	3		2			SST-C/OPER	
299-E27-16			1					2	2				2			2	2	B-63	
299-E27-17		2	3	2	2		2	4	2				4		2	2	4	B-63/LLWMA2	
299-E27-18			1					2	2			A	2			2	2	B-63	
299-E27-19			1					2	2				2			2	2	B-63	
299-E27-7		2	1	2		2	1	1	2	2	2	2	2		2			SST-C	
299-E27-8		2	3	2	2		2	4	2				4		2	2	4	B-63/LLWMA2	
299-E27-9		2	3	2	2		2	4	2				4		2	2	4	B-63/LLWMA2	
299-E28-1		1	A	1	1	A			A	A	A		A	1	A		A	OPER	
299-E28-10			A			A			A	A	A		A		A				
299-E28-12		1	1	1									1		A			OPER	
299-E28-13			A						A				A						
299-E28-17			A			A			A	A	A	A	A		A				
299-E28-18		2	2	2		1	2					1	2		1			OPER	
299-E28-2		1	A	1	1	A			A	A	A	A	A	1	A			OPER	
299-E28-21		2	2	2		1	2		A			1	2		1			OPER	
299-E28-23		1	A	1	1	A	1		A	A	1	A	1		A				
299-E28-24		1	A	1	1	A	1		A	A	1	A	1		A				
299-E28-25		1	A	1	1	A	1		A	A	1	A	1		A				
299-E28-26		4	4	4			4	4	A			A	4		4			LLWMA-1	
299-E28-27		4	4	4		A	4	4	A			A	4		4			LLWMA-1	
299-E28-28		4	4	4			4	4				A	4		4			LLWMA-1	
299-E28-5		1	A	1	1	A			A	A	A	A	A	1		A		OPER	
299-E28-6		1	1	1		A			A	A	A	A	A	1		A		OPER	
299-E28-7			A			A			A	A	A	A	A		A				
299-E28-8						A			A	A	A		A		A				
299-E28-9		1	1	1									1					OPER	
299-E32-10		4	4	4			4	4	A				4		4			LLWMA-1	
299-E32-2		6	6	6	2	2	6	6	A	2	2	A	2	6	6		200-BP-5	LLWMA-1	
299-E32-3		4	4	4			4	4					4		4			LLWMA-1	
299-E32-4		8	4	8		1	4	8	A			A	8		4			B-POND/LLWMA1	
299-E32-5		5	5	5			4	4	A			A	5		4			LLWMA-1	
299-E32-6		4	4	4			4	4					4		4			LLWMA-1	
299-E32-7		4	4	4			4	4					4		4			LLWMA-1	
299-E32-8		4	4	4			4	4	A				4		4			LLWMA-1	
299-E32-9		4	4	4			4	4					4		4			LLWMA-1	

2.0 200 AREA WELLS

2.1 200-EAST AREA WELLS^(a) (contd)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
299-E33-1		2	A	2	2	2	2	2	A	2	2	2	A	2	2		200-BP-5		
299-E33-10			A						A			A	A						
299-E33-12		2	A	2	2	A	2	2	2	2	2	A	2	A	2	2	200-BP-5		CAS
299-E33-13		2		2	2	2	2	2	2	2	2	2	2	2	2	2	200-BP-5		
299-E33-26		2		2	2	2	2	2	2	2	2	2	2	2	2	2	200-BP-5		
299-E33-28		6	6	6	2	2	2	6	6	2	2	2	2	6	6	6	200-BP-5	LLMA-1	
299-E33-29		6	6	6	2	2	2	6	6	2	2	2	2	6	6	6	200-BP-5	LLMA-1	
299-E33-3		2	A	2	2	2	2	2	2	2	2	A	2	A	2	2	200-BP-5		
299-E33-30		6	6	6	2	2	2	6	6	A	2	2	2	6	6	6	200-BP-5	LLMA-1	
299-E33-31		4	3	4	2	4	3	3	2	4	4	4	4	4	4	4	200-BP-5	SST-B-BY-BX	
299-E33-32		4	3	4	2	4	3	3	2	4	4	4	4	4	4	4	200-BP-5	SST-B-BY-BX	
299-E33-33		2	2	2		2	1	3	4	2	2	2	2	4	2	2	2	B-63/SST-B-BY-BX	
299-E33-34		4	4	4			4	4	A					4	4	4		LLMA-1	
299-E33-35		4	4	4			4	4	A					4	4	4		LLMA-1	
299-E33-36		2	2	2		2	1	3	4	2	2	2	2	4	2	2	2	B-63/SST-B-BY-BX	
299-E33-37		1	2	1				2	2					3		2	2	B-63	
299-E33-39		2	2	2	2	2	2	2	2	2	2	2	2	2	2		200-BP-5		
299-E33-41		2	1	2		2	1	1	2	2	2	2	2	2	2	2		SST-B-BY-BX	
299-E33-42		2	1	2		2	1	1	2	2	2	2	2	2	2	2		SST-B-BY-BX	
299-E33-43		2	1	2		2	1	1	2	2	2	2	2	2	2	2		SST-B-BY-BX	
299-E33-5		2	2	2	2	2	2	2	A	2	2	2	2	2	2		200-BP-5		
299-E33-7		2	2	2	2	2	2	2	2	2	2	2	2	2	2		200-BP-5		
299-E34-10		2	3	2	2		2	4	2					4	2	2	4	B-63/LLMA2	
299-E34-11		2	2	2	2		2	2	A			A		2	2	2	2	LLMA2	
299-E34-12		2	2	2	2		2	2	2					2	2	2	2	LLMA2	
299-E34-2		2	2	2	2		2	2	A			A		2	2	2	2	LLMA2	
299-E34-3		2	2	2	2		2	2	A					2	2	2	2	LLMA2	
299-E34-5		4	4	4	4	2	4	4	A	2	2	2	2	4	4	2	200-BP-5	LLMA2	
299-E34-7		3	3	3	2		2	2	A					3	2	2	2	LLMA2	
299-E34-8		1	2	1				2	2	2				3		2	2	B-63	
299-E34-9		2	2	2	2		2	2	A					2	2	2	2	LLMA2	
299-E35-2	2		2				2	2						3			3	LERF	

2.0 200 AREA WELLS

2.2 200-WEST AREA WELLS^(b)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes	
299-W10-1		1	1	1								A	1				1	OPER		
299-W10-13		4	4	4			4	4	A			A	4				4	LLWMA3		
299-W10-14		4	4	4			4	4					4				4	LLWMA3		
299-W10-15	2	4	4	4		4	4	4	4	4	4	4	4		4		2	SST-T		
299-W10-16		5	5	5		4	4	4	4	4	4	4	5		4		1	SST-T		
299-W10-17	2	4	4	4		4	4	4	4	4	4	4	4		4		2	SST-TX-TY		
299-W10-18	2	4	4	4		4	4	4	4	4	4	4	4		4		2	SST-TX-TY		
299-W10-19		4	4	4			4	4	A			A	4				4	LLWMA3		
299-W10-20		4	4	4	1		4	4					4		1		4	LLBG		
299-W10-21		4	4	4	1		4	4					4		1		4	LLBG		
299-W10-4		1	1	1									1				1	OPER		
299-W10-5		1	1	1								A	1				1	OPER		
299-W10-9		A					A					A	A			A				
299-W11-10		1	1	1			A		A			A	1		A		1	OPER		
299-W11-14		1	1	1			A		A			A	1		A		1	OPER		
299-W11-18		1	1	1			A						1				1	OPER		
299-W11-23		1	1	1									1				1	OPER		
299-W11-27	2	4	4	4		4	4	4	4	4	4	4	4		4		2	SST-T		
299-W11-28		4	4	4		4	4	4	4	4	4	4	4		4		A	SST-T		
299-W11-3		1	1	1			A					A	1		A		1	OPER		
299-W11-31		2	2	2	2			2	2	A		A	2		2		2	LLWMA5		
299-W11-6		1	1	1			A					A	1				1	OPER		
299-W11-7		1	1	1			A					A	1		A		1	OPER		
299-W12-1		1	1	1					A			A	1		A		1	OPER		
299-W14-12	2	4	4	4		4	4	4	4	4	4	4	4		4		2	SST-TX-TY		
299-W14-2		1	1	1								A	1		A		1	OPER		
299-W14-6		1	1	1									1				1	OPER		
299-W15-10		A					A		A	A			A		A		A			
299-W15-12		1	1	1					A			A	1				1	OPER		
299-W15-15		1	1	1	1		1	1				A	1		1		A	LLWMA4		
299-W15-16		1	1	1	1		1	1				A	1		1		3	LLWMA4		
299-W15-17		1	1	1	1		1	1					1		1		1	LLWMA4		
299-W15-18		1	1	1	1		1	1	A			A	1		1		1	LLWMA4		
299-W15-19		2	2	2	1		1	1	A			A	2		1		2	LLWMA4		
299-W15-2		1	1	1									1				1	OPER		
299-W15-20		1	1	1	1		1	1					1		1		1	LLWMA4		
299-W15-22	2	5	5	5		4	4	4	4	4	4	4	5		4		3	SST-TX-TY		
299-W15-23		1	1	1	1		1	1					1		1		1	LLWMA4		
299-W15-24		2	2	2	1		1	1					2		1		2	LLWMA4		
299-W15-4		1	1	1						A		A	1		A		1	OPER		
299-W15-6		A			A	A			A	A		A	A		A		A			
299-W15-7		1	A	1	1	SA	SA		A	SA		A	A	1	A		A	1	OPER	

2.0 200 AREA WELLS

2.2 200-WEST AREA WELLS^(b) (contd)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	129I	Pu	90Sr	99Tc	3H	Lo 3H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
299-W18-17		4	4	4		2	4				2			4	2		4	OPER	
299-W18-20		5	5	5		3	5				3			5	3		5	OPER	
299-W18-21		1	1	1	1		1	1						1	1		1	LLUMA4	
299-W18-22		2	2	2	1		1	1						2	1		2	LLUMA4/OPER	
299-W18-23		1	1	1	1		1	1						1	1		1	LLUMA4	
299-W18-24		1	1	1	1		1	1						1	1		1	LLUMA4	
299-W18-25		3	5	3		2	1	1	2	2	2	2		3	2		3	SST-U/OPER	
299-W18-26		1	1	1	1		1	1						1	1		1	LLUMA4	
299-W18-27		1	1	1	1		1	1						1	1		1	LLUMA4	
299-W18-28		1	1	1	1		1	1						1	1		1	LLUMA4	
299-W18-29		5	5	5	1	2	5	1		2				5	3		5	LLUMA4/OPER	
299-W18-30		2	4	2		2	1	1	2	2	2	2		2	2		2	SST-U	
299-W18-31		2	4	2		2	1	1	2	2	2	2		2	2			SST-U	
299-W18-32		1	1	1	1		1	1						1	1		1	LLUMA4	
299-W18-4			A		A	A			A								A		
299-W18-5			A		A							A	A				A		
299-W19-1		4	4	4		1	4	1			1	A		4	4		4	OPER	
299-W19-10		1	1	1			1					A		1	1		1	OPER	
299-W19-11		1	1	1		A	1		A			A		1	1		1	OPER	
299-W19-12		1	1	1					A			A		1	A		1	SST-U	
299-W19-13			A						A			A			A				
299-W19-14			A						A			A			A		A		
299-W19-15		1	1	1			1		A			A		1	1		1	OPER	
299-W19-16		1	1	1			1		A			A		1	1		1	OPER	
299-W19-17		1	1	1			1		A			A		1	1		1	OPER	
299-W19-18		2	2	2			1		A			A		2	1		2	OPER	
299-W19-19		4	4	4			4	2	A			A		4	4		4	OPER	
299-W19-2		2	2	2			1		A			A		2	A	1	2	OPER	
299-W19-20		4	4	4			4	2	A			A		4	4		4	OPER	
299-W19-21		4	4	4		1	4	1			1			4	4		4	OPER	
299-W19-23		4	4	4			4	2	A			A		4	4		4	OPER	
299-W19-24		4	4	4			4	2	A			A		4	4		4	OPER	
299-W19-25		4	4	4			4	2	A			A		4	4		4	OPER	
299-W19-26		4	4	4			4	2						4	4		4	OPER	
299-W19-27		4	4	4		1	4	1	A		1	A		4	4		4	OPER	
299-W19-28		2	2	2	A	A	2		A		A		2	2	2		2	OPER	
299-W19-29		3	3	3		A	2		A		A		2	3	2		3	OPER	
299-W19-3		2	2	2		A	1		A		A		A	2	1		2	OPER	
299-W19-30			A						A			A			A		A		
299-W19-31		3	5	3		2	1	1	2	2	2	2		3	2		1	SST-U/OPER	
299-W19-32		2	4	2		2	1	1	2	2	2	2		2	2		2	SST-U	
299-W19-4		1	1	1			A		A			A		1	A		1	OPER	

2.0 200 AREA WELLS

2.2 200-WEST AREA WELLS^(b) (contd)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	129I	Pu	90Sr	99Tc	3H	Lo 3H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes	
299-W19-9		1	1	1			1						1		1		1	OPER		
299-W19-91		5	5	5		2	5	2			2		5		5		5	OPER		
299-W19-92		5	5	5		2	5	2	A		2	A	5		5		5	OPER		
299-W19-93		5	5	5		2	5	2			2		5		5		5	OPER		
299-W21-1			A		A				A			A	A		A		A			
299-W22-10			A			A	A		A		A	A	A				A			
299-W22-12		1	1	1			A		A		A	A	1				1	OPER		
299-W22-2			A				A		A	A	A		A				A			
299-W22-20	A	Q	1	Q	1	Q	A		A			A	Q	1	Q		A	1	OPER	DOM
299-W22-21		1	A	1	1		A		A			A	A	1	A		A	1	OPER	
299-W22-22		4	4	4			4	4	4		4	4	4	4	A	4	4	U-12		
299-W22-23		4	4	4			4	4	4		4	4	4	4		4	4	U-12		
299-W22-39		3	2	3		2	1	1	2	2	2	2	3		2		1	SST-S-SX/OPER		
299-W22-40		5	5	5		A	4	4	4		4	4	5		A	4	5	U-12/OPER		
299-W22-41		4	4	4		A	4	4	4		4	4	4			4	4	U-12		
299-W22-42		4	4	4			4	4	4		4	4	4			4	4	U-12		
299-W22-43		4	4	4			4	4	4		4	4	4			4	4	U-12		
299-W22-44		2	1	2		2	1	1	2	2	2	2	2		2		A	SST-S-SX		
299-W22-45		2	1	2		2	1	1	2	2	2	2	2		2		A	SST		
299-W22-46		2	1	2		2	1	1	2	2	2	2	2		2		A	SST		
299-W22-9		1	1	1		A	A		A		A	A	1		A		1	OPER		
299-W23-10			A									A	A		A		A			
299-W23-11		1	1	1									1				1	OPER		
299-W23-13		2	1	2		2	1	1	2	2	2	2	2		2		A	SST-S-SX		
299-W23-14		3	2	3		2	1	1	2	2	2	2	3		2		1	SST-S-SX		
299-W23-15		2	1	2		2	1	1	2	2	2	2	2		2		A	SST-S-SX		
299-W23-2			A			A			A	A	A	A	A		A		A			
299-W23-3			A			A			A	A	A	A	A		A		A			
299-W23-4			A									A	A		A		A			
299-W23-7			A			A			A	A		A	A		A		A			
299-W23-9		1	1	1					A			A	1		A		1	OPER		
299-W26-10		2	1	2			1	1	A		A		1	1	2		1	S-10		
299-W26-12		2	1	2			1	1	A		A		1	1	2		1	S-10		
299-W26-6		1	1	1									1				1	OPER		
299-W26-7		2	1	2			1	1	A		A		1	1	2		1	S-10		
299-W26-8		2	1	2		A	1	1			A		1	1	2		1	S-10		
299-W26-9		2	1	2			1	1	A		A		1	1	2		1	S-10		
299-W27-1		4	4	4		4	4				4		4	4	4		4	OPER		
299-W27-2		2	1	2			1	1				1	1		2		1	S-10		
299-W6-1		1	1	1					A			A	1				1	OPER		
299-W6-10		2	2	2	2		2	2	A			A	2		2		2	LLWNA5		
299-W6-11		2	2	2	2		2	2					2		2		2	LLWNA5		

2.0 200 AREA WELLS

2.2 200-WEST AREA WELLS^(b) (contd)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H U	U-iso	VOM	CERCLA	RCRA/OPER	Notes
299-U6-12		2	2	2	2		2	2					2	2	2		LLMA5		
299-U6-2		7	7	7	2		6	6					7	2	7		LLMA3/5		
299-U6-3		2	2	2	2		2	2					2	2	2		LLMA5		
299-U6-4		2	2	2	2		2	2					2	2	2		LLMA5		
299-U6-5		2	2	2	2	A	2	2	A		A	A	2	2	2		LLMA5		
299-U6-6		2	2	2	2		2	2					2	2	2		LLMA5		
299-U6-7		2	2	2	2		2	2					2	2	2		LLMA5		
299-U6-8		2	2	2	2		2	2					2	2	2		LLMA5		
299-U6-9		2	2	2	2		2	2	A			A	2	2	2		LLMA5		
299-U7-1		4	4	4			4	4					4		4		LLMA3		
299-U7-10		6	6	6	2		6	6					6	2	6		LLMA3/5		
299-U7-11		4	4	4			4	4					4		4		LLMA3		
299-U7-12		4	4	4			4	4					4		4		LLMA3		
299-U7-2		4	4	4			4	4					4		4		LLMA3		
299-U7-3		4	4	4			4	4					4		4		LLMA3		
299-U7-4		4	4	4			4	4	A			A	4		4		LLMA3		
299-U7-5		4	4	4	A		4	4					4		4		LLMA3		
299-U7-6		5	5	5			4	4	A			A	5		5		LLMA3		
299-U7-7		4	4	4			4	4					4		4		LLMA3		
299-U7-8		4	4	4			4	4	A			A	4		4		LLMA3		
299-U7-9		4	4	4			4	4					4		4		LLMA3		
299-U8-1		4	4	4			4	4					4		4		LLMA3		
299-U9-1		4	4	4			4	4					4		4		LLMA3		

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- (a) Refer to Figure 2.1, 200-East Area Well Locations.
 (b) Refer to Figure 2.2, 200-West Area Well Locations.

S9401003.4

Figure 2.1. 200-East Area Well Locations

S9401003.3

Figure 2.2. 200-West Area Well Locations

3.0 1100, 3000, AND 300 AREA WELLS

3.1 1100 AND 3000 AREA WELLS^(a)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H	U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
1199-34-15A			A	A								A		A			A			DWS
1199-39-15			A	A			A							A			A			DWS
1199-39-16C			A	A			A							A			A			DWS
1199-39-16E			A			A	A							A	A		A			DWS
1199-40-15			A			A	A							A	A		A			DWS
1199-40-168			A			A	A					A		A	A		A			DWS
3099-42-16			A			A	A							A	A		A			DWS

3.2 300 AREA WELLS^(b)

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Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H	U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
399-1-10A	1	1	A	1			1	1					1		1		1		300-TRENCH	
399-1-10B			A				A						A		A		A			
399-1-11	1	1	A	1			1	1					1		1		1		300-TRENCH	
399-1-12	1	1	A	1			1	1					1		1		1		300-TRENCH	
399-1-13A			A										A							
399-1-13B			A				A	A					A		A		A			
399-1-14A	1	1	A	1			1	1					1		1		1		300-TRENCH	
399-1-14B			A				A						A		A		A			
399-1-15			A										A		A					
399-1-16A	1	1	A	1			1	1					1		1		1		300-TRENCH	
399-1-16B	1	1		1			1	1					1		1		1		300-TRENCH	
399-1-16C															2	2	2	300-FF-5		
399-1-17A	A	1	Q	1	Q	2	Q	1	A		2	A	Q	1	Q	3	2	3	300-TRENCH	DON
399-1-17B	1	1		1			1	1					1		1		1		300-TRENCH	
399-1-18A	1	1	A	1			1	1					1		1		1		300-TRENCH	
399-1-19			A										A		A		A			
399-1-2			A										A		A		A			
399-1-21A			A				A	A				A	A		A	2	2	A	2	300-FF-5
399-1-21B			A				A	A					A		A		A			
399-1-3			A										A		A		A			
399-1-4			A										A		A		A			
399-1-5															2	2	2	300-FF-5		
399-1-6			A									A	A		A		A			
399-1-7			A												2	2	2	300-FF-5		
399-1-8			A										A		A		A			

3.0 1100, 3000, AND 300 AREA WELLS

3.2 300 AREA WELLS^(b)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	129I	Pu	90Sr	99Tc	3H	Lo 3H	U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
399-1-9			A										A		A		A			
399-2-1	1	1	A	1			1	1					A	1	A	1	A	1		300-TRENCH
399-2-2			A			A							A		A	2	2	A	2	300-FF-5
399-2-3			A			A							A		A		A			
399-3-1			A										A		A		A			
399-3-10	1	1	A	1			1	1					A	1		1		1		300-TRENCH
399-3-11			A			A					A	A	A		A	2	2	A	2	300-FF-5
399-3-12			A										A		A	2	2	A	2	300-FF-5
399-3-2			A											A	A	2	2	A	2	300-FF-5
399-3-3			A										A		A		A			
399-3-6			SA										SA		SA		SA			
399-3-7			A										A		A		A			
399-3-9			A									A	A		A		A			
399-4-1			A									A	SA		A		A			
399-4-10			A										A		A	2	2	A	2	300-FF-5
399-4-11			A								A		A		A		A			
399-4-12			A									A	A		A	2	2	A	2	300-FF-5
399-4-7			A										A			2	2	A	2	300-FF-5
399-4-9			A										A		A		A			
399-5-1			A									A	A		A		A			
399-5-2	A		A			A	A		A		A	A			A		A			CAS
399-8-1			A											A	A		A			
399-8-3			A										A							
399-8-5A			A				A	A					A		A		A			
399-8-5B			A				A	A					A		A		A			
399-8-5C			A				A	A					A		A		A			

(a) Refer to Figure 3.1, 1100 and 3000 Area Well Locations.

(b) Refer to Figure 3.2, 300 Area Well Locations.

S9401003.5

Figure 3.1. 1100 and 3000 Area Well Locations

S9401003.1

Figure 3.2. 300 Area Well Locations

4.0 400 AREA WELLS

4.1 400 AREA WELLS^(a)

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
499-S0-7			A						A			A	M			A			DWS
499-S0-8			A										M			A			DWS
499-S1-8A			A						A			A	A						
499-S1-8J	A	A	A	A			A		A		A	A	M		A	A	A		DWS/DOH

(a) Refer to Figure 4.1, 400 Area Well Locations.

S9401003.2

Figure 4.1. 400 Area Well Locations

5.0 600 AREA WELLS^{(a)(b)}

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	129I	Pu	90Sr	99Tc	3H	Lo 3H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
699-1-18		4	4	4				4	A			A	4					OPER	
699-10-54A			A										A						
699-10-E12			A									A	A			A			
699-101-48B			SA				SA	SA			A	A	SA		A				
699-13-1C			A										A						CAS
699-14-38			A					A					A						
699-15-E3A			A										A						
699-17-5	A	SA	SA	SA		SA	A	A	A			A	SA						DOH
699-17-70			A						A			A		A					
699-19-43			A										A						
699-19-58			A										A						
699-19-88			A										A						
699-2-3		4	4	4				4						4				OPER	
699-2-7		4	4	4				4						4				OPER	
699-20-20		Q	Q	Q		Q	A	A	A			A	Q						DOH
699-20-E12			A									A	A						
699-20-E12P			A									A	A						CAS
699-20-E5A			A									A	A						
699-20-E5Q			A									A	A						CAS
699-21-6			A						A			A	A						
699-22-23			A						A			A	A						
699-22-35	4	4	4	4				4					A	4		4		SWL	
699-22-70			A									A	A						CAS
699-23-34A	2	2	2	2				2	A			A	A	2		2		SWL	
699-23-34B	4	4	4	4				4	A			A	A	4		4		SWL	
699-24-1P			A										A					SWL	CAS
699-24-33	4	4	4	4				4						4		4		SWL	
699-24-34A	4	4	4	4				4						4		4		SWL	
699-24-34B	4	4	4	4				4						4		4		SWL	
699-24-34C	4	4	4	4				4						4		4		SWL	
699-24-35	4	4	4	4				4						4		4		SWL	
699-24-46			A										A						
699-25-33A	2	2	2	2				2	2					2		2		NRDWL	
699-25-34A	2	2	2	2				2	2					2		2		NRDWL	
699-25-34B	2	2	2	2				2	2	A		A		2		2		NRDWL	
699-25-34C	4	4	4	4				4						4		4		SWL	
699-25-34D	2	2	2	2				2	2	A		A		2		2		NRDWL	
699-25-70			A						A			A	A						
699-26-15A			A						A			A	SA						
699-26-33	2	2	2	2				2	2					2		2		NRDWL	
699-26-34A	2	2	2	2				2	2					2		2		NRDWL	
699-26-34B	2	2	2	2				2	2					2		2		NRDWL	
699-26-35A	6	6	6	6				6	2					6		6		NRDWL	
699-26-35C	2	2	2	2				2	2					2		2		NRDWL	
699-27-8			A						A			A	SA						
699-28-40			A						A			A	A						

5.0 600 AREA WELLS

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	129I	Pu	90Sr	99Tc	3H	Lo 3H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
699-29-4			A										A						
699-29-78			A						A			A	A						
699-3-45			A										A						
699-31-31	A	A	A	A		A			A			A	A			A			DOH
699-31-31P	A		A			A			A			A	A			A			CAS
699-31-53B			A			A			A		A		A		A				
699-32-43	A	SA	SA	SA		SA	A	A	A		A	A	SA			A			DOH
699-32-62			1	1	1									1				OPER	
699-32-70B			A			A			A			A	SA						
699-32-72A			A						A			A	A		A				
699-32-77	A	A	A	A					A			A	A						DOH
699-33-14			A										A						
699-33-42			A						A				SA						
699-33-56			A			A			A		A		A		A				
699-33-6			A						A			A	A						
699-34-41B			A										A						
699-34-42			1	A	1	1			A			A	A	1				OPER	
699-34-51			A			A			A		A		A		A				
699-35-66A			A						A			A	SA						
699-35-70	A	SA	1	SA	1	SA	A	A	A		A	A	SA	1	SA			OPER	DOH
699-35-78A			A						A			A	SA		A		A		
699-35-9			A						A			A	SA						
699-36-46Q			A						A		A	A	A						CAS
699-36-61A			1	A	1	1			A			A	A	1				OPER	
699-36-61B			A						A			A	A						
699-36-93			A										A						
699-37-43			1	A	1	1			A			A	A	1				OPER	
699-37-82A			1	A	1	1							SA	1				OPER	
699-37-E4			A									A	A						
699-38-15			A						A			A	SA						
699-38-65	A	SA	SA	SA		SA	A	A	A			A	SA		SA				DOH
699-38-70			1	A	1	1	A	A	A			A	SA	1	SA		SA	OPER	
699-39-0			A									A	SA						
699-39-39			A										SA						
699-39-79			1	A	1	1			A			A	A	1		A		OPER	
699-40-1			A										A						
699-40-20			A										A						
699-40-33A	A	A	A	A		A	A	A	A			A	A						DOH
699-40-36			4		4		1		4					4				B-POND	
699-40-39			4		4		1		4					4				B-POND	
699-40-40B			4		4		1		4					4				B-POND	
699-40-62			1	A	1	1			A			A	SA	1				OPER	
699-40-72			1	1	1									1				OPER	
699-40-40A			4		4		1		4					4				B-POND	

5.0 600 AREA WELLS

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	129I	Pu	90Sr	99Tc	3H	Lo 3H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
699-41-1	A	Q	Q	Q		Q	A	A	A		Q	Q	Q						DOM
699-41-23			A						A			A	SA						
699-41-35		4		4		1		4					4					B-POND	
699-41-40		4	A	4		1	A	4	A			A				A		B-POND	
699-41-42		4		4		1		4					4					B-POND	
699-42-12A			SA						A			A	SA						
699-42-2			A										A						
699-42-37		4		4		1		4					4					B-POND	
699-42-39A		4	A	4		1		4	A			A	4					B-POND	
699-42-39B		4	A	4		1	A	4	A			A	4					B-POND	
699-42-40A		4		4		1		4					4					B-POND	
699-42-40C		4	A	4		1		4	A			A	A	4				B-POND	CAS
699-42-41		4		4		1		4					4					B-POND	
699-42-42A		1	1	1									1					OPER	
699-42-42B		4	A	4		1		4	A			A	4					B-POND	
699-42-E9B	A	SA	SA	SA		SA	A	A				SA	SA		SA		A		DOM/CAS
699-43-3			A						A			A	A						
699-43-40		4		4		1		4					4					B-POND	
699-43-41E		4	A	4		1	A	4	A			A	4					B-POND/A-29	
699-43-41F		4		4		1		4					4					B-POND	
699-43-41G		4		4		1		4					4					B-POND	
699-43-42J		4		4		1		4					4					B-POND	
699-43-43		8	A	4	8	1	4	8	A			A	8					B-POND	
699-43-45		8		4	8	1	4	8					8					B-POND/A-29	
699-43-9			A						A			A	A						
699-44-39B		4		4		1		4					4					B-POND	
699-44-4													A						
699-44-42		4		4		1		4					4					B-POND	
699-44-43B		4		4		1		4					4					B-POND	
699-44-64		1	A	1	1	SA	A		A			A	SA	1	A			OPER	
699-45-2			A						A			A	A						
699-45-42		1		1	1				A			A		1				OPER	
699-45-69A		1		1	1	A			A			A		1	A		A	OPER	
699-46-21B			A										A						
699-46-4			A						A			A	A						
699-47-35A			A								A		A						
699-47-46A			A						A			A	A						
699-47-5													A						
699-47-50	A		A				A		A			A	A				200-BP-5		CAS
699-47-60			A		A	A							A				200-BP-5		
699-48-18			A						A			A	A						
699-48-7A													A						
699-48-71		1	A	1	1							A	SA	1	A			OPER	
699-48-77A		4		4		1		4					4					B-POND	
699-48-50																	200-BP-5		

5.0 600 AREA WELLS

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	129I	Pu	90Sr	99Tc	3H	Lo 3H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
699-49-100C	A	SA	A	SA		SA	A	A					SA		SA				DOH
699-49-13E													A						
699-49-28			A										A						
699-49-55A			A		SA	SA			A				SA				200-BP-5		
699-49-55B			A		A	A							A				200-BP-5		CAS
699-49-57A			A		SA	SA			A			A	SA				200-BP-5		
699-49-57B																	200-BP-5		CAS
699-49-79			1	A	1	1							A	1				OPER	
699-50-45	A		A				A												CAS
699-50-48B	A		A				A												CAS
699-50-53A	A	SA	SA	SA	SA	SA	A	A	SA	SA		SA	SA		SA		200-BP-5		DOH
699-50-53B			A		A	A							A				200-BP-5		CAS
699-50-85			A										A						
699-51-46	A		A				A												CAS
699-51-63			A		A	A			A			A	A						
699-51-75			A			A	A						A			A			
699-52-19			A										A						
699-52-46A	A		1	A	1	1						A		1				OPER	CAS
699-52-48	A		A									A							CAS
699-52-54																	200-BP-5		
699-52-57																	200-BP-5		
699-53-47A			A								A		A						
699-53-47B			1	1	1			1				1		1				OPER	
699-53-48A			1	A	1	1	A				A		A	1				OPER	
699-53-48B			1	1	1			1				1		1				OPER	
699-53-50	A		1	A	1	1		A						1				OPER	CAS
699-53-55A																	200-BP-5		
699-53-55B																	200-BP-5		
699-53-55C																	200-BP-5		
699-54-34			A										A						
699-54-45B			1	1	1									1				OPER	
699-54-48			1	A	1	1					A		A	1				OPER	
699-54-49			2	2	2	A		1			A	1		2				OPER	
699-54-57			A		A	A							A				200-BP-5		CAS
699-55-40													A						
699-55-50C			2	2	2	A		1				1	A	2				OPER	
699-55-55																	200-BP-5		
699-55-57			A		A	A	A		A			A	A			A	200-BP-5		
699-55-60A			1	1	1	A	A		A					1				OPER	
699-55-76			A			A							A						
699-55-89			A										A						
699-56-53	A		1	A	1	1		A						1				OPER	CAS
699-57-29A			A										A			A			
699-57-59																	200-BP-5		
699-56-43	A		1	A	1	1		A				A		1				OPER	CAS

5.0 600 AREA WELLS

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Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
699-58-24			A										A						
699-58-48		1	1	1			1				1		1					OPER	
699-59-55		1	1	1									1					OPER	
699-59-58		1	A	1	1	A			A			A	A	1			200-BP-5	OPER	
699-60-57			A										SA				200-BP-5	OPER	
699-60-60																	200-BP-5		
699-61-37			A										A						
699-61-41			A										A						
699-61-62			SA			SA			A			SA	SA						
699-61-66			A			A			A			A	A						
699-62-31			A										A						
699-62-43F			SA				A						SA			A			
699-63-25A			A										A						
699-63-55			A						A			A	A						
699-63-58			SA			A			A			A	SA						
699-63-90		2	A		2			2	2		2	2	A	2			100-BC-5		
699-64-27			A										A			A			
699-64-62			SA						A			A	SA						
699-65-59A			A						A			A	A						
699-65-72		2	A		2	A		2	2	A	2	A	2	A			100-BC-5		
699-65-83		2			2			2	2		2	2	2	2			100-BC-5		
699-66-23			A				A	A					A			A			
699-66-38			A										A						
699-66-39			A										A						
699-66-58			SA						A			A	SA						
699-66-64		2	A		2			2	2		2	A	2	A			100-BC-5		
699-66-84		2			2			2	2		2	2	2	2			100-BC-5		
699-67-51			A									A	A						
699-67-86		2			2			2	2		2	2	2	2		A	100-BC-5		
699-70-68		2	A	2	2	2	2	2	2	2	2	A	2	A	2	2	2	100-KR-4	
699-71-30			A				A	A					A			A			
699-71-77		2			2			2	2		2	2	2	2		A	100-BC-5		
699-72-73		2			2			2	2		2	2	2	2		A	100-BC-5		
699-72-88			A				A	A					SA			A			
699-72-92		2			2			2	2		2	2	2	2			100-BC-5		
699-73-61		2	A	2	2	2	2	2	2	2	2	A	2	A	2	2	2	100-KR-4	
699-74-44			A										A			A			
699-77-36			A										A			A			
699-77-54			A									A	A						
699-78-62		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	100-KR-4	
699-8-17			A						A			A	A			A			
699-81-58			A										A						
699-83-47			A				A	A					A			A			
699-84-35A			A				A	A				A	A			A			
699-8-25			A						A			A	A						

5.0 600 AREA WELLS

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	129I	Pu	90Sr	99Tc	3H	Lo 3H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
699-87-55			A				A	A				A	SA			A			
699-89-35			A				A	A				A	A			A			
699-90-45			A				SA	SA				A	SA						
699-91-46	2							2						2			100-HR-3		
699-93-48A	2							2						2			100-HR-3		
699-96-43	2		A				A	2			A	A	A	2	A		100-HR-3		
699-96-49	2							2						2			100-HR-3		
699-97-43	2		A				A	2				A	A	2	A		100-HR-3		
699-97-51A	2							2						2			100-HR-3		
699-ATH			A			A						A	A		A	A			
699-S11-E12A			SA									A	SA						
699-S11-E12AP A			A				A					A							
699-S12-29			A										A						
699-S12-3			A										A						
699-S19-11		SA	SA	SA		SA							SA						DON
699-S19-E13		Q	Q	Q		Q			A			A	Q		Q				DON
699-S19-E14			A									A	A						
699-S22-E9A			A									A	A						
699-S22-E9B			A										A						
699-S22-E9C			A										A						
699-S27-E14			SA				A					A	SA			A	300-FIRE		
699-S27-E9A			A									A	A						
699-S27-E9B			A										A						
699-S27-E9C			A										A						
699-S28-E0			A										A			A			DWS
699-S28-E12			A									A	A		A	A			
699-S29-E11	4			4					4								4 11-EN-1		
699-S29-E12			A									A	A		A	A			
699-S29-E16A			SA				A					A		Q	A	A			
699-S29-E16B			SA				A					A		SA	A	A			
699-S29-E16C			SA				A							SA	A	A			
699-S3-25			A										A						
699-S3-E12			A						A			A	SA						
699-S30-E10A	4	A	A	4			A					A			A	A	4 11-EN-1		
699-S30-E10B	4	A	A	4		A	A					A		A	A	A	4 11-EN-1		
699-S30-E15A	A	SA	SA	SA		SA						A		SA	SA	A			DON
699-S31-1			A									A		A	A	A			
699-S31-E10A	4	A	A	4		A	A					A		A	A	A	4 11-EN-1		
699-S31-E10B		SA	SA				A					SA		SA	SA	SA			
699-S31-E10C	4	A		4								A		A	A	A	4 11-EN-1		
699-S31-E10D	4	A		4								A		A	A	A	4 11-EN-1		
699-S31-E11	4			4													4 11-EN-1		
699-S31-E8A	4	A	A	4		A	A					A		A	A	A	4 11-EN-1		
699-S32-E11	4			4													4 11-EN-1		
699-S31-E10E		SA	SA				SA					A		A	SA	SA			

5.0 600 AREA WELLS

Well	Alk	Alpha	Anion	Beta	CN ⁻	Gamma	ICP-f	ICP-u	¹²⁹ I	Pu	⁹⁰ Sr	⁹⁹ Tc	³ H	Lo ³ H U	U-iso	VOA	CERCLA	RCRA/OPER	Notes
699-S32-E13A			A											SA		SA			
699-S32-E13B			SA									A		SA		SA			
699-S32-E8			SA				A					A	SA		SA		A		
699-S34-E10		A	A			A							A		A		A		
699-S36-E12B			A										A				A		
699-S36-E13A			A										A				A		
699-S36-E13B			A										A				A		
699-S37-E11A	1		A	1				1					A				A	1 11-EN-1	
699-S37-E14		Q	Q	Q		Q	A	A			Q	Q	Q				A		DOM
699-S38-E11	1		A	1									A				A	1 11-EN-1	
699-S38-E12A	1		A	1									A				A	1 11-EN-1	
699-S38-E12B			A										A				A		
699-S40-E14			A				SA						SA				SA		
699-S41-E11A	1		A	1				1					A				A	1 11-EN-1	
699-S41-E12	1			1									A				A	1 11-EN-1	
699-S41-E13A			A				A					A	A		A		A		
699-S41-E13B			A				A						A		A		A		
699-S41-E13C			A				A						A		A		A		
699-S43-E12			A										A						
699-S6-E14A			A										SA						
699-S6-E4B			A										SA						
699-S6-E4D		SA	SA	SA		SA	A	A	A			A	SA		SA				DOM
699-S8-19			A										A						

-
- (a) Refer to Figure 5.1, 600 Area Unconfined Aquifer Well Locations.
 (b) Refer to Figure 5.2, 600 Area Confined Aquifer Well Locations.

S9401003.6

Figure 5.2. 600 Area Confined Aquifer Well Locations

6.0 WELL DISTRIBUTION ACCORDING TO PROGRAM

Figure 6.1. Distribution of Wells Sampled by the Ground-Water Surveillance, CERCLA, and RCRA/Operational Monitoring Programs

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