Appendix A

Supporting Information for CERCLA Groundwater Operable Units

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Supporting Information for CERCLA Groundwater Operable Units

The groundwater and vadose zone beneath contaminated portions of the Hanford Site are divided into 11 groundwater operable units. Figure A.1 shows the locations of these units and related groundwater interest areas on the Hanford Site. The groundwater project defined the interest areas informally to aid in planning, scheduling, and data interpretation.

Tables A.1 through A.16 list the constituents, monitoring wells, and the frequency of sampling for each operable units required by sampling and analysis plans or other documentation. The tables also indicate whether the wells were sampled as scheduled during fiscal year 2004.

In many cases, wells are sampled for additional constituents not strictly required by the plans. Those constituents are not listed in the tables of this appendix, but data files accompanying this report include all required and supplemental data.

References

Comprehensive Environmental Response, Compensation, and Liability Act. 1980. Public Law 96-510, as amended, 94 Stat. 2767, 42 USC 9601 et seq.

DOE/RL-2001-49. 2003. *Groundwater Sampling and Analysis Plan for the 200-BP-5 Operable Unit*. U.S. Department of Energy, Richland, Washington.

DOE/RL-2002-11, Rev. 0. 2002. *300-FF-5 Operable Unit Sampling and Analysis Plan*. U.S. Department of Energy, Richland, Washington.

DOE/RL-2003-04, Rev. 0. 2003. *Groundwater Sampling and Analysis Plan for the 200-PO-1 Operable Unit*. U.S. Department of Energy, Richland, Washington.

DOE/RL-2003-38. 2003. *100-BC-5 Operable Unit Sampling and Analysis Plan*. U.S. Department of Energy, Richland, Washington.

DOE/RL-2003-49. 2003. *100-FR-3 Operable Unit Sampling and Analysis Plan*. U.S. Department of Energy, Richland, Washington.

PNNL-12220. 1999. *Sampling and Analysis Plan Update for Groundwater Monitoring – 1100-EM-1 Operable Unit*. DR Newcomer, Pacific Northwest National Laboratory, Richland, Washington.

Table A.1. Monitoring Wells and Constituents for the 100-BC-5 Operable Unit (adapted from DOE/RL-2003-38)

Well	Alkalinity	Alpha	Anions	Beta	Hex Cr	Metals	Sr-90	Tritium	Sampled as Scheduled in FY 2004
199-B2-12	A	BO	A	BO		A	BO	A	Yes
199-B2-13	A	BE	A	BE		A	BE	A	No alpha, beta, Sr-90 (scheduling error)
199-B3-1	A		A		A		A	A	Yes
199-B3-46					A		A	A	No; preparatory work for multi-depth sampling delayed
199-B3-47	A	A	A	A	A		A	A	No; preparatory work for multi-depth sampling delayed
199-B4-1		BE		BE			BE	BE	Yes
199-B4-4		BE		BE			BE	BE	Yes
199-B4-5		BO		BO			BO	BO	Not scheduled
199-B4-6		BE		BE			BE	BE	Yes
199-B4-7		BO		BO			BO	BO	Not scheduled
199-B4-8	A	A	A	A		A	BE	A	No Sr-90 (scheduling error)
199-B5-1		A		A			BE	A	No Sr-90 (scheduling error)
199-B5-2		A		A	A		BO	A	Yes
199-B8-6		BO		BO			BO	BO	Not scheduled
199-B9-2		BE		BE			BE	BE	Yes
199-B9-3		BO		BO			BO	BO	Not scheduled
699-63-90		A		A				A	Yes
699-65-72	A		A			A		A	Yes
699-65-83								BE	Yes
699-66-103								BE	Yes
699-67-86								BO	Not scheduled
699-68-105								BO	Not scheduled
699-71-77								BO	Not scheduled
699-72-73			A					A	Yes
699-72-92			A					BO	Yes
AT-01					A		BE	A	Yes
AT-03					A		BE	A	Yes
AT-04					A		BE	A	Yes
AT-05					A		BE	A	Yes
AT-06					A		BE	A	Yes
AT-07					A		BE	A	Yes
AT-B-1					A		BE	A	No Sr-90 or tritium (scheduling error)
AT-B-2					A		BE	A	No Sr-90 (scheduling error)
AT-B-3					A		BE	A	Yes
AT-B-4					A		BE	A	Yes
AT-B-5					A		BE	A	Yes
AT-B-7					A		BE	A	Yes
Seep 037-1		A		A	A		BE	A	Total chromium instead of hexavalent
Seep 039-2		A		A	A		BE	A	Total chromium instead of hexavalent

A	=	Annual.
BE	=	Biennial, even fiscal year (e.g., (FY 2004).
BO	=	Biennial, odd fiscal year.
FY	=	Fiscal year.
Hex Cr	=	Hexavalent chromium.
Sr-90	=	Strontium-90.

Table A.2. Monitoring Wells and Constituents for 100-KR-4 Pump-and-Treat System[a]

Well	Hex Cr	Sr-90	Tritium	Sampled as Scheduled in FY 2004
199-K-114A	M	A	A	Missed December[b] and March (pump problem)
199-K-117A	M	A	A	Missed December[b]
199-K-130	M	A	A	Missed December[b]
199-K-18	M	A	A	Missed December[b]
199-K-19	SA			Yes
199-K-20	M	A	A	Missed December[b]
199-K-21	SA			Yes (total, filtered chromium)
199-K-22	SA			Yes
199-K-37	SA			Yes

(a) Table based on requirements transmitted to the Groundwater Performance Assessment Project via letter, FH-0303686.1 from H Hermanas (Fluor Hanford, Inc.) to JS Fructher (Pacific Northwest National Laboratory), *Revision 1 to Tables Specifying Fluor Hanford Performance Sampling Requirements for Fiscal Year 2004* , dated February 24, 2004. See main text of this report for additional references for interim action monitoring requirements.

(b) Sampling behind schedule; cancelled December event.

A	=	Annual.
FY	=	Fiscal year.
Hex Cr	=	Hexavalent chromium.
M	=	Monthly.
SA	=	Semiannual.
Sr-90	=	Strontium-90.

Table A.3. Monitoring Wells and Constituents for 100-KR-4 Operable Unit Long-Term Monitoring[a]

Well	Alpha	Anions	Beta	C-14	Gamma	Hex Cr	Metals	Mercury	Sr-90	Tritium	Sampled as Scheduled in FY 2004
199-K-106A	BE	BE	BE		BE		BE			BE	Yes
199-K-107A	A	A	A		A	Q	A			A	Yes[b]
199-K-108A	A	A	A	A	A	Q	A			A	Yes[b]
199-K-109A	A	A	A		A		A		Q	A	Yes
199-K-11	BO	BO	BO		BO		BO			BO	Not scheduled
199-K-110A	BE	BE	BE		BE		BE			BE	Yes
199-K-111A	A	A	A	A	A		A			A	Yes
199-K-18	A	A	A		A		A			A	Yes
199-K-19	A	A	A		A		A			A	Yes
199-K-20	A	A	A		A		A			A	Yes
199-K-21	A	A	A		A		A			A	Yes
199-K-22	A	A	A		A		A			A	Yes
199-K-23	BO	BO	BO		BO		BO			BO	Not scheduled
199-K-27	BE	BE	BE		BE		BE		Q	BE	Yes
199-K-30	BO	BO	BO		BO		BO		Q	BO	Yes
199-K-31	A	A	A		A		A			A	Yes
199-K-32A	A	A	A	A	A		A			A	Yes
199-K-32B	A	A	A		A		A			A	Yes
199-K-34	BO	BO	BO		BO		BO			BO	Not scheduled
199-K-35	BO	BO	BO		BO		BO			BO	Not scheduled
199-K-36	A	A	A		A	Q	A	A		A	Yes[b]
199-K-37	A	A	A		A		A			A	Yes
699-70-68	BE	BE	BE		BE		BE			BE	Yes
699-73-61	BE	BE	BE		BE		BE			BE	Yes
699-78-62	BE	BE	BE		BE		BE			BE	Yes
SK-057-3	A	A	A		A		A			A	Yes
SK-077-1	A	A	A		A		A			A	Yes
SK-082-2	A	A	A		A		A			A	No

(a) Table based on requirements transmitted to the Groundwater Performance Assessment Project via letter, FH-0303686.1 from H Hermanas (Fluor Hanford, Inc.) to JS Fructher (Pacific Northwest National Laboratory), *Revision 1 to Tables Specifying Fluor Hanford Performance Sampling Requirements for Fiscal Year 2004* , dated February 24, 2004. See main text of this report for additional references for interim action monitoring requirements.

(b) For quarterly wells, samples from one quarter (October 2003) were not analyzed specifically for hexavalent chromium because they were analyzed for filtered, total chromium under the ICP method.

A	=	Annual.
BE	=	Biennial, even fiscal year (e.g., FY 2004).
BO	=	Biennial, odd fiscal year.
C-14	=	Carbon-14.
FY	=	Fiscal year.
Hex Cr	=	Hexavalent chromium.
ICP	=	Inductively coupled plasma.
Q	=	Quarterly.
Sr-90	=	Strontium-90.

Table A.4. Monitoring Wells and Constituents for 100-NR-2 Interim Action[(a)]

Well	Alpha	Anions	Beta	Gamma	ICP	Oil/Grease	Sr-90	TPH	Tritium	Sampled as Scheduled in FY 2004
199-N-14		SA	SA		SA		SA		SA	Yes
199-N-16		A	A		A	A	A	A		Yes
199-N-18						A		A		Yes
199-N-2		A	A		A		A		A	Yes
199-N-21		A			A					Yes
199-N-27	A	A		A	A				A	Yes
199-N-3		SA	SA		SA		SA		SA	Yes
199-N-32		SA	SA	SA	SA		SA		SA	Yes
199-N-50			A						A	Yes
199-N-51			A						A	Yes
199-N-64		A	A		A		A		A	Yes
199-N-67	SA	SA	SA		SA		SA			Yes
199-N-70	A	A	A	A	A		A		A	Yes
199-N-74	A		A	A	A					Yes
199-N-75		SA	SA		SA		SA		SA	Yes
199-N-76		SA	SA	SA	SA		SA		SA	Yes
199-N-80	A	A	A	A	A		A		A	Yes
199-N-81		A	A		A		A		A	Yes
199-N-92A		A	A		A		A		A	Yes
199-N-96A		A	A		A		A		A	Yes
199-N-99A		A	A		A		A		A	Yes

(a) Table based on requirements transmitted to the Groundwater Performance Assessment Project via letter, FH-0303686.1 from H Hermanas (Fluor Hanford, Inc.) to JS Fructher (Pacific Northwest National Laboratory), *Revision 1 to Tables Specifying Fluor Hanford Performance Sampling Requirements for Fiscal Year 2004* , dated February 24, 2004. See main text of this report for additional references for interim action monitoring requirements.

A	=	Annual.
FY	=	Fiscal year.
ICP	=	Inductively coupled plasma.
SA	=	Semiannual.
Sr-90	=	Strontium-90.
TPH	=	Total petroleum hydrocarbons.

Table A.5. Monitoring Wells and Constituents for 100-NR-2 Baseline Monitoring

Well	Alkalinity	Alpha	Anions	Beta	DO	Gamma	Metals	Sr-90	Tritium	Sampled as Scheduled in FY 2004
199-N-46	Q	Q	Q	M	M	Q	Q	Q	Q	Yes
199-N-67	Q	Q	Q	M	M	Q	Q	Q	Q	Yes
199-N-92A	A	A	A	A	A	A	A	A	A	Yes
199-N-96A	Q	Q	Q	M	M	Q	Q	Q	Q	Yes
199-N-99A	Q	Q	Q	M	M	Q	Q	Q	Q	Yes
199-N-119	Q	Q	Q	M	M	Q	Q	Q	Q	Yes
199-N-120	Q	Q	Q	M	M	Q	Q	Q	Q	Yes
199-N-121	Q	Q	Q	M	M	Q	Q	Q	Q	Yes
NS-2A-23cm	Q	Q	Q	M	M	Q	Q	Q	Q	Scheduling error; missed July
NS-2A-87cm	Q	Q	Q	M	M	Q	Q	Q	Q	Scheduling error; missed July
NS-2A-168cm	Q	Q	Q	M	M	Q	Q	Q	Q	Scheduling error; missed July
NS-3A-10cm	Q	Q	Q	M	M	Q	Q	Q	Q	Scheduling error; missed July
NS-3A-87cm	Q	Q	Q	M	M	Q	Q	Q	Q	Scheduling error; missed July
NS-3A-176cm	Q	Q	Q	M	M	Q	Q	Q	Q	Scheduling error; missed July
NS-4A-17cm	Q	Q	Q	M	M	Q	Q	Q	Q	Scheduling error; missed July
NS-4A-138cm	Q	Q	Q	M	M	Q	Q	Q	Q	Scheduling error; missed July
NS-2	Q	Q	Q	M	M	Q	Q	Q	Q	Access issues
NS-3	Q	Q	Q	M	M	Q	Q	Q	Q	Access issues
NS-4	Q	Q	Q	M	M	Q	Q	Q	Q	Access issues

Sampling initiated June 2004.

A	=	Annual.
DO	=	Dissolved oxygen.
FY	=	Fiscal year.
M	=	Monthly.
Q	=	Quarterly.
Sr-90	=	Strontium-90.

Table A.6. Monitoring Wells and Constituents for 100-HR-3 Operable Unit In Situ Redox System (100-D Area)[(a)]

Well Name	Anions	Arsenic	DO	Hex Cr	Metals	Sulfate	Uranium	Sampled as Scheduled in FY 2004
199-D2-6	A	A	Q	Q	A	Q	A	Yes
199-D3-2	A	A	Q	Q	A	Q	A	Yes
199-D4-1	A	A	Q	Q	A	Q	A	Yes
199-D4-15	A	A	M	M	A	M	A	Missed June; scheduling error
199-D4-20	A	A	Q	Q	A	Q	A	Yes
199-D4-22	A	A	Q	Q	A	Q	A	Yes
199-D4-23	A	A	Q	Q	A	Q	A	Yes
199-D4-26	A	A	Q	Q	A	Q	A	Yes
199-D4-31	A	A	Q	Q	A	Q	A	Yes
199-D4-32	A	A	Q	Q	A	Q	A	Yes
199-D4-36	A	A	Q	Q	A	Q	A	Yes
199-D4-38	A	A	Q	Q	A	Q	A	Yes
199-D4-39	A	A	Q	Q	A	Q	A	Yes
199-D4-4	A	A	Q	Q	A	Q	A	Yes
199-D4-48	A	A	Q	Q	A	Q	A	Yes
199-D4-5	A	A	Q	Q	A	Q	A	Yes
199-D4-6	A	A	Q	Q	A	Q	A	Yes
199-D4-62	A	A	Q	Q	A	Q	A	Yes
199-D4-7	A	A	Q	Q	A	Q	A	Yes
199-D4-78	A	A	Q	Q	A	Q	A	Yes
199-D4-83	A	A	Q	Q	A	Q	A	Yes
199-D4-84	A	A	Q	Q	A	Q	A	Yes
199-D4-85	A	A	Q	Q	A	Q	A	Yes
199-D4-86	A	A	Q	Q	A	Q	A	Yes
199-D5-36	A	A	Q	Q	A	Q	A	Yes
199-D5-38	A	A	M	M	A	M	A	Yes
199-D5-39	A	A	M	M	A	M	A	Yes
199-D5-43	A	A	M	M	A	M	A	Yes

Note: For quarterly wells, samples from one quarter (November 2003) were not analyzed specifically for hexavalent chromium because they were analyzed for filtered, total chromium under the ICP method.

(a) Table based on requirements transmitted to the Groundwater Performance Assessment Project via letter, FH-0303686.1 from H Hermanas (Fluor Hanford, Inc.) to JS Fructher (Pacific Northwest National Laboratory), *Revision 1 to Tables Specifying Fluor Hanford Performance Sampling Requirements for Fiscal Year 2004* , dated February 24, 2004. See main text of this report for additional references for interim action monitoring requirements.

A	=	Annual.
DO	=	Dissolved oxygen.
FY	=	Fiscal year.
Hex Cr	=	Hexavalent chromium.
ICP	=	Inductively coupled plasma.
M	=	Monthly.
Q	=	Quarterly.

Table A.7. Monitoring Wells and Constituents for 100-HR-3 Pump-and-Treat Systems (100-D and 100-H Areas)[(a)]

Well	Anions	Hex Cr	Sr-90	Tc-99	Tritium	Uranium	Sampled as Scheduled in FY 2004
199-D8-54B		SA					Yes
199-D8-69		M	A		A		Yes
199-D8-70		M	A		A		Yes
199-D8-71		SA					Yes
199-H4-10		SA					Yes
199-H4-12B		SA					Yes
199-H4-12C		SA					Yes
199-H4-13		SA					Yes
199-H4-14		SA					Yes
199-H4-15B		SA					Yes
199-H4-15CS		SA					Yes
199-H4-16		SA					Yes
199-H4-17		SA					Yes
199-H4-18		SA					Yes
199-H4-3		SA					Yes
199-H4-4	A	M	A	A	A	A	Yes
199-H4-45		SA					No; contaminated wasp nests
199-H4-46		SA					Yes
199-H4-48		SA					Yes
199-H4-49		SA					Yes
199-H4-5	A	M	A	A	A	A	Yes
199-H4-6		SA					Yes
199-H4-63	A	M	A	A	A	A	Yes
199-H4-64	A	M	A	A	A	A	Yes
199-H4-8		SA					Yes
199-H5-1A		SA					Yes

(a) Table based on requirements transmitted to the Groundwater Performance Assessment Project via letter, FH-0303686.1 from H Hermanas (Fluor Hanford, Inc.) to JS Fructher (Pacific Northwest National Laboratory), *Revision 1 to Tables Specifying Fluor Hanford Performance Sampling Requirements for Fiscal Year 2004* , dated February 24, 2004. See main text of this report for additional references for interim action monitoring requirements.

A	=	Annual.
FY	=	Fiscal year.
Hex Cr	=	Hexavalent chromium.
M	=	Monthly.
SA	=	Semiannual.
Sr-90	=	Strontium-90.
Tc-99	=	Technetium-99.

Table A.8. Monitoring Wells and Constituents for 100-HR-3 Operable Unit Long-Term Monitoring (100-D and 100-H Area)[a]

Well	Alpha	Anions	Beta	Hex Cr	Metals	Tritium	Sampled as Scheduled in FY 2004
199-D2-6	A	Q	A	Q	A	A	Yes[b]
199-D3-2	A	Q	A	Q	A	A	Yes[b]
199-D4-13	A	Q	A	Q	A	A	Yes[b]
199-D4-14	A	Q	A	Q	A	A	Yes[b]
199-D4-15	A	M	A	M	A	A	Missed July; pump problem
199-D4-19	A	Q	A	Q	A	A	Yes[b]
199-D4-20	A	Q	A	Q	A	A	Yes[b]
199-D4-22	A	Q	A	Q	A	A	Yes[b]
199-D4-23	A	Q	A	Q	A	A	Yes[b]
199-D5-13	A	A	A	Q	A	A	Yes[b]
199-D5-14	A	A	A	Q	A	A	Yes[b]
199-D5-15	A	A	A	Q	A	A	Yes[b]
199-D5-16	A	A	A	Q	A	A	Yes[b]
199-D5-17	A	A	A		A	A	Yes[b]
199-D5-18	BO	BO	BO		BO	BO	Not scheduled
199-D5-19	BE	BE	BE		BE	BE	Yes
199-D5-20	A	A	A	Q	A	A	Converted to extraction well
199-D5-32				6[c]			Converted to extraction well
199-D5-33				6[c]			No
199-D5-34				6[c]			No
199-D5-36	A	Q	A	Q	A	A	Yes[b]
199-D5-37	A	Q	A	Q	A	A	Converted to extraction well
199-D5-38	A	M	A	M	A	A	Yes
199-D5-39	A	M	A	M	A	A	Yes
199-D5-40	A	Q	A	Q	A	A	Yes[b]
199-D5-41	A	Q	A	Q	A	A	Yes[b]
199-D5-42	A	Q	A	Q	A	A	Converted to injection well
199-D5-43	A	M	A	M	A	A	Yes
199-D5-44	A	Q	A	Q	A	A	Yes[b]
199-D8-4	A	A	A		A	A	Yes
199-D8-5	A	A	A		A	A	Yes
199-D8-54B	A	A	A		A	A	Yes
199-D8-55	A	A	A	Q	A	A	Yes[b]
199-H3-2A	A	A	A		A	A	Yes
199-H3-2C	BE	BE	BE		BE	BE	Yes
199-H4-10	A	A	A		A	A	Yes
199-H4-12C	A	A	A		A	A	Yes
199-H4-13	A	A	A		A	A	Yes
199-H4-14	BO	BO	BO		BO	BO	Not scheduled
199-H4-16	BO	BO	BO		BO	BO	Not scheduled
199-H4-17	BO	BO	BO		BO	BO	Not scheduled
199-H4-18	A	A	A		A	A	Yes
199-H4-3	A	A	A		A	A	Yes
199-H4-4	A	A	A		A	A	Yes
199-H4-45	A	A	A		A	A	No; contaminated wasp nests
199-H4-46	BO	BO	BO		BO	BO	Not scheduled
199-H4-47	BE	BE	BE		BE	BE	Yes
199-H4-48	BE	BE	BE		BE	BE	Yes

Table A.8. (contd)

Well	Alpha	Anions	Beta	Hex Cr	Metals	Tritium	Sampled as Scheduled in FY 2004
199-H4-49	BE	BE	BE		BE	BE	Yes
199-H4-5	A	A	A		A	A	Yes
199-H4-6	BO	BO	BO		BO	BO	Not scheduled
199-H4-63	A	A	A		A	A	Yes
199-H4-64	A	A	A		A	A	Yes
199-H4-8	BO	BO	BO		BO	BO	Not scheduled
199-H4-9	BE	BE	BE		BE	BE	Yes
199-H5-1A	BE	BE	BE		BE	BE	Yes
199-H6-1	A	A	A		A	A	Yes
699-91-46A	BE	BE	BE		BE	BE	Yes
699-93-48A	BE	BE	BE		BE	BE	Yes
699-96-43	BO	BO	BO		BO	BO	Not scheduled
699-96-49	BO	BO	BO		BO	BO	Not scheduled
699-97-43	BE	BE	BE		BE	BE	Yes
699-97-51A	A	A	A		A	A	Yes
SD-102-1	A	A	A		A	A	Yes
SD-110-1	A	A	A		A	A	Yes
SD-110-2	A	A	A		A	A	Yes
SD-98-1	A	A	A		A	A	Yes
SH-144-1	A	A	A		A	A	Yes
SH-145-1	A	A	A		A	A	Yes
SH-150-1	A	A	A		A	A	Yes
SH-152-2	A	A	A		A	A	No; under water
SH-153-1	A	A	A		A	A	Yes

(a) Table based on requirements transmitted to the Groundwater Performance Assessment Project via letter, FH-0303686.1 from H Hermanas (Fluor Hanford, Inc.) to JS Fructher (Pacific Northwest National Laboratory), Revision 1 to Tables Specifying Fluor Hanford Performance Sampling Requirements for Fiscal Year 2004, dated February 24, 2004. See main text of this report for additional references for interim action monitoring requirements.

(b) For quarterly wells, samples from one quarter (November 2003) were not analyzed specifically for hexavalent chromium because they were analyzed for filtered, total chromium under the ICP method.

(c) Letter of instruction specified sampling monthly from November through February, then quarterly for a total of six samples. Well 199-D5-33 was sampled March, May, and August; well 199-D5-34 was sampled January, February, May, and September.

A	=	Annual.
BE	=	Biennial, even fiscal year (e.g., FY 2004).
BO	=	Biennial, odd fiscal year.
FY	=	Fiscal year.
Hex Cr	=	Hexavalent chromium.
ICP	=	Inductively coupled plasma.
M	=	Monthly.
Q	=	Quarterly.

Table A.9. Monitoring Wells and Constituents for the 100-FR-3 Operable Unit (adapted from DOE/RL-2003-49)

Well	Alkalinity	Alpha	Anions	Hex Cr	Metals	Sr-90	Tritium	TCE (VOA)	Sampled as Scheduled in FY 2004
199-F1-2	BO		BO		BO				Not scheduled
199-F5-1	A	BE	A		A	BE	A		Yes
199-F5-3	A	BE	A			A	A		Removed from network
199-F5-4	A	BO	A		A		A	BO	Yes
199-F5-42	BO	BO	BO		BO	BO	BO		Not scheduled
199-F5-43A	BE	BE	BE		BE	BE	BE		Yes
199-F5-43B	BO	BO	BO		BO	BO	BO		Not scheduled
199-F5-44	BE	BE	BE		BE	BE	BE		Yes
199-F5-45	BO	BO	BO		BO	BO	BO		Not scheduled
199-F5-46	BE	BE	BE	BE	BE	BE	A		Yes
199-F5-47	A	BE	A		A		A	BE	Yes
199-F5-48	BO	BO	BO		BO		BO		Not scheduled
199-F5-6	BE	BE	BE		BE	BE	BE		Yes
199-F6-1	BO	BO	BO		BO	BO	BO		Not scheduled
199-F7-1	BE		BE		BE		BE	BE	Yes
199-F7-2	BE		BE		BE		BE		Yes
199-F7-3	BE	BE	BE		BE		BE	BE	Yes
199-F8-2	BO	BO	BO		BO		BO		Not scheduled
199-F8-3	BO	A	BO		BO		A	BO	Yes
199-F8-4	BE	A	BE		BE		BE		Yes
699-58-24	BE		BE		BE				Yes
699-60-32	BO		BO		BO				Not scheduled
699-61-37	BE		BE		BE				Yes
699-62-31	BE		BE		BE				Yes
699-62-43F	A		A				A		Yes
699-63-25A	BO		BO		BO				Not scheduled
699-63-55	BO		BO		BO		A		Not scheduled
699-64-27	BE		BE		BE				Yes
699-65-50	BO		BO		BO		BO		Not scheduled
699-66-23	BE		BE		BE				Yes
699-67-51	BO		BO		BO		BO		Not scheduled
699-69-45	BO		BO		BO			BO	Not scheduled
699-71-30	BO		BO		BO				Yes
699-71-52	BE		BE		BE			BE	Yes
699-74-44	BO		BO		BO			BO	Not scheduled
699-77-36	A		A		A			A	Yes
699-77-54	BO		BO		BO			BO	Not scheduled
699-83-47	BE		BE		BE			BE	Yes
699-84-35A	BE		BE		BE				Yes
AT-62	A		A	A	A			A	Yes
AT-63	A		A	A	A			A	No water
AT-64	A		A	A	A	A		A	Yes
AT-65	A		A	A	A	A		A	Yes
AT-66	A		A	A	A	A		A	Yes
AT-67	A		A	A	A			A	Yes
AT-68	A		A	A	A		A	A	Yes
AT-69	A		A	A	A		A	A	No; tube destroyed
AT-70	A		A	A	A		A	A	No; tube destroyed
AT-71	A		A	A	A		A	A	No; tube destroyed
AT-72	A		A	A	A		A	A	Yes
AT-73	A		A	A	A		A	A	No; tube under water
AT-74	A		A	A	A		A	A	Yes
AT-75	A		A	A	A			A	Yes
AT-76	A		A	A	A			A	Yes
AT-77	A		A	A	A			A	No; tube under water
AT-78	A		A	A	A			A	No; tube under water

Table A.9. (contd)

Well	Alkalinity	Alpha	Anions	Hex Cr	Metals	Sr-90	Tritium	TCE (VOA)	Sampled as Scheduled in FY 2004
AT-80	A		A	A	A			A	Yes
AT-F-1	A		A	A	A	A		A	Yes
AT-F-2	A		A	A	A		A	A	Yes
AT-F-3	A		A	A	A		A	A	Yes
AT-F-4	A		A	A	A		A	A	Yes
SF-187-1	A		A	A	A		A	A	No; conductivity too low
SF-190-4	A		A	A	A		A	A	No; conductivity too low
SF-207-1	A		A	A	A		A	A	No alkalinity

A	=	Annual.
BE	=	Biennial, even fiscal year (e.g., FY 2004).
BO	=	Biennial, odd fiscal year.
FY	=	Fiscal year.
Hex Cr	=	Hexavalent chromium.
Sr-90	=	Strontium-90.
TCE	=	Trichloroethene.
VOA	=	Volatile organic analyses.

Table A.10. Monitoring Wells and Constituents for the 200-ZP-1 Operable Unit[a]

Well	Ammonia	Anions	Arsenic	C-14	Cyanide	Gamma	Hex Cr	I-129	Metals	Mercury	Lead	Selenium	Phenols	Se-79	SVOA	Sr-90	Tc-99	TPH	Tritium	Uranium	VOA	Sampled as Scheduled in FY 2004
299-W10-1		A	A						A										A		A	Yes
299-W10-13		BO																			BO	Not scheduled
299-W10-19		A							A												A	Dry
299-W10-20		BO																			BO	Yes
299-W10-21		A							A										A		A	Yes
299-W10-22		A						A	A								A		A	A	A	Yes
299-W10-23	Sup	A	A	Sup	Sup	Sup	Sup	A	A	Sup	Sup	Sup	Sup	Sup	Sup	Sup	A	Sup	A	A	A	No selenium
299-W10-4		SA	SA					SA	SA								SA		SA		SA	Yes
299-W10-5		A							A								A		A		A	Yes
299-W11-10		SA																			SA	Yes
299-W11-13		SA	SA					SA	SA								SA		SA		SA	Yes
299-W11-14	Sup	SA	Sup	Sup	Sup	Sup	Sup	SA	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	SA	SA	SA	No selenium
299-W11-18		A						A	A								A		A	A	A	Yes
299-W11-3		SA						SA											SA	SA	SA	Second sampling delayed until 11/2004
299-W11-37		SA						SA											SA	SA	SA	Yes
299-W11-6		SA						SA												SA	SA	Yes
299-W11-7		A	A					A	A								A			A	A	Yes
299-W12-1		A						A											A		A	Second sampling delayed until 10/2004
299-W14-14	Sup	A	Sup	Sup	Sup	Sup	Sup	A	A	Sup	Sup	Sup	Sup	Sup	Sup	Sup	A	Sup	A	Sup	A	No selenium
299-W14-16		A						A	A								A		A		A	Yes
299-W15-1		SA																			SA	Yes
299-W15-11		SA															SA		SA		SA	Yes
299-W15-15		A							A												A	Yes
299-W15-16		SA							SA								SA				SA	Sampled once, then dry
299-W15-17		SA							SA								SA				SA	Yes
299-W15-2		A															A				A	Yes
299-W15-30		SA							SA								SA				SA	Yes
299-W15-31A		SA															SA				SA	Yes
299-W15-34		A															A				A	Yes

Table A.10. (contd)

Well	Ammonia	Anions	Arsenic	C-14	Cyanide	Gamma	Hex Cr	I-129	Metals	Mercury	Lead	Selenium	Phenols	Se-79	SVOA	Sr-90	Tc-99	TPH	Tritium	Uranium	VOA	Sampled as Scheduled in FY 2004
299-W15-35	Sup	A	Sup	Sup	Sup	Sup	Sup	Sup	A	Sup	Sup	Sup	Sup	Sup	Sup	Sup	A	Sup	Sup	Sup	A	No selenium
299-W15-36		A																			A	Yes
299-W15-38		A							A												A	Yes
299-W15-39		SA																			SA	Yes
299-W15-40		SA							SA								SA		SA		SA	Yes
299-W15-41		SA							SA								SA		SA		SA	Missing 1 VOA
299-W15-42		SA							SA								SA				SA	Yes
299-W15-43		SA							SA								SA		SA		SA	Missing 1 metals
299-W15-44		SA						SA	SA								SA		SA		SA	Yes
299-W15-45		Q															Q				Q	Yes[(b)]
299-W15-47		Q															Q				Q	Yes[(b)]
299-W15-7		SA															SA				SA	Yes
299-W18-1		SA							SA												SA	Yes
299-W18-23		A															A			A	A	Yes
299-W18-27		A																		A	A	Dry
299-W6-10		A						A	A										A	A	A	Yes
299-W6-2		SA						SA	SA										SA		SA	Dry
299-W6-7		A						A	A										A		A	Dry
299-W7-12		BO																	BO		BO	Yes
299-W7-4	Sup	A	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	A	Several constituents missing
299-W7-7		A							A										A		A	Dry
299-W7-8		BO																	BO		BO	Not scheduled
299-W8-1		BE																	BE		BE	Yes
699-39-79		BO							BO												BO	Not scheduled
699-43-89		BO	BO					BO	BO							BO	BO		BO	BO	BO	Not scheduled
699-44-64		BO						BO									BO		BO	BO		Not scheduled
699-45-69A		BO						BO													BO	Not scheduled
699-47-60		BO						BO	BO								BO		BO	BO	BO	Not scheduled
699-48-71		BO						BO											BO	BO	BO	Not scheduled
699-48-77A	Sup	BO	Sup	Sup	Sup	Sup	Sup	Sup	BO	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	BO	Sup	BO	No selenium or phenols
699-55-60A		BO						BO	BO								BO		BO	BO	BO	Not scheduled

Table A.10. (contd)

Well	Ammonia	Anions	Arsenic	C-14	Cyanide	Gamma	Hex Cr	I-129	Metals	Mercury	Lead	Selenium	Phenols	Se-79	SVOA	Sr-90	Tc-99	TPH	Tritium	Uranium	VOA	Sampled as Scheduled in FY 2004
New Wells																						
299-W15-4A (new well C)		Q																			Q	Not completed in FY 2004
299-W18-16 (new well D)		Q																			Q	Not completed in FY 2004
299-W15-50 (new well E)		Q							Q												Q	Not completed in FY 2004
New well F	Sup	Q	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Q	Not yet installed
299-W13-1 (New well G)		Q																	Q		Q	Yes[(b)]
New well H																				Q	Q	Not yet installed
299-W17-1 (new well I)		Q															Q		Q		Q	Yes[(b)]

Sup = Supplemental analyses for additional constituents of concern. To be samled once in FY 2004 and once in FY 2006. If undetected, sampling will be discontinued. If detected, frequency to be determined.

(a) Table based on requirements transmitted to the Groundwater Performance Assessment Project via letter, FH-0303686.1 from H Hermanas (Fluor Hanford, Inc.) to JS Fructher (Pacific Northwest National Laboratory), Revision 1 to Tables Specifying Fluor Hanford Performance Sampling Requirements for Fiscal Year 2004, dated February 24, 2004. See main text of this report for additional references for interim action monitoring requirements.

(b) New wells began sampling part way through FY 2004.

A	=	Annual.
BE	=	Biennial, even fiscal year (e.g., FY 2004).
BO	=	Biennial, odd fiscal year.
C-14	=	Carbon-14.
FY	=	Fiscal year.
Hex Cr	=	Hexavalent chromium.
I-129	=	Iodine-129.
Q	=	Quarterly.
SA	=	Semiannual.
Se-79	=	Selenium-79.
Sr-90	=	Strontium-90.
SVOA	=	Semivolatile organic analyses.
Tc-99	=	Technetium-99.
TPH	=	Total petroleum hydrocarbons.
VOA	=	Volatile organic analyses.

Table A.11. Monitoring Wells and Constituents for the 200-UP-1 Operable Unit[a]

Well	Ammonia	Anions	Arsenic	C-14	Cyanide	Gamma	Hex Cr	I-129	Metals	Mercury	Lead	Phenols	Se-79	SVOA	Sr-90	Sulfide	Tc-99	TPH	Tritium	Uranium	VOA	Sampled as Scheduled in FY 2004
299-W15-37		A	A						A											A	A	Yes
299-W18-15		SA	SA																	SA	SA	Yes
299-W18-21		A	A														A			A	A	Yes
299-W18-22		A	A														A			A	A	Yes
299-W18-30		A	A					A												A	A	Yes
299-W18-33		A	A																A	A	A	Yes
299-W19-34A		A						A									A			A	A	Yes
299-W19-34B		BE						BE									BE			BE	BE	Yes
299-W19-35		SA						SA	SA								SA			SA	SA	Yes
299-W19-36		A						A									A			A	A	Yes
299-W19-37		SA						SA	SA								SA			SA	SA	Yes
299-W19-4		BO						BO									BO			BO	BO	Not scheduled
299-W19-40		A						A									A		A	A	A	Yes
299-W19-43	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Yes
299-W19-46	Sup	SA	Sup	Sup	Sup	Sup	Sup	SA	SA	Sup	Sup	Sup	Sup	Sup	Sup	Sup	SA	Sup	SA	SA	SA	Yes
299-W19-9		A	A					A									A			A	A	Yes
299-W22-20		A						A							A		A		A	A	A	Yes
299-W22-26		A						A	A										A	A	A	Yes
299-W22-45		A						A	A						A				A	A	A	Yes
299-W22-48		SA	SA					SA	SA						SA				SA	SA	SA	Yes
299-W22-49		SA						SA	SA						SA		SA		SA	SA	SA	Yes
299-W22-83	Sup	Q	Sup	Sup	Sup	Sup	Sup	Q	Q	Sup	Sup	Sup	Sup	Sup	Q	Sup	Q	Sup	Q	Q	Q	Yes
299-W22-9		BO						BO	BO						BO		BO		BO	BO	BO	Not scheduled
299-W23-10	Sup	SA	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	SA	Sup	SA	SA	SA	Yes
299-W23-15		SA															SA		SA	SA	SA	Yes

Table A.11. (contd)

Well	Ammonia	Anions	Arsenic	C-14	Cyanide	Gamma	Hex Cr	I-129	Metals	Mercury	Lead	Phenols	Se-79	SVOA	Sr-90	Sulfide	Tc-99	TPH	Tritium	Uranium	VOA	Sampled as Scheduled in FY 2004
299-W23-21	Sup	Q	Sup	Sup	Sup	Sup	Sup	Sup	Q	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Q	Sup	Q	Q	Q	Yes
299-W23-4	Sup	SA	SA	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	SA	SA	SA	Yes
299-W23-9		A															A		A	A	A	Yes
299-W26-13		BO						BO											BO	BO	BO	Not scheduled
299-W26-14		SA						SA	SA								SA		SA	SA	SA	Yes
699-32-62		BO						BO	BO										BO			Not scheduled
699-32-72A		BO						BO											BO		BO	Not scheduled
699-35-66A		BO						BO	BO										BO		BO	Not scheduled
699-35-70		BO						BO											BO		BO	Not scheduled
699-35-78A		A	A																	A	A	Yes
699-36-61A		BO						BO	BO										BO			Not scheduled
699-36-70A		A						A									A		A	A	A	Yes
699-38-65		A						A											A			Yes
699-38-68A		BO						BO									BO		BO	BO	BO	Not scheduled
699-38-70	Sup	A	Sup	Sup	Sup	Sup	Sup	A	Sup	Sup	Sup	Sup	Sup	Sup	Sup	Sup	A	Sup	A	A	A	Yes
699-40-62		BO						BO									BO		BO	BO	BO	Not scheduled
New Wells																						
699-W19-48 (new well K)		Q						Q									Q		Q	Q	Q	Not completed until FY 2005
New well L		Q															Q		Q	Q	Q	Not yet installed
New well M		Q						Q									Q		Q	Q	Q	Not yet installed
699-38-70C (new well N)		Q						Q									Q		Q	Q	Q	Yes[(b)]
699-38-70B (new well O)		Q						Q									Q			Q	Q	Yes[(b)]
699-36-70B (new well P)		Q						Q									Q		Q	Q	Q	Not completed until FY 2005

Table A.11. (contd)

Well	Ammonia	Anions	Arsenic	C-14	Cyanide	Gamma	Hex Cr	I-129	Metals	Mercury	Lead	Phenols	Se-79	SVOA	Sr-90	Sulfide	Tc-99	TPH	Tritium	Uranium	VOA	Sampled as Scheduled in FY 2004
299-W21-2 (new well Q)		Q						Q									Q		Q	Q	Q	Not completed until FY 2005
699-30-66 (new well R)		Q						Q											Q	Q	Q	Not completed until FY 2005
699-40-65 (new well S)		Q						Q											Q			Yes[(b)]

(a) Table based on requirements transmitted to the Groundwater Performance Assessment Project via letter, FH-0303686.1 from H Hermanas (Fluor Hanford, Inc.) to JS Fructher (Pacific Northwest National Laboratory), *Revision 1 to Tables Specifying Fluor Hanford Performance Sampling Requirements for Fiscal Year 2004*, dated February 24, 2004. See main text of this report for additional references for interim action monitoring requirements.

(b) Sampling new wells commenced part way through the year as they were completed.

Sup = Supplemental analyses for additional constituents of concern. To be samled once in FY 2004 and once in FY 2005. If undetected, frequency will reduce to every 5 years. If detected, frequency to be determined.

A	=	Annual.
BE	=	Biennial, even fiscal year (e.g., FY 2004).
BO	=	Biennial, odd fiscal year.
C-14	=	Carbon-14.
FY	=	Fiscal year.
Hex Cr	=	Hexavalent chromium.
I-129	=	Iodine-129.
Q	=	Quarterly.
SA	=	Semiannual.
Se-79	=	Selenium-79.
Sr-90	=	Strontium-90.
SVOA	=	Semivolatile organic analyses.
Tc-99	=	Technetium-99.
TPH	=	Total petroleum hydrocarbons.
VOA	=	Volatile organic analyses.

Table A.12. Monitoring Wells and Constituents for the 200-BP-5 Operable Unit (adapted from DOE/RL-2001-49)

Well Name	Anions	Cyanide	Gamma	I-129	Pu	Sr-90	Tc-99	Tritium	Uranium	Sampled in FY 2004
299-E27-14	A						A			Yes
299-E27-15	A						A			Yes
299-E27-7	A						A			Yes
299-E28-17	A		A		A	A			A	Yes
299-E28-18				A					A	Yes
299-E28-2			A	A	A	A	A	A		Yes
299-E28-21									A	Yes
299-E28-23			A		A	A			A	Yes
299-E28-24			A		A	A			A	Yes
299-E28-25			A		A	A			A	Yes
299-E28-26	A						A		A	Yes
299-E28-27	A		A	A	A	A	A		A	Yes
299-E28-5			A		A	A			A	Yes
299-E28-6			A		A	A			A	Yes
299-E28-8			A		A	A	A		A	Yes
299-E32-10		A	A				A		A	Yes
299-E32-4	A			A			A	A		Yes
299-E32-6	A						A			Yes
299-E32-9	A			A			A			Yes
299-E33-12							T			Yes
299-E33-13		A					A		A	Yes
299-E33-15	A						A			Yes
299-E33-16	A			A			A		A	Yes
299-E33-18				A			A		A	Yes
299-E33-26		A	A				A		A	Yes
299-E33-28	A						A			Yes
299-E33-30	A						A			Yes
299-E33-338							A		A	Yes
299-E33-34	A	A	A	A			A	A	A	Yes
299-E33-35	A	A					A		A	Yes
299-E33-38	A	A	A	A			A		A	Yes
299-E33-39	A			A			A	A		Yes
299-E33-41							A		A	Yes

Table A.12. (contd)

Well Name	Anions	Cyanide	Gamma	I-129	Pu	Sr-90	Tc-99	Tritium	Uranium	Sampled in FY 2004
299-E33-42				A			A		A	Yes
299-E33-43				A			A		A	Yes
299-E33-44			A				A		A	Yes
299-E33-46	A						A		A	Not sampleable[(a)]
299-E33-7	A	A	A	A			A		A	Yes
699-43-40				T				T		Dry
699-45-42				T				T		Yes
699-47-60	A			A			A	A		Yes
699-49-55A	A	A	A	A			A	A		Yes
699-49-57A	A	A	A	A			A	A	A	Yes
699-49-57B			T				T			Yes
699-50-53A	A	A	A	A			A			Dry
699-53-47A	A					A				Yes
699-53-47B	T					T				Not scheduled
699-53-48A	T					T				Not scheduled
699-53-48B						T				Dry
699-53-55A							T			Not scheduled
699-53-55B							T			Yes
699-53-55C	A	A	A	A			A	A		Yes
699-54-45A	T									Not scheduled
699-54-45B	T									Not scheduled
699-54-48						T				Not scheduled
699-54-49	T					T				Not scheduled
699-55-50C	A			A		A	A	A		Yes
699-55-57	A	A	A	A			A			Yes
699-55-60A	A	A	A	A			A	A		Yes
699-57-59	A			A			A	A		Yes
699-59-58	A			A			A	A		Yes
699-60-60	T			T			T	T		Yes
699-61-62	T			T		T	T	T		Yes
699-61-66	T			T			T	T		Yes
699-64-62	T						T	T		Yes
699-65-50							T			Yes

Table A.12. (contd)

Well Name	Anions	Cyanide	Gamma	I-129	Pu	Sr-90	Tc-99	Tritium	Uranium	Sampled in FY 2004
699-65-72								T		Yes
699-66-58							T	T		Yes
699-66-64							T	T		Yes
699-70-68							T	T		Yes
699-72-73	T							T		Yes
699-73-61								T		Yes

(a) Moisture log hole; not monitoring well. Mistakenly included in DOE/RL-2001-49.

A	=	Annual.
FY	=	Fiscal year.
I-129	=	Iodine-129.
Pu	=	Plutonium.
Sr-90	=	Strontium-90.
T	=	Triennial.
Tc-99	=	Technetium-99.

Table A.13. Monitoring Wells and Constituents for the 200-PO-1 Operable Unit (adapted from DOE/RL-2003-04)

Well	Alkalinity	Alpha	Ammonia	Anions	Arsenic	Beta	Coliform	Cyanide	Gamma	Hex Cr	I-129	ICP	Metals-Hg	Metals-Pb	Oil/Grease	Phenols	Pu	Semi-VOA	Sr-90	Tc-99	TDS	TOC	TOX	TPH	Tritium	Uranium	VOA	Sampled as Scheduled in FY 2004
299-E13-5		A		A		A		A	A			A							A	A					A	A		No cyanide, Tc-99 or uranium; scheduling error
299-E16-1	T3	T3		T3		T3					T3	T3													T3			Not scheduled
299-E16-2				T1	T1						T1														T1			Yes
299-E17-12		A		A	A	A					A	A													A			Yes
299-E17-13	A	A		A	A	A					A	A							A						A			Yes
299-E17-14				T1	T1						T1														T1			Yes
299-E17-16				T1	T1						T1														T1			Yes
299-E17-18				T1	T1						T1														T1			Yes
299-E17-19				T1	T1						T1														T1			Yes
299-E23-1				T1	T1						T1														T1			Yes
299-E24-18				T1	T1						T1														T1			Yes
299-E24-19		A		A		A																						No; casing corroded
299-E24-20				T1	T1						T1														T1			Yes
299-E24-5				T1	T1						T1														T1			Yes
299-E25-17				T1	T1						T1														T1			Yes
299-E25-18				T1	T1						T1														T1			Yes
299-E25-19				T1	T1						T1														T1			Yes
299-E25-20				T1	T1						T1														T1			Yes
299-E25-22				T1	T1						T1														T1			Yes
299-E25-28				T1	T1						T1														T1			Yes
299-E25-29P				T1	T1						T1														T1			Yes
299-E25-29Q				T1	T1						T1														T1			Yes
299-E25-3				T1	T1						T1														T1			Yes
299-E25-32P				T1	T1						T1														T1			Yes
299-E25-32Q	T1			T1	T1						T1	T1													T1			Yes
299-E25-34				T1	T1						T1														T1			Yes
299-E25-35				T1	T1						T1														T1			Yes
299-E25-36				T1	T1						T1														T1			Yes
299-E25-37				T1	T1						T1														T1			Yes
299-E25-41				T1	T1						T1														T1			Yes
299-E25-42				T1	T1						T1														T1			Yes
299-E25-43				T1							T1														T1			Yes
299-E25-44											T1														T1			Yes
299-E25-46				T1							T1														T1			No; casing corroded
299-E25-47				T1							T1														T1			Yes
299-E25-6		T1		T1	T1	T1			T1		T1									T1					T1	T1		Yes
299-E26-4		A		A	A	A			A		A	A													A			No; scheduling error
499-S0-7	A	A	A	A		A					A	A													Q			Yes
499-S0-8	A	A		A		A					A	A													Q			Yes

Table A.13. (contd)

Well	Alkalinity	Alpha	Ammonia	Anions	Arsenic	Beta	Coliform	Cyanide	Gamma	Hex Cr	I-129	ICP	Metals-Hg	Metals-Pb	Oil/Grease	Phenols	Pu	Semi-VOA	Sr-90	Tc-99	TDS	TOC	TOX	TPH	Tritium	Uranium	VOA	Sampled as Scheduled in FY 2004
499-S1-8J		A	A	A		A			A		A	A							A	A					Q	A	A	Yes
699-10-54A	T1								T1			T1							T1	T1		T1	T1					Yes
699-10-E12	A	A		A		A			A			A							A			A	A		A			Yes
699-12-4D				T1							T1														T1			Yes
699-13-1A		T1		T1		T1					T1														T1			Delayed till early FY 2005
699-13-1C	T3	T3		T3		T3						T3													T3			Sampled FY 2004
699-13-3A									A																		A	Yes
699-14-38				T1								T1													T1			Yes
699-17-5	T1	T1		T1		T1			T1		T1	T1							T1	T1					T1		T1	Yes
699-19-43				T1							T1	T1													T1			Yes
699-20-20		T1		T1		T1			T1		T1	T1								T1					T1			Yes
699-20-E12O	A	A		A		A			A		A	A							A	A		A	A		A			No Tc-99; scheduling error
699-20-E12S	T1			T1																					T1			Awaiting new sampling procedure to air lift
699-20-E5A				T1																					T1			Yes
699-21-6				T1							T1														T1			Yes
699-2-3				T1							T1														T1			Yes
699-24-1P	T1	T1		T1		T1						T1													T1			Awaiting new sampling procedure to air lift
699-24-34C				T1							T1														T1			Yes
699-24-46	A	A		A		A			A		T1	A							A	A		A	A		A			Yes
699-26-15A				T1							T1														T1			Yes
699-26-33	A	A		A		A			A		A	A							A	A		A	A		A			Yes
699-26-35A				T1							T1														T1			Yes
699-2-6A	Q	A		Q		A	A					A	A	A								Q			A			No, sampled only once; scheduling error; tritium & anions only[(a)]
699-2-7	Q	A		Q		A	A					A	A	A								Q			A			No, sampled only once; scheduling error; tritium & anions only[(a)]
699-27-8				T1							T1														T1			Dry
699-28-40				T1							T1	T1													T1			Yes
699-29-4				T1							T1														T1			Yes
699-31-11				T1							T1														T1			Yes
699-31-31	A	A		A		A			A		A	A							A	A		A	A		A			Yes
699-31-31P				T1							T1														T1			No; broken piezometer
699-32-22A	A	A		A		A			A		A	A							A	A		A	A		A			Yes

Table A.13. (contd)

Well	Alkalinity	Alpha	Ammonia	Anions	Arsenic	Beta	Coliform	Cyanide	Gamma	Hex Cr	I-129	ICP	Metals-Hg	Metals-Pb	Oil/Grease	Phenols	Pu	Semi-VOA	Sr-90	Tc-99	TDS	TOC	TOX	TPH	Tritium	Uranium	VOA	Sampled as Scheduled in FY 2004
699-32-22B	T3	T3		T3		T3					T3	T3													T3			Yes
699-32-43	A	A		A		A			A		A	A							A	A		A	A		A			Yes
699-33-42				T1							T1	T1													T1			Yes
699-34-41B				A							A														A			Yes
699-34-42				T1							T1														T1			No I-129; laboratory failure
699-35-9				T1							T1														T1			Yes
699-37-43				T1							T1														T1			Yes
699-37-47A				T1	T1						T1														T1			Yes
699-37-E4	T1			T1							T1	T1													T1			Yes
699-38-15				T1							T1														T1			Yes
699-39-39				T1							T1														T1			Did not produce water
699-40-1				T1							T1														T1			Yes
699-40-33A				T1							T1														T1			Yes
699-41-1A	A	A		A		A			A		A	A							A	A		A	A		A			Yes
699-41-23	T1	A		A		A			T1		A	T1							T1	T1		T1	T1		A			Yes
699-41-40	T1	T1		T1		T1					T1														T1			Yes
699-42-12A				T1							T1														T1			Yes
699-42-39A				T1							T1														T1			Yes
699-42-39B	T1			T1							T1														T1			Yes
699-42-40C	T3	T3		T3		T3					T3	T3													T3			Sampled FY 2004
699-42-41				T1	T1						T1														T1			Decommissioned
699-42-42B	T1			T1							T1														T1			Yes
699-43-3				T1							T1														T1			Yes
699-43-40				T1	T1						T1														T1			Dry
699-43-41E				T1	T1						T1														T1			Yes
699-43-43				T1	T1						T1														T1			Decommissioned
699-43-45				T1	T1						T1														T1			Yes
699-44-39B				T1							T1														T1			Yes
699-45-42				T1							T1														T1			Yes
699-46-21B	T1	A		A		A			T1		T1	T1							T1	T1		T1	T1		A			Yes
699-46-4	A	A		A		A			A		A	A							A	A		A	A		A			Yes
699-47-5				T1							T1														T1			Yes
699-48-7A																									T1			Yes
699-49-13E		T1		T1		T1			T1		T1														T1			Yes
699-50-28B				T1							T1														T1			Yes
699-8-17	Q	A		Q		A	A				A	A	A	A								Q			A			No[(b)]
699-8-25				T1							T1														T1			Yes
699-9-E2		T1		T1		T1			T1		T1														T1			Yes
699-S11-E12AP																									A			Yes
699-S12-3				T1																					T1			Yes
699-S19-E13	SA	A		SA		A			A			A							A	A		A	A		SA			December; sampled in June

Table A.13. (contd)

Well	Alkalinity	Alpha	Ammonia	Anions	Arsenic	Beta	Coliform	Cyanide	Gamma	Hex Cr	I-129	ICP	Metals-Hg	Metals-Pb	Oil/Grease	Phenols	Pu	Semi-VOA	Sr-90	Tc-99	TDS	TOC	TOX	TPH	Tritium	Uranium	VOA	Sampled as Scheduled in FY 2004
699-S19-E14				T1																					T1			Yes
699-S2-34B	A			A							A	A									A				A			No I-129 or TDS; sampler error
699-S3-25				T1																					T1			Yes
699-S3-E12	A	A		A		A			A			A							A	A		A	A		A			Yes
699-S6-E14A		T1		T1		T1			T1																T1			Yes
699-S6-E4A	A			A					A						SA	SA	A	SA	A					SA		SA	SA	SVOA, TPH; sampling error
699-S6-E4B		T1		T1		T1			T1																T1			No anions
699-S8-19				T1																					T1			Yes
81-D		A		A		A				A	A									A					A			No[(c)]
81-M		A		A		A				A	A									A					A			No[(c)]
81-S		A		A		A				A	A									A					A			No[(c)]
82-M		A		A		A				A	A									A					A			No[(c)]
82-S		A		A		A				A	A									A					A			No[(c)]
83-D		A		A		A				A	A									A					A			No[(c)]
84-D		A		A		A				A	A									A					A			No[(c)]
84-M		A		A		A				A	A									A					A			No[(c)]
84-S		A		A		A				A	A									A					A			No[(c)]
85-D		A		A		A				A	A									A					A			No[(c)]
85-M		A		A		A				A	A									A					A			No[(c)]
85-S		A		A		A				A	A									A					A			No[(c)]
86-D		A		A		A				A	A									A					A			No[(c)]
86-M		A		A		A				A	A									A					A			No[(c)]
86-S		A		A		A				A	A									A					A			No[(c)]

(a) Quarterly sampling and all constituents except tritium and anions were formerly sampled for 400 Area Process Ponds; ponds no longer required groundwater monitoring as of October 1, 2003.

(b) Formerly sampled for 400 Area Process Ponds; will change to triennial sampling for 200-PO-1 beginning in FY 2005.

(c) Scheduled to begin sampling in FY 2005.

A	=	Annual.
FY	=	Fiscal year.
Hex Cr	=	Hexavalent chromium.
I-129	=	Iodine-129.
Sr-90	=	Strontium-90.
SVOA	=	Semivolatile organic analyses.
T1	=	Triennial cycle beginning FY 2001 (e.g., FY 2004).
T3	=	Triennial cycle beginning FY 2003.
Tc-99	=	Technetium-99.
TDS	=	Total dissolved solids.
TOC	=	Total organic carbon.
TOX	=	Total organic halides.
TPH	=	Total petroleum hyrdocarbons.
VOA	=	Volatile organic analyses.

Table A.14. Monitoring Wells, Aquifer Tubes, and Constituents for the 300-FF-5 Operable Unit, 300 Area (adapted from DOE/RL-2002-11)

Well	Alkalinity	Alpha	Anions	Beta	ICP Metals	Sr-90	TPH	Tritium	Uranium	VOA	Sampled as Scheduled in FY 2004
399-1-1	SA		SA						SA	SA	Yes
399-1-10A	SA		SA						SA	SA	Yes
399-1-10B	SA							SA	SA	SA	Yes
399-1-11	SA								SA	SA	Yes
399-1-12	SA								SA	SA	Yes
399-1-15	SA	SA		SA			SA		SA	SA	Yes
399-1-16A	SA		SA						SA	SA	Missed December[(a)]
399-1-16B	SA								SA	SA	Missed December[(a)]
399-1-17A	SA	SA	SA	SA				SA	SA	SA	Yes
399-1-17B	SA								SA	SA	Yes
399-1-18A	SA		SA								Missed December[(a)]
399-1-18B	SA							SA			Yes
399-1-2	SA		SA						SA	SA	Yes
399-1-21A	SA							SA	SA	SA	Yes
399-1-21B	SA								SA	SA	Yes
399-1-6	SA		SA				SA		SA	SA	Yes
399-1-7	SA								SA	SA	Yes
399-1-8	SA								SA	SA	Yes
399-2-1	SA								SA	SA	Yes
399-2-2	SA								SA	SA	Yes
399-3-10	SA								SA	SA	Yes
399-3-11	SA	SA	SA	SA		SA		SA	SA	SA	Yes
399-3-12	SA		SA					SA	SA	SA	Yes
399-3-2	SA									SA	Yes
399-3-6	SA		SA					SA	SA	SA	Yes
399-4-1	SA		SA					SA	SA	SA	Yes
399-4-12	SA		SA					SA	SA	SA	Yes
399-4-9	SA		SA					SA	SA	SA	Yes
399-5-4B	SA							SA		SA	Yes
399-8-5A	SA	A	SA	SA				SA	SA	SA	Yes
AT-3-1-D	A		A		A				A	A	Yes
AT-3-1-M									A		Yes
AT-3-1-S									A		Yes

Table A.14. (contd)

Well	Alkalinity	Alpha	Anions	Beta	ICP Metals	Sr-90	TPH	Tritium	Uranium	VOA	Sampled as Scheduled in FY 2004
AT-3-2-M	A		A		A				A	A	Yes
AT-3-3-D	A		A		A				A	A	Yes
AT-3-3-M									A		Yes
AT-3-3-S									A		Yes
AT-3-4-D	A		A		A				A	A	Yes
AT-3-5-M	A		A		A				A	A	Yes
AT-3-6-D	A		A		A				A	A	Yes
AT-3-7-D	A		A		A				A	A	Yes
AT-3-8-D	A		A		A				A	A	Yes

(a) Sampling behind schedule; cancelled December event.

FY	=	Fiscal year.
ICP	=	Inductively coupled plasma.
SA	=	Semiannual.
Sr-90	=	Strontium-90.
TPH	=	Total petroleum hydrocarbons.
VOA	=	Volatile organic analyses.

Table A.15. Monitoring Wells and Constituents for the 300-FF-5 Operable Unit, North (adapted from DOE/RL-2002-11)

Well	Alkalinity	Alpha	Anions	Beta	Gamma	Iodine-129	Metals	TPH	Technetium-99	Tritium	Uranium	VOA and SVOA	Sampled as Scheduled in FY 2004
699-12-2C	SA	Q	SA	Q	Q	SA	A			Q	Q	A	Yes
699-13-0A	SA	Q	SA	Q	Q	SA	A			Q	Q	A	Yes
699-13-1E	SA	Q	SA	Q	Q	SA	A			Q	Q	A	Yes
699-13-2D	SA	Q	SA	Q	Q	SA	A			Q	Q	A	Yes
699-13-3A	SA	Q	SA	Q	Q	SA	A		A	Q	Q	A	Yes
699-S6-E4A	SA	SA	SA	SA	SA		SA	A		SA	SA	SA	Yes
699-S6-E4B	SA	A		A	A					SA	A		Yes
699-S6-E4D	A	A		A	A				A	A	A		Yes
699-S6-E4E	SA	A		A	A					A	A		Yes
699-S6-E4K	SA	SA	SA	SA	SA		SA	SA	SA	SA	SA	SA	Yes
699-S6-E4L	SA	SA	SA	SA	SA		SA	SA	SA	SA	SA	SA	Yes

A	=	Annual.
FY	=	Fiscal year.
Q	=	Quarterly.
SA	=	Semiannually.
SVOA	=	Semivolatile organic analyses.
TPH	=	Total petroleum hydrocarbons.
VOA	=	Volatile organic analyses.

Table A.16. Monitoring Wells and Constituents for the 1100-EM-1 Operable Unit (adapted from PNNL-12220)

Well	Anions	Metals	VOA	Sampled as Scheduled in FY 2004
699-S27-E12A			A	Yes
699-S28-E12	A		A	Yes
699-S28-E13A	A		A	Yes
699-S29-E10A	A		A	Yes
699-S29-E11	A		A	Yes
699-S29-E12	A		A	Yes
699-S29-E13A	A		A	Yes
699-S30-E10A	A		A	Yes
699-S30-E10B	A		A	Yes
699-S30-E11A	A		A	Yes
699-S31-E10A	A		A	Yes
699-S31-E10C	A		A	Yes
699-S31-E10D	A		A	Yes
699-S31-E11	A		A	Yes
699-S41-E12		A		Yes

A	=	Annual.
FY	=	Fiscal year.
VOA	=	Volatile organic analyses.

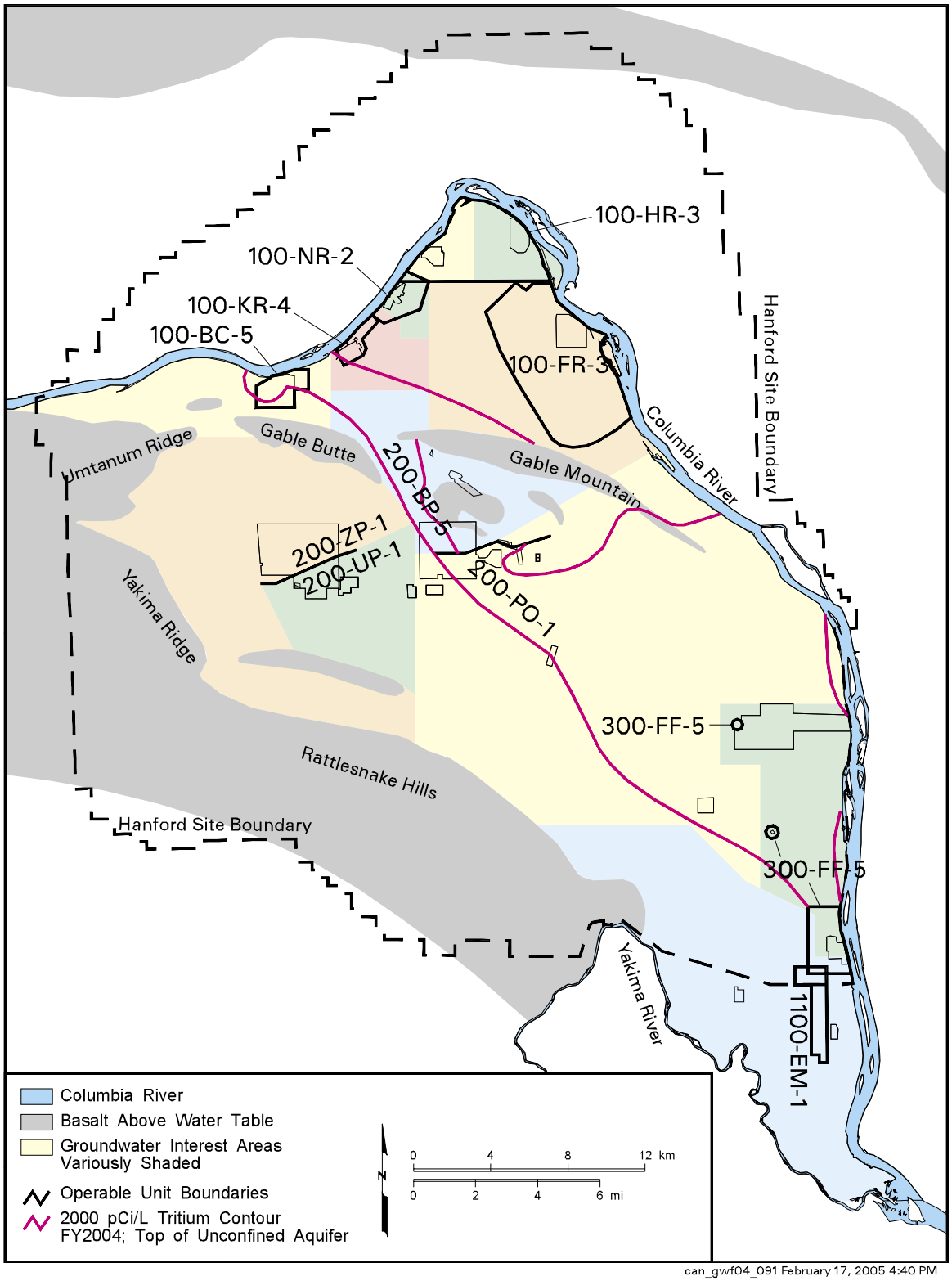

Figure A.1. Groundwater Operable Units and Groundwater Interest Areas on the Hanford Site