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Appendix G
Data Quality Objectives Forms

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PRC-PRO-SMP-5305

Characterization Data Quality Objectives

Published Date:

Effective Date:

Systematic Planning Record

Characterization Data Collection Planning Record

NOTE: In cases where the requested information is not applicable, state that, and explain why it is not applicable so that it is clear that a required field has not been forgotten.

Project Summary

Project Name: 200-W-44 Sand Filter

Date: 06/14/2016

Name of Person Completing Record: Emily Macdonald

Position: Facilitator

Name of Responsible Manager: Patrick Baynes

Project Background:

Supplemental planning for characterization activities is needed for the 200-W-44 Sand Filter. The 200-W-44 291-U Stack sand filter is partially below-grade, constructed of reinforced concrete, and has an asphalt-covered concrete slab roof. The sand filter was built in 1944-1945 to provide exhaust ventilation for the 221U Canyon Building. The ventilation system was taken off line in September 2011 and completely deactivated. Decisions and data needs identified as a result of this data quality objective (DQO) process will be documented in DOE/RL-2010-49, Remedial Investigation/Feasibility Study Work Plan for the 200-WA-1 and 200-BC-1 Operable Units.

Planning Type:

(If systematic planning is not required, state the reason)

Multi-Party

Organization, Schedule, and Goal

(State the problem, requirements, schedule, principal study questions [PSQs], and outcomes)

State the Problem

(Describe the reason/need for data collection and project goals/objectives)

Due to uncertainty about the presence and concentration of contamination (if any) associated with the sand filter media and surrounding soils, it is necessary to determine if an investigation is needed to characterize the filter media and surrounding soils. Data collected will be used to support remedy evaluation of the 200-WA-1 Operable Unit (OU) and to determine whether contaminants exceed acceptable risk levels for protection of human health and the environment.

Principal Study Questions <i>(What data are needed to answer questions?)</i>	PSQ 1	Is there a release to soil outside the sand filter that presents an unacceptable risk to groundwater?	PSQ 6	Does filter media inside the sand filter pose an direct contact risk to outdoor or construction workers?
	PSQ 2	Is there a release to soil outside the sand filter that presents an unacceptable risk to ecological receptors or communities?	PSQ 7	In addition to the planned U Plant barrier, which is the preferred response action: (1)complete excavation and disposal, (2)removal and disposal of filter media, (3)stabilization (e.g., grout), (4)institutional controls, or (5) no additional action?

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NOTE: In cases where the requested information is not applicable, state that, and explain why it is not applicable so that it is clear that a required field has not been forgotten.

	PSQ 3	Is there a release to soil outside the sand filter that presents an unacceptable risk to outdoor or construction workers?	PSQ 8	Not applicable
	PSQ 4	Does filter media inside the sand filter pose an unacceptable threat to groundwater?	PSQ 9	Not applicable
	PSQ 5	Does filter media inside the sand filter pose an unacceptable threat to ecological populations or communities?	PSQ 10	Not applicable
Define alternative outcomes or actions that can occur upon answering PSQs.	AA 1A	No - No additional action required	AA 6A	No - No additional action required
	AA 1B	Yes - Action warranted to protect groundwater	AA 6B	Yes - Action warranted to protect outdoor or construction workers
	AA 2A	No - No additional action required	AA 7A	No - Identify and evaluate viable alternatives
	AA 2B	Yes - Action warranted to protect ecological receptors or communities	AA 7B	Yes - Collect data sufficient to evaluate and select the most appropriate response action
	AA 3A	No - No additional action required	AA 8A	Not applicable
	AA 3B	Yes - Action warranted to protect outdoor or construction workers	AA 8B	Not applicable
	AA 4A	No - No additional action required	AA 9A	Not applicable
	AA 4B	Yes - Action warranted to protect groundwater	AA 9B	Not applicable
	AA 5A	No - No additional action required	AA 10A	Not applicable
	AA 5B	Yes - Action warranted to protect ecological receptors or communities	AA 10B	Not applicable

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NOTE: In cases where the requested information is not applicable, state that, and explain why it is not applicable so that it is clear that a required field has not been forgotten.

Identify the decision statements or estimation statements needed to address the PSQs.	1. Determine whether potential releases to the soil from the sand filter warrant action to protect groundwater.
	2. Determine whether potential releases to the soil from the sand filter warrant action to protect ecological receptors or communities.
	3. Determine whether potential releases to the soil from the sand filter warrant action to protect outdoor and construction workers.
	4. Determine whether contaminated filter media inside the sand filter warrants action to protect groundwater.
	5. Determine whether contaminated filter media inside the sand filter warrants action to protect ecological receptors or communities.
	6. Determine whether contaminated filter media inside the sand filter warrants action to protect outdoor and construction workers.
	7. Determine the most appropriate response action to address any conditions warranting action identified above.
	8. Not applicable
	9. Not applicable
	10. Not applicable

Data Needs

(Define the spatial and temporal boundaries of the study)

Define what constitutes a sampling unit:

Sampling units include (1) sand filter media, (2) sand filter structure, and (3) soil within 3 m (10 ft) outside of the sand filter.

What is the smallest unit upon which decisions or estimates will be made?

Sand filter media and sand filter structure.

Data Needs Summary

(Information inputs to answer PSQs: target population, characteristics of interest, spatial and temporal limits, scale of inference)

PSQ(s)	Data Need	Media of Interest	Location	Sampling Method	Action Level	Frequency	Practical Constraints	Analytical Method	Potential Source of Data
1, 2, 3	Radiological screening	Soil	At French drain where	Soil boring		Once	Many below-ground interfaces		New data collection

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Characterization Data Collection Planning Record

NOTE: In cases where the requested information is not applicable, state that, and explain why it is not applicable so that it is clear that a required field has not been forgotten.

Data Needs Summary

(Information inputs to answer PSQs: target population, characteristics of interest, spatial and temporal limits, scale of inference)

PSQ(s)	Data Need	Media of Interest	Location	Sampling Method	Action Level	Frequency	Practical Constraints	Analytical Method	Potential Source of Data
			condensate was disposed						
1, 2, 3	Physical sample	Soil	At French drain where condensate was disposed	Soil boring	Groundwater preliminary remediation goals	Once	Many below-ground interfaces		New data collection
4, 5, 6	Radiological screening	Filter media	Four existing sample ports	Downhole screening		Once	No heavy equipment allowed on top of sand filter		New data collection
7	Concentration of transuranic (TRU) waste, if present, in filter media	Filter media	Inside filter structure	Direct sampling	100 nCi/g	Once	Significant risk to workers by opening the sand filter		Once opened for remedy implementation, the presence and volume of TRU waste can be determined

Performance or Acceptance Criteria

(Determine the quality of data needed and analytical approach)

Specify the population parameter (e.g., mean, median, or percentile), appropriate for making decisions or estimates:

As the basis for action is clear, statistical tests are not necessary to support the resolution of these PSQs.

Decision Problem	Provide a decision rule related to the Action Level identified above that includes a clear "if...then...else" statement: If contamination attributable to the 200-W-44 Sand Filter is found in excess of site-specific action levels, then alternatives will be evaluated and an alternative other than No Action will be selected. Otherwise, No Action will be needed to ensure the sand filter is protective of human health and the environment.
	What are the consequences of making an incorrect decision and what is the tolerance for an incorrect decision?

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NOTE: In cases where the requested information is not applicable, state that, and explain why it is not applicable so that it is clear that a required field has not been forgotten.

	Incorrectly determining that action is not warranted would result in violation of CERCLA and would potentially put workers at risk of exposure to contamination above thresholds of concern.
Estimation Problem	Develop the specification of the estimator by combining the true value of the selected population parameter with the scale of estimation and other boundaries: Not applicable
	What are the acceptable limits on uncertainty? Not applicable

Plan for Obtaining the Data

(Specify the general plan of obtaining the needed data and explain where and how the information in this Planning Record will be formalized in a data collection plan)

Outside sand filter: Prior to evaluation of alternatives, collect samples from one biased soil boring located at the French drain that received filter condensate, because this location will provide information on the constituents that are likely present in the sand filter media. A radiological screening of this borehole will be conducted, and a physical sample will be collected and analyzed for radionuclides and any process-related nonradionuclides.

Sand filter media: Prior to evaluation of alternatives, open the four existing sample ports and conduct radiological screening of these ports. It is anticipated that a dose-Curie conversion could possibly calculate the concentrations of Sr-90 and Cs-137 in the filter media.

Inside sand filter structure: As part of implementation of a selected remedy, open the sand filter to collect samples of sand filter media and residuals found inside, if any. These samples will be analyzed for radionuclides and any nonradionuclides indicated by process history. The purpose of this sampling will be to support waste disposal or the determination of the specific make-up of required stabilizing material.

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Systematic Planning Record

Characterization Data Collection Planning Record

NOTE: In cases where the requested information is not applicable, state that, and explain why it is not applicable so that it is clear that a required field has not been forgotten.

Project Summary

Project Name: 241-WR Vault	Date: 06/14/2016
Name of Person Completing Record: Emily Macdonald	Position: Facilitator
Name of Responsible Manager: Patrick Baynes	

Project Background:
 Supplemental planning for characterization activities is needed for the 241-WR Vault. The 241-WR Vault contains nine 189,270 L (50,000 gal) tanks that received uranium and thorium slurry solutions (via underground encased pipelines) from the tank farms single-shell tanks and prepared the waste to be fed into the 221U Facility to extract the uranium and thorium. The vault also received neutralized waste from the 221U extraction process and stored it until it was transferred back to the tank farms. Decisions and data needs identified as a result of this data quality objective (DQO) process will be documented in DOE/RL-2010-49, Remedial Investigation/Feasibility Study Work Plan for the 200-WA-1 and 200-BC-1 Operable Units.

Planning Type:
 (If systematic planning is not required, state the reason)
 Multi-Party

Organization, Schedule, and Goal

(State the problem, requirements, schedule, principal study questions [PSQs], and outcomes)

State the Problem
 (Describe the reason/need for data collection and project goals/objectives)
 Due to uncertainty of contents, if any, within both the 241-WR Vault tanks and sumps, it is necessary to determine if an investigation is needed to characterize the interiors of these structures and surrounding soils. Data collected will be used to support remedy evaluation of the 200-WA-1 Operable Unit (OU) and to determine whether contaminants exceed acceptable risk levels for protection of human health and the environment.

Principal Study Questions (What data are needed to answer questions?)	PSQ 1	Is there a release to soil outside the vault structure that presents an unacceptable risk to groundwater?	PSQ 6	Does residual liquid/sludge inside the tanks or vault structure pose an direct contact risk to outdoor or construction workers?
	PSQ 2	Is there a release to soil outside the vault structure that presents an	PSQ 7	In addition to the planned U Plant barrier, are the following potential response actions viable: (1)excavation

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Characterization Data Collection Planning Record

NOTE: In cases where the requested information is not applicable, state that, and explain why it is not applicable so that it is clear that a required field has not been forgotten.

		unacceptable risk to ecological receptors or communities?		and disposal, (2) stabilization (e.g., grout), (3) institutional controls, or (4) no additional action?
	PSQ 3	Is there a release to soil outside the vault structure that presents an unacceptable risk to outdoor or construction workers?	PSQ 8	Not applicable
	PSQ 4	Does residual liquid/sludge inside the tanks or vault structure pose an unacceptable threat to groundwater?	PSQ 9	Not applicable
	PSQ 5	Does residual liquid/sludge inside the tanks or vault structure pose an unacceptable threat to ecological populations or communities?	PSQ 10	Not applicable
Define alternative outcomes or actions that can occur upon answering PSQs.	AA 1A	No - No additional action required	AA 6A	No - No additional action required
	AA 1B	Yes - Action warranted to protect groundwater	AA 6B	Yes - Action warranted to protect outdoor or construction workers
	AA 2A	No - No additional action required	AA 7A	No - Identify and evaluate viable alternatives
	AA 2B	Yes - Action warranted to protect ecological receptors or communities	AA 7B	Yes - Collect data sufficient to evaluate and select the most appropriate response action
	AA 3A	No - No additional action required	AA 8A	Not applicable
	AA 3B	Yes - Action warranted to protect outdoor or construction workers	AA 8B	Not applicable
	AA 4A	No - No additional action required	AA 9A	Not applicable
	AA 4B	Yes - Action warranted to protect groundwater	AA 9B	Not applicable
	AA 5A	No - No additional action required	AA 10A	Not applicable
	AA 5B	Yes - Action warranted to protect ecological receptors or communities	AA 10B	Not applicable

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NOTE: In cases where the requested information is not applicable, state that, and explain why it is not applicable so that it is clear that a required field has not been forgotten.

<p>Identify the decision statements or estimation statements needed to address the PSQs.</p>	1. Determine whether potential releases to the soil from the vault warrants action to protect groundwater.
	2. Determine whether potential releases to the soil from the vault warrants action to protect ecological receptors or communities.
	3. Determine whether potential releases to the soil from the vault warrants action to protect outdoor and construction workers.
	4. Determine whether residual liquid/sludge inside the tanks or vault structure warrant action to protect groundwater.
	5. Determine whether residual liquid/sludge inside the tanks or vault structure warrant action to protect ecological receptors or communities.
	6. Determine whether residual liquid/sludge inside the tanks or vault structure warrant action to protect outdoor and construction workers.
	7. Determine the most appropriate response action to address any conditions warranting action identified above.
	8. Not applicable
	9. Not applicable
	10. Not applicable

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Data Needs

(Define the spatial and temporal boundaries of the study)

Define what constitutes a sampling unit:

Sampling units include (1) internals of each tank, (2) sumps inside each tank vault, and (3) soil within 3 m (10 ft) of the outside of the vault.

What is the smallest unit upon which decisions or estimates will be made?

The entire vault structure including the tanks.

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Data Needs Summary

(Information inputs to answer PSQs: target population, characteristics of interest, spatial and temporal limits, scale of inference)

PSQ(s)	Data Need	Media of Interest	Location	Sampling Method	Action Level	Frequency	Practical Constraints	Analytical Method	Potential Source of Data
1, 2, 3	Rad screening	Soil	Beneath wall between TK-001 and TK-002	Angled boring		Once	Many below-ground interfaces		New data collection
1, 2, 3	Physical sample (radionuclides, nitrates, tributyl phosphate (TBP))	Soil	Beneath wall between TK-001 and TK-002	Angled Boring	Groundwater preliminary remediation goals (PRGs)	Once	Many below-ground interfaces		New data collection
4, 5, 6	Presence/absence of residuals	Sludge/liquid	Tanks and vault sumps	Visual inspection	NA	Once	Significant risk to workers by opening the vault or accessing tanks		Historical records confirm presence of residuals
4, 5, 6	Volume of residuals	Sludge/liquid	Tanks and vault sumps	Depth measurement	NA	Once	Significant risk to workers by opening the vault or accessing tanks		Historical records provide reasonable estimated volume in tanks and vault sumps
4, 5, 6	Concentration of residuals	Sludge/liquid	Tanks and vault sumps	Direct sampling	NA	Once	Significant risk to workers by opening the vault or		Historical records provide reasonable estimated maximum concentration

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Systematic Planning Record

Characterization Data Collection Planning Record

NOTE: In cases where the requested information is not applicable, state that, and explain why it is not applicable so that it is clear that a required field has not been forgotten.

Data Needs Summary

(Information inputs to answer PSQs: target population, characteristics of interest, spatial and temporal limits, scale of inference)

PSQ(s)	Data Need	Media of Interest	Location	Sampling Method	Action Level	Frequency	Practical Constraints	Analytical Method	Potential Source of Data
							accessing tanks		
7	Lateral and vertical extent of contamination	Soil	Beneath wall between TK-001 and TK-002	Angled Boring	Groundwater protection PRGs, ecological threshold, outdoor and construction worker thresholds	Once	Many below-ground interfaces		New data collection
7	Volume of residuals to determine potential grout make-up	Sludge/liquid	Tanks and vault sumps	Depth measurement	Not applicable	Once	Significant risk to workers by opening the vault or accessing tanks		Once opened for remedy implementation, the volume of residuals can be confirmed
7	Concentration of transuranic (TRU) waste, if present, in residuals	Sludge/liquid	Tanks and vault sumps	Direct sampling	100 nCi/g	Once	Significant risk to workers by opening the vault or accessing tanks		Once opened for remedy implementation, the presence and volume of TRU waste can be determined

Performance or Acceptance Criteria

(Determine the quality of data needed and analytical approach)

Specify the population parameter (e.g., mean, median, or percentile), appropriate for making decisions or estimates:

As the basis for action is clear, statistical tests are not necessary to support the resolution of these PSQs.

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Systematic Planning Record

Characterization Data Collection Planning Record

NOTE: In cases where the requested information is not applicable, state that, and explain why it is not applicable so that it is clear that a required field has not been forgotten.

Decision Problem	<p>Provide a decision rule related to the Action Level identified above that includes a clear "if...then...else" statement:</p> <p>If contamination attributable to the 241-WR Vault or tanks is found in excess of site-specific action levels, then alternatives will be evaluated and an alternative other than No Action will be selected. Otherwise, No Action will be needed to ensure the vault and tanks are protective of human health and the environment.</p>
	<p>What are the consequences of making an incorrect decision and what is the tolerance for an incorrect decision?</p> <p>Incorrectly determining that action is not warranted would result in violation of CERCLA and would potentially put workers at risk of exposure to contamination above thresholds of concern.</p>
Estimation Problem	<p>Develop the specification of the estimator by combining the true value of the selected population parameter with the scale of estimation and other boundaries:</p> <p>Not applicable</p>
	<p>What are the acceptable limits on uncertainty?</p> <p>Not applicable</p>

Plan for Obtaining the Data
(Specify the general plan of obtaining the needed data and explain where and how the information in this Planning Record will be formalized in a data collection plan)

Outside vault: Prior to evaluation of alternatives, collect samples from one biased angle boring located beneath the wall between TK-001 and TK-002, because this is the mostly likely location for any leaks to have occurred. A radiological screening of this borehole will be conducted, and a physical sample will be collected and analyzed for radionuclides, nitrates, and tributyl phosphate. Due to the depth of the bottom of the vault structure (~ 15 m [50 ft]below ground surface), the data will be evaluated against groundwater protection PRGs.

Inside tanks and vault: As part of implementation of a selected remedy, open the vault and tanks to collect samples of residual sludge and liquid. These samples will be analyzed for radionuclides and any nonradionuclides indicated by process history. The purpose of this sampling will be to support either waste disposal or the specific make-up of required stabilizing material.

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Effective Date:

Systematic Planning Record

Characterization Data Collection Planning Record

NOTE: In cases where the requested information is not applicable, state that, and explain why it is not applicable so that it is clear that a required field has not been forgotten.

Project Summary

Project Name: Non-TSD pipelines and tanks

Date: 06/14/2016

Name of Person Completing Record: Emily Macdonald

Position: Facilitator

Name of Responsible Manager: Patrick Baynes

Project Background:

Supplemental planning for characterization activities is needed for pipelines and tanks that fall within the proposed boundary of the U Plant Barrier. These include the following: 200-W-42, 200-W-244-PL, 200-W-248-PL, 200-W-12, 200-W-84-PL, 200-W-100-PL, 200-W-192-PL, 200-W-193-PL, 200-W-195-PL, 216-BC-201 Siphon Tank (200-E-14), 270-W Neutralization Tank, 241-T-361 Settling Tank, 231-W-151 Vault, and 241-U-361 Settling Tank. For the purposes of this data quality objective (DQO) process, these waste sites are collectively referred to as "components." Specific information on the history and current status of these waste sites is available in the PowerPoint developed to support scoping and in pipeline scoping summaries. Decisions and data needs identified as a result of this DQO process will be documented in DOE/RL-2010-49, Remedial Investigation/Feasibility Study Work Plan for the 200-WA-1 and 200-BC-1 Operable Units.

Planning Type:

(If systematic planning is not required, state the reason)

Multi-Party

Organization, Schedule, and Goal

(State the problem, requirements, schedule, principal study questions [PSQs], and outcomes)

State the Problem

(Describe the reason/need for data collection and project goals/objectives)

Due to uncertainty of contents of and past releases from these components, it is necessary to determine if an investigation is needed to characterize the components and surrounding soils. Data collected will be used to support remedy evaluation of the 200-WA-1 Operable Unit (OU) and to determine whether contaminants exceed acceptable risk levels for protection of human health and the environment.

Principal Study Questions (PSQs) <i>(What data are needed to answer questions?)</i>	PSQ 1	Is there a release to soil outside the components that presents an unacceptable risk to groundwater?	PSQ 6	Does residual liquid/sludge inside the components structure pose an direct contact risk to outdoor or construction workers?
	PSQ 2	Is there a release to soil outside the components that presents an unacceptable	PSQ 7	Are the following potential response actions viable: (1) excavation and disposal, (2)stabilization (e.g., grout),

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NOTE: In cases where the requested information is not applicable, state that, and explain why it is not applicable so that it is clear that a required field has not been forgotten.

		risk to ecological receptors or communities?		(3)institutional controls, or (4)no additional action?
	PSQ 3	Is there a release to soil outside the components that presents an unacceptable risk to outdoor or construction workers?	PSQ 8	Not applicable
	PSQ 4	Do residual liquid/sludge inside the components pose an unacceptable threat to groundwater?	PSQ 9	Not applicable
	PSQ 5	Does residual liquid/sludge inside the components pose an unacceptable threat to ecological populations or communities?	PSQ 10	Not applicable
Define alternative outcomes or actions that can occur upon answering PSQs.	AA 1A	No - No additional action required	AA 6A	No - No additional action required
	AA 1B	Yes - Action warranted to protect groundwater	AA 6B	Yes - Action warranted to protect outdoor or construction workers
	AA 2A	No - No additional action required	AA 7A	No - Identify and evaluate viable alternatives
	AA 2B	Yes - Action warranted to protect ecological receptors or communities	AA 7B	Yes - Collect data sufficient to evaluate and select the most appropriate response action
	AA 3A	No - No additional action required	AA 8A	Not applicable
	AA 3B	Yes - Action warranted to protect outdoor or construction workers	AA 8B	Not applicable
	AA 4A	No - No additional action required	AA 9A	Not applicable
	AA 4B	Yes - Action warranted to protect groundwater	AA 9B	Not applicable
	AA 5A	No - No additional action required	AA 10A	Not applicable
	AA 5B	Yes - Action warranted to protect ecological receptors or communities	AA 10B	Not applicable

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<p>Identify the decision statements or estimation statements needed to address the PSQs.</p>	1. Determine whether potential releases to the soil from the components warrants action to protect groundwater.
	2. Determine whether potential releases to the soil from the components warrants action to protect ecological receptors or communities.
	3. Determine whether potential releases to the soil from the components warrants action to protect outdoor and construction workers.
	4. Determine whether residual liquid/sludge inside the components warrants action to protect groundwater?
	5. Determine whether residual liquid/sludge inside the components warrants action to protect ecological receptors or communities?
	6. Determine whether residual liquid/sludge inside the components warrants action to protect outdoor and construction workers
	7. Determine the most appropriate response action to address any conditions warranting action identified above.
	8. Not applicable
	9. Not applicable
	10. Not applicable

Data Needs
(Define the spatial and temporal boundaries of the study)

Define what constitutes a sampling unit:

Sampling units include (1) internals of each component and (2) soil within 0.6 m (2 ft) of each component.

What is the smallest unit upon which decisions or estimates will be made?

Each component

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NOTE: In cases where the requested information is not applicable, state that, and explain why it is not applicable so that it is clear that a required field has not been forgotten.

Data Needs Summary

(Information inputs to answer PSQs: target population, characteristics of interest, spatial and temporal limits, scale of inference)

PSQ	Data Need	Media of Interest	Location	Sampling Method	Action Level	Frequency	Practical Constraints	Analytical Method	Potential Source of Data
PSQ 1, PSQ 2, PSQ 3,	Nature and extent of potential release from components	Soil	Adjacent to component	Geoprobe or borehole		Once	Many belowground interfaces		New data collection
PSQ 4, PSQ 5, PQS 6	Volume/concentrations of residuals	Sludge/liquid	Inside components	Historical process information	NA	Once	Limited information available for some components		Historical records provide reasonable estimated maximum concentration
PSQ 7	Lateral and vertical extent of contamination	Soil	Adjacent to component	Geoprobe or borehole	Groundwater protection preliminary remediation goals, ecological threshold, outdoor and construction worker thresholds	Once	Many belowground interfaces		New data collection
PSQ 7	Volume of residuals to determine potential grout make-up	Sludge/liquid	Inside components	Depth measurement	NA	Once	Significant risk to workers accessing components		Once opened for remedy implementation, the volume of residuals can be confirmed

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NOTE: In cases where the requested information is not applicable, state that, and explain why it is not applicable so that it is clear that a required field has not been forgotten.

Data Needs Summary

(Information inputs to answer PSQs: target population, characteristics of interest, spatial and temporal limits, scale of inference)

PSQ	Data Need	Media of Interest	Location	Sampling Method	Action Level	Frequency	Practical Constraints	Analytical Method	Potential Source of Data
PSQ 7	Concentration of transuranic (TRU) waste, if present, in residuals	Sludge/liquid	Inside components	Direct sampling	100 nCi/g	Once	Significant risk to workers accessing components		Once opened for remedy implementation, the presence and volume of TRU can be determined

Performance or Acceptance Criteria

(Determine the quality of data needed and analytical approach)

Specify the population parameter (e.g., mean, median, or percentile), appropriate for making decisions or estimates:

As the basis for action is clear, statistical tests are not necessary to support the resolution of these PSQs.

Decision Problem	Provide a decision rule related to the Action Level identified above that includes a clear "if...then...else" statement: If contamination attributable to the components is found in excess of site-specific action levels, then alternatives will be evaluated and an alternative other than no action will be selected. Otherwise, no action will be needed to ensure the vault and tanks are protective of human health and the environment.
	What are the consequences of making an incorrect decision and what is the tolerance for an incorrect decision? Incorrectly determining that action is not warranted would result in violation of CERCLA and would potentially put workers at risk of exposure to contamination above thresholds of concern.
Estimation Problem	Develop the specification of the estimator by combining the true value of the selected population parameter with the scale of estimation and other boundaries: Not applicable
	What are the acceptable limits on uncertainty? Not applicable

Plan for Obtaining the Data

(Specify the general plan of obtaining the needed data and explain where and how the information in this Planning Record will be formalized in a data collection plan)

216-BC-201 (200-E-14) Siphon Tank: Prior to evaluation of alternatives, conduct a rad screen and collect samples from one borehole located adjacent to the siphon-end of the tank going slightly deeper than the bottom of the tank (approximately 9 m [30 ft] below ground surface). If data from the borehole indicate a need for additional data, step-

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Characterization Data Quality Objectives

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out boreholes may be evaluated. All samples will be analyzed for radionuclides and any nonradionuclides indicated by process history. As part of implementation of a selected remedy, open tank to collect samples of residual sludge and liquid. These samples will be analyzed for radionuclides and any nonradionuclides indicated by process history. The purpose of this sampling will be to support either waste disposal or the specific make-up of required stabilizing material.

200-W-100-PL: Prior to evaluation of alternatives, characterize around 241-UX-154 (a TDS unit served by 200-W-100-PL) with boreholes outside the components to validate the absence of leaks from this pipeline. No intrusive sampling will be conducted.

270-W Neutralization Tank: Prior to evaluation of alternatives, collect samples from one borehole located as close to the tank as possible to depth of about 15 m (50 ft). If geophysical logging of that hole indicates that further investigation is needed, then open the 6 in. blanked vent riser to perform a rad screen to establish an understanding of the activity within the tank. If the rad screen indicates that tank contents warrant more detailed evaluation, then a sample from within the tank will be collected and analyzed for radionuclides and any nonradionuclides indicated by process history.

200-W-248-PL and 200-W-248-PL: Prior to evaluation of alternatives, collect samples from the planned 241-WR Vault angle borehole to identify the presence or absence of contamination at depth below the 241-WR Vault. No additional sampling is needed due to the proximity of existing data that will be collected at the 241-WR Vault and lack of known or suspected releases.

241-T-361 Settling Tank: Sufficient samples of tank contents exist, so there is no need to resample tank contents. Prior to evaluation of alternatives, the existing data from inside the tank will be used to confirm that the contents require handling as TRU waste. Additionally, install a borehole to a depth approximately 3 m (10 ft) below the bottom of the tank to investigate the potential for a release from the tank. If the shallow investigation indicates a release, deeper soil samples will be collected to define the extent of the release.

200-W-12: Conduct field reconnaissance and dig test pits to determine if an underground tank is present. If located, a detailed characterization approach of the tank will be developed in coordination with EPA. Because of the degree of uncertainty related to the existence of a tank at this site, the type of tank construction, its use, potential

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contents, and any potential releases, a detailed characterization approach cannot be developed prior to obtaining field reconnaissance and screening data.

231-W-151: Prior to evaluation of alternatives, collect samples from one borehole (approximately 9 m [30 ft] deep) in the vicinity of the vault to determine the extent of known historic releases. If necessary to fully characterize the extent of the release, deeper samples will be collected at biased locations selected as a result of the initial borehole. The contents of the tanks are known to be TRU, and no additional characterization of tank contents is needed.

200-W-192-PL: Prior to evaluation of alternatives, collect samples from one shallow boring near the western edge of the proposed U Plant Canyon Barrier, southeast of the manhole where four segments of 200-W-192-PL-X and 200-W-192-PL-A converge.

200-W-193-PL: Existing data are sufficient to support decision making.

241-U-361 Settling Tank: Existing data are sufficient to support decision making.

200-W-84-PL: Existing data are sufficient to support decision making.

200-W-195-PL: Existing data are sufficient to support decision making.

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