

TRI-PARTY AGREEMENT

Change Notice Number TPA-CN- 1112	TPA CHANGE NOTICE FORM	Date: December 27, 2022
Document Number, Title, and Revision: DOE/RL-2017-13-ADD1, Groundwater Monitoring Sampling and Analysis Plan for the 100-HR-3 Groundwater Operable Unit, Rev. 0		Date Document Last Issued: July 27, 2021
Approved Change Notices Against this Document: TPA-CN-1109		
Originator: S. J. Bendaña		Phone: 509-373-6734
Description of Change:		
<p>Table B-1 is amended to add four RUM aquifer extraction wells and two monitoring wells to the sampling and analysis schedule. The waste management plan for handling the drilling-derived wastes is updated by adding the six wells to Table B-1. Additionally, there are six extraction wells that have been realigned to injection wells and are removed from the groundwater sampling schedule. Five extraction wells have been converted to monitoring wells. Two monitoring wells that are added to the automated water level network (AWLN) and one well that is removed from the AWLN. One monitoring well needs to be sampled specifically during high river stage. The sampling frequencies for five wells near known continuing sources of contamination in 100-HR-3 were changed from annually to quarterly. Figure B1 is updated to show the most recent 100-HR-3 well network. A change history table is added to document the revisions made to the groundwater monitoring SAP via this TPA-CN and TPA-CN-1109.</p>		

W. F. Hamel _____ and _____ K. R. Welsch _____ agree that the proposed change
DOE **Lead Regulatory Agency**

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*.

The following changes have been made to Table B-1:

- The following wells and sampling frequencies were added:
 - D0264
 - D0265
 - D0266
 - D0267
 - 199-H4-95
 - 199-D3-7

CONTINUED ON PAGE 2

Additions are shown using double underline. Deletions are shown using ~~strikeout~~.

Note: Include affected page numbers: xi-xii, B1-B23

Justification and Impacts of Change: CONTINUED ON PAGE 2

Approvals:

<u>William F. Hamel</u> <small>DOE Project Manager</small>  <u>Armijo, Roberto</u> <small>EPA Project Manager</small>  <small>Ecology Project Manager</small> 	<small>Digital signature by William F. Hamel</small> <small>Date: 2023.01.05 10:01:49 -08'00'</small> <small>Date</small> <small>Digital signature by Armijo, Roberto</small> <small>Date: 2023.01.06 07:32:42 -08'00'</small> <small>Date</small> <small>Digital signature by Welsch, Kim (ECY)</small> <small>Date: 2023.01.05 12:26:54 -08'00'</small> <small>Date</small>	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> Approved <input checked="" type="checkbox"/> Disapproved <input type="checkbox"/> Approved <input checked="" type="checkbox"/> Disapproved
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Continued Description of Change:

- Sampling is removed from the schedule for the following:
 - 199-D5-20
 - 199-D8-55
 - 199-H1-32
 - 199-H1-33
 - 199-H1-34
 - 199-H1-39
- For the following converted wells, well type information is updated:
 - 199-H4-15A
 - 199-H4-64
 - 199-H4-63
 - 199-H4-69
 - 199-H3-21
- The following unconfined monitoring wells are being added to the AWLN:
 - 199-H3-2A
 - 199-H4-88
- The following unconfined monitoring well is taken off the AWLN:
 - 199-D4-13
- The following unconfined monitoring well needs to be sampled during high river stage:
 - 199-H1-7
- Sampling frequencies for the following analytes have been increased from annually to quarterly:
 - 199-H3-21 (Hexavalent Chromium [Cr(VI)])
 - 199-H4-83 (Hexavalent Chromium [Cr(VI)])
 - 199-H4-84 (Hexavalent Chromium [Cr(VI)], Nitrate and Uranium)
 - 199-H4-88 (Hexavalent Chromium [Cr(VI)], Nitrate and Uranium)
 - 199-H4-89 (Hexavalent Chromium [Cr(VI)], Nitrate and Uranium)
- Updated Figure B-1. 100-HR-3 Well Network as of August 2022.
- Added an "Change History for DOE/RL-2017-13-ADD1, Groundwater Monitoring Sampling and Analysis Plan for the 100-HR-3 Groundwater Operable Unit" Table. Added an additional page "xi".
- The changes from annual to quarterly sampling include changing sampling frequency indicators "A" (annual) to "Q" (quarterly) for the wells listed in the second bulleted list

Justification and Impacts of Change:

New wells were identified for installation during fiscal year 2022 to address 100-HR-3 project needs. Wells D0264, D0265, D0266, and D0267 are RUM aquifer extraction wells being placed in high contaminant concentration locations to accelerate remediation of the RUM aquifer. The change of the sampling schedule for these new wells will obtain additional water level and contaminant characterization data for the lower RUM water bearing unit. RUM and unconfined monitoring wells (199-H4-95 and 199-D3-7, respectively) are defined in DOE/RL-2017-13-ADD2A to monitor and characterize contamination in their respective locations.

Additionally, this TPA change notice removes of sampling locations from the groundwater sampling schedule that can no longer be sampled because of the change in well configurations to injection purposes. It increases the sampling frequencies at select existing locations near known contamination continuing sources to allow for observing contaminant release characteristics that may be seasonally induced. This information is important for parameterizing flow and transport models used in estimating time-to-cleanup.

Two unconfined monitoring wells are being added to the AWLN to support accurate hydraulic gradient and groundwater flow path estimation during the 100-H-North Rebound Study. One unconfined well that is no longer registering measurements will be removed from the AWLN network and its AWLN equipment transferred to another well.

At the request of Ecology, the change history table is added to list the changes currently written for DOE/RL-2017-13-ADD2.

Continued Description of Change:

- Sampling is removed from the schedule for the following:
 - 199-D5-20
 - 199-D8-55
 - 199-H1-32
 - 199-H1-33
 - 199-H1-34
 - 199-H1-39
- For the following converted wells, well type information is updated:
 - 199-H4-15A
 - 199-H4-64
 - 199-H4-63
 - 199-H4-69
 - 199-H3-21
- The following unconfined monitoring wells are being added to the AWLN:
 - 199-H3-2A
 - 199-H4-88
- The following unconfined monitoring well is taken off the AWLN:
 - 199-D4-13
- The following unconfined monitoring well needs to be sampled during high river stage:
 - 199-H1-7
- Sampling frequencies for the following analytes have been increased from annually to quarterly:
 - 199-H3-21 (Hexavalent Chromium [Cr(VI)])
 - 199-H4-83 (Hexavalent Chromium [Cr(VI)])
 - 199-H4-84 (Hexavalent Chromium [Cr(VI)], Nitrate and Uranium)
 - 199-H4-88 (Hexavalent Chromium [Cr(VI)], Nitrate and Uranium)
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- Updated Figure B-1. 100-HR-3 Well Network as of August 2022.
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- The changes from annual to quarterly sampling include changing sampling frequency indicators "A" (annual) to "Q" (quarterly) for the wells listed in the second bulleted list

Justification and Impacts of Change:

New wells were identified for installation during fiscal year 2022 to address 100-HR-3 project needs. Wells D0264, D0265, D0266, and D0267 are RUM aquifer extraction wells being placed in high contaminant concentration locations to accelerate remediation of the RUM aquifer. The change of the sampling schedule for these new wells will obtain additional water level and contaminant characterization data for the lower RUM water bearing unit. RUM and unconfined monitoring wells (199-H4-95 and 199-D3-7, respectively) are defined in DOE/RL-2017-13-ADD2A to monitor and characterize contamination in their respective locations.

Additionally, this TPA change notice removes of sampling locations from the groundwater sampling schedule that can no longer be sampled because of the change in well configurations to injection purposes. It increases the sampling frequencies at select existing locations near known contamination continuing sources to allow for observing contaminant release characteristics that may be seasonally induced. This information is important for parameterizing flow and transport models used in estimating time-to-cleanup.

Two unconfined monitoring wells are being added to the AWLN to support accurate hydraulic gradient and groundwater flow path estimation during the 100-H-North Rebound Study. One unconfined well that is no longer registering measurements will be removed from the AWLN network and its AWLN equipment transferred to another well.

At the request of Ecology, the change history table is added to list the changes currently written for DOE/RL-2017-13-ADD2.

Change History for DOE/RL-2017-13-ADD1, Groundwater Monitoring Sampling and Analysis Plan for the 100-HR-3 Groundwater Operable Unit

<u>TPA-CN</u>	<u>Modifications</u>	<u>Signature Date</u>
<u>TPA-CN-1109</u>	<p>(1) <u>Added following FY2021 and FY2022 drilled and to-be-drilled wells to Table B-1 for sampling:</u></p> <ul style="list-style-type: none">• <u>199-H3-33 (RUM, extraction)</u>• <u>199-H3-34 (RUM, monitoring)</u>• <u>199-H6-9 (RUM, monitoring)</u>• <u>199-D1-1 (unconfined, monitoring)</u>• <u>199-D2-14 (unconfined, monitoring)</u>• <u>199-H1-51 (unconfined, extraction)</u>• <u>199-H3-35 (RUM, extraction)</u>• <u>199-H3-36 (RUM, extraction)</u>• <u>199-H3-37 (RUM, extraction)</u>• <u>199-H3-38 (RUM, extraction)</u>• <u>199-H3-39 (RUM, extraction)</u>• <u>199-H4-95 (RUM, monitoring)</u>• <u>199-D11-2 (RUM, monitoring)</u>• <u>699-95-46 (RUM, monitoring)</u>• <u>199-H3-15 (RUM, monitoring)</u>• <u>199-D3-7 (unconfined, monitoring)</u>• <u>199-D5-162 (unconfined, monitoring)</u>• <u>199-D5-163 (unconfined, monitoring)</u>• <u>199-D11-3 (unconfined, monitoring)</u> <p>(2) <u>Updated title of Table B-1</u></p> <p>(3) <u>Updated Table B-1 footnotes</u></p>	<u>2/10/2022</u>
<u>TPA-CN-1112</u>	<p>(1) <u>Added following FY2022 through FY2024 drilled and to-be-drilled wells to Table B-1 for sampling:</u></p> <ul style="list-style-type: none">• <u>D0264 (RUM, extraction)</u>• <u>D0265 (RUM, extraction)</u>• <u>D0266 (RUM, extraction)</u>• <u>D0267 (RUM, extraction)</u>• <u>199-H4-95 (RUM, monitoring)</u>• <u>199-D3-7 (unconfined, monitoring)</u> <p>(2) <u>Updated Table B-1 well type information for the following wells converted from extraction to injection</u></p> <ul style="list-style-type: none">• <u>199-D5-20</u>• <u>199-D8-55</u>• <u>199-H1-32</u>• <u>199-H1-33</u>• <u>199-H1-34</u>• <u>199-H1-39</u> <p>(3) <u>Updated Table B-1 to change well type for the following wells realigned from extraction to monitoring</u></p> <ul style="list-style-type: none">• <u>199-H4-15A</u>• <u>199-H4-64</u>• <u>199-H4-63</u>• <u>199-H4-69</u>• <u>199-H3-21</u>	<u>Expected 12/29/2022</u>

<p>(4) <u>Updated Table B-1 to reflect addition to the HR-3 automated water level network (AWLN) for the following wells</u> • <u>199-H3-2A</u> • <u>199-H4-88</u></p> <p>(5) <u>Updated Table B-1 to reflect deletion to the HR-3 automated water level network (AWLN) for the following wells</u> • <u>199-D4-13</u></p> <p>(6) <u>Updated Table B-1 to reflect unconfined monitoring well that needs to be sampled during high river stage</u> • <u>199-H1-7</u></p> <p>(7) <u>Updated sampling frequencies from annually to quarterly for the following wells in Table B-1</u> • <u>199-H3-21 (Hexavalent Chromium)</u> • <u>199-H4-83 (Hexavalent Chromium)</u> • <u>199-H4-84 (Hexavalent Chromium, Nitrate, and Uranium)</u> • <u>199-H4-88 (Hexavalent Chromium, Nitrate, and Uranium)</u> • <u>199-H4-89 (Hexavalent Chromium, Nitrate, and Uranium)</u></p> <p>(8) <u>Updated Figure B-1. 100-HR-3 Well Network</u></p>	
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Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a	Cr(VI) (Filtered)	Nitrate (Unfiltered)	Sr-90 (Unfiltered)	Uranium (Total) (Filtered and Unfiltered)	Tc-99 (Unfiltered)	Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?	PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?	PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?	PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?	PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?	PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?	PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?
			A	A	A	5	A	YES	A	YES	1a	2a	1a	2a	4a, 4b	4a, 4b	4a, 4b
Unconfined Aquifer Wells																	
199-D2-10			A								1a	2a					
199-D2-11								YES									
199-D2-12			A								1a						
199-D2-6				5									3a				
199-D3-2			A					YES			1a	2a		4a, 4b			
199-D3-3	To be decommissioned																
199-D3-4	To be decommissioned																
199-D3-5			A					YES				2a		4a, 4b			
<u>199-D3-7</u>			<u>A</u>									<u>2a</u>					
199-D4-1			A								1a	2a					
199-D4-10	To be decommissioned																
199-D4-101 ^c			A									2a					
199-D4-102			A									2a					
199-D4-103			A									2a					
199-D4-11	To be decommissioned																
199-D4-12	To be decommissioned																
199-D4-13			A	5				YES			1a	2a	3a	4a, 4b			
199-D4-14		DX-EXT	A					YES			1a	2a		4a, 4b			
199-D4-15								YES						4a, 4b			
199-D4-16	To be decommissioned																
199-D4-17	To be decommissioned																
199-D4-18	To be decommissioned																

Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a	Cr(VI) (Filtered)	Nitrate (Unfiltered)	Uranium (Total) (Filtered and Unfiltered)	Tc-99 (Unfiltered)	Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?	PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?	PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?	PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?	PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?	PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?	PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?
199-D4-19			A					YES		1a	2a		4a, 4b			
199-D4-2	To be decommissioned															
199-D4-20			5					YES				3a	4a, 4b			
199-D4-21								YES					4a, 4b			
199-D4-22			A							1a	2a					
199-D4-23			A					YES		1a			4a, 4b			
199-D4-24	To be decommissioned															
199-D4-25	To be decommissioned															
199-D4-26	To be decommissioned															
199-D4-27			A							1a						
199-D4-28	To be decommissioned															
199-D4-29	To be decommissioned															
199-D4-3	To be decommissioned															
199-D4-30	To be decommissioned															
199-D4-31			A							1a						
199-D4-32	To be decommissioned															
199-D4-33	To be decommissioned															
199-D4-34		DX-EXT	A					YES	1a	2a		4a, 4b				
199-D4-35	To be decommissioned															
199-D4-36	To be decommissioned															
199-D4-37	To be decommissioned															
199-D4-38		DX-EXT	A					YES	1a	2a		4a, 4b				
199-D4-39		DX-EXT	A					YES	1a			4a, 4b				

Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a	Cr(VI) (Filtered)	Nitrate (Unfiltered)	Sr-90 (Unfiltered)	Uranium (Total) (Filtered and Unfiltered)	Tc-99 (Unfiltered)	Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?	PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?	PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?	PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?	PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?	PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?	PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?
199-D4-4	To be decommissioned																
199-D4-40	To be decommissioned																
199-D4-41	To be decommissioned																
199-D4-42	To be decommissioned																
199-D4-43	To be decommissioned																
199-D4-44	To be decommissioned																
199-D4-45	To be decommissioned																
199-D4-46	To be decommissioned																
199-D4-47	To be decommissioned																
199-D4-48		A									1a						
199-D4-49	To be decommissioned																
199-D4-5	To be decommissioned																
199-D4-50		A									1a						
199-D4-51	To be decommissioned																
199-D4-52	To be decommissioned																
199-D4-53	To be decommissioned																
199-D4-54	To be decommissioned																
199-D4-55	To be decommissioned																
199-D4-56		A									1a	2a					
199-D4-57	To be decommissioned																
199-D4-58	To be decommissioned																
199-D4-59	To be decommissioned																
199-D4-6	To be decommissioned																

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Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a	Cr(VI) (Filtered)	Nitrate (Unfiltered)	Sr-90 (Unfiltered)	Uranium (Total) (Filtered and Unfiltered)	Tc-99 (Unfiltered)	Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?	PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?	PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?	PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?	PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?	PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?	PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?
199-D4-60			A								1a						
199-D4-61	To be decommissioned																
199-D4-62	To be decommissioned																
199-D4-63	To be decommissioned																
199-D4-64	To be decommissioned																
199-D4-65	To be decommissioned																
199-D4-66	To be decommissioned																
199-D4-67	To be decommissioned																
199-D4-68		A									1a	2a					
199-D4-69	To be decommissioned																
199-D4-7	To be decommissioned																
199-D4-70	To be decommissioned																
199-D4-71	To be decommissioned																
199-D4-72	To be decommissioned																
199-D4-73	To be decommissioned																
199-D4-74	To be decommissioned																
199-D4-75	To be decommissioned																
199-D4-76	To be decommissioned																
199-D4-77	To be decommissioned																
199-D4-78		A									1a	2a					
199-D4-79	To be decommissioned																
199-D4-8	To be decommissioned																
199-D4-80	To be decommissioned																

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199-D4-81	To be decommissioned																
199-D4-82	To be decommissioned																
199-D4-83		DX-EXT	A						YES	1a			4a, 4b				
199-D4-84		DX-EXT	A						YES	1a			4a, 4b				
199-D4-85		DX-EXT	A						YES	1a	2a		4a, 4b				
199-D4-86			A						YES		1a	2a		4a, 4b			
199-D4-87	To be decommissioned																
199-D4-88	To be decommissioned																
199-D4-89	To be decommissioned																
199-D4-9	To be decommissioned																
199-D4-90	To be decommissioned																
199-D4-91	To be decommissioned																
199-D4-92	To be decommissioned																
199-D4-93	To be decommissioned																
199-D4-94	To be decommissioned																
199-D4-95		DX-EXT	A						YES		2a		4a, 4b				
199-D4-96		DX-EXT	A						YES		2a		4a, 4b				
199-D4-97		DX-EXT							YES				4a, 4b				
199-D4-98		DX-EXT	A						YES	1a			4a, 4b				
199-D4-99		DX-EXT	A						YES	1a	2a		4a, 4b				
199-D5-101		DX-EXT							YES				4a, 4b				
199-D5-103		DX-EXT	A						YES		2a		4a, 4b				
199-D5-104		DX-EXT	A						YES		2a		4a, 4b				

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199-D5-106								YES						4a, 4b		
199-D5-107																
199-D5-108		DX-INJ						YES						4a, 4b		
199-D5-109																
199-D5-110																
199-D5-111		DX-INJ						YES						4a, 4b		
199-D5-112																
199-D5-113																
199-D5-114																
199-D5-115																
199-D5-116																
199-D5-117																
199-D5-118																
199-D5-123		A	5								2a	3a				
199-D5-125		A									2a					
199-D5-126							YES						4a, 4b			
199-D5-127		DX-EXT	A					YES			2a			4a, 4b		
199-D5-128		DX-INJ						YES						4a, 4b		
199-D5-129		DX-INJ						YES						4a, 4b		
199-D5-13							YES							4a, 4b		
199-D5-130		DX-EXT	A					YES			2a			4a, 4b		
199-D5-131		DX-EXT						YES						4a, 4b		
199-D5-132						5						3a				

Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a	Cr(VI) (Filtered)	Nitrate (Unfiltered)	Sr-90 (Unfiltered)	Uranium (Total) (Filtered and Unfiltered)	Tc-99 (Unfiltered)	Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?	PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?	PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?	PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?	PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?	PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?	PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?
199-D5-133			A					YES			2a			4a, 4b			
199-D5-14			A					YES			2a			4a, 4b			
199-D5-142			A	5							2a		3a				
199-D5-143			A								2a						
199-D5-145			A								2a			5a			
199-D5-146		DX-EXT	A					YES			2a			4a, 4b			
199-D5-147				5									3a				
199-D5-148		DX-INJ						YES						4a, 4b			
199-D5-149			A								2a						
199-D5-15			A	5	5						2a		3a				
199-D5-150			A								2a						
199-D5-151			A								2a						
199-D5-152			A								2a						
199-D5-153		DX-EXT	A					YES			2a			4a, 4b			
199-D5-154		DX-EXT						YES						4a, 4b			
199-D5-159		DX-EXT	A					YES			2a			4a, 4b			
199-D5-16			A	5							2a		3a				
199-D5-160 ^d		DX-EXT	A					YES			2a			4a, 4b			
199-D5-17			A					YES			2a			4a, 4b			
199-D5-18																	
199-D5-19								YES						4a, 4b			
199-D5-20		DX-EXT DX-INJ	A					YES	+					4a, 4b			
199-D5-32		DX-EXT	A					YES			2a			4a, 4b			

Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a	Cr(VI) (Filtered)	Nitrate (Unfiltered)	Sr-90 (Unfiltered)	Uranium (Total) (Filtered and Unfiltered)	Tc-99 (Unfiltered)	Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?	PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?	PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?	PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?	PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?	PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?	PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?
199-D5-33			A					YES		1a				4a, 4b			
199-D5-34		DX-EXT	A					YES			2a			4a, 4b			
199-D5-36			A					YES		1a	2a			4a, 4b			
199-D5-37			A					YES		1a				4a, 4b			
199-D5-38			A					YES			2a			4a, 4b			
199-D5-39		DX-EXT	A					YES			2a			4a, 4b			
199-D5-40																	
199-D5-41			A					YES			2a			4a, 4b			
199-D5-42			A								2a						
199-D5-43			A					YES			2a			4a, 4b			
199-D5-44			A							1a	2a						
199-D5-92		DX-EXT	A					YES		1a	2a			4a, 4b			
199-D5-97			A					YES			2a			4a, 4b			
199-D6-1		DX-INJ						YES						4a, 4b			
199-D6-2		DX-INJ						YES						4a, 4b			
199-D6-3								YES						4a, 4b			
199-D7-3		DX-EXT						YES						4a, 4b			
199-D7-4		DX-INJ						YES						4a, 4b			
199-D7-5		DX-INJ						YES						4a, 4b			
199-D7-6																	
199-D8-101			A					YES			2a			4a, 4b			
199-D8-102			A								2a						
199-D8-4			A								2a						

Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a	Cr(VI) (Filtered)	Nitrate (Unfiltered)	Uranium (Total) (Filtered and Unfiltered)	Tc-99 (Unfiltered)	Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?	PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?	PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?	PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?	PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?	PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?	PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?
199-D8-5			A					YES		1a	2a		4a, 4b			
199-D8-53		DX-EXT	A					YES			2a		4a, 4b			
199-D8-54A			A					YES		1a	2a		4a, 4b			
199-D8-55		DX-EXT DX-INJ	A					YES		4a	2a		4a, 4b			
199-D8-6			A								2a					
199-D8-68		DX-EXT	A					YES		1a	2a		4a, 4b			
199-D8-69		DX-EXT	A					YES		1a			4a, 4b			
199-D8-70			A					YES		1a			4a, 4b			
199-D8-71			A					YES		1a	2a		4a, 4b			
199-D8-72			A							1a	2a					
199-D8-73		DX-EXT	A					YES		1a			4a, 4b			
199-D8-88		DX-EXT	A					YES		1a			4a, 4b			
199-D8-89		DX-EXT	A					YES		1a	2a		4a, 4b			
199-D8-90		DX-EXT						YES			2a		4a, 4b			
199-D8-91		DX-EXT	A					YES		1a	2a		4a, 4b			
199-D8-93			A					YES		1a	2a		4a, 4b			
199-D8-94			A							1a	2a					
199-D8-95		DX-EXT	A					YES			2a		4a, 4b			
199-D8-96		DX-EXT	A	5				YES			2a	3a	4a, 4b			
199-D8-97		DX-EXT	A	5				YES			2a	3a	4a, 4b			
199-D8-98		DX-EXT	A					YES			2a		4a, 4b			
199-D8-99		DX-EXT						YES			2a		4a, 4b			
199-H1-1		HX- EXT	A					YES			2a		4a, 4b			

Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a	Cr(VI) (Filtered)	Nitrate (Unfiltered)	Sr-90 (Unfiltered)	Uranium (Total) (Filtered and Unfiltered)	Tc-99 (Unfiltered)	Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?	PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?	PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?	PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?	PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?	PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?	PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?
199-H1-12		HX-INJ							YES					4a, 4b			
199-H1-2		HX- EXT	A						YES			2a		4a, 4b			
199-H1-20		HX-INJ							YES					4a, 4b			
199-H1-21		HX-INJ							YES					4a, 4b			
199-H1-25		HX-INJ							YES					4a, 4b			
199-H1-27		HX-INJ							YES					4a, 4b			
199-H1-3 ^c		HX-INJ							YES					4a, 4b			
199-H1-32		<u>HX- EXT HX-INJ</u>	SA						YES	1a	2a			4a, 4b			
199-H1-33		<u>HX- EXT HX-INJ</u>	SA						YES	1a	2a			4a, 4b			
199-H1-34		<u>HX- EXT HX-INJ</u>	A						YES	1a	2a			4a, 4b			
199-H1-35		HX- EXT	A						YES	1a	2a			4a, 4b			
199-H1-36		HX- EXT	A						YES		2a			4a, 4b			
199-H1-37		HX- EXT	SA						YES	1a	2a			4a, 4b			
199-H1-38		HX- EXT	SA						YES	1a	2a			4a, 4b			
199-H1-39		<u>HX- EXT HX-INJ</u>	SA						YES	1a	2a			4a, 4b			
199-H1-4		HX- EXT	SA						YES		2a			4a, 4b			
199-H1-40		HX- EXT	SA						YES	1a	2a			4a, 4b			
199-H1-42		HX- EXT	SA						YES		2a			4a, 4b			
199-H1-43		HX- EXT	A						YES		2a			4a, 4b			
199-H1-45		HX- EXT	A						YES		2a			4a, 4b			
199-H1-46		HX- EXT	A						YES		2a			4a, 4b			

Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a	Cr(VI) (Filtered)	Nitrate (Unfiltered)	Sr-90 (Unfiltered)	Uranium (Total) (Filtered and Unfiltered)	Tc-99 (Unfiltered)	Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?	PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?	PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?	PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?	PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?	PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?	PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?
199-H1-47		HX- EXT	A						YES		2a		4a, 4b				
199-H1-48		HX- EXT	A						YES		2a		4a, 4b				
199-H1-49		HX- EXT	A						YES		2a		4a, 4b				
199-H1-5		DX-INJ							YES				4a, 4b				
199-H1-6		HX-INJ							YES				4a, 4b				
199-H1-7 ⁱ			A					YES		1a	2a		4a, 4b				
199-H3-11			A	5							2a	3a					
199-H3-21		HX- EXT	AQ	5					YES	1a	2a	3a	4a, 4b				
199-H3-25		HX- EXT							YES		2a		4a, 4b				
199-H3-26		HX- EXT							YES		2a		4a, 4b				
199-H3-27		HX-INJ							YES				4a, 4b				
199-H3-2A			A					YES			2a		4a, 4b				
199-H3-2B								YES					4a, 4b				
199-H3-3			A								2a						
199-H3-4 ^c		HX-INJ						YES					4a, 4b				
199-H3-5			A								2a						
199-H3-6			A	5						1a	2a	3a		5a			
199-H3-7																	
199-H4-10			A					YES		1a			4a, 4b				
199-H4-11			A					YES		1a			4a, 4b	5a			
199-H4-12A																	
199-H4-12B			A					YES		1a	2a		4a, 4b				
199-H4-13			A	5				YES		1a	2a	3a	4a, 4b				

Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a	Cr(VI) (Filtered)	Nitrate (Unfiltered)	Sr-90 (Unfiltered)	Uranium (Total) (Filtered and Unfiltered)	Tc-99 (Unfiltered)	Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?	PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?	PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?	PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?	PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?	PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?	PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?
199-H4-15A		HX- EXT	A						YES	1a				4a, 4b			
199-H4-15B								YES					4a, 4b				
199-H4-16		A	5									2a	3a		5a		
199-H4-17		HX-INJ							YES					4a, 4b			
199-H4-18 ^c		A										2a					
199-H4-4		HX- EXT	A						YES	1a	2a			4a, 4b			
199-H4-45		A	5							1a	2a	3a			5a		
199-H4-46		A									2a						
199-H4-47							YES							4a, 4b			
199-H4-49		A									2a						
199-H4-5		A					YES			1a	2a			4a, 4b			
199-H4-6																	
199-H4-63		HX- EXT	A	5					YES	1a	2a	3a	4a, 4b		5a		
199-H4-64		HX- EXT	A						YES	1a				4a, 4b			
199-H4-65			A							1a	2a						
199-H4-69		HX- EXT	A						YES		2a			4a, 4b	5a		
199-H4-70		HX- EXT	A						YES		2a			4a, 4b			
199-H4-71 ^c			A								2a						
199-H4-72 ^c			A								2a						
199-H4-73 ^c			A								2a						
199-H4-74		HX- EXT							YES					4a, 4b			
199-H4-75		HX- EXT	A						YES		2a			4a, 4b			
199-H4-76		HX- EXT	A						YES		2a			4a, 4b			

Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a		Uranium (Total) (Filtered and Unfiltered)		Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?		PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?		PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?		PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?		PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?		PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?		PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?		
			Cr(VI) (Filtered)	Nitrate (Unfiltered)	Sr-90 (Unfiltered)	Tc-99 (Unfiltered)			YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
199-H4-77 ^c		HX-INJ																					
199-H4-78		HX-INJ																					
199-H4-79		HX-INJ																					
199-H4-8			A	A	A		YES		1a	2a													
199-H4-80 ^c		DX-INJ																					
199-H4-81		DX-EXT	A					YES		2a													
199-H4-82		DX-INJ						YES															
199-H4-83			AQ		5		YES			2a	3a	4a, 4b	5a										
199-H4-84			AQ	AQ		AQ	YES			2a		4a, 4b	5a										
199-H4-85			A	A	A				1a	2a			5a										
199-H4-86		HX- EXT	A					YES		2a		4a, 4b											
199-H4-87			A								2a												
199-H4-88			AQ	AQ	AQ		YES			2a		4a, 4b	5a										
199-H4-89			AQ	AQ	AQ					2a			5a										
199-H4-92		HX- EXT	A					YES		2a		4a, 4b											
199-H4-93		HX- EXT	A					YES		2a		4a, 4b											
199-H5-10																							
199-H5-11																							
199-H5-12																							
199-H5-13																							
199-H5-14																							
199-H5-16		HX- EXT	A					YES		2a		4a, 4b											
199-H5-1A			A				YES			2a		4a, 4b											

Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a	Cr(VI) (Filtered)	Nitrate (Unfiltered)	Sr-90 (Unfiltered)	Uranium (Total) (Filtered and Unfiltered)	Tc-99 (Unfiltered)	Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?	PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?	PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?	PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?	PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?	PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?	PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?
199-H5-2																	
199-H5-3O																	
199-H5-3P																	
199-H5-4O																	
199-H5-4P																	
199-H5-5O																	
199-H5-5P																	
199-H5-6																	
199-H5-7																	
199-H5-8																	
199-H5-9																	
199-H6-1																	
199-H6-2		HX-INJ							YES					4a, 4b			
199-H6-3			A	5				YES			2a	3a	4a, 4b				
199-H6-4																	
199-H6-7		HX-INJ						YES					4a, 4b				
199-H6-8		HX-INJ						YES					4a, 4b				
699-100-43B			A					YES		1a			4a, 4b				
699-101-45								YES					4a, 4b				
699-101-48B			A							1a							
699-88-41			A								2a						
699-88-41A			A					YES			2a		4a, 4b				
699-89-35			A							1a							

Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a	Cr(VI) (Filtered)	Nitrate (Unfiltered)	Uranium (Total) (Filtered and Unfiltered)	Tc-99 (Unfiltered)	Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?	PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?	PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?	PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?	PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?	PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?	PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?
699-90-34	To be decommissioned															
699-90-37B		A									2a					
699-90-38	To be decommissioned															
699-90-45																
699-90-45B		HX-INJ						YES				4a, 4b				
699-90-47B		DX-INJ						YES				4a, 4b				
699-91-46A																
699-92-49																
699-93-37A		A				YES				2a		4a, 4b				
699-93-48A																
699-93-48C		DX-INJ					YES					4a, 4b				
699-93-50																
699-94-41		A				YES				2a		4a, 4b				
699-94-43		A	5			YES				2a	3a	4a, 4b				
699-95-45		A				YES				2a		4a, 4b				
699-95-45B		HX-INJ					YES					4a, 4b				
699-95-48		A								2a						
699-95-51		A				YES				2a		4a, 4b				
699-96-43																
699-96-44						YES						4a, 4b				
699-96-45																
699-96-52B		A				YES		1a				4a, 4b				
699-97-41		A				YES				2a		4a, 4b				

Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a	Cr(VI) (Filtered)	Nitrate (Unfiltered)	Sr-90 (Unfiltered)	Uranium (Total) (Filtered and Unfiltered)	Tc-99 (Unfiltered)	Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?	PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?	PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?	PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?	PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?	PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?	PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?
			A	A	A	A	A	A	A	A	2a	2a	2a	4a, 4b	4a, 4b	4a, 4b	4a, 4b
699-97-43B			A														
699-97-45			A					YES									
699-97-47B			A					YES									
699-97-47C		HX-INJ							YES								
699-97-48B			A					YES									
699-97-51A			A														
699-98-43			A					YES									
699-98-46			A														
699-98-49A			A					YES									
699-98-51			A					YES									
699-99-41			A					YES			1a						
699-99-42B			A					YES			1a	2a					
699-99-44			A					YES				2a					

Uppermost Water-bearing Unit of the RUM Aquifer

199-D5-134	RUM - First water-bearing unit		A				YES			2b			4c, 4d				7
199-D5-141	RUM - First water-bearing unit		A							2b			4c, 4d				7
199-D7-7	RUM - First water-bearing unit	A	Q													6	7
199-D8-54B	RUM - First water-bearing unit		SA				YES		1b	2b			4c, 4d				7
199-D11-1	RUM - First water-bearing unit	A	Q													6	7
699-95-45C	RUM - First water-bearing unit		A				YES			2b			4c, 4d				7
699-95-48B	RUM - First water-bearing unit		A	Q												6	7
699-95-48C	RUM - First water-bearing unit		A	Q												6	7
699-96-42B	RUM - First water-bearing unit	A	Q													6	7

Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a		Uranium (Total) (Filtered and Unfiltered)		Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?		PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?	PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?	PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?	PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?	PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?	PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?
			Cr(VI) (Filtered)	Nitrate (Unfiltered)	Sr-90 (Unfiltered)	Tc-99 (Unfiltered)			YES	YES						
699-97-43C	RUM - First water-bearing unit		A								2b		4c, 4d			7
699-97-47D	RUM - First water-bearing unit		A	Q											6	7
699-97-45B	RUM - First water-bearing unit		A								2b		4c, 4d			7
699-97-48C	RUM - First water-bearing unit		A				YES				2b		4c, 4d			7
699-97-60	RUM - First water-bearing unit		A				YES				2b		4c, 4d			7
699-97-61	RUM - First water-bearing unit	DX-EXT	A					YES			2b		4c, 4d			7
699-98-50	RUM - First water-bearing unit		A	Q											6	7
199-H1-50	RUM - First water-bearing unit		SA				YES		1b	2b		4c, 4d				7
199-H2-1	RUM - First water-bearing unit		SA				YES		1b	2b		4c, 4d				7
199-H3-10	RUM - First water-bearing unit		A				YES			2b		4c, 4d				7
199-H3-12	RUM - First water-bearing unit		SA	SA			YES		1b	2b	3b	4c, 4d	5b			7
199-H3-13	RUM - First water-bearing unit		SA	SA		A	YES		1b	2b	3b	4c, 4d	5b			7
199-H3-22	RUM - First water-bearing unit	HX- EXT	SA	SA		A	YES	1b	2b	3b	4c, 4d	5b				7
199-H3-28	RUM - First water-bearing unit	HX- EXT	SA	SA			YES		2b	3b	4c, 4d					7
199-H3-29	RUM - First water-bearing unit	HX- EXT	SA	SA		A	YES	1b	2b	3b	4c, 4d	5b				7
199-H3-2C	RUM - First water-bearing unit	HX- EXT	SA				YES		2b		4c, 4d					7
199-H3-30	RUM - First water-bearing unit		SA	A			YES		1b	2b	3b	4c, 4d				7
199-H3-31	RUM - First water-bearing unit		A	Q											6	7
199-H3-32	RUM - First water-bearing unit		SA				YES		1b	2b		4c, 4d				7
199-H3-9	RUM - First water-bearing unit	HX- EXT	SA	A			YES	1b	2b		4c, 4d	5b				7
199-H4-12C	RUM - First water-bearing unit	HX- EXT	SA	SA			YES	1b	2b	3b	4c, 4d	5b				7
199-H4-15CS	RUM - First water-bearing unit		SA						1b	2b						7
199-H4-90	RUM - First water-bearing unit		A				YES			2b		4c, 4d				7

Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a	Cr(VI) (Filtered)	Nitrate (Unfiltered)	Sr-90 (Unfiltered)	Uranium (Total) (Filtered and Unfiltered)	Tc-99 (Unfiltered)	Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?	PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?	PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?	PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?	PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?	PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?	PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?
199-H4-91	RUM - First water-bearing unit		A					YES			2b			4c, 4d			7
199-H4-94	RUM - First water-bearing unit		A	Q												6	7
<u>199-H4-95</u>	<u>RUM - First water-bearing unit</u>		<u>A</u>	<u>Q</u>												<u>6</u>	<u>7</u>
199-H7-1	RUM - First water-bearing unit		A					YES			2b			4c, 4d			7
199-H3-33 ^c	RUM - First water-bearing unit; Drilled in FY 2021	HX- EXT	A	SA					YES		2b			4c, 4d	5b		7
199-H3-34 ^c	RUM - First water-bearing unit; Drilled in FY 2021		SA	Q				YES									
199-H6-9 ^f	RUM - First water-bearing unit; Drilled in FY 2021		SA	Q				YES									
199-H3-35 ^g	RUM - First water-bearing unit; Planned for FY 2022	HX- EXT	A	SA					YES	1b	2b			4c, 4d	5b		7
199-H3-36 ^g	RUM - First water-bearing unit; Planned for FY 2022	HX- EXT	A	SA					YES	1b	2b			4c, 4d	5b		7
199-H3-37 ^g	RUM - First water-bearing unit; Planned for FY 2022	HX- EXT	A	SA	SA				YES		2b	3b		4c, 4d	5b		7
199-H3-38 ^g	RUM - First water-bearing unit; Planned for FY 2022	HX- EXT	A	SA					YES		2b			4c, 4d	5b		7
199-H3-39 ^g	RUM - First water-bearing unit; Planned for FY 2022	HX- EXT	A	SA					YES		2b			4c, 4d	5b		7
199-D11-2 ^g	RUM - First water-bearing unit; Planned for FY 2022		SA	Q				YES									
699-95-46 ^g	RUM - First water-bearing unit; Planned for FY 2022		SA	Q				YES									
199-H3-15 ^g	RUM - First water-bearing unit; Planned for FY 2022		SA	Q				YES		1b							
D0264	RUM - First water-bearing unit; Planned for FY 2023	HX- EXT	A	SA					YES		2b			4c, 4d	5b		7

Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a		Cr(VI) (Filtered)		Nitrate (Unfiltered)		Uranium (Total) (Filtered and Unfiltered)		Tc-99 (Unfiltered)		Automated Water-Level Network		P&T System Data		PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?		PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?		PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?		PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?		PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?		PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?		PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?		
			A	SA	A	SA	A	SA	A	SA	A	SA	A	SA	YES	YES	2b	2b	2b	4c, 4d	5b	4c, 4d	5b	4c, 4d	5b	4c, 4d	5b	7	7		
D0265	RUM - First water-bearing unit; Planned for FY 2023	HX- EXT	A	SA																											
D0266	RUM - First water-bearing unit; Planned for FY 2024	HX- EXT	A	SA																											
D0267	RUM - First water-bearing unit; Planned for FY 2024	HX- EXT	A	SA																											
Aquifer Tubes																															
36-M	100-D Area				A												1c	2a													
38-M	100-D Area				A												1c	2a													
AT-D-1-M	100-D Area				A												1c	2a													
AT-D-3-D	100-D Area				A												1c	2a													
AT-D-4-D	100-D Area				A												1c	2a													
C6278	100-D Area				A													2a													
C6334	100-D Area				A												1c	2a													
C7647	100-D Area				SA												1c	2a													
DD-10-3	100-D Area				A												1c	2a													
DD-12-2	100-D Area				A												1c	2a													
DD-15-3	100-D Area				A												1c	2a													
DD-16-4	100-D Area				SA												1c	2a													
DD-17-2	100-D Area				A												1c														
DD-41-3	100-D Area				A												1c	2a													
DD-44-4	100-D Area				A												1c	2a													
DD-49-3	100-D Area				SA												1c	2a													
DD-50-3	100-D Area				SA												1c														
DD-50-4	100-D Area				SA												1c	2a													

Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a	Cr(VI) (Filtered)	Nitrate (Unfiltered)	Sr-90 (Unfiltered)	Uranium (Total) (Filtered and Unfiltered)	Tc-99 (Unfiltered)	Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?	PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?	PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?	PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?	PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?	PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?	PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?
Redox-1-6.0	100-D Area		A								1c	2a					
Redox-3-3.3	100-D Area		A								1c	2a					
43-M	100-H Area		SA								1c	2a					
45-M	100-H Area		A								1c	2a					
47-D	100-H Area		A								1c						
47-M	100-H Area		A								1c	2a					
48-M	100-H Area		A								1c	2a					
50-M	100-H Area		A								1c	2a					
51-D	100-H Area		A								1c	2a					
52-D	100-H Area		A								1c	2a					
54-M	100-H Area		A								1c	2a					
AT-H-1-M	100-H Area		A								1c	2a					
AT-H-2-D	100-H Area		A								1c	2a					
AT-H-3-D	100-H Area		SA								1c	2a					
C5633	100-H Area		SA								1c	2a					
C5636	100-H Area		SA								1c	2a					
C5638	100-H Area		SA								1c	2a					
C5641	100-H Area		SA								1c	2a					
C5678	100-H Area		A								1c	2a					
C5682	100-H Area		A								1c						
C6293	100-H Area		A								1c	2a					
C6301	100-H Area		A								1c	2a					
C7649	100-H Area		A								1c						

Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a	Cr(VI) (Filtered)	Nitrate (Unfiltered)	Sr-90 (Unfiltered)	Uranium (Total) (Filtered and Unfiltered)	Tc-99 (Unfiltered)	Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?	PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?	PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?	PSQ 4: What are the Direction and Magnitude of Groundwater Hydraulic Gradients?	PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?	PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?	PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?
C7650	100-H Area			SA							1c	2a					
Lower Confined Units																	
199-H4-15CP	Basalt confined		5	5							1c						
199-H4-15CQ	Rwia confined		5	5							1c						
199-H4-15CR	Rwie confined		5	5							1c						
199-H4-2	Basalt confined		5	5							1c						
River Gauges																	
D Gauge									YES					4a, 4b, 4c, 4d			
H Gauge									YES					4a, 4b, 4c, 4d			

a. Approximately 20% of aquifer tubes and wells sampled for Cr(VI) will be sampled for total chromium per year, on a random basis.

b. Additional wells are to be selected for specific geographic area tests.

c. Well is being converted to a monitoring well in FY 2020. Sampling and P&T system configuration reflect post-realignment conditions. Monitoring is needed to confirm conditions relative to PSQ 2.

d. Well is being converted to an extraction well in FY 2020. Sampling and P&T system configuration reflect post-realignment conditions.

e. Well is being converted to an injection well in FY 2020. Sampling and P&T system configuration reflect post-realignment conditions.

f. Wells are implemented under TPA-CN-0915 to sampling and analysis plan DOE/RL-2013-35-ADD-13. Drilling wastes are designated by this table and are handled according to DOE/RL-2017-13 Section 6.3.3

g. Wells are implemented under the drilling sampling SAP DOE/RL-2017-13-ADD2 and its addendum ADD2A. Drilling wastes are designated by this table and are handled according to DOE/RL-2017-13 Section 6.3.3

h. Well drilled and constructed in FY 2021 under SAP DOE/RL-2013-35-ADD-13. Drilling wastes are designated by this table and are handled according to DOE/RL-2017-13 Section 6.3.3.

i. Well needs to be sampled during high river stage

A = sampled annually

SA = sampled semi-annually

Q = sampled quarterly

5 = sampled every five years

FY = fiscal year

P&T = pump and treat

PSQ = principle study question

Rwia = Ringold Formation member of Wooded Island — unit A

Rwie = Ringold Formation member of Wooded Island — unit E

Table B-1. Sample Summary Table

Monitoring Location	Notes	Remediation System	Total Chromium (Filtered and Unfiltered) ^a	Cr(VI) (Filtered)	Nitrate (Unfiltered)	Sr-90 (Unfiltered)	Uranium (Total) (Filtered and Unfiltered)	Tc-99 (Unfiltered)	Automated Water-Level Network	P&T System Data	PSQ 1: Is Cr(VI) Discharging to the River at Concentrations Greater Than 10 µg/L?	PSQ 2: Are the Cr(VI) Mass, Concentrations, and Plume Areas Reducing as Expected?	PSQ 3: Are Concentrations of Nitrate and Strontium-90 Attenuating as Expected?	PSQ 4 ^b : What are the Direction and Magnitude of Groundwater Hydraulic Gradients?	PSQ 5: Are There Areas That Require Additional Sampling to Evaluate the Impacts of Secondary Sources?	PSQ 6: What are the Nature and Extent of Cr(VI) Concentrations Within the Uppermost water-bearing unit of the RUM?	PSQ 7: What are the Physical and Hydraulic Characteristics of the Uppermost water-bearing unit of the RUM?
RUM	= Ringold Formation upper mud																

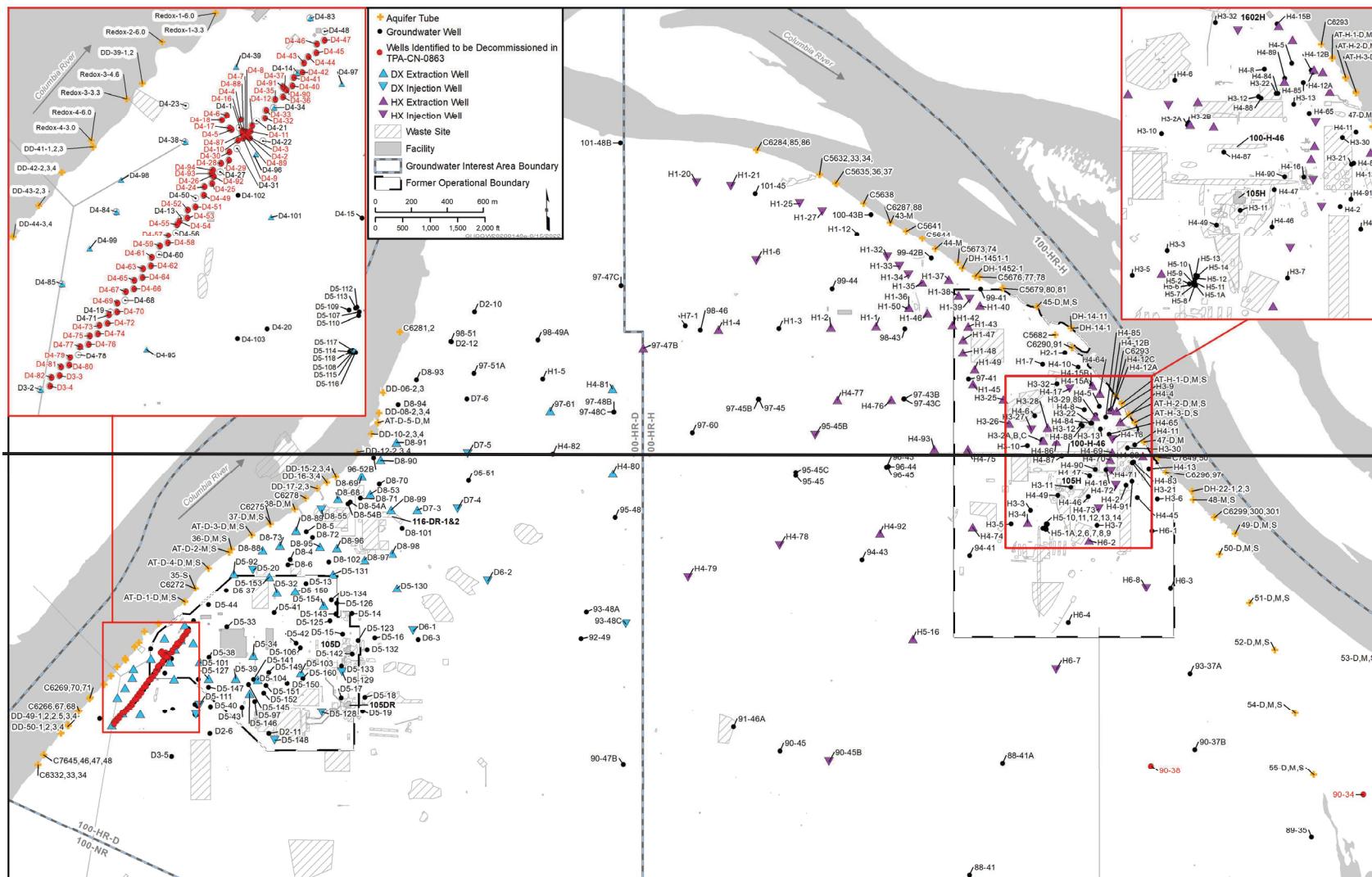


Figure B-1. Available Monitoring Locations as of December 31, 2010

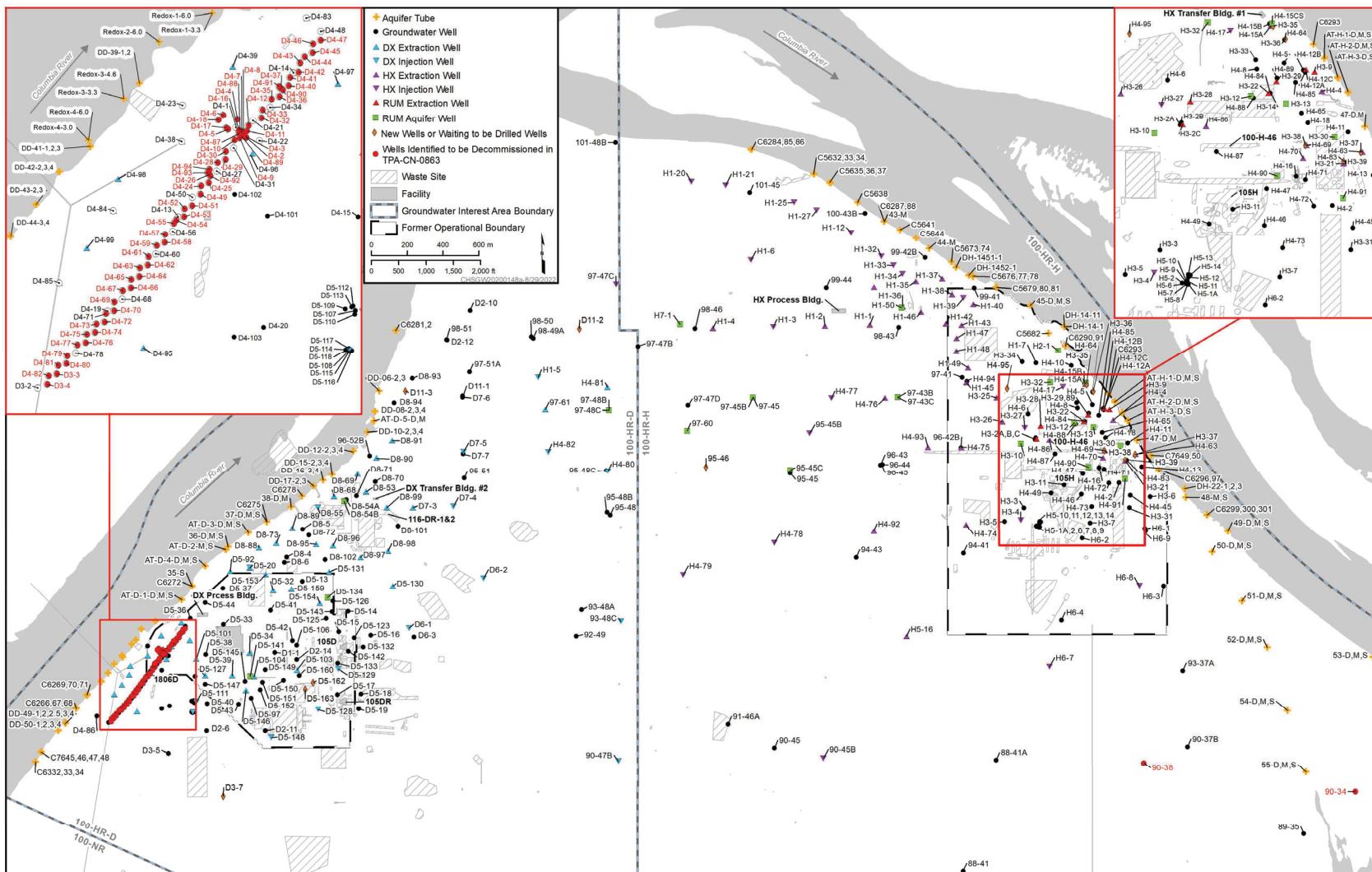


Figure B-1. Available Monitoring Locations as of August 31, 2022