

100 & 300 AREA UNIT MANAGERS MEETING (UMM) NOVEMBER 21, 2019

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788

CH2MHILL
Plateau Remediation Company

**P.O. Box 1600
Richland, Washington 99352**

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Date Published
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P.O. Box 1600
Richland, Washington 99352

APPROVED

By Janis D. Aardal at 2:42 pm, Dec 12, 2019

Release Approval

Date

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100 & 300 AREA UNIT MANAGERS MEETING
NOVEMBER 21, 2019

FINAL MEETING MINUTES

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Meeting Attendees
Administrative Record
Correspondence Control

100/300 AREA UNIT MANAGERS MEETING
Attachments List
November 21, 2019

Minutes of the 100/300 Area Unit Managers Meeting of November 21, 2019 are attached. Minutes are comprised of the following:

- | | |
|---------------------|--|
| Attachment 1 | Agenda |
| Attachment 2 | Attendees Sign-In Sheets |
| Attachment 3 | Signature Approval Page |
| Attachment 4 | 100K Area Report |
| Attachment 5 | 300 Area Report |
| Attachment 6 | Groundwater Summary by O.U. |
| Attachment 7 | Documents to the AR, Approved TPA CNs |
| Attachment 8 | 100-OL-1 Orchard Lands |
| Attachment 9 | Action Items |

**100/300 AREA UNIT MANAGERS MEETING
AGENDA
November 21, 2019**

100 Area River Corridor Soils and Sludge & K Basin Summary (Deborah Singleton/R. Quintero)

300 Area River Corridor Soils Summary (Lorna Dittmer/B. Vannah)

Groundwater Summary by O.U.

- 100-K Area Groundwater (Ellwood Glossbrenner)
- 100-BC Area Groundwater (Ellwood Glossbrenner)
- 100-N Area Groundwater (Steve Balone)
- 100-D/H Areas Groundwater (John Sands)
- 100-F Area Groundwater (Steve Balone)
- 300 Area Groundwater (John Sands)
- Summary of Hanford Sampling Program
- Documents for the Administrative Record and Approved TPA Change Notices

100-OL-1 – Orchard Lands (Johns Sands)

Action Items

Closing Comments

- Sign concurrence to “Groundwater Summary by O.U.” and “Action Item List” if applicable

All future UMM meetings will be held in 2420 Stevens Room 308 from 1:00-2:30pm as follows:

2019

- November 21

2020

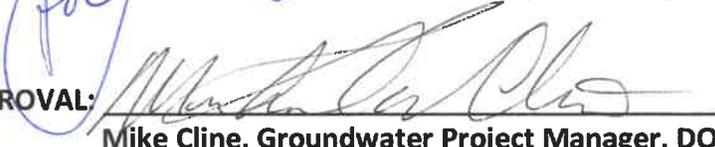
- January 16
- March 19
- May 21
- July 16
- September 17
- November 19

100/300 Area Unit Managers Status Meeting
November 21, 2019

PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
Scott Davis	MSA	TPA - USA	376-8757
Angel Nuñez	MSA	TPA	578-4728
Cristal Meza	MSA	TPA	480-9004
Laura Buebel	EPA		376-5466
Deborah Singleton	CHPRC		373-7687
Lynne Hood	EPA		376-8631
Ben Vannah	DOE	324	376-9623
Bill Fought	CHPRC	CAM/PM	376-3139
Craig Cameron	EPA		376-8665
Sharon Gimon	ODOE		(SAI) 240-d61
Alicia Boyd	Ecology	100 Areas	372-7934
KIM WELSCH	ECOLOG	PROJ. MGR	372-7882
Bob Cathel	CHPRC		376-1513
Glossbramer, Edward	DOE/RL	CHPRC/K	376 5828
Kathy Higgins	DOE		376-3658
Dr. Neuf	DOE/RL	300 100 Area Soils	372 0649
Manuel Lopez	DOE/RL	100K D&D	509-314-5074
John Sands	DOE/RL	PIH, 300 OL-1	372-2282
Gretchen Hanson	CHPRC	SA GRP	
Stuart Luttrek	ECY		372-2883
Laura O'mara	CHPRC	Admin	

**100/300 Area Unit Managers Meeting
Meeting Minutes Approval
November 21, 2019**

APPROVAL:  DATE: 11/21/19
Mark French, River Corridor Project Manager, DOE/RL

APPROVAL:  DATE: 11/21/19
Mike Cline, Groundwater Project Manager, DOE/RL

APPROVAL:  DATE: 11/21/19
Kim Welsch, Environmental Restoration Acting Project Manager, Ecology

APPROVAL:  DATE: 11/21/19
Laura Buelow, 100 Area Project Manager, EPA

HFFACO Action Plan Section 4.1 requires signature of agreements and commitments made during the Project Manager Meeting. Approval of these minutes documents agreements and commitments identified in the attached "Groundwater Summary by O.U." and the "Action Item List". Approval does not apply to the minutes themselves or to any other attachments.

100K Area Report
100/300 Area Unit Manager Meeting
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RL-0012 Sludge Treatment Project

TPA Milestone M-016-176, *Completed sludge removal from 105-KW Fuel Storage Basin with the shipment of STSC #20 to T Plant.*

- (12/31/19) – Completed September 11, 2019.
- Completion letter is expected to be submitted to DOE by 11/21/19.



RL-0041 100K Closure Project

TPA Milestone M-016-143, *Complete the interim response actions for 100 K Area within the perimeter boundary and to the Columbia River for Phase 2 actions. Phase 2 is defined in the 100 K Area RD/RA Work Plans.*

- (9/30/24) – On Schedule

Soil Remediation and Waste Site Closure

- Contractor continues to mobilize and train in preparation to begin soil remediation in Mid December.
 - Following mobilization, work is expected to begin at:
 - Waste Site 100-K-47:2 for overburden removal
 - Waste Site 116-KE-2 for soil excavation (contingent on training)

Ancillary Facility Deactivation and Demolition (D&D)

- Completed asbestos abatement in the 165-K West Power Control Building.
- Continued removing residual oily water from the 166-K East Fuel Storage Bunker. Expected completion 11/20/19.
- Preparations for 166-K East demolition following completion of residual oil water removal is underway.

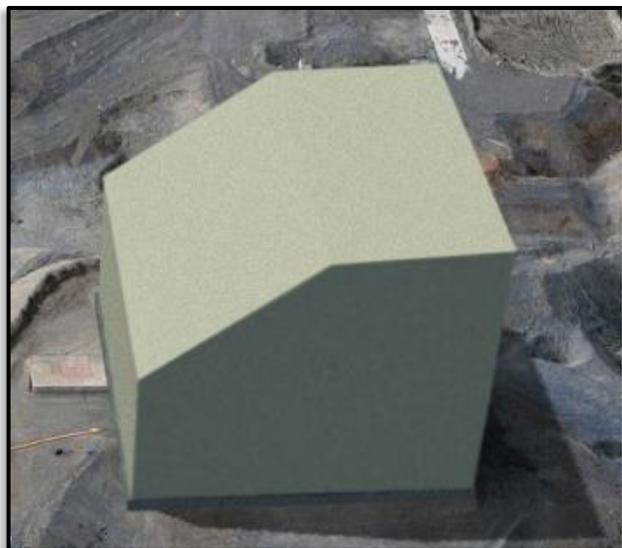
100K Area Report
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*166-KE prepared for demolition
(165-KE Power Control Building in Background)*



105-K East Reactor Interim Safe Storage (ISS)



Conceptual Design of the 105-K East Safe Storage Enclosure

- CHPRC has completed the update of SSE structural engineering model calculations and calculation driven changes into design drawings. An independent engineering review of the documents has been completed.
- The architecture engineering (AE) contractor completed the Safe Storage Enclosure (SSE) design modification package. Expected release date 11/21/19.
- Completed removal of asbestos in the reactor building. Contractor was demobilized.

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TPA Milestone M-093-28, *Submit a change package for proposed interim milestones for 105-KE and 105-KW Reactor Interim Safe Storage.*

- (12/31/19) – On-going.

TPA Milestone M-093-27, *Complete 105-KE and 105-KW Reactor Interim Safe Storage in Accordance with the Removal Action Work Plan.*

- (9/30/24) – On-going – New dates being proposed as part of change package for M-093-028.

TPA Milestone M-016-00C, *Complete all response actions for the 100 K Area.*

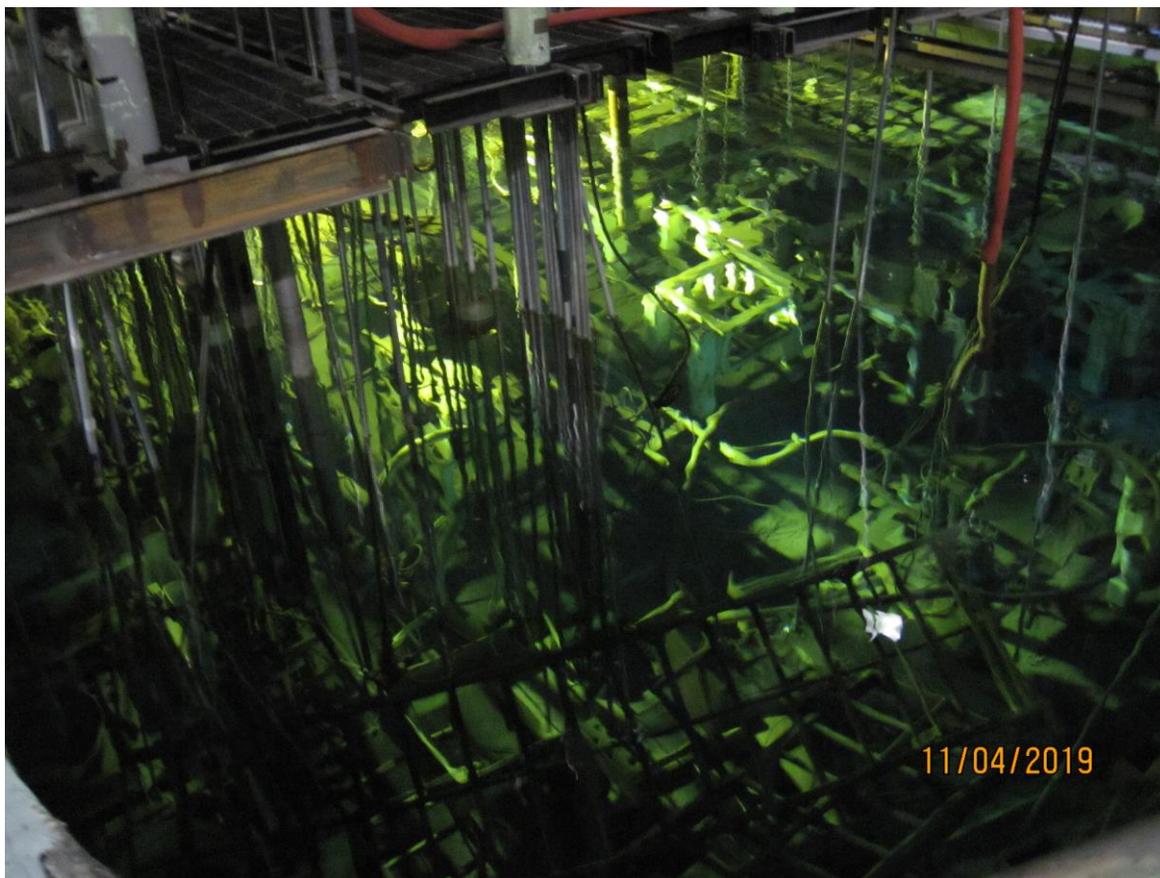
- (9/30/24) – On-going – Dates will need to follow proposed action dates for M-093-028.

TPA Milestone M-016-173, *Select K Basin sludge treatment and packaging technology and propose new interim sludge treatment and packaging milestones.*

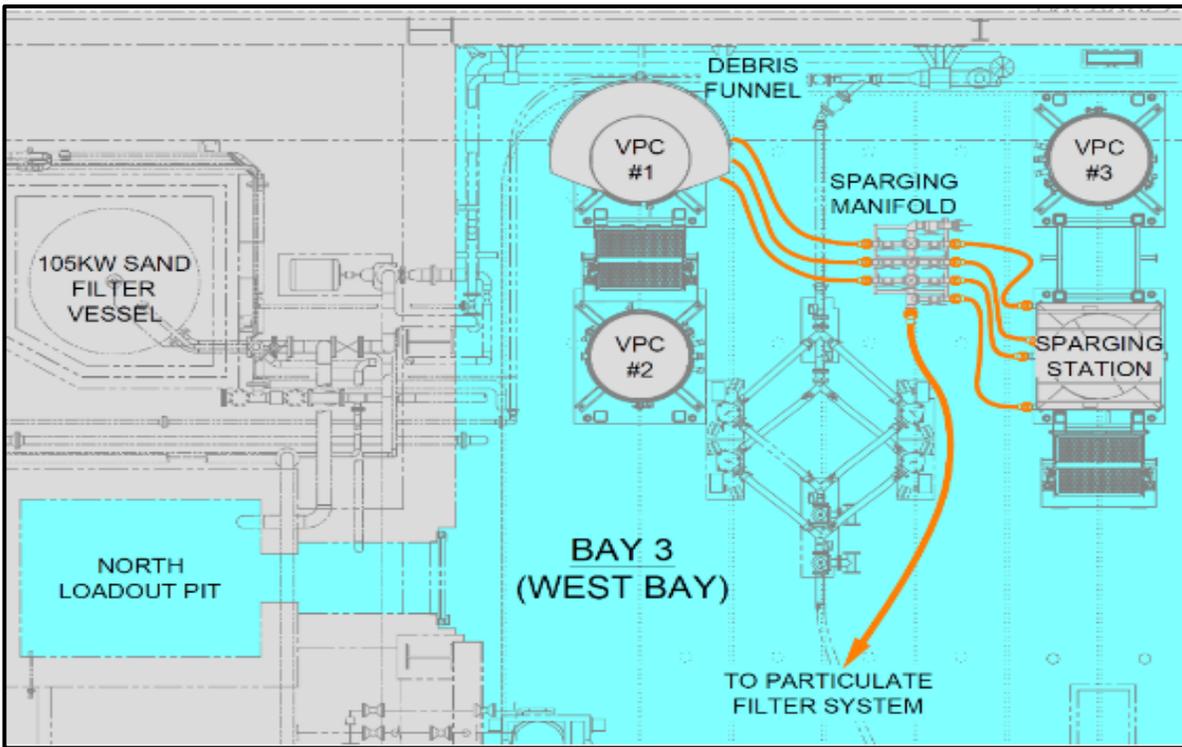
- (9/30/22) – On Schedule.

TPA Milestone M-016-178, *Initiate deactivation of 105-KW Fuel Storage Basin.*

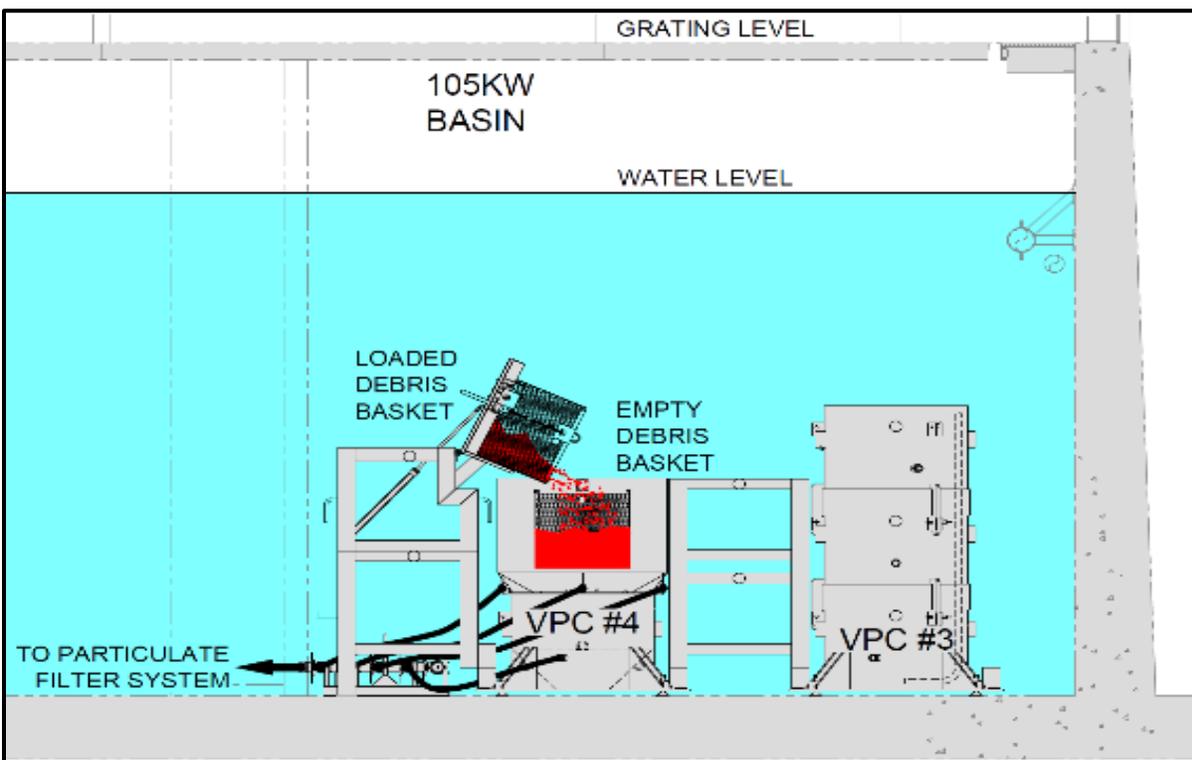
- (12/31/19) – On Schedule.
- Basin deactivation work has started in the 105KW Basin. Activities include the following:
 - Deactivation of the Basin Recirculation and Cooling System (BRC). BRC deactivation meets the completion requirements of TPA-M-016-178, *Initiation of 105-KW Fuel Storage Basin Deactivation*. Expected completion 11/27/19.



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Plan View of VPCs Installed in K West Basin



VPC Debris Washing Station

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TPA Milestone M-016-181, *Complete deactivation, demolition and removal of 105-KW Fuel Storage Basin,*

- (9/30/23) – On Schedule.
- Team is incorporating EPA comments to draft of DOE/RL-2010-52, *Remedial Design and Remedial Action Work Plan for the K Basins Interim Remedial Action: 105-K West Basin Deactivation.*
- Clearing the footprint in the K West Basin West Bay for installation of the Vertical Pipe Casing (VPC) System continues.
- Relocation, inventorying and dose rating below-water debris.
- Dose rating of the basin walls.
- Preparing to perform bulk removal of hanging pole tools.
- Preparing to inspect and characterize the Integrated Water Treatment System settler tanks.
- Preparing to sample the Skimmer System sand filter media.
- Columbia Energy and Environmental Services continues fabrication of Vertical Pipe (VPC) System.

TPA Milestone M-016-186, *Initiate soil remediation under the 105-KW Fuel Storage Basin.*

- (12/31/23) – On Schedule.

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300 Area ROD Scope

TPA Milestone M-016-85A, *Complete remote excavation of the 300-296 waste site in accordance with an approved RD/RA Work Plan, (9/30/2021)* – On Schedule

Performing the following activities in preparation for remote excavation of the highly contaminated soil beneath the 324 Building B-Cell, and grout in place in the adjacent hot cells (A, C, D) for disposal.

324 Building Equipment Installation:

- Completed grouting the final REA through Support Assembly (TSA) installation in B-Cell. (10/14/19).

Equipment Procurement & Fabrication:

- Continued design and fabrication of equipment:
 - B-Cell 10T Crane
 - Universal cutting tool
 - Cell dams
 - Water delivery system for the Airlock
 - Concrete box for soil waste bins

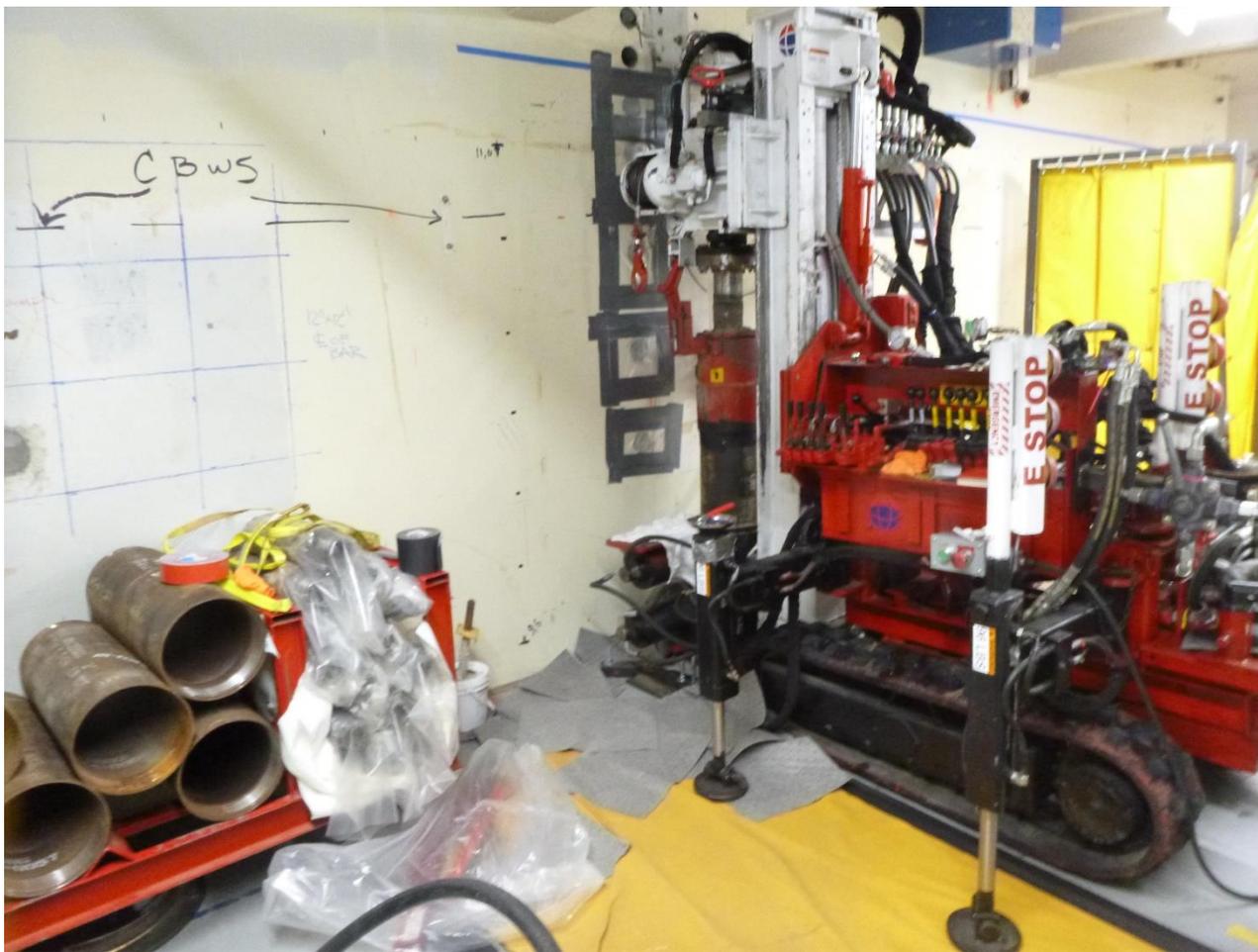
324 Activities:

- Completed A/D Crane Inspection Hazard Review Board (10/24/19).
- Sampling the new groundwater monitoring well southeast of 324 Building.

Structural Modifications:

- Temporary north shoring excavation (supports stabilizing soil below B-Cell door):
 - Completed grouting the first 11 of 21 micropiles (11/9/19).
- Room 18/Pilot Hole:
 - Completed drilling third pilot hole (10/17/19).
 - Completed drilling fourth pilot hole (11/13/19).

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Drill Rig Setup in Room 18

Mockup:

- N/A

Cell Cleanout:

- Continue size reduction and waste bin load out of B-Cell debris.
- Received shielded cradle supporting 324 waste load-out (10/3/19).
- Filled sixth 9x5x5 box with 3 bins of B-Cell debris (10/10/19).

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September 3, 2019



September 11, 2019

Before and after size reduction and waste bin loading in B-Cell NW corner

Upcoming Activities:

- Restore A/D Crane hoist function.
- Continue B-Cell floor cleaning for saw install.
- Complete floor saw preparation: facility utility installation, ops performance and HRB.
- Complete HRB for conversion of pilot holes to micropiles.

TPA Milestone M-016-85, Complete Remedial Actions for 300-296 and Disposition for 324 Bldg and Ancillary Bldgs (9/30/2025) – On Schedule.

Milestone Description: *Complete remedial actions for 300-296 waste site in accordance with RD/RA Work Plan for 300-FF-2 Soils (DOE/RL-2014-13-ADD1) and disposition for the 324 Building and Ancillary Buildings in accordance with the Removal Action Work Plan (DOE/RL-2004-77). Completion of facility disposition is defined as the completion of deactivation, decontamination, decommissioning, and demolition in accordance with the removal action work plan.*

300 Area Report 300 Area Unit Manager Meeting November 21, 2019

300-296 FES Summary Schedule

#	Activity Name	Start	Finish	Prior Month Finish VAR	FY2019												FY2020												FY2021												FY2022											
					O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
1	300-296 Key Milestones	15-Nov-18 A	24-Aug-21	-36																																																
2	Complete Install Upper Remote Excavation Arm in B-Cell (3/31/19)		15-Nov-18 A	0																																																
3	Completion of Core Drilling into Radiochemical Engineering Complex (REC) (6/15/19)		21-Feb-19 A	0																																																
4	Complete Three Test Pilot Holes 2-4, and Grout Two Micro-Pile Holes		26-Dec-19*	-35																																																
5	Complete 324 Building REC Cleanout		21-Jan-20*	-14																																																
6	Initiate 324 B-Cell Floor Scoring	18-May-20*		-116																																																
7	TPA M-016-85A Complete remote excavation of the 300-296 waste site (Due 9/30/2021)		24-Aug-21*	-36																																																
8	Mockup Equipment Procurements	18-May-17 A	12-Dec-18 A	0																																																
9	Mockup Equipment Installation	15-Nov-17 A	23-Apr-19 A	0																																																
10	Mockup Training	25-Apr-18 A	19-Apr-21	-22																																																
11	A/D Crane Recovery	11-Sep-19 A	20-Nov-19	-7																																																
12	324 Bldg - REC Cleanout	13-Sep-17 A	04-Mar-20	27																																																
13	324 Bldg - Interference Removal	31-Oct-17 A	14-Dec-19	-22																																																
14	324 Bldg - Cell Sealing	29-Jan-18 A	20-May-21	-21																																																
15	324 Bldg - Core Drilling	09-Jan-18 A	28-Mar-19 A	0																																																
16	324 Bldg - Structural Modifications Design	11-Oct-17 A	02-Dec-19	-20																																																
17	324 Bldg - Structural Modifications Design - Micropiles	27-Dec-18 A	31-Oct-19	0																																																
18	324 Bldg - Structural Modifications - Temp Shoring	27-Jun-19 A	31-Dec-19	-19																																																
19	324 Bldg - Structural Modifications - Scabbling/Dowel Drilling	04-Mar-19 A	24-Nov-20	-22																																																
20	324 Bldg - Structural Modifications - Micropiles	04-Nov-19	14-Oct-20	-22																																																
21	324 Bldg - Structural Modifications - Soil Stabilization	01-Oct-19 A	24-Nov-20	-22																																																
22	324 Bldg - Structural Modifications - Pile Cap	14-May-20	25-Jan-21	-22																																																
23	324 Bldg - Equipment Procurements	14-Sep-17 A	29-Sep-20	0																																																
24	324 Bldg - Equipment Installations	16-Jul-18 A	01-Jun-21	-22																																																
25	324 Bldg - B-Cell Debris Removal	02-Jul-18 A	30-Jul-20	-64																																																
26	324 Bldg - Readiness Assessment	17-Dec-18 A	16-Nov-20	-65																																																
27	324 Bldg - B-Cell Floor Scoring	18-May-20	29-Jun-20	-64																																																
28	324 Bldg - B-Cell Floor Removal	04-Aug-20	06-Oct-20	-53																																																
29	324 Bldg - B-Cell Soil Excavation (To the Footers)	10-Nov-20	05-Jan-21	-25																																																
30	324 Bldg - B-Cell Soil Excavation (Below Footers)	26-Jan-21	12-Jul-21	-21																																																

100/300 Area Project Managers Meeting
Groundwater Summary by OU (September - October 2019 Data)
November 21, 2019
100-K Area Groundwater Operable Unit

EPA Lead (RL – E. Glossbrenner, CHPRC – E. Feist, J. Hulstrom)

- CERCLA Process Implementation:
 - A meeting was held on September 5, 2019 with RL, EPA and Ecology to review the draft TI versus MNA presentation for the October RAP meeting. The revised draft presentation was reviewed by RL, EPA and Ecology on September 10, 2019.
 - The FY20 drilling SAP for 100-KR-4, DOE/RL-2013-36-ADD-7, was signed by RL and EPA by September 5, 2019.
 - Obtained signatures from RL and EPA for DOE/RL 2019-16, *The well Installation Sampling and Analysis Plan for 100-KR-4 Groundwater Operable Unit*.
 - Obtained signatures from RL and EPA on September 24, 2019 for TPA-CN-0869, which updates the KW Soil Flushing Treatability Test SAP (DOE/RL-2018-10) based on observations during Phase 1 of the treatability test.
 - Submitted SGW-63885, Revision 0 *KW Soil Flushing Treatability Test Effectiveness Assessment and Recommendation* to RL on September 26, 2019.
 - A meeting was held on Wednesday, October 2, 2019, with RL to discuss how the 100-K-43 and 100-K-82 waste sites are addressed in the KR-4 Remedial Investigation and Feasibility Study.
 - Received EPA comments on the 100-KR-1, 100-KR-2, and 100-KR-4 Operable Units Remedial Investigation, Draft B (DOE/RL-2010-97) on October 7, 2019. Comment Resolution in progress.
 - DOE and EPA presented the Technical Impracticability Waiver versus Monitored Natural Attenuation presentation to the RAP on October 16, 2019. DOE and EPA committed to offer the RAP an update once the FS Draft B is released.
 - A meeting was held on October 10, 2019, with RL and EPA to discuss the C-14 plume and the groundwater remedial alternatives. EPA agreed that the original groundwater modeling performed is appropriate for the development of remedial alternatives in the feasibility study. A follow on meeting with RL and EPA was held on October 22, 2019 to discuss the C-14 plume, and the uranium dose change. EPA agreed with the approach of re-evaluating the protectiveness of a riparian animal using the 100-K seep with site specific parameters. EPA also agreed to adding a discussion to the Feasibility Study of why using the IRIS Rfd and how the use of the updated toxicity values would not change the outcome of the baseline risk assessment. Additionally, a high-level description of the proposed remedial alternatives for the waste sites and groundwater was presented.
- Monitoring & Reporting:
 - The KW Soil Flushing Treatability Test, which began on May 28, 2019 at the former 183.1KW Headhouse chemical storage tank farm, continued during the months of September and October. On September 17, 2019, the infiltration gallery was restarted after it was shut down August 12, 2019 to allow for the mound created in the vadose zone to drain. As of October 31, 2019, an additional 6.2 million gallons of water was discharged to the soil column through the infiltration gallery. This brings the overall total volume of water injected up to about 35 million gallons. Figure KR-1 shows the Cr(VI) results through the end of October 2019. Figure KR-2 shows Cr(VI) concentrations in key wells since the restart of the infiltration gallery on September 17, 2019.
- Remedial Actions & System Modifications:
 - Figures KR-3 through KR-5 present the monthly volume of groundwater treated and mass of hexavalent chromium removed through October 2019. The total mass removed for KW continues to be elevated as a result of

100/300 Area Project Managers Meeting
Groundwater Summary by OU (September - October 2019 Data)
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the KW Soil Flushing Treatability test.

- Figure KR-6 illustrates the monthly average pumping rates for operating extraction wells across the 100-KR-4 system.
- The volume of groundwater treated and mass of Cr(VI) removed for the 100-K P&T systems (KX, KR4, and KW) during September and October 2019 are:

Month	Gallons Treated (in millions)	Hexavalent Chromium Removed (kg)
September	58	3.6
October	62	4.5

- For FY19, the 100-KR-4 P&T systems treated a combined 739 million gallons of water and removed 45 kg of chromium.
- FY 2020 (October 2019) P&T performance to date:

P&T System	Treated (mgal)	Removed (kg)
KR4	9.5	0.1
KW	13	2.0
KX	40	2.4
Total	62	4.5

**100/300 Area Project Managers Meeting
Groundwater Summary by OU (September - October 2019 Data)
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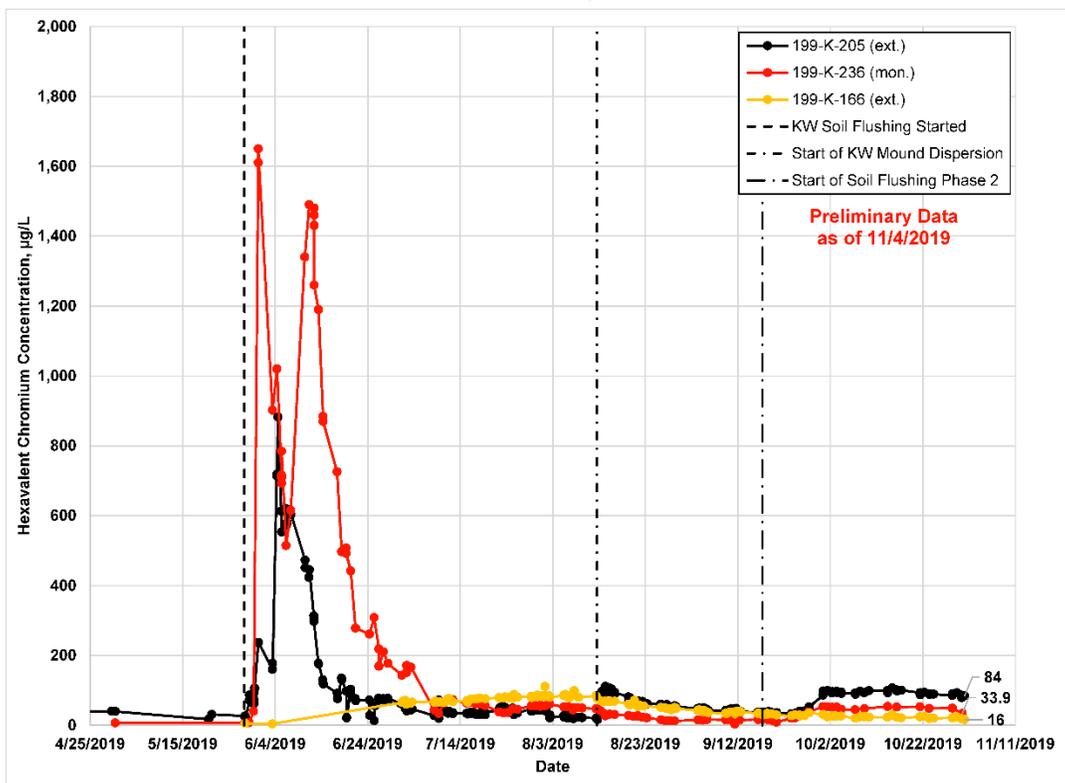


Figure KR-1. Observed Cr(VI) Concentrations during the KW Soil Flushing Treatability Test

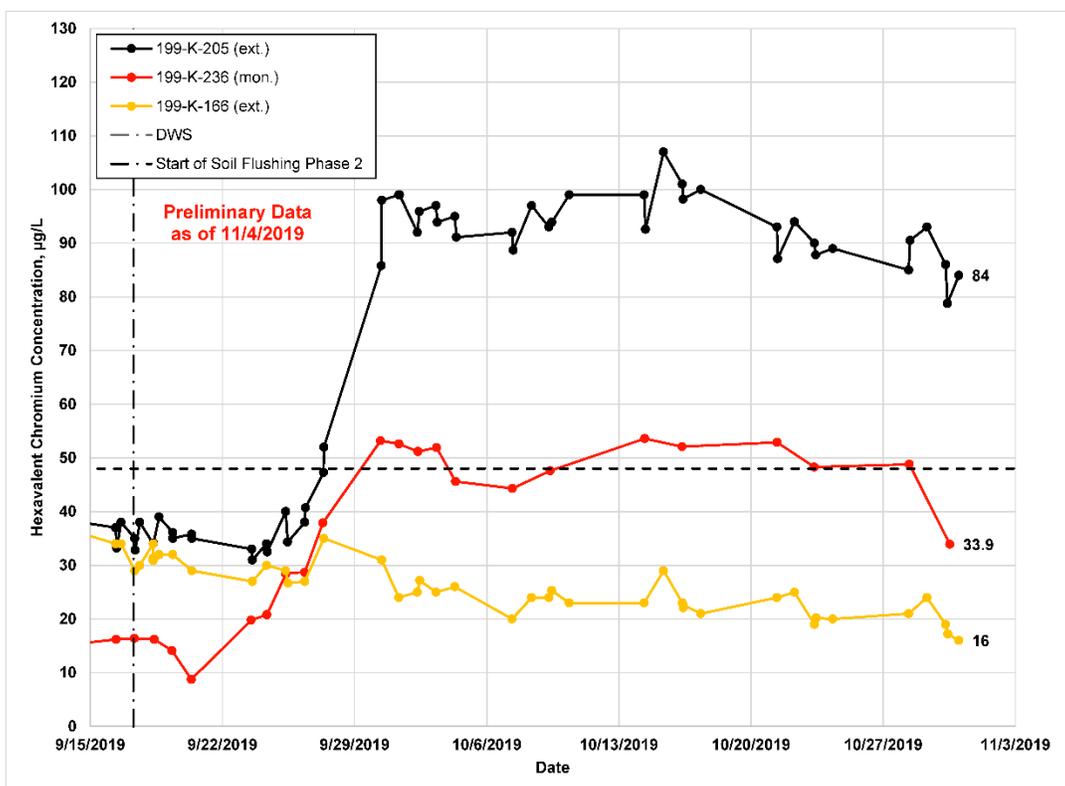


Figure KR-2. Observed Cr(VI) Concentration after September 17, 2019

**100/300 Area Project Managers Meeting
Groundwater Summary by OU (September - October 2019 Data)
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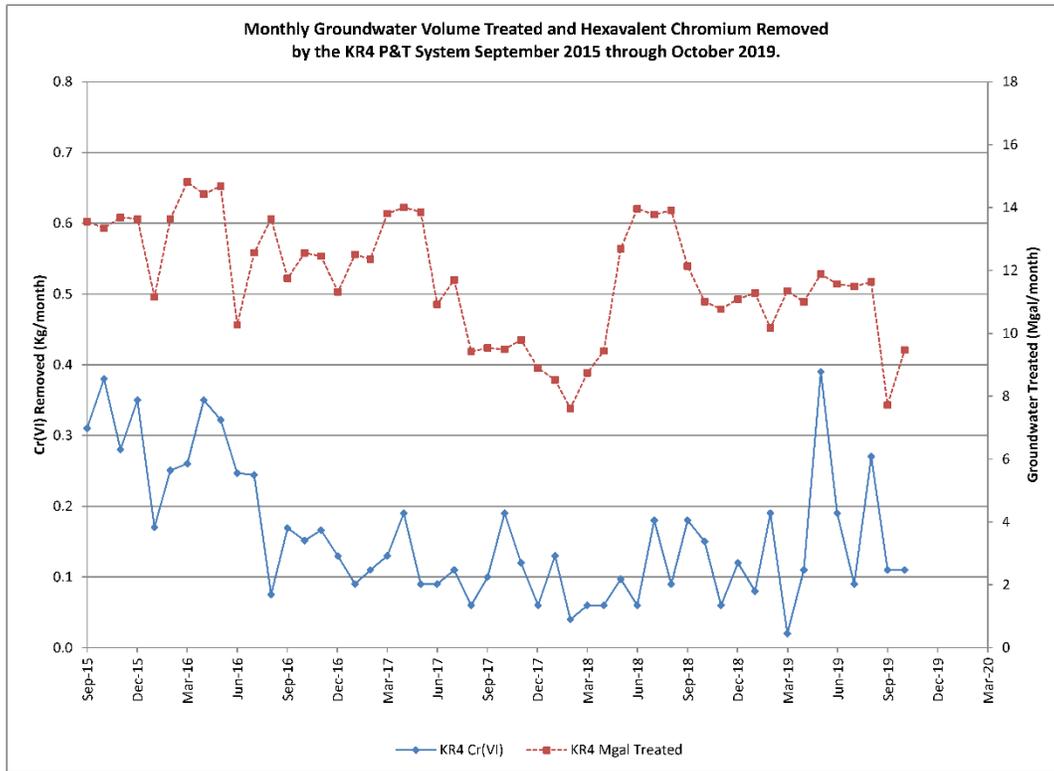


Figure KR-3. Monthly Cr(VI) Removed and Groundwater Volume Treated by KR4 P&T September 2015 through October 2019

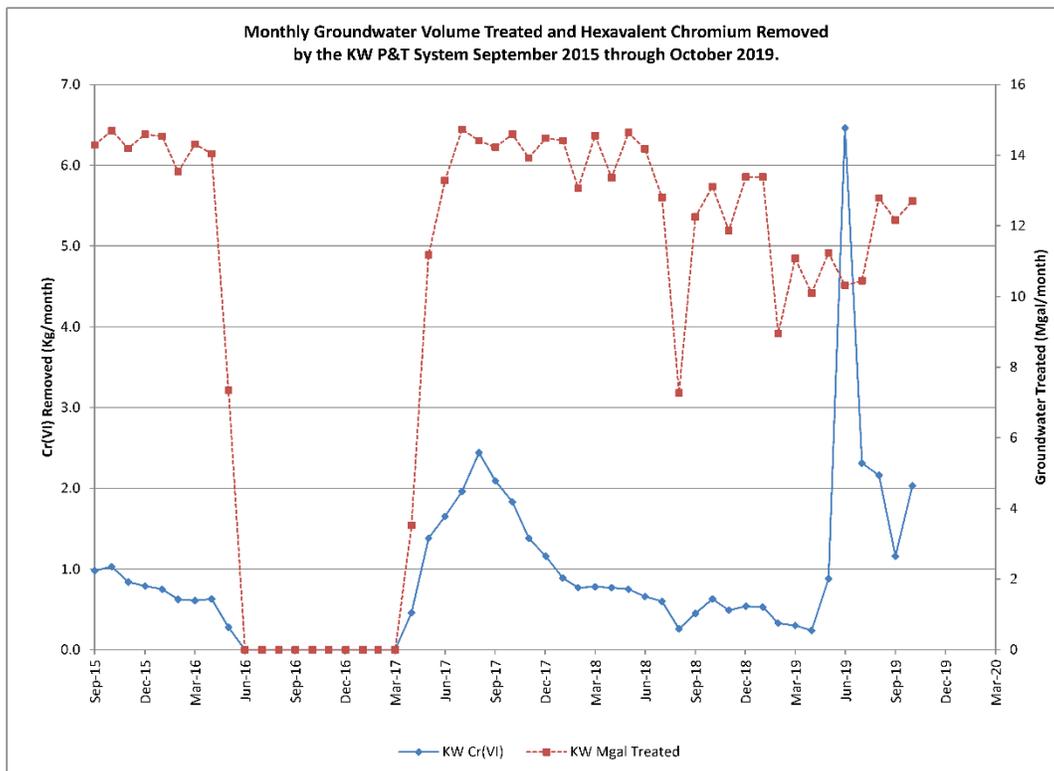


Figure KR-4. Monthly Cr(VI) Removed and Groundwater Volume Treated by KW P&T September 2015 through October 2019

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Groundwater Summary by OU (September - October 2019 Data)
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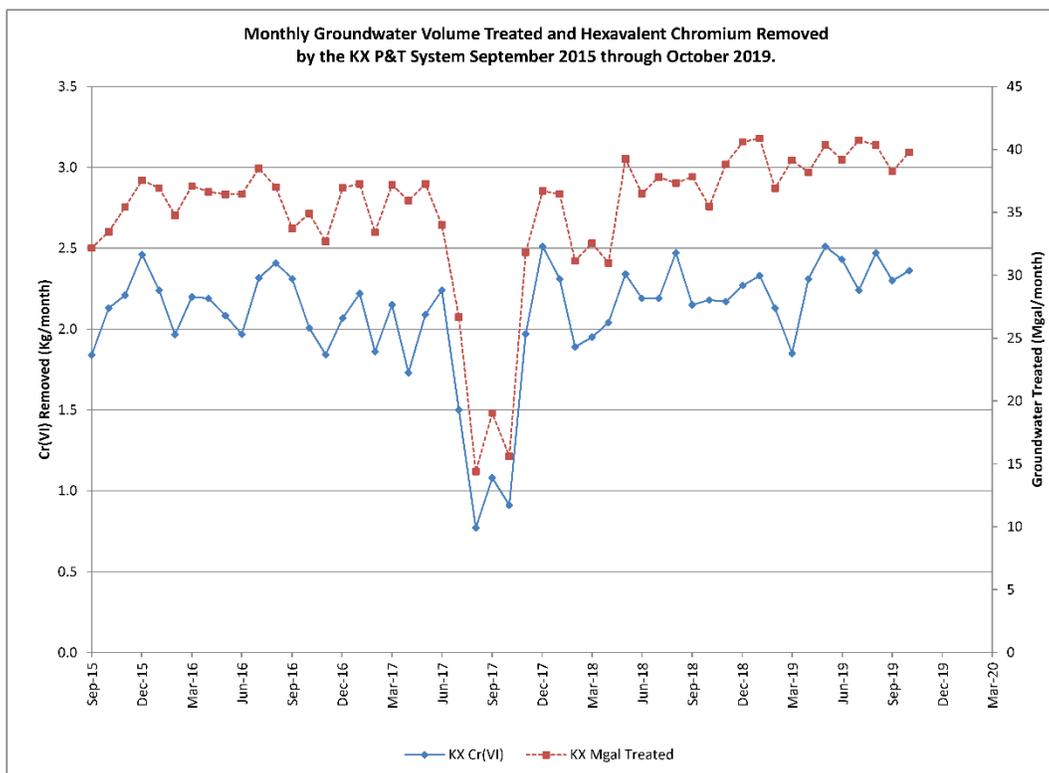


Figure KR-5. Monthly Cr(VI) removed and groundwater volume treated by KX P&T September 2015 through October 2019

**100/300 Area Project Managers Meeting
Groundwater Summary by OU (September - October 2019 Data)
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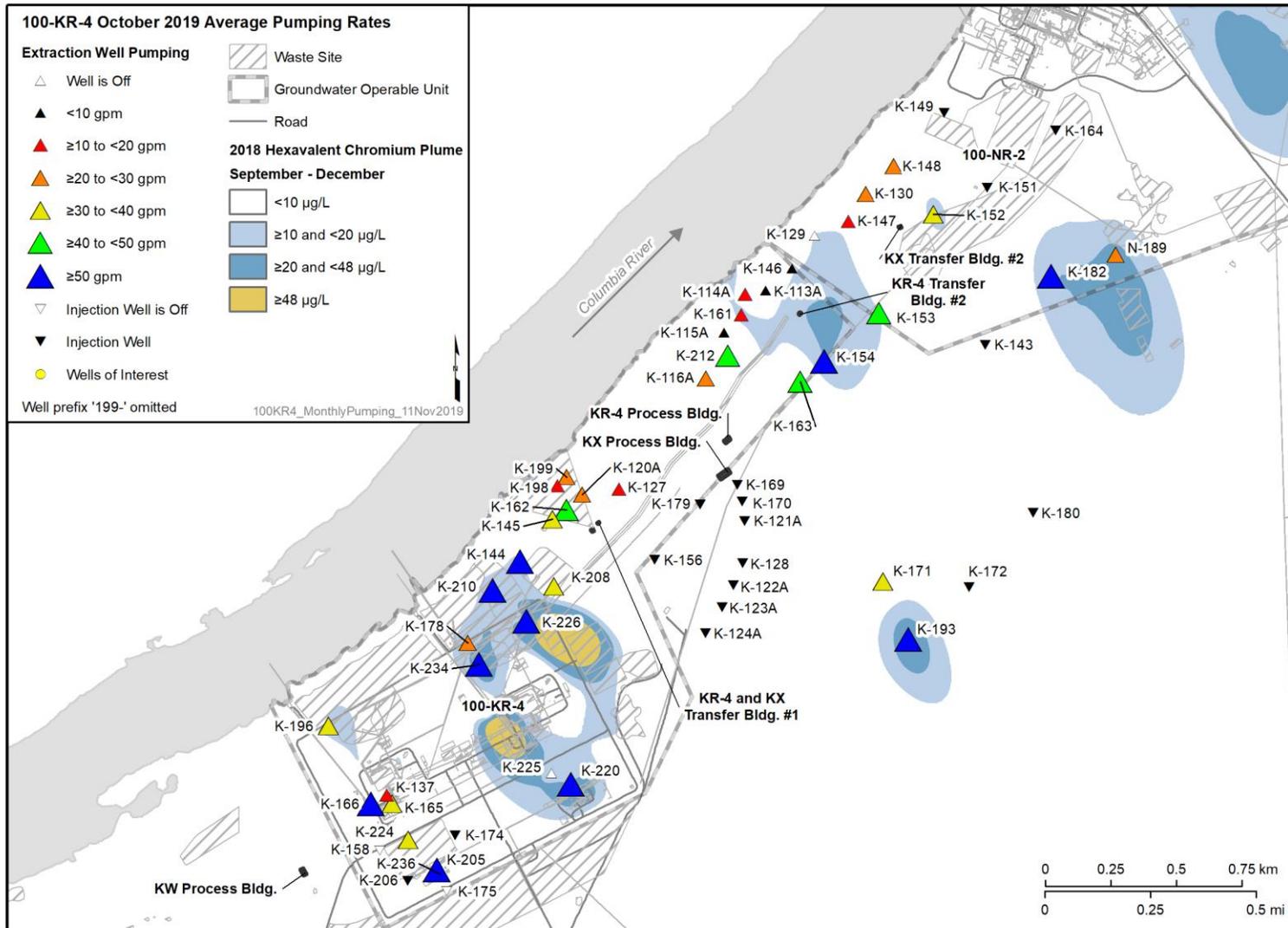


Figure KR-6. October 2019 Average Pumping Rates for the 100-KR-4 P&T System

Regulatory Agency Comments: None

100/300 Area Project Managers Meeting
Groundwater Summary by OU (September - October 2019 Data)
November 21, 2019
100-BC Area Groundwater Operable Unit

EPA Lead (RL – E. Glossbrenner, CHPRC – R. Evans, M. Hartman)

- CERCLA Process Implementation:
 - The 30-day public comment period for the Proposed Plan began October 7, 2019. A request to extend the original 30 day comment period was received from the public and it has been accordingly extended an additional 30-days and is now scheduled to end December 9, 2019.
- Monitoring & Reporting:
 - 100-BC-5 aquifer tubes were sampled as planned in fall 2019, with two exceptions. At one location, labels were missing from two of the three tubes in the cluster, including the one scheduled for sampling. The labeled tube was sampled instead. At another location, the scheduled aquifer tube has not produced representative samples in the past two years so another tube in the same cluster was sampled instead. This type of substitution is allowed under the groundwater SAP. Aquifer tube sampling results were consistent with previous data.
 - 100-BC-5 monitoring wells were all sampled in October as scheduled, and all of the data have been received. Contaminant concentrations were within previously established ranges.

Regulatory Agency Comments: None

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100-N Area Operable Unit

Ecology Lead (RL – S. Balone, CHPRC – B. Faught, V. Rohay, A. Lee)

- CERCLA Process Implementation
 - A TPA CN is undergoing Ecology review for the 100-NR-2 RD/RAWP (DOE/RL-2001-27) which reflects changes in the PRB injection schedule. A draft of the TPA CN was provided to Ecology on June 28, 2018. Ecology provided verbal comments on August 28, 2019 for changes to align with schedule for issuance of the 100-N RI/FS and ROD. The draft TPA CN was updated to incorporate Ecology's verbal comments and provided for review on September 23, 2019.
 - Completed clearance for publication for the Draft B, RI/FS Report on October 24, 2019 and it has been transmitted to Ecology for review.
 - Met with Ecology on October 15, 2019 to discuss changes to the 100-NR-2 Sampling and Analysis Plan. A TPA change notice is being prepared for the SAP changes.
- Remedial Actions:
 - The quarterly biovent vapor samples were collected on September 30, 2019 as scheduled. The next quarterly biovent vapor samples are scheduled for late December 2019.
 - The bioventing system was shut down on October 14, 2019 for the biennial bioventing system respirometry test for low river stage. The test will run through November 19, 2019, then groundwater samples will be collected from the bioremediation monitoring wells and the bioventing system operations restarted the week of November 25, 2019.
 - Ecology provided comments on October 2, 2019 to the draft biovent soil characterization SAP to collect characterization soil samples to evaluate the effectiveness of the bioventing system for remediating deep vadose zone TPH contamination. Met with RL and Ecology on October 31, 2019 for comment resolution. A follow on meeting was held November 19, 2019 to address remaining comments.
- Product Recovery:
 - The sorbent sponge assemblies in wells 199-N-18 and 199-N-183 were removed on October 13, 2019. A total of 250 grams of product was recovered since the last sponge changeout on August 29, 2019. New sponge assemblies will be installed following the bioventing respirometry test.
- Monitoring and Reporting:
 - The low river sampling of aquifer tubes C7934, C7935, and C7936 were sampled on August 27, 2019 as scheduled. Strontium-90 and tritium results through August of 2019 are shown in Figures NR2-1 and NR2-2. They will be sampled next in June 2020.

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Groundwater Summary by OU (September - October 2019 Data)
November 21, 2019**

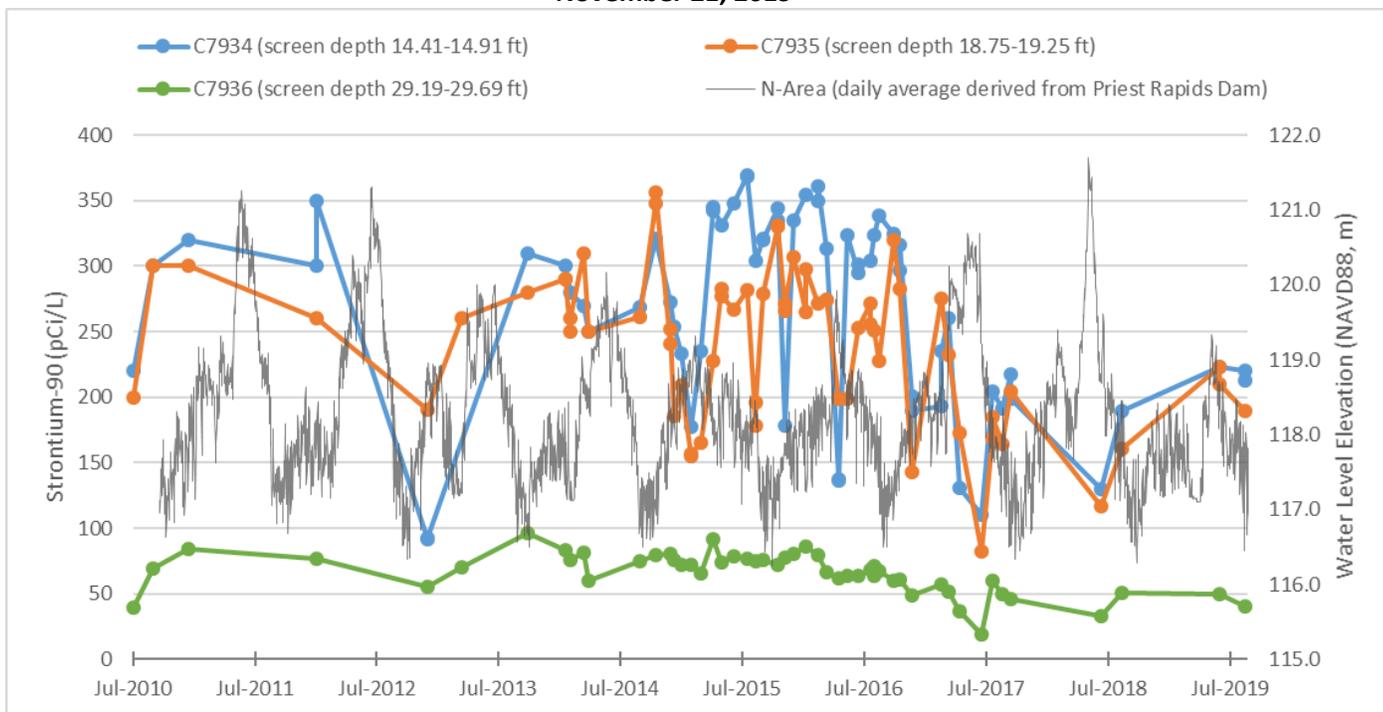


Figure NR2-1. Strontium-90 Time series for Aquifer Tubes C7934, C7935, and C7936 through June 2019

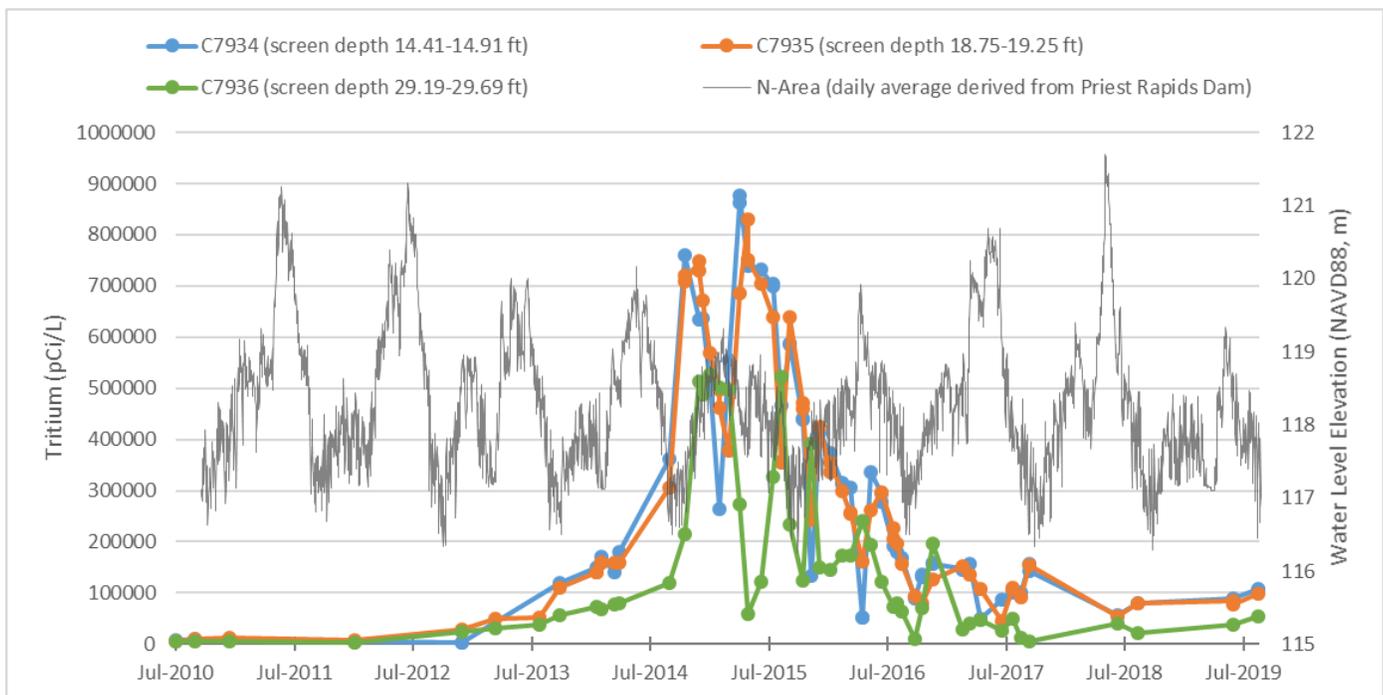


Figure NR2-3. Tritium Time series for Aquifer Tubes C7934, C7935, and C7936 through June 2019

Regulatory Agency Comments: None

100/300 Area Project Managers Meeting
Groundwater Summary by OU (September - October 2019 Data)
November 21, 2019
100-D/H Areas Groundwater Operable Unit

Ecology Lead (RL – J. Sands, CHPRC –R. Evans, K. Ivarson)

- CERCLA Process Implementation:
 - Agreement was reached on October 15, 2019, by RL, EPA, and Ecology to incorporate the requirements of the WMP into the RD/RAWP. It was further agreed on October 28, 2019, to incorporate the groundwater monitoring SAP as an addendum.
 - Comment resolution has been completed for the new overarching drilling SAP for the 100-HR-3 OU. The document is being finalized, and is expected to be ready for signatures in late November 2019.
 - The SAP for several wells planned for drilling in FY20 (DOE/RL-2013-35-ADD12), was signed on September 26, 2019.
 - TPA-CN-0865, associated with several of the wells planned for drilling in FY20, was signed on September 25, 2019. The TPA-CN makes changes to DOE/RL-2013-35-ADD10 to update the sampling quality control requirements to the current levels, and changes well 699-94-47D from an unconfined aquifer extraction well to a RUM extraction well.
- Monitoring & Reporting:
 - All well drilling and construction activities are complete for FY19.
- Remedial Actions & System Modifications:
 - The volume of groundwater treated and mass of Cr(VI) removed from the 100-HR-3 P&T systems during September and October 2019 are:

Month	Gallons Treated (in millions)	Hexavalent Chromium Removed (kg)
September	51	5.5
October	49	5.1

- For FY19, the 100-HR-3 P&T systems treated a combined 602 million gallons of water, and removed 55 kg of chromium.
- FY 2020 (October 2019) P&T performance to date:

P&T System	Treated (mgal)	Removed (kg)
DX	27	1.9
HX	22	3.2
Total	49	5.1

- Figure HR-1 illustrates the monthly average pumping rates for operating extraction wells across the 100-HR-3 system.
- Summaries of the volume of groundwater extracted and treated for Cr(VI) at DX and HX P&T systems are shown in Figures HR-2 and HR-3, respectively. The recent increase in Cr(VI) concentration shown in Figure HR-3 is the result of starting RUM extraction at well (199-H3-22) which has Cr(VI) concentrations near 300 µg/L and a flow rate of approximately 132 l/min (35gpm).

**100/300 Area Project Managers Meeting
Groundwater Summary by OU (September - October 2019 Data)
November 21, 2019**

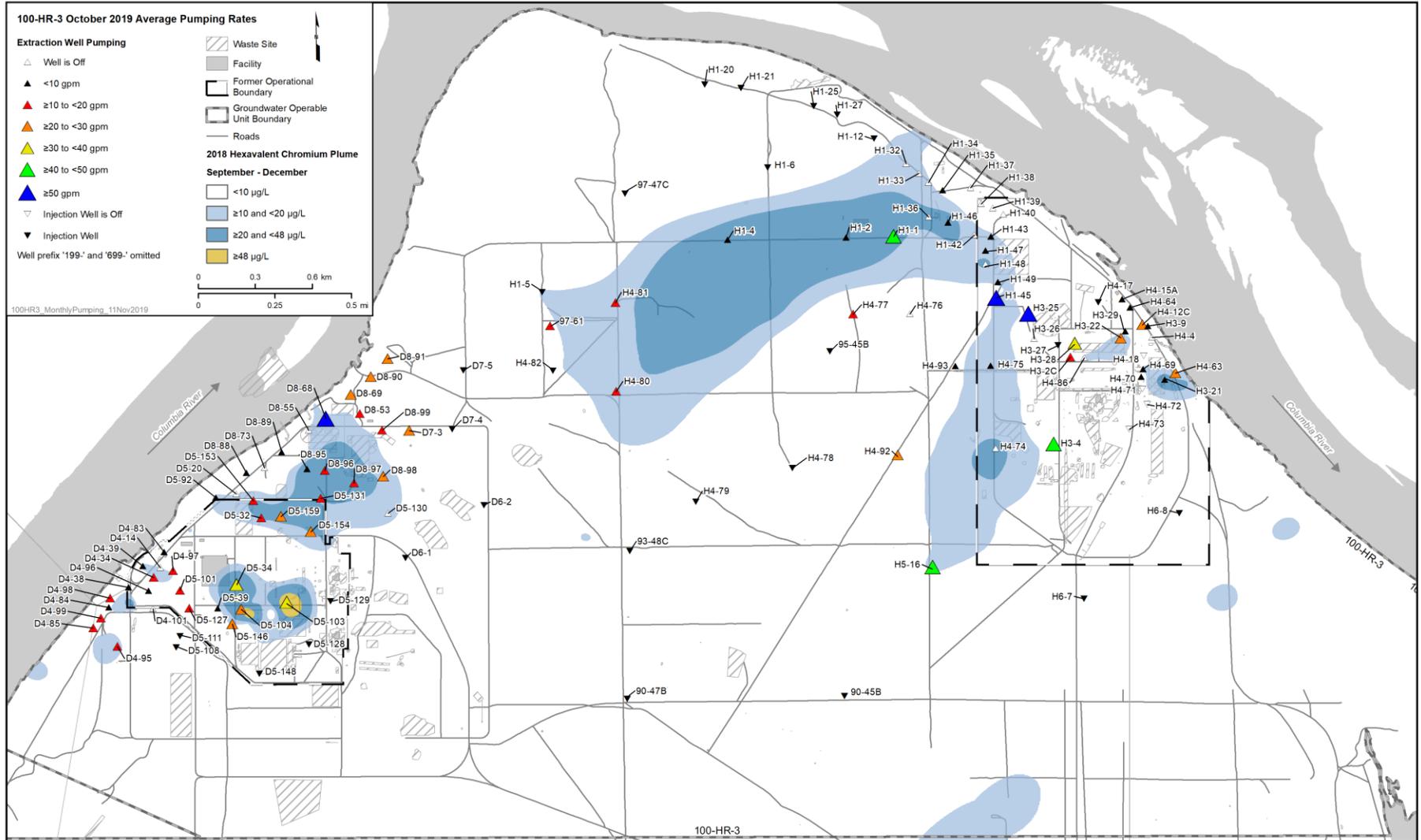


Figure HR-1. October 2019 Average Pumping Rates for the 100-HR-3 P&T System

**100/300 Area Project Managers Meeting
Groundwater Summary by OU (September - October 2019 Data)
November 21, 2019**

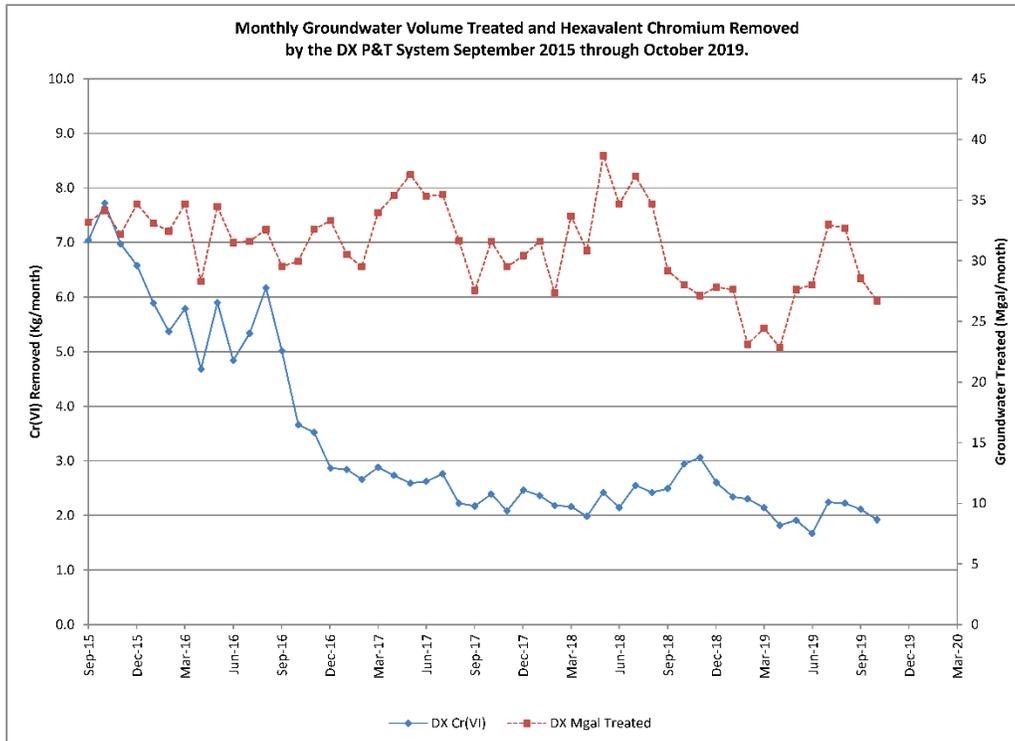


Figure HR-2. Monthly Cr(VI) Removed and Groundwater Volume Treated by DX P&T, September 2015 through October 2019

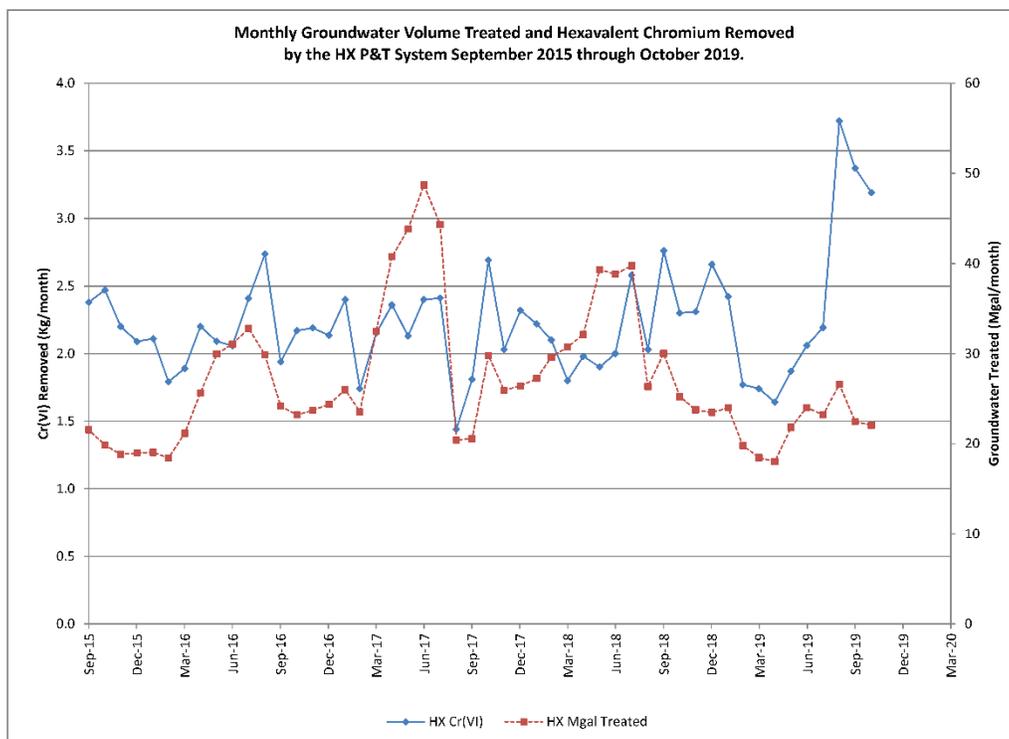


Figure HR-3. Monthly Cr(VI) Removed and Groundwater Volume Treated by HX P&T, September 2015 through October 2019

Regulatory Agency Comments: None

100/300 Area Project Managers Meeting
Groundwater Summary by OU (September - October 2019 Data)
November 21, 2019
100-F Area Groundwater Operable Unit

EPA Lead (RL – S. Balone, CHRPC – R. Evans, M. Hartman)

- CERCLA Process Implementation:
 - Nothing new to report.
- Monitoring & Reporting:
 - EPA reviewed draft TPA-CN-0874, which modifies the 100-F/IU Work Plan (DOE/RL-2014-44-ADD2). Changes to Appendix A (groundwater SAP) and Appendix C (waste management plan) incorporate new monitoring wells installed in 2019 and remove decommissioned boreholes. EPA indicated they have no comments. It will now be finalized for signatures.
 - As of November 11, 2019, the entire 100-FR-3 monitoring network had been sampled with the exception of three aquifer tubes and one seep, where sampling is planned for late November 2019. Only the field data were in HEIS when this report was prepared.
 - Results of July-August 2019 grab samples from six new wells and one borehole were loaded into HEIS. Figure FR-1 shows well locations. Notable results are as follows:
 - Well 699-71-24, located east of where the “ridge” of RUM is above the water table, had a nitrate concentration at 48 mg/L, above the 45 mg/L cleanup level. Concentrations in monitoring wells to the north and south, and in nearby aquifer tubes, are below the cleanup level.
 - In new well 699-70-29, the nitrate concentration was below the cleanup level, which was unexpected based on concentrations in surrounding wells.
 - A grab sample from the RUM aquitard in borehole C9873 had nitrate at 83.7 mg/L. The RUM sediments were characterized as 100% silt and clay, but produced enough water for a bailed sample. The borehole was decommissioned and replaced with well 699-70-29.
 - TCE was analyzed in a grab sample from new well 699-71-30C, which was installed to replace aging well 699-71-30. Well 699-71-30C had a concentration of 4.33 µg/L, slightly above the 4 µg/L cleanup level. This was higher than in the old well, where the trend was increasing (Figure FR-2). We did not analyze grab samples from new wells 699-73-30 or 699-70-29 for TCE, but added it to the constituent list beginning in October 2019.

**100/300 Area Project Managers Meeting
Groundwater Summary by OU (September - October 2019 Data)
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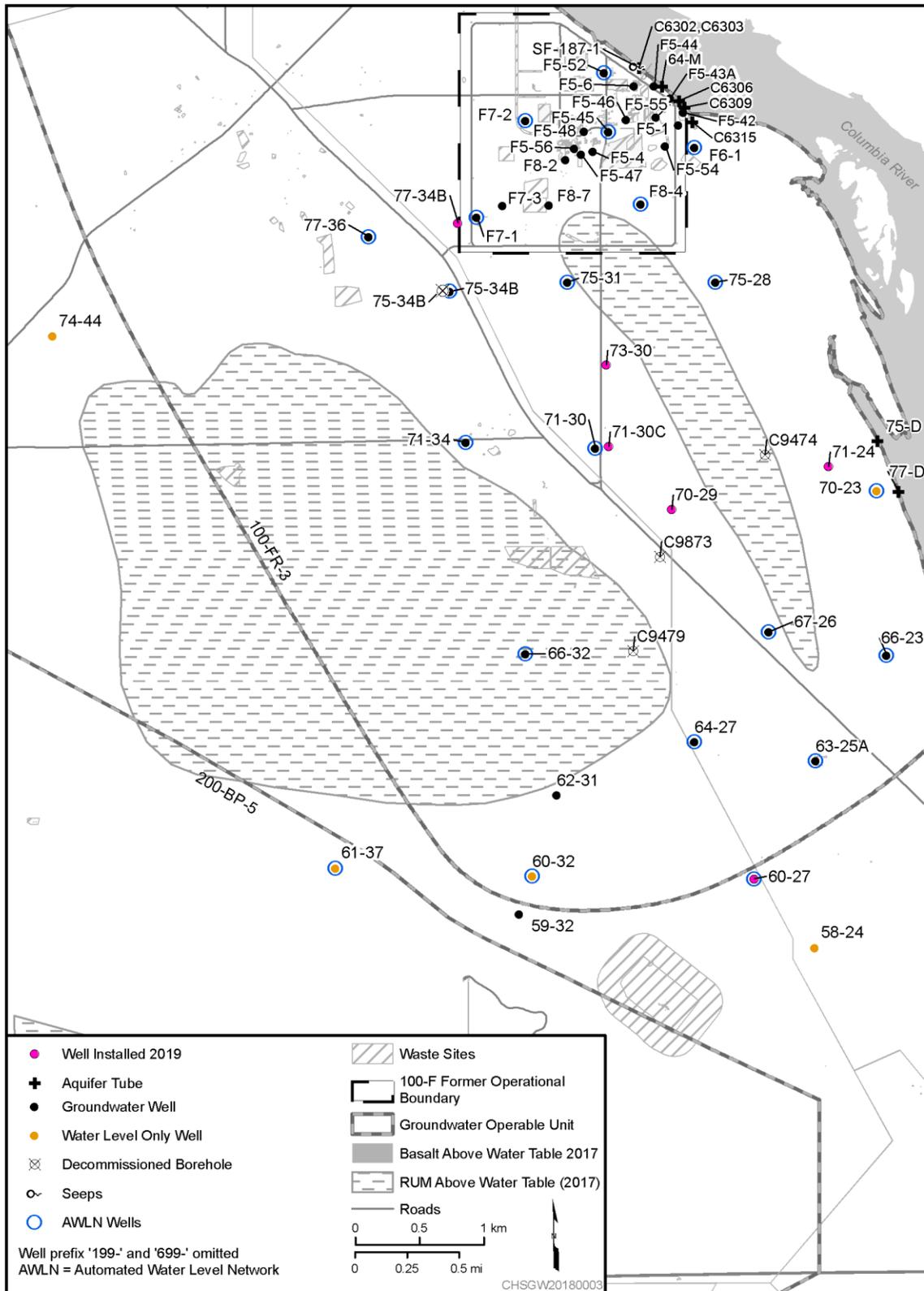


Figure FR-1. 100-FR-3 Groundwater Monitoring Network, Including New Monitoring Wells

100/300 Area Project Managers Meeting
Groundwater Summary by OU (September - October 2019 Data)
November 21, 2019
699-71-30, 699-71-30C
Trichloroethene (ug/L)

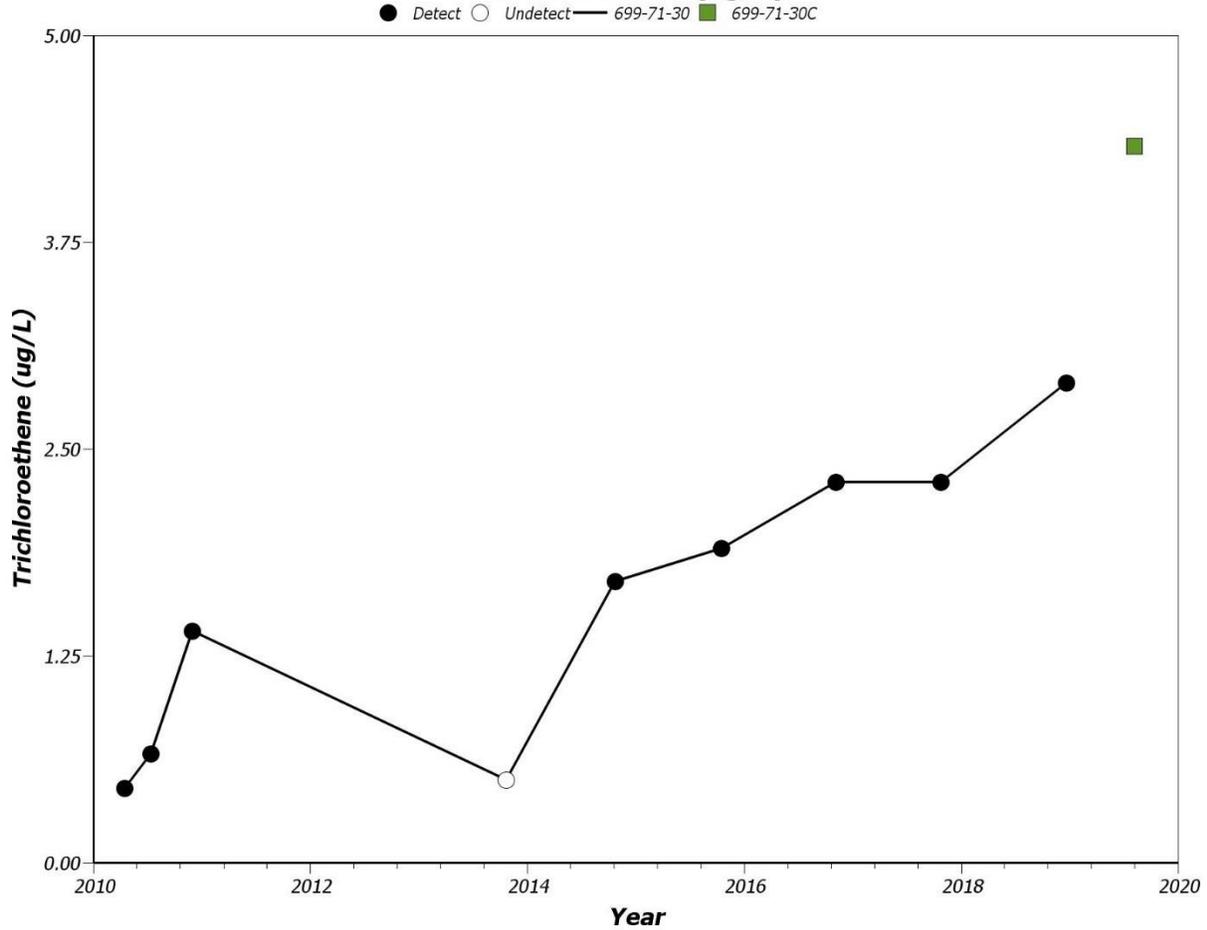


Figure FR-2. TCE Concentrations in Wells South of 100-F Area

Regulatory Agency Comments: None

100/300 Area Project Managers Meeting
Groundwater Summary by OU (September - October 2019 Data)
November 21, 2019
300 Area Groundwater Operable Unit

EPA Lead (RL – J. Sands, CHPRC – D. St. John, V. Rohay, E. Frohling)

- CERCLA Process Implementation:
 - Two TPA change notices were approved in October 2019. TPA-CN-0867 modifies the 300-FF-5 OU SAP (DOE/RL-2014-42) and TPA-CN-0868 modifies the SAP addendum (DOE/RL-2014-42-ADD1). These two TPA-CN's revise the documents to be consistent with Stage B uranium sequestration operations implemented in 2018.
 - ECF-300FF5-19-0005, *Injection Volumes For 300-FF-5 Stage B Injections and Sampling*, for the Stage B uranium sequestration operations was finalized in September 2019.
- Remedial Actions:
 - Monthly sampling of 13 groundwater monitoring wells for one year required by the SAP addendum (DOE/RL-2014-42-ADD1) as part of Stage B uranium sequestration operations was completed October 2019.
- Monitoring & Reporting:

Uranium Sequestration

- Monthly sampling at 13 groundwater monitoring wells was completed as planned in September 2019 and October 2019 (Figure FF5-1). No additional uranium sequestration sampling is required or planned for these 13 wells in the Stage B groundwater monitoring network.

300 Area Industrial Complex

- All six CERCLA wells were sampled as planned in September 2019. The next CERCLA sampling event for long-term monitoring wells is scheduled for December 2019.
- One AEA aquifer tube was sampled as planned in September 2019. The next AEA sampling event is scheduled for December 2019.
- Quarterly sampling began in October 2019 for the AEA groundwater monitoring wells (399-4-16 and 399-4-15) downgradient of the 324 Building.
- The next CERCLA sampling event for uranium fate and transport model calibration wells in the 300 Area Industrial Complex is scheduled for December 2019.

618-10 Burial Ground/316-4 Crib

- The next CERCLA sampling event is scheduled for November 2019.
- One AEA well (699-S6-E4D) scheduled for sampling in December 2018 could not be sampled as scheduled because a gravel pad around the well was needed for access, but was successfully sampled in September 2019. The next AEA sampling event at 618-10/316-4 wells is scheduled for November 2019.
- The initial sampling event at AEA well 699-S6-E3B, installed as a replacement for decommissioned well 699-S6-E4L at the 618-10 Burial Ground, is scheduled for November 2019.

618-11 Burial Ground

- CERCLA sampling event scheduled for October 2019 had not been completed as of November 6, 2019.
- The next AEA sampling event is scheduled for October 2019. As of November 6, 2019, October sampling had not occurred.

Note: Milestone Status: M-016-86 – Complete Remedial Action for 618-11 Burial Ground in accordance with DOE/RL-2014-13-ADD1. **Due: 9/30/2021 – At Risk.**

**100/300 Area Project Managers Meeting
Groundwater Summary by OU (September - October 2019 Data)
November 21, 2019**

300 Area Process Trenches (316-5) RCRA Monitoring

- All 8 RCRA wells were sampled as scheduled in September 2019 (Figure FF5-2). The next RCRA sampling event is scheduled for June 2020.

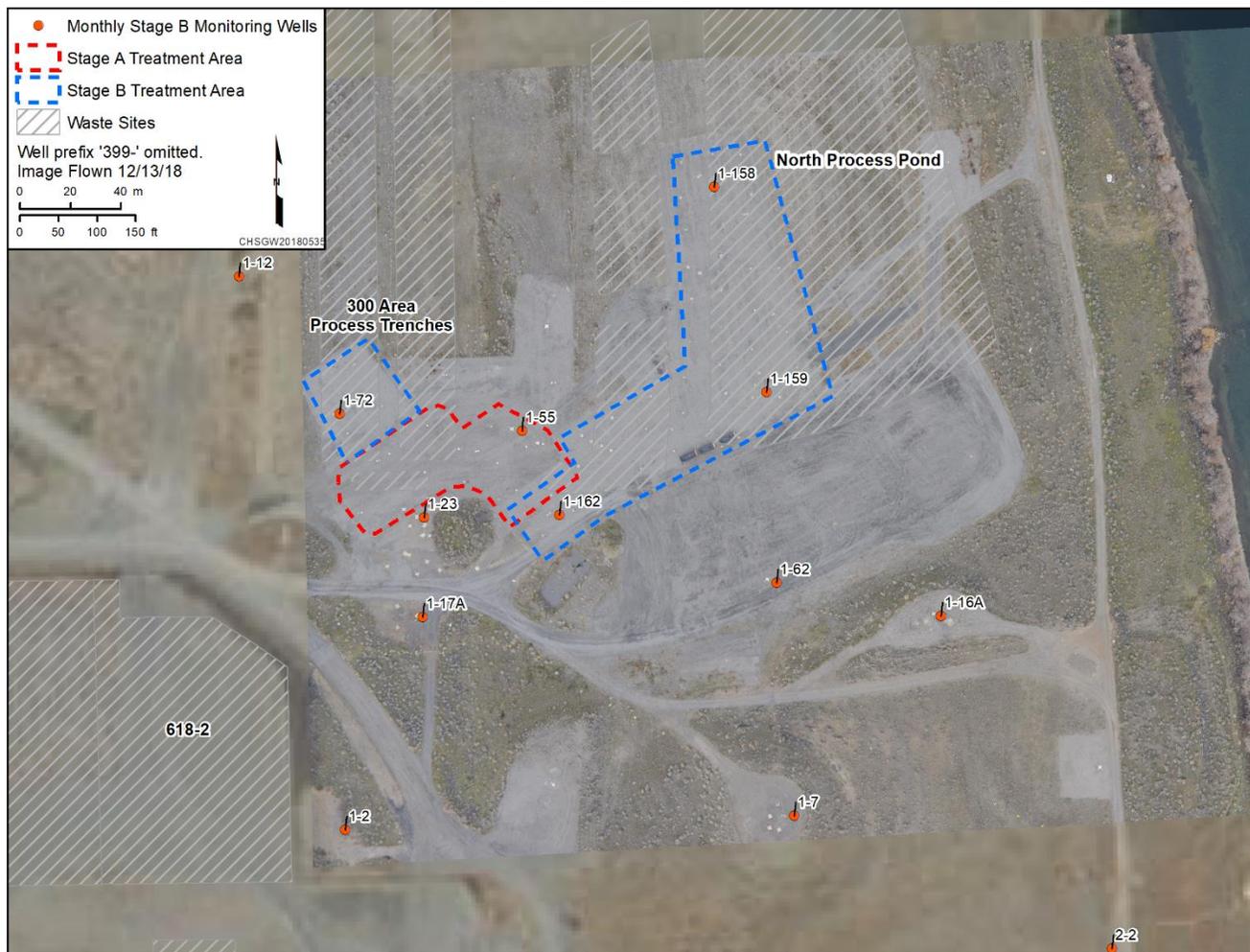


Figure FF5-1. 300 Area Uranium Sequestration Monthly Monitoring Wells

100/300 Area Project Managers Meeting
Groundwater Summary by OU (September - October 2019 Data)
November 21, 2019

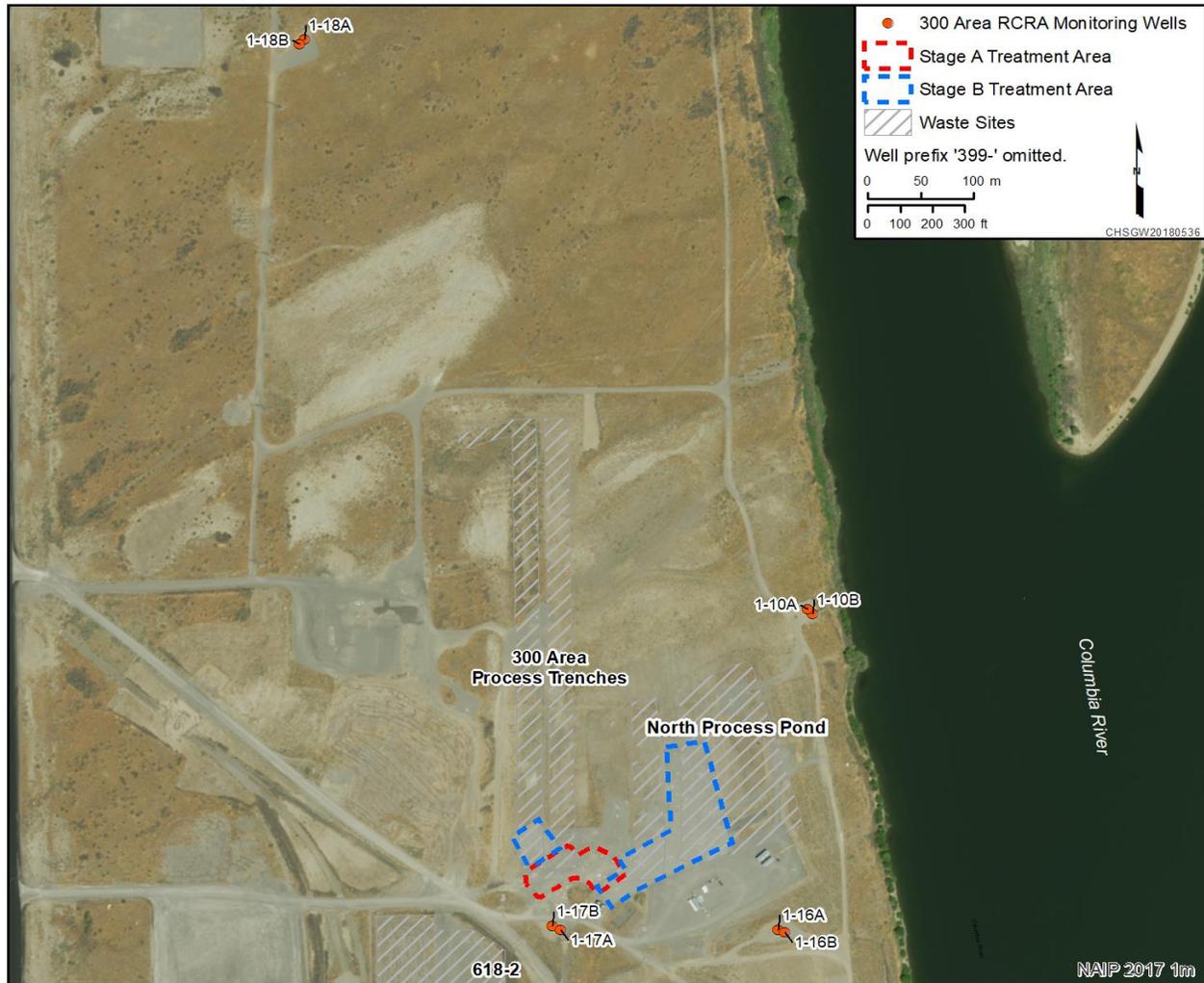
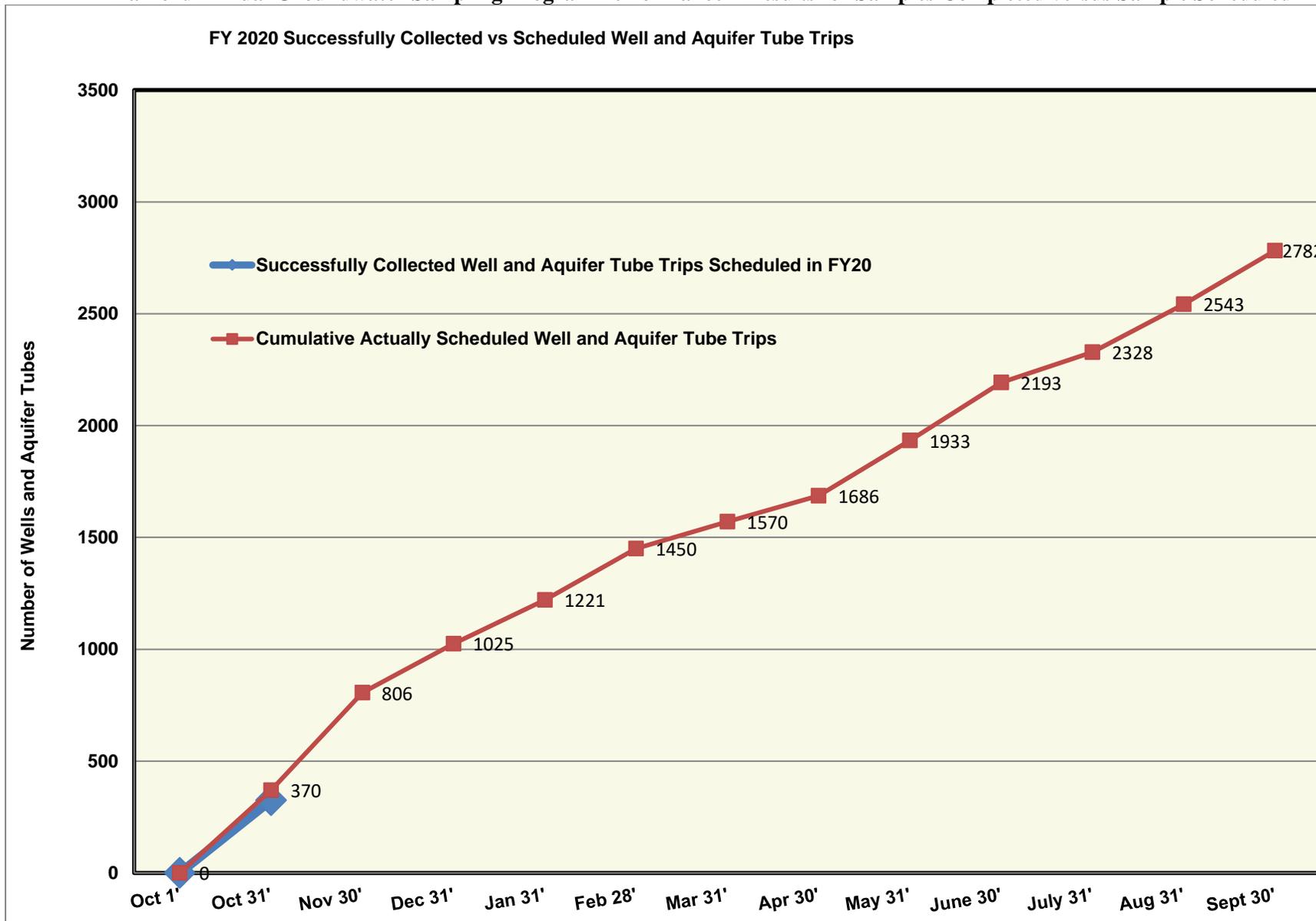


Figure FF5-2. 300 Area Process Trenches RCRA Monitoring Wells

Regulatory Agency Comments: None

100/300 Area Project Managers Meeting
Groundwater Summary by OU (September - October 2019 Data)
November 21, 2019

Hanford Annual Groundwater Sampling Program Performance Results for Samples Completed versus Sample Scheduled



Regulatory Agency Comments: None

**100/300 Area Project Managers Meeting
Groundwater Summary by OU (September - October 2019 Data)
November 21, 2019**

Documents Submitted to the AR

Document Number	Document Title	Referencing Document
ECF-Hanford-19-0092_R0	Calculation of Upper Confidence Limits For RCRA Monitoring at The 183-H Solar Evaporation Basins To Support The January - June 2019 Semi-Annual Report	SGW-63832_R0
ECF-300FF5-19-0095_R0	Calculation of Upper Confidence Limits For RCRA Monitoring at the 300 Area Process Trenches to Support the January - June 2019 Semi-Annual Report	SGW-63850_R0
DOE/RL-2013-36-ADD7_R0	100-KR-4 Groundwater Operable Unit Well Installation Sampling and Analysis Plan, Addendum 7: Wells 199-K-238, 199-K-239, and 199-K-240	Secondary Document
ECF-300FF5-19-0031_R0	Calculation of Concentration Trends, Means, and Confidence Limits for CIS-1,2-Dichloroethene, Gross Alpha, Nitrate, Trichloroethene, Tritium, and Uranium in the 300-FF-5 Operable Unit Through CY 2018	SGW-63357_R0
SGW-63357_R0	300-FF-5 Operable Unit Remedial Action Performance Evaluation for 2018	Secondary Document
DOE/RL-91-50_R4	Environmental Monitoring Plan	DOE/RL-2012-15_DB
DOE/RL-2010-118_DA	Sampling and Analysis Plan for Ex-Situ Plant and Invertebrate Bioassays to Evaluate Terrestrial Environments Across the Hanford Site	DOE/RL-2012-15_DB
DOE/RL-2005-22_R0	100-NR-2 Area Ecological Risk Assessment Sampling and Analysis Plan	DOE/RL-2012-15_DB
DOE/RW-0017	Nuclear Waste Policy Act Draft Environmental Assessment Overview	DOE/RL-2012-15_DB
ECF-100BC5-11-0145_R0	Analysis of Slug Test Data at the 100-BC-5 Operable Unit	DOE/RL-2012-15_DB
ECF-100NR1-12-0041_R1	Computation of Exposure Point Concentrations for the 100-NR-1 Source Operable Unit	DOE/RL-2012-15_DB
ECF-100NR1-12-0045_R1	Ecological Risk Evaluation for the 100-N Source Operable Units	DOE/RL-2012-15_DB
ECF-100NR1-12-0049_R1	Waste Site Evaluation Process for the 100-NR-1 Operable Unit	DOE/RL-2012-15_DB
ECF-100NR2-17-0006_R0	Calculation of Exposure Point Concentrations for the 100-NR-2 Groundwater Operable Unit	DOE/RL-2012-15_DB
ECF-100NR2-17-0007_R0	Well-Specific Tap Water Risk Assessment for the 100-NR-2 Groundwater Operable Unit	DOE/RL-2012-15_DB
ECF-100NR2-17-0008_R0	Native American Risk Assessments for the 100-NR-2 Groundwater Operable Unit	DOE/RL-2012-15_DB
ECF-HANFORD-10-0445_R2	Calculation of Nonradiological Preliminary Remediation Goals in Soil for a Casual User Scenario for the 100 Areas and 300 Area Remedial Investigation/Feasibility Study Reports	DOE/RL-2012-15_DB
ECF-HANFORD-10-0446_R1	Calculation of Radiological Preliminary Remediation Goals in Soil for a Casual User Scenario for the 100 Areas and 300 Area Remedial Investigation/Feasibility Study Reports	DOE/RL-2012-15_DB
SGW-60431_R1	Borehole Summary Report for the Installation of Six Groundwater Monitoring Wells at the 100 NR 2 Operable Unit, FY 2016	DOE/RL-2012-15_DB
UNI-1261	United Nuclear Industries, Inc. Reactor and Fuels Production Facilities 1978 Effluent Release Report	DOE/RL-2012-15_DB

**100/300 Area Project Managers Meeting
Groundwater Summary by OU (September - October 2019 Data)
November 21, 2019**

Documents Submitted to the AR

Document Number	Document Title	Referencing Document
UNI-4481	Summary of N Reactor Operations - 10 Years	DOE/RL-2012-15_DB
WHC-EP-0161	Environmental Surveillance Annual Report-100 Areas Calendar Year 1987	DOE/RL-2012-15_DB
CHPRC-04182	D4-100K-059 Facility Status Change Form for 1724K, 1724KA and 167K	Waiting for John Neath

Approved Change Notices

Document Number	Document Title
TPA-CN-0865	DOE/RL-2013-35-ADD10, 100-HR-3. Groundwater Operable Unit Well Installation Sampling and Analysis Plan, Addendum 10: 199-D1-1, 199-D7-7; 199-H1-12, 199-H3-21, 199-H3-31, 199-H3-32, 199-H7-1, 699-95-48C, and 699-97-47D, Rev. 0
TPA-CN-0869	DOE/RL-2018-10, KW Soil Flushing/Infiltration Treatability Test Plan Sampling and Analysis Plan, Rev. 0
TPA-CN-0867	DOE/RL-2014-42, 300-FF-5 Operable Unit Remedy Implementation Sampling and Analysis Plan, Rev. 0
TPA-CN-0868	DOE/RL-2014-42-ADD1, Addendum for 300-FF-5 Stage B Operable Uranium Und Sequestration, Remedy Implement

TPA Compliance Note:

The DOE Project Managers have identified no outstanding issues with the preceding month's Environmental Performance Report for this scope.

**100-OL-1 Operable Unit Report
100/300 Area Unit Manager Meeting
November 21, 2019**

100-OL-1 OU Scope

- **Interim Milestone M-015-97**, Change Number M-15-19-01, Lead Regulatory Agency: Ecology

- Submit to Ecology the 100-OL-1 Operable Unit Feasibility Study Report, Draft A.
- Due Date: 08/30/2020. On Schedule.

- **Background**

100-OL-1 OU covers 4,995 acres across the River Corridor, incorporating lands where former orchards used lead arsenate pesticide (Figure 1). Lead arsenate was the standard pesticide for controlling codling moths in many fruit trees from the 1890s through 1988. Some waste sites in the 100 Area contain relatively high lead and arsenic concentrations near the soil surface. 100-OL-1 OU was divided into 133 decision units (DUs) for the evaluation of lead and arsenic in the surface soils using a portable x-ray fluorescence (XRF) analyzer. The Remedial Investigation found:

- There are 83 DUs (3,056 acres) that need no further action because the nature and extent of lead and arsenic soil concentrations in the DUs do not meet or exceed any criteria of the “3 part rule” (WAC 173-340-740(7)) for human health or ecological screening levels.
- There are 9 DUs (362 acres) that do not meet or exceed any criteria of the “3 part rule” for the human health screening levels, but exceed ecological screening levels.
- There are 41 DUs (1,578 acres) that meet or exceed some criteria of the “3 part rule” for the human health screening levels.

- **Status**

On-going comment resolution of *Remedial Investigation for the 100-OL-1 Operable Unit Hanford Orchard Lands* (DOE/RL-2016-54, Draft A). Comments from Ecology were received in May 2018. All comments are either dispositioned or have a path is set for disposition.

100-OL-1 Operable Unit Report
100/300 Area Unit Manager Meeting
November 21, 2019

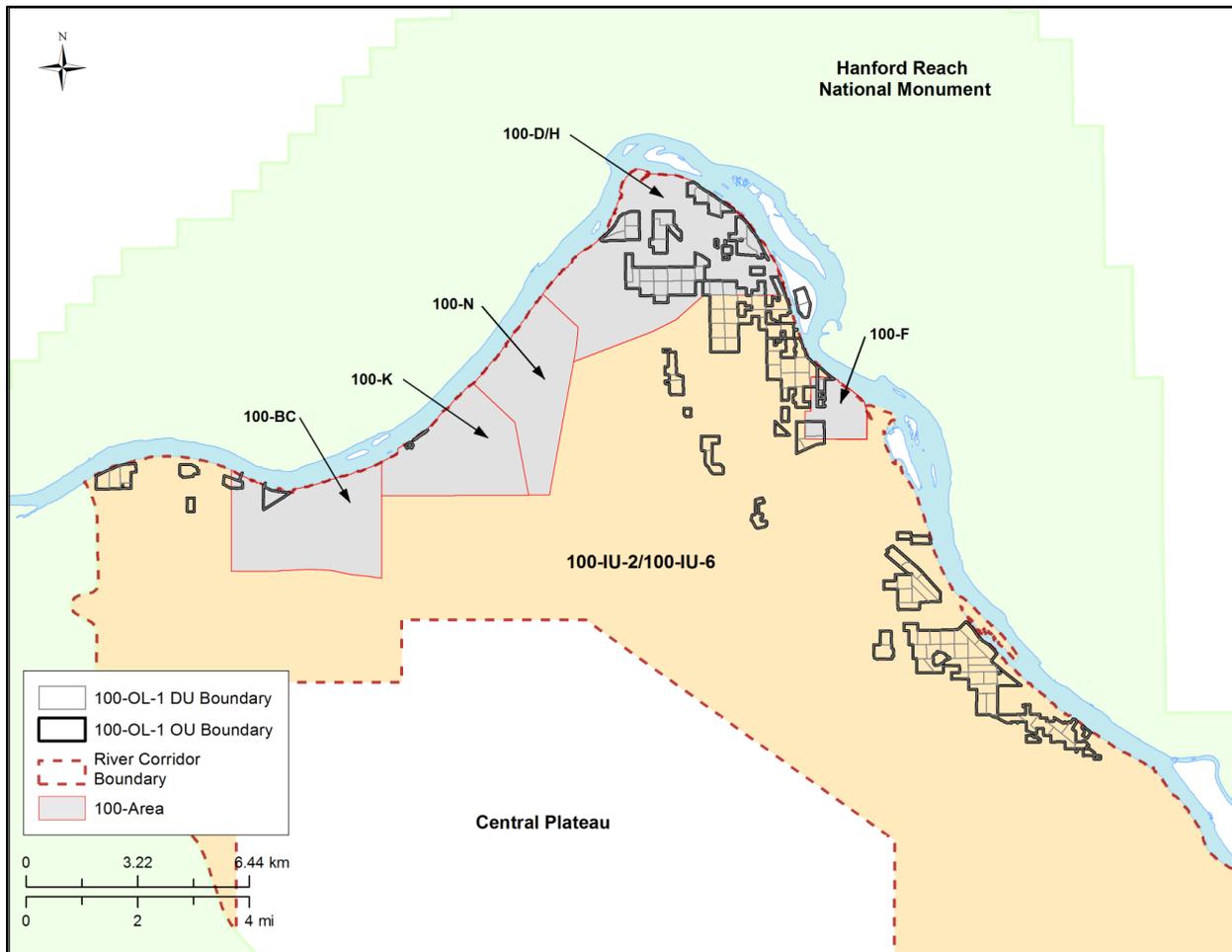


Figure 1. The 100-OL-1 OU and Associated Decision Units across the Hanford Site River Corridor

100/300 Area UMM
 Action Items List
 November 21, 2019

CHPRC-1904935
 ATTACHMENT 9

Open (O)/ Closed (X)	Action No.	Co.	Actionee	Project	Action Description	Status
O	186	CHPRC	Bill Faught	100-N	Provide to RL recent photos of 100-N project for December 4th meeting	