TRI-PARTY AGREEMENT

Change Notice Number TPA-CN- 676	TPA CHANGE NOTICE FORM	Date: 2/16/16
Document Number, Title, and Revision: DOE/RL-2000-59, Sampling and Analysis Plan for Aquifer Sampling Tubes, Rev. 1		Date Document Last Issued: February 2009
Previous Change Notices Against this Document: TPA-CN-327, TPA-CN-353, TPA-CN-556 and TPA-CN-612		
Originator: M.K. Stewart		Phone: 373-5818

Description of Change:
Change to Appendix A, Table A-1 and Table A-2 of DOE/RL-2000-59, *Sampling and Analysis Plan for Aquifer Sampling Tubes*.

M.W. Cline (**DOE**) and N.M Menard, C. J. Guzzetti (**Lead Regulatory Agency**) agree that the proposed change modifies an approved workplan/document and will be processed in accordance with the Tri-Party Agreement Action Plan, Section 9.0, *Documentation and Records,* and not Chapter 12.0, *Changes to the Agreement*.

Aquifer tubes in the 100-FR-3 and 300-FF-5 OUs are removed from this SAP because new OU-specific SAPs (DOE/RL-2014-42 and DOE/RL-2014-44-ADD2) supersede requirements for those aquifer tubes.

Replace pages A-17 through A-21 and A-34 through A-40 with the attached pages. Deleted text is identified by ~~Double Strikethrough~~, due to original published document including single strikethrough.

Justification and Impacts of Change:
Groundwater sampling and analysis plans (SAPs) for the River Corridor operable units (OU) are being revised. The data quality objectives process is applied to determine appropriate sampling programs. If this process determines that aquifer tube data are needed, the aquifer tubes are incorporated into the revised SAP for the individual groundwater OU. As the SAPs are revised, the aquifer tube requirements of DOE/RL-2000-59 are being superseded. New SAPs are already in place for 100-FR-3 (DOE/RL-2014-44-ADD2) and 300-FF-5 (DOE/RL-2014-42) OUs, so those aquifer tubes are deleted from Tables A-1 and A-2 immediately. As other SAPs are implemented, they will supersede requirements of DOE/RL-2000-59 and additional change notices will be prepared.

For information purposes, the bullets below list the actual or planned date for conversion of aquifer tube requirements into OU-specific SAPs:

- 100-BC-5: planned for fall 2016
- 100-KR-4: planned for fall 2016
- 100-NR-2: planned for spring 2016
- 100-HR-3: planned for spring 2016
- 100-FR-3: implemented fall 2015 (DOE/RL-2014-44-ADD2)
- 200-PO-1: planned for fall 2016
- 300-FF-5: implemented fall 2015 (DOE/RL-2014-42)

Approvals:

DOE Project Manager	2/17/2016 Date	[X] Approved [ ] Disapproved
EPA Project Manager	2/17/16 Date	[X] Approved [ ] Disapproved
Ecology Project Manager	2/18/16 Date	[X] Approved [ ] Disapproved

Table A-1. Aquifer Tube Sampling Sites and Analyses Proposed for Fiscal Year 2009. (19 sheets)

Tube Name	Note for Tubes Installed 2007 or 2008	Scheduled Collection Month	Frequency	Field Parameters	Anions	Hexavalent Chromium	Metals (Unfiltered)	Metals (Filtered)	Alkalinity	Arsenic	Tritium	Gross Alpha/ Beta	Gross Beta	Carbon-14	Gamma Scan	Iodine-129	Strontium-90	Technetium-99	Total Uranium	VOA	TPH	TOC
~~100 FR 3 Segment~~																						
~~62 M~~		~~Oct~~	~~A~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~													
~~C6302~~[a]	~~S~~	~~Oct~~	~~A~~	~~1~~		~~1~~											~~1~~					
~~C6303~~[a]	~~M~~	~~Oct~~	~~A~~	~~1~~	~~1~~	~~1~~					~~1~~						~~1~~					
~~64 S~~[a]		~~Oct~~	~~A~~	~~1~~		~~1~~											~~1~~					
~~64 M~~[a]		~~Oct~~	~~A~~	~~1~~		~~1~~											~~1~~					
~~64 D~~[a]		~~Oct~~	~~A~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~								~~1~~					
~~C6305~~[a]	~~S~~	~~Oct~~	~~A~~	~~1~~		~~1~~											~~1~~					
~~C6306~~[a]	~~M~~	~~Oct~~	~~A~~	~~1~~		~~1~~											~~1~~					
~~C6307~~[a]	~~D~~	~~Oct~~	~~A~~	~~1~~	~~1~~	~~1~~					~~1~~						~~1~~					
~~C6308~~[a]	~~S~~	~~Oct~~	~~A~~	~~1~~		~~1~~											~~1~~					
~~C6309~~[a]	~~M~~	~~Oct~~	~~A~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~			~~1~~						~~1~~					
~~C6311~~[a]	~~S~~	~~Oct~~	~~A~~	~~1~~		~~1~~											~~1~~					
~~C6312~~[a]	~~M~~	~~Oct~~	~~A~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~			~~1~~						~~1~~					
~~C6314~~[a]	~~S~~	~~Oct~~	~~A~~	~~1~~		~~1~~											~~1~~					
~~C6315~~[a]	~~M~~	~~Oct~~	~~A~~	~~1~~		~~1~~											~~1~~					
~~C6316~~[a]	~~D~~	~~Oct~~	~~A~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~			~~1~~						~~1~~					
~~AT F 1 S~~[a]		~~Oct~~	~~A~~	~~1~~		~~1~~											~~1~~					
~~AT F 1 M~~[a]		~~Oct~~	~~A~~	~~1~~		~~1~~											~~1~~					
~~AT F 1 D~~[a]		~~Oct~~	~~A~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~								~~1~~					
~~66 S~~			~~A~~	~~1~~																		

Table A-1. Aquifer Tube Sampling Sites and Analyses Proposed for Fiscal Year 2009. (19 sheets)

Tube Name	Note for Tubes Installed 2007 or 2008	Scheduled Collection Month	Frequency	Field Parameters	Anions	Hexavalent Chromium	Metals (Unfiltered)	Metals (Filtered)	Alkalinity	Arsenic	Tritium	Gross Alpha/ Beta	Gross Beta	Carbon-14	Gamma Scan	Iodine-129	Strontium-90	Technetium-99	Total Uranium	VOA	TPH	TOC
~~66-M~~		~~Oct~~	~~A~~	~~1~~																		
~~66-D~~		~~Oct~~	~~A~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~													
~~67-S~~		~~Oct~~	~~A~~	~~1~~																		
~~67-M~~			~~A~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~													
~~68-S~~		~~Oct~~	~~A~~	~~1~~																		
~~68-M~~		~~Oct~~	~~A~~	~~1~~																		
~~68-D~~		~~Oct~~	~~A~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~		~~1~~											
~~AT F-2-M~~		~~Oct~~	~~A~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~	~~1~~		~~1~~											
~~74-D~~		~~Oct~~	~~A~~	~~1~~	~~1~~	~~1~~																
~~75-D~~		~~Oct~~	~~A~~	~~1~~	~~1~~	~~1~~					~~1~~											
~~76-D~~		~~Oct~~	~~A~~	~~1~~	~~1~~	~~1~~																
~~77-D~~		~~Oct~~	~~A~~	~~1~~	~~1~~	~~1~~																
200-PO-1 Segment																						
85-D		Dec	A	1	1						1	1				1		1				
86-D		Dec	A	1	1						1	1				1		1				
C6383	S	Dec	A	1																		
C6384	M	Dec	A	1	1	1					1	1				1		1				
C6353	S	Dec	A	1	1	1					1	1				1		1				
C6356	S	Dec	A	1	1	1					1	1				1		1				
C6359	S	Dec	A	1	1	1					1	1				1		1				
C6362	S	Dec	A	1	1	1					1	1				1		1				
C6365	S	Dec	A	1	1	1					1	1				1		1				

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C6368	S	Dec	A	1	1	1					1	1				1		1				
C6371	S	Dec	A	1	1	1					1	1				1		1				
C6374	S	Dec	A	1																		
C6375	M	Dec	A	1	1	1					1	1				1		1				
C6378	S	Dec	A	1	1	1					1	1				1		1				
C6380	S	Dec	A	1	1	1					1	1				1		1				
~~300-FF-5 Segment~~																						
~~AT-3-1-S~~		~~Dec~~	~~A~~	~~1~~															~~1~~			
~~AT-3-1-M~~		~~Dec~~	~~A~~	~~1~~	~~1~~		~~1~~	~~1~~	~~1~~		~~1~~	~~1~~							~~1~~	~~1~~		
~~AT-3-1-D(1)~~		~~Dec~~	~~A~~	~~1~~															~~1~~			
~~AT-3-2-S~~		~~Dec~~	~~A~~	~~1~~															~~1~~			
~~AT-3-2-M~~		~~Dec~~	~~A~~	~~1~~	~~1~~		~~1~~	~~1~~	~~1~~		~~1~~	~~1~~							~~1~~	~~1~~		
~~C6341~~	~~S~~	~~Dec~~	~~A~~	~~1~~															~~1~~	~~1~~		
~~C6342~~	~~M~~	~~Dec~~	~~A~~	~~1~~	~~1~~		~~1~~	~~1~~	~~1~~		~~1~~	~~1~~							~~1~~	~~1~~		
~~C6343~~	~~D~~	~~Dec~~	~~A~~	~~1~~															~~1~~	~~1~~		
~~AT-3-3-S~~		~~Dec~~	~~A~~	~~1~~	~~1~~		~~1~~	~~1~~	~~1~~		~~1~~	~~1~~							~~1~~	~~1~~		
~~AT-3-3-M~~		~~Dec~~	~~A~~	~~1~~															~~1~~	~~1~~		
~~AT-3-3-D~~		~~Dec~~	~~A~~	~~1~~															~~1~~	~~1~~		
~~C6344~~	~~S~~	~~Dec~~	~~A~~	~~1~~	~~1~~		~~1~~	~~1~~	~~1~~		~~1~~	~~1~~							~~1~~	~~1~~		
~~AT-3-4-S~~		~~Dec~~	~~A~~	~~1~~	~~1~~		~~1~~	~~1~~	~~1~~		~~1~~	~~1~~							~~1~~	~~1~~		
~~AT-3-4-M~~		~~Dec~~	~~A~~	~~1~~															~~1~~	~~1~~		
~~AT-3-4-D~~		~~Dec~~	~~A~~	~~1~~															~~1~~	~~1~~		

Table A-1. Aquifer Tube Sampling Sites and Analyses Proposed for Fiscal Year 2009. (19 sheets)

Tube Name	Note for Tubes Installed 2007 or 2008	Scheduled Collection Month	Frequency	Field Parameters	Anions	Hexavalent Chromium	Metals (Unfiltered)	Metals (Filtered)	Alkalinity	Arsenic	Tritium	Gross Alpha/ Beta	Gross Beta	Carbon-14	Gamma Scan	Iodine-129	Strontium-90	Technetium-99	Total Uranium	VOA	TPH	TOC
~~C6347~~	~~S~~	~~Dec~~	~~A~~	~~1~~															~~1~~	~~1~~		
~~C6348~~	~~M~~	~~Dec~~	~~A~~	~~1~~	~~1~~		~~1~~	~~1~~	~~1~~		~~1~~	~~1~~							~~1~~	~~1~~		
~~AT-3-5-S~~		~~Dec~~	~~A~~	~~1~~	~~1~~		~~1~~	~~1~~	~~1~~			~~1~~							~~1~~			
~~C6350~~	~~S~~	~~Dec~~	~~A~~	~~1~~															~~1~~	~~1~~		
~~C6351~~	~~M~~	~~Dec~~	~~A~~	~~1~~	~~1~~		~~1~~	~~1~~	~~1~~		~~1~~	~~1~~							~~1~~	~~1~~		
~~AT-3-6-S~~		~~Dec~~	~~A~~	~~1~~	~~1~~		~~1~~	~~1~~	~~1~~			~~1~~							~~1~~			
~~AT-3-6-M~~		~~Dec~~	~~A~~	~~1~~															~~1~~			
~~AT-3-6-D~~		~~Dec~~	~~A~~	~~1~~															~~1~~	~~1~~		
~~AT-3-7-S~~		~~Dec~~	~~A~~	~~1~~															~~1~~			
~~AT-3-7-M~~		~~Dec~~	~~A~~	~~1~~	~~1~~		~~1~~	~~1~~	~~1~~			~~1~~							~~1~~			
~~AT-3-7-D~~		~~Dec~~	~~A~~	~~1~~															~~1~~	~~1~~		
~~AT-3-8-S~~		~~Dec~~	~~A~~	~~1~~	~~1~~		~~1~~	~~1~~	~~1~~			~~1~~							~~1~~			
~~AT-3-8-M~~		~~Dec~~	~~A~~	~~1~~															~~1~~			

[a] Sampled by apatite project staff (DOE/RL-2005-95, April 2008 addendum). Included in this sampling and analysis plan for information.

[b] Horn area sampling and analysis instruction (SGW-33224) specifies frequency of quarterly for one year (last quarter will be November 2008), then review data and determine frequency. Will schedule annually for FY09 (i.e., November). Can add more if Horn area evaluation warrants.

[c] Sample regardless of specific conductance.

NOTES:

Choice of tube depths to sample for full suite of constituents may vary depending on field conditions. See Table A-2 for recommendations of tube depths to sample.

Notes for tubes installed 2007 or 2008: Horn area tubes in accordance with SGW-33224; others in accordance with SGW-36398. "S," "M," and "D" indicate relative depths of tubes.

Frequency: A = annual; S = semi-annual; Q = quarterly

Q/A = quarterly for key constituents; annually (during low river stage) for full suite

Numerals in the constituent columns indicate number of samples to be collected during FY09 (e.g., 1 = annual, 4 = quarterly).

FY = fiscal year

TOC = total organic carbon

TPH = total petroleum hydrocarbon

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Tube Name	Note for Tubes Installed 2007 or 2008	Scheduled Collection Month	Frequency	Field Parameters	Anions	Hexavalent Chromium	Metals (Unfiltered)	Metals (Filtered)	Alkalinity	Arsenic	Tritium	Gross Alpha/ Beta	Gross Beta	Carbon-14	Gamma Scan	Iodine-129	Strontium-90	Technetium-99	Total Uranium	VOA	TPH	TOC

VOA = volatile organic analysis

Field parameters include the following:

Dissolved oxygen	Specific conductance
Oxidation-reduction potential	Temperature
pH	Turbidity

Metals analysis includes the following:

Barium	Molybdenum
Beryllium	Nickel
Bismuth	Potassium
Boron	Silicon
Cadmium	Silver
Calcium	Sodium
Chromium	Strontium
Cobalt	Tin
Copper	Titanium
Iron	Vanadium
Lithium	Zinc
Magnesium	Zirconium
Manganese	

Anions analysis includes the following:

Nitrate	Phosphate
Sulfate	Bromide
Fluoride	Nitrite
Chloride	

Table A-2. Sampling Recommendations Based on Evaluation of Aquifer Tube Historical Data. (19 sheets)

Shore Segment	Well ID	Tube Name	SAP	Hanford River Mile	Screen Depth (ft Below Land Surface)	Status	Plumes or Monitoring Purpose	Recommendation[a]
HR3H	B8321	57-S		17.10	7.0	Not currently in use	None; located downstream of 100-H	Do not need
HR3H	B8320	57-M		17.10	18.0	Not currently in use		
HR3H	B8319	57-D		17.10	29.0	Not currently in use		
HR3H	B8324	58-S		17.16	11.0	Not currently in use	None; located downstream of 100-H	Do not need
HR3H	B8323	58-M		17.16	19.5	Not currently in use		
HR3H	B8322	58-D		17.16	26.5	Not currently in use		
HR3H	B8327	59-S		17.38	11.0	Not currently in use	None; located downstream of 100-H	Do not need
HR3H	B8326	59-M		17.38	16.5	Not currently in use		
HR3H	B8325	59-D		17.38	23.0	Not currently in use		
HR3H	B8330	60-S		17.74	8.5	Not currently in use	None; located northwest of 100-F	Do not need
HR3H	B8329	60-M		17.74	17.5	Not currently in use		
HR3H	B8328	60-D		17.74	26.5	Not currently in use		
~~FR3~~	~~B8333~~	~~61-S~~		~~18.10~~	~~8.5~~	~~Not currently in use~~	~~None; located northwest of 100-F~~	~~Do not need~~
~~FR3~~	~~B8332~~	~~61-M~~		~~18.10~~	~~15.5~~	~~Not currently in use~~		
~~FR3~~	~~B8331~~	~~61-D~~		~~18.10~~	~~24.0~~	~~Not currently in use~~		
~~FR3~~	~~B8336~~	~~62-S~~	~~e~~	~~18.40~~	~~8.0~~	~~Active~~	~~NO3 >20 mg/L; located upstream of 100-F~~	~~Sample M~~
~~FR3~~	~~B8335~~	~~62-M~~	~~e~~	~~18.40~~	~~18.0~~	~~Active~~		
~~FR3~~	~~B8334~~	~~62-D~~		~~18.40~~	~~28.0~~	~~No yield~~		
~~FR3~~	~~B8339~~	~~63-S~~	~~e~~	~~18.81~~	~~10.0~~	~~Active~~	~~None~~	~~Do not need; redundant with new tubes~~
~~FR3~~	~~B8338~~	~~63-M~~		~~18.81~~	~~16.0~~	~~No yield~~		
~~FR3~~	~~B8337~~	~~63-D~~		~~18.81~~	~~23.0~~	~~No yield~~		
~~FR3~~	~~B8342~~	~~64-S~~		~~18.94~~	~~7.5~~	~~1 data point~~	~~Sr 90 <8 pCi/L; Cr <10 µg/L~~	~~Sample all for Sr 90; D for full suite~~
~~FR3~~	~~B8341~~	~~64-M*~~	~~e~~	~~18.94~~	~~17.0~~	~~Few data~~		
~~FR3~~	~~B8340~~	~~64-D*~~	~~e~~	~~18.94~~	~~27.0~~	~~Active~~		

Table A-2. Sampling Recommendations Based on Evaluation of Aquifer Tube Historical Data. (19 sheets)

Shore Segment	Well ID	Tube Name	SAP	Hanford River Mile	Screen Depth (ft Below Land Surface)	Status	Plumes or Monitoring Purpose	Recommendation[a]
~~FR3~~	~~B8345~~	~~65-S~~	~~e~~	~~19.10~~	~~8.5~~	~~Destroyed~~	~~N/A~~	~~N/A~~
~~FR3~~	~~B8344~~	~~65-M~~	~~e~~	~~19.10~~	~~16.0~~			
~~FR3~~	~~B8343~~	~~65-D~~	~~e~~	~~19.10~~	~~27.0~~			
~~FR3~~	~~C4391~~	~~AT-F-1-S[e]~~	~~e~~	~~19.22~~	~~10.3~~	~~Active~~	~~Sr-90 <8 pCi/L; Cr <10 µg/L~~	~~Sample all for Sr-90; D for full suite~~
~~FR3~~	~~C4390~~	~~AT-F-1-M[e]~~	~~e~~	~~19.22~~	~~18.1~~	~~Active~~		
~~FR3~~	~~C4389~~	~~AT-F-1-D[e]~~	~~e~~	~~19.22~~	~~26.1~~	~~Active~~		
~~FR3~~	~~B8348~~	~~66-S[e]~~	~~e~~	~~19.37~~	~~10.0~~	~~Active~~	~~None; Sr-90 undetected; Cr <10 µg/L~~	~~Sample highest SC~~
~~FR3~~	~~B8347~~	~~66-M[e]~~	~~e~~	~~19.37~~	~~19.2~~	~~Active~~		
~~FR3~~	~~B8346~~	~~66-D[e]~~	~~e~~	~~19.37~~	~~28.1~~	~~Active~~		
~~FR3~~	~~B8351~~	~~67-S~~	~~e~~	~~19.58~~	~~10.0~~	~~Active~~	~~None; samples all very dilute and dominated by river water~~	~~Sample highest SC~~
~~FR3~~	~~B8350~~	~~67-M~~	~~e~~	~~19.58~~	~~20.0~~	~~Active~~		
~~FR3~~	~~B8349~~	~~67-D~~		~~19.58~~	~~30.0~~	~~No yield~~		
~~FR3~~	~~B8354~~	~~68-S~~	~~e~~	~~19.76~~	~~10.5~~	~~Not currently in use~~	~~None; samples all very dilute and dominated by river water~~	~~Sample highest SC~~
~~FR3~~	~~B8353~~	~~68-M~~	~~e~~	~~19.76~~	~~18.3~~	~~Not currently in use~~		
~~FR3~~	~~B8352~~	~~68-D~~	~~e~~	~~19.76~~	~~25.0~~	~~Active~~		
~~FR3~~	~~B8356~~	~~69-M~~		~~19.80~~	~~15.0~~	~~Not currently in use~~	~~None; samples all very dilute~~	~~Do not need~~
~~FR3~~	~~B8355~~	~~69-D~~		~~19.80~~	~~31.0~~	~~Not currently in use~~		
~~FR3~~	~~B8360~~	~~70-S~~		~~19.95~~	~~17.0~~	~~Destroyed~~	~~N/A~~	~~N/A~~
~~FR3~~	~~B8359~~	~~70-M~~		~~19.95~~	~~24.0~~			
~~FR3~~	~~B8358~~	~~70-D~~		~~19.95~~	~~31.0~~			
~~FR3~~	~~C4394~~	~~AT-F-2-S~~	~~e~~	~~20.11~~	~~7.5~~	~~No data~~	~~None; located downstream of 100-F~~	~~Sample highest SC~~
~~FR3~~	~~C4393~~	~~AT-F-2-M~~	~~e~~	~~20.11~~	~~13.6~~	~~Active~~		
~~FR3~~	~~C4392~~	~~AT-F-2-D~~	~~e~~	~~20.11~~	~~19.3~~	~~Few data~~		
~~FR3~~	~~B8361~~	~~71-D~~		~~20.26~~	~~7.5~~	~~Destroyed~~	~~N/A~~	~~N/A~~

Table A-2. Sampling Recommendations Based on Evaluation of Aquifer Tube Historical Data. (19 sheets)

Shore Segment	Well ID	Tube Name	SAP	Hanford River Mile	Screen Depth (ft Below Land Surface)	Status	Plumes or Monitoring Purpose	Recommendation[a]
~~FR3~~	~~C4385~~	~~AT F-3-S~~	~~e~~	~~20.42~~	~~6.0~~	~~Few data~~	~~None; located downstream of 100-F~~	~~Do not need~~
~~FR3~~	~~C4384~~	~~AT F-3-M~~	~~e~~	~~20.42~~	~~10.8~~	~~Few data~~		
~~FR3~~	~~C4383~~	~~AT F-3-D~~	~~e~~	~~20.42~~	~~14.1~~	~~Active~~		
~~FR3~~	~~B8366~~	~~72-S~~		~~20.67~~	~~9.5~~	~~Not found~~	~~None; located downstream of 100-F~~	~~Do not need~~
~~FR3~~	~~B8365~~	~~72-M~~	~~e~~	~~20.67~~	~~18.0~~	~~Active~~		
~~FR3~~	~~B8364~~	~~72-D~~	~~e~~	~~20.67~~	~~28.0~~	~~Low yield~~		
~~FR3~~	~~B8369~~	~~73-S~~	~~e~~	~~20.81~~	~~10.5~~	~~Not found~~	~~N/A~~	~~N/A~~
~~FR3~~	~~B8368~~	~~73-M~~	~~e~~	~~20.81~~	~~19.0~~			
~~FR3~~	~~B8367~~	~~73-D~~	~~e~~	~~20.81~~	~~27.0~~			
~~FR3~~	~~C4388~~	~~AT F-4-S~~	~~e~~	~~21.00~~	~~7.2~~	~~No data~~	~~None; located downstream of 100-F~~	~~Don't need~~
~~FR3~~	~~C4387~~	~~AT F-4-M~~	~~e~~	~~21.00~~	~~18.0~~	~~No data~~		
~~FR3~~	~~C4386~~	~~AT F-4-D~~	~~e~~	~~21.00~~	~~32.3~~	~~Active~~		
~~FR3~~	~~B8372~~	~~74-S~~		~~21.16~~	~~11.0~~	~~No yield~~	~~NO3 occasionally >10 mg/L; located downstream of 100-F~~	~~Sample D—best record~~
~~FR3~~	~~B8371~~	~~74-M~~	~~e~~	~~21.16~~	~~17.0~~	~~Few data~~		
~~FR3~~	~~B8370~~	~~74-D~~	~~e~~	~~21.16~~	~~29.0~~	~~Active~~		
~~FR3~~	~~B8375~~	~~75-S~~	~~e~~	~~21.49~~	~~11.0~~	~~One data point~~	~~NO3 >45 mg/L; located downstream of 100-F~~	~~Sample M or D~~
~~FR3~~	~~B8374~~	~~75-M~~	~~e~~	~~21.49~~	~~19.0~~	~~Active~~		
~~FR3~~	~~B8373~~	~~75-D~~	~~e~~	~~21.49~~	~~27.0~~	~~Active~~		
~~FR3~~	~~B8378~~	~~76-S~~	~~e~~	~~21.68~~	~~11.0~~	~~Few data~~	~~NO3 once >20 mg/L; located downstream of 100-F~~	~~Sample D—best record~~
~~FR3~~	~~B8377~~	~~76-M~~	~~e~~	~~21.68~~	~~19.0~~	~~Few data~~		
~~FR3~~	~~B8376~~	~~76-D~~	~~e~~	~~21.68~~	~~25.0~~	~~Active~~		
~~FR3~~	~~B8381~~	~~77-S~~	~~e~~	~~21.86~~	~~8.5~~	~~Few data~~	~~NO3 >20 mg/L; located downstream of 100-F~~	~~Sample D—best record~~
~~FR3~~	~~B8380~~	~~77-M~~	~~e~~	~~21.86~~	~~16.5~~	~~Few data~~		
~~FR3~~	~~B8379~~	~~77-D~~	~~e~~	~~21.86~~	~~24.5~~	~~Active~~		

Table A-2. Sampling Recommendations Based on Evaluation of Aquifer Tube Historical Data. (19 sheets)

Shore Segment	Well ID	Tube Name	SAP	Hanford River Mile	Screen Depth (ft Below Land Surface)	Status	Plumes or Monitoring Purpose	Recommendation[a]
~~FR3~~	~~B8384~~	~~78-S~~	~~e~~	~~22.30~~	~~8.0~~	~~Not found~~	~~N/A~~	~~N/A~~
~~FR3~~	~~B8383~~	~~78-M~~	~~e~~	~~22.30~~	~~16.0~~			
~~FR3~~	~~B8382~~	~~78-D~~	~~e~~	~~22.30~~	~~24.0~~			
~~FR3~~	~~B8390~~	~~80-S~~		~~23.10~~	~~5.0~~	~~No data~~	~~None; located between 100-F and Hanford townsite~~	~~Do not need~~
~~FR3~~	~~B8389~~	~~80-M~~	~~e~~	~~23.10~~	~~15.5~~	~~Not found~~		
~~FR3~~	~~B8388~~	~~80-D~~	~~e~~	~~23.10~~	~~25.5~~	~~Active~~		
~~PO1~~	~~B8393~~	~~81-S~~	~~f~~	~~25.12~~	~~8.5~~	Not found	N/A	N/A
~~PO1~~	~~B8392~~	~~81-M~~	~~f~~	~~25.12~~	~~16.5~~			
~~PO1~~	~~B8391~~	~~81-D~~	~~f~~	~~25.12~~	~~24.5~~			
PO1	B8396	82-S	f	25.72	8.5	1 data point	Tritium undetected; located at Hanford townsite	Do not need
PO1	B8395	82-M	f	25.72	14.5	Low yield		
~~PO1~~	~~B8397~~	~~83-D~~	~~f~~	~~26.23~~	~~20.0~~	Not found	N/A	N/A
PO1	B8402	84-S	f	26.64	8.0	No data	Tritium mostly undetected; located at Hanford townsite	Do not need; doesn't help define plumes
PO1	B8401	84-M	f	26.64	14.0	No data		
PO1	B8400	84-D	f	26.64	22.0	Active		
PO1	B8405	85-S	f	27.13	8.0	No data	Tritium near detection limit; located at Hanford townsite	Sample highest SC; help bound plumes
PO1	B8404	85-M	f	27.13	17.0	1 data point		
PO1	B8403	85-D	f	27.13	26.0	1 data point		
PO1	B8408	86-S	f	27.39	7.0	1 data point	Tritium >2,000 pCi/L; located at Hanford townsite	Sample D - best record
PO1	B8407	86-M	f	27.39	10.0	Active		
PO1	B8406	86-D	f	27.39	26.0	Active; best record		

Table A-2. Sampling Recommendations Based on Evaluation of Aquifer Tube Historical Data. (19 sheets)

Shore Segment	Well ID	Tube Name	SAP	Hanford River Mile	Screen Depth (ft Below Land Surface)	Status	Plumes or Monitoring Purpose	Recommendation[a]
~~3FF5~~	~~C4347~~	~~AT 3-1-S~~	~~g~~	~~42.08~~	~~11.6~~	~~Active~~	~~U >30 µg/L; tritium >2,000 pCi/L~~	~~No recommendation—defer to SAP.~~
~~3FF5~~	~~C4346~~	~~AT 3-1-M~~	~~g~~	~~42.08~~	~~16.8~~	~~Active~~		
~~3FF5~~	~~C4345~~	~~AT 3-1-D(1)~~	~~g~~	~~42.08~~	~~21.1~~	~~Active~~		
~~3FF5~~	~~C4348~~	~~AT 3-1-D(2)~~		~~42.08~~	~~21.0~~	~~No data~~		
~~3FF5~~	~~C4350~~	~~AT 3-2-S~~	~~g~~	~~42.24~~	~~10.8~~	~~Active~~	~~U >30 µg/L, same in both; tritium >2,000 pCi/L~~	
~~3FF5~~	~~C4349~~	~~AT 3-2-M~~	~~g~~	~~42.24~~	~~16.6~~	~~Active~~		
~~3FF5~~	~~C5277~~	~~103mArray-US125~~		~~42.313~~	~~2.7~~	~~Active~~	~~U <30 µg/L; SC low~~	
~~3FF5~~	~~C5276~~	~~103mArray-US100~~		~~42.332~~	~~6.0~~	~~Active~~	~~U <30 µg/L; SC low~~	
~~3FF5~~	~~C5275~~	~~103mArray-US75~~		~~42.350~~	~~6.2~~	~~Active~~	~~U >30 µg/L; tritium >2,000 pCi/L~~	
~~3FF5~~	~~C4642~~	~~300SPR9A-19cm~~		~~42.365~~	~~0.6~~	~~Active~~	~~U >30 µg/L; tritium >2,000 pCi/L; NO3 >20 mg/L; highest in 142cm~~	
~~3FF5~~	~~C4643~~	~~300SPR9A-86cm~~		~~42.365~~	~~2.8~~	~~Active~~		
~~3FF5~~	~~C4644~~	~~300SPR9A-142cm~~		~~42.365~~	~~4.7~~	~~Active~~		
~~3FF5~~	~~C5274~~	~~103mArray-US50~~		~~42.367~~	~~6.1~~	~~Active~~	~~U >30 µg/L; tritium >2,000 pCi/L~~	
~~3FF5~~	~~C5273~~	~~103mArray-US25~~		~~42.377~~	~~5.6~~	~~Active~~	~~U >30 µg/L; tritium >2,000 pCi/L~~	
~~3FF5~~	~~none~~	~~300-3-3B-120cm~~		~~42.389~~	~~3.9~~	~~No data~~	~~Tube 376cm: U >30 µg/L; tritium >2,000 pCi/L; NO3 sometimes >20 mg/L~~	
~~3FF5~~	~~C4646~~	~~300-3-3B-376cm~~		~~42.389~~	~~12.3~~	~~Active~~		
~~3FF5~~	~~C4740~~	~~300-3-3B-518cm~~		~~42.389~~	~~17.0~~	~~1 data point~~		
~~3FF5~~	~~C4741~~	~~300-3-3C-409cm~~		~~42.390~~	~~13.4~~	~~Active~~	~~Tube 409cm: U >30 µg/L~~	
~~3FF5~~	~~C4742~~	~~300-3-3C-589cm~~		~~42.390~~	~~19.3~~	~~Few data~~		
~~3FF5~~	~~none~~	~~300-3-3-80cm~~		~~42.391~~	~~2.6~~	~~No data~~	~~N/A~~	

Table A-2. Sampling Recommendations Based on Evaluation of Aquifer Tube Historical Data. (19 sheets)

Shore Segment	Well ID	Tube Name	SAP	Hanford River Mile	Screen Depth (ft Below Land Surface)	Status	Plumes or Monitoring Purpose	Recommendation[a]
~~3FF5~~	~~C4690~~	~~300-3-3A-124cm~~		~~42.391~~	~~4.1~~	~~Active~~	~~U >30 µg/L; tritium >2,000 pCi/L; NO3 sometimes >20 mg/L~~	
~~3FF5~~	~~C4645~~	~~300-3-3A-410cm~~		~~42.391~~	~~13.5~~	~~Active~~		
~~3FF5~~	~~C4739~~	~~300-3-3A-579cm~~		~~42.391~~	~~19.0~~	~~Few data~~		
~~3FF5~~	~~C5272~~	~~103mArray-AT3A~~		~~42.391~~	~~6.9~~	~~Active~~	~~U >30 µg/L; tritium >2,000 pCi/L~~	
~~3FF5~~	~~C4353~~	~~AT-3-3-S~~	~~g~~	~~42.39~~	~~6.9~~	~~Active~~	~~U >30 µg/L; TCE >100 µg/L in D; tritium >2,000 pCi/L in S and M~~	
~~3FF5~~	~~C4352~~	~~AT-3-3-M~~	~~g~~	~~42.39~~	~~15.1~~	~~Active~~		
~~3FF5~~	~~C4351~~	~~AT-3-3-D~~	~~g~~	~~42.39~~	~~29.1~~	~~Low yield~~		
~~3FF5~~	~~C5278~~	~~103mArray-DS25~~		~~42.404~~	~~5.6~~	~~Active~~	~~U >30 µg/L; tritium >2,000 pCi/L~~	
~~3FF5~~	~~C5279~~	~~103mArray-DS50~~		~~42.412~~	~~5.2~~	~~Active~~	~~U >30 µg/L; tritium >2,000 pCi/L~~	
~~3FF5~~	~~C5280~~	~~103mArray-DS75~~		~~42.434~~	~~6.6~~	~~Active~~	~~U >30 µg/L; tritium >2,000 pCi/L~~	
~~3FF5~~	~~C4356~~	~~AT-3-4-S~~	~~g~~	~~42.49~~	~~7.0~~	~~Active~~	~~U >30 µg/L; TCE >5 µg/L in M and D; tritium >2,000 pCi/L in S~~	
~~3FF5~~	~~C4355~~	~~AT-3-4-M~~	~~g~~	~~42.49~~	~~9.2~~	~~Low yield~~		
~~3FF5~~	~~C4354~~	~~AT-3-4-D~~	~~g~~	~~42.49~~	~~12.0~~	~~Low yield~~		
~~3FF5~~	~~C4358~~	~~AT-3-5-S~~	~~g~~	~~42.61~~	~~7.7~~	~~Active~~	~~U >30 µg/L; TCE <1 µg/L; tritium >2,000 pCi/L~~	
~~3FF5~~	~~C4357~~	~~AT-3-5-M~~		~~42.61~~	~~12.2~~	~~No yield~~		
~~3FF5~~	~~C4361~~	~~AT-3-6-S~~	~~g~~	~~42.72~~	~~9.6~~	~~Active~~	~~U >30 µg/L in S&M; TCE <1 µg/L; tritium >2,000 pCi/L~~	
~~3FF5~~	~~C4360~~	~~AT-3-6-M~~	~~g~~	~~42.72~~	~~21.8~~	~~Active~~		
~~3FF5~~	~~C4359~~	~~AT-3-6-D~~	~~g~~	~~42.72~~	~~38.6~~	~~Active~~		
~~3FF5~~	~~C4364~~	~~AT-3-7-S~~	~~g~~	~~42.82~~	~~8.6~~	~~Active~~	~~U <30 µg/L; TCE <1 µg/L; NO3 >20 mg/L in M~~	
~~3FF5~~	~~C4363~~	~~AT-3-7-M~~	~~g~~	~~42.82~~	~~20.8~~	~~Active~~		
~~3FF5~~	~~C4362~~	~~AT-3-7-D~~	~~g~~	~~42.82~~	~~37.3~~	~~Active~~		

Table A-2. Sampling Recommendations Based on Evaluation of Aquifer Tube Historical Data. (19 sheets)

Shore Segment	Well ID	Tube Name	SAP	Hanford River Mile	Screen Depth (ft Below Land Surface)	Status	Plumes or Monitoring Purpose	Recommendation[a]
~~3FF5~~	~~C4367~~	~~AT 3-8-S~~	~~g~~	~~42.94~~	~~8.0~~	~~Active~~	~~U <30 µg/L; TCE <1 µg/L; NO3 >20 mg/L~~	
~~3FF5~~	~~C4366~~	~~AT 3-8-M~~	~~g~~	~~42.94~~	~~14.0~~	~~Active~~		
~~3FF5~~	~~C4365~~	~~AT 3-8-D~~	~~g~~	~~42.94~~	~~20.1~~	~~No yield~~		

NOTE: Tubes shown with strike-out text are out of service or do not consistently yield water.
[a] Subject to approval by regulatory agencies.
[b] TPA-CN-182, dated September 6, 2007.
[c] PNNL-15798, *100-N Shoreline Groundwater Monitoring Plan.*
[d] DOE/RL-2005-95, *Removal Action Work Plan #2 for the 324/327 Buildings and Ancillary Facilities,* Addendum (dated April 2008).
[e] DOE/RL-2003-49, *100-FR-3 Operable Unit Sampling and Analysis Plan.*
[f] DOE/RL-2003-04, *Sampling and Analysis Plan for the 200-PO-1 Groundwater Operable Unit.*
[g] DOE/RL-2002-11, *300-FF-5 Operable Unit Sampling and Analysis Plan.*
[c] Sampling and analysis plan specifies these tubes to be sampled regardless of specific conductance.
DWS = drinking water standard
FY = fiscal year
ISRM = In Situ Redox Manipulation
N/A = not applicable
S&M = surveillance and maintenance
SAP = sampling and analysis plan
SC = specific conductance
TCE = trichloroethene
WT = water table