

DISTRIBUTION
100 & 300 AREA UNIT MANAGERS MEETING
September 19, 2019

FINAL MEETING MINUTES

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**100/300 AREA UNIT MANAGERS MEETING
Attachments List
September 19, 2019**

**Minutes of the 100/300 Area Unit Managers Meeting of September 19, 2019 are attached.
Minutes are comprised of the following:**

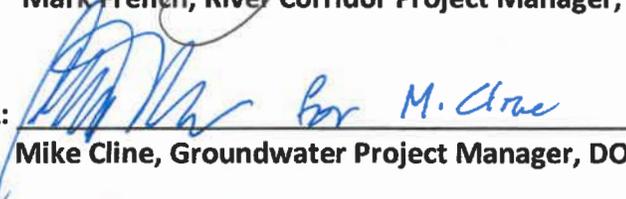
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|----------------------|--|
| Attachment 1 | Agenda |
| Attachment 2 | Attendees Sign-In Sheets |
| Attachment 3 | Signature Approval Page |
| Attachment 4 | Presentation – <i>100/300 Areas 2019 Annual Institutional Controls Assessment</i> |
| Attachment 5 | Presentation – <i>MSA Annual Institutional Controls Assessment (2019)</i> |
| Attachment 6 | Presentation – <i>PNNL 300 Area 2019 Annual Institutional Controls Assessment</i> |
| Attachment 7 | 100K Area Report, July - August Data |
| Attachment 8 | 300 Area Report, July - August Data |
| Attachment 9 | Groundwater Summary by O.U., July - August Data |
| Attachment 10 | Documents to the AR, Approved TPA CNs July - August Data |
| Attachment 11 | 100-OL-1 Orchard Lands, July - August Data |
| Attachment 12 | Action Items |

100/300 Area Unit Managers Meeting
September 19, 2019

PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
Bob Cathel	CHPRC	100K/CPRM	376-1513
Marissa Merker	NPT		509-339-5543
Stan Sobczyk	NPT		208-621-3751
STEWART CIMON	ODOE		(541) 240-0161
CRAIG BERLIN	MSA		509-375-7465
Bill FAUGHT	CHPRC		376-3139
Steve Balone	DOE-RL	2nd Corridor Lead	376-0236
Ben Vannah	DOE-RL	324	376-9623
Scott Davis	MSIA-TPA	TPA	376-8757
John Sands	DOE	OL1 HR3	372-2282
Roger Pressentin	DOE	LTS # Land Mgmt	376-1291
DAW SWARDS	PNL		371-7860
Ben Cowin	MSA		372-0116
Gretchen Hanson	CHPRC		373-7553
Glossbrenner Elkwood	DOE/RL	100 BC/K	376-5828
Theresa Howell	Ecology	304 Central Plateau Center	372-7955
FRED RUCK	CHPRC	CEQA JME/IC rtr.	376-9816
Lorna Dittmer	CHPRC	300 Area (324)	531-8877
Manuel Lopez	DOE		509-314-5079
John Neader	DOE		
Laura Buelow	EPA	PM	376-5466
Laura O'Mara	CHPRC	Admin	373-9763

100/300 Area Unit Managers Meeting
Meeting Minutes Approval
September 19, 2019

APPROVAL:  DATE: 10/3/19
Mark French, River Corridor Project Manager, DOE/RL

APPROVAL:  for M. Cline DATE: 9/19/19
Mike Cline, Groundwater Project Manager, DOE/RL

APPROVAL:  DATE: 9/19/19
~~Nina Menard~~, Environmental Restoration Project Manager, Ecology
KIM WELSCH ACTING

APPROVAL:  DATE: 9/19/19
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.

100/300 AREAS 2019 ANNUAL INSTITUTIONAL CONTROLS ASSESSMENT



100/300 Area Project Managers Meeting

September 19, 2019



U.S. DEPARTMENT OF
ENERGY

100/300 Areas Institutional Controls Assessment

Institutional Controls are:

- Specified in CERCLA Decision documents and RCRA Closure/Corrective Action documents
- Consolidated in DOE/RL-2001-41, Rev. 9

Annual assessment requirement is contained in in DOE/RL-2001-41, Rev. 9

100/300 Areas Records of Decision

- 100-H/D Operable Units ROD
- 100-F/IU-2/IU-6 Operable Units ROD
- 100 Areas Burial Grounds ROD
- 100-BC-1/DR-1/HR-1 Source OUs Interim ROD
- 100-HR-3/100-KR-4 Interim ROD
- 100-KR-2 (K Basins) ROD
- 100/200 Areas Remaining Sites ROD
- 300-FF-1 Amended and 300-FF-2/5 ROD

Institutional Controls Associated with Records of Decision

- Entry Restrictions – Example: Active badging and barricades
- Warning Notices – Example: Signage as specified in decision documents
- Groundwater-Use Management – Example: No unauthorized wells
- Land-Use Management – Example: Excavation permits, site evaluations

Institutional Controls Assessment Results

- Institutional controls were in place through out FY 2019 for the 100/300 Operable Units.
- There were no failures of institutional controls during the fiscal year.
- These controls are planned to be continued through FY 2020 on the 100/300 Operable Units.



MSA - ANNUAL INSTITUTIONAL CONTROLS ASSESSMENT (2019)





Background

Institutional Controls

- Defined in CERCLA and RCRA decision documents
 - Consolidated in *Sitewide Institutional Controls Plan For Hanford CERCLA Response Actions and RCRA Corrective Actions*, DOE/RL-2001-41, Rev. 9 (IC Plan)
 - Rev. 9 published in early 2019 to incorporate 100-D/H ROD
 - IC Plan requires annual assessment of ICs



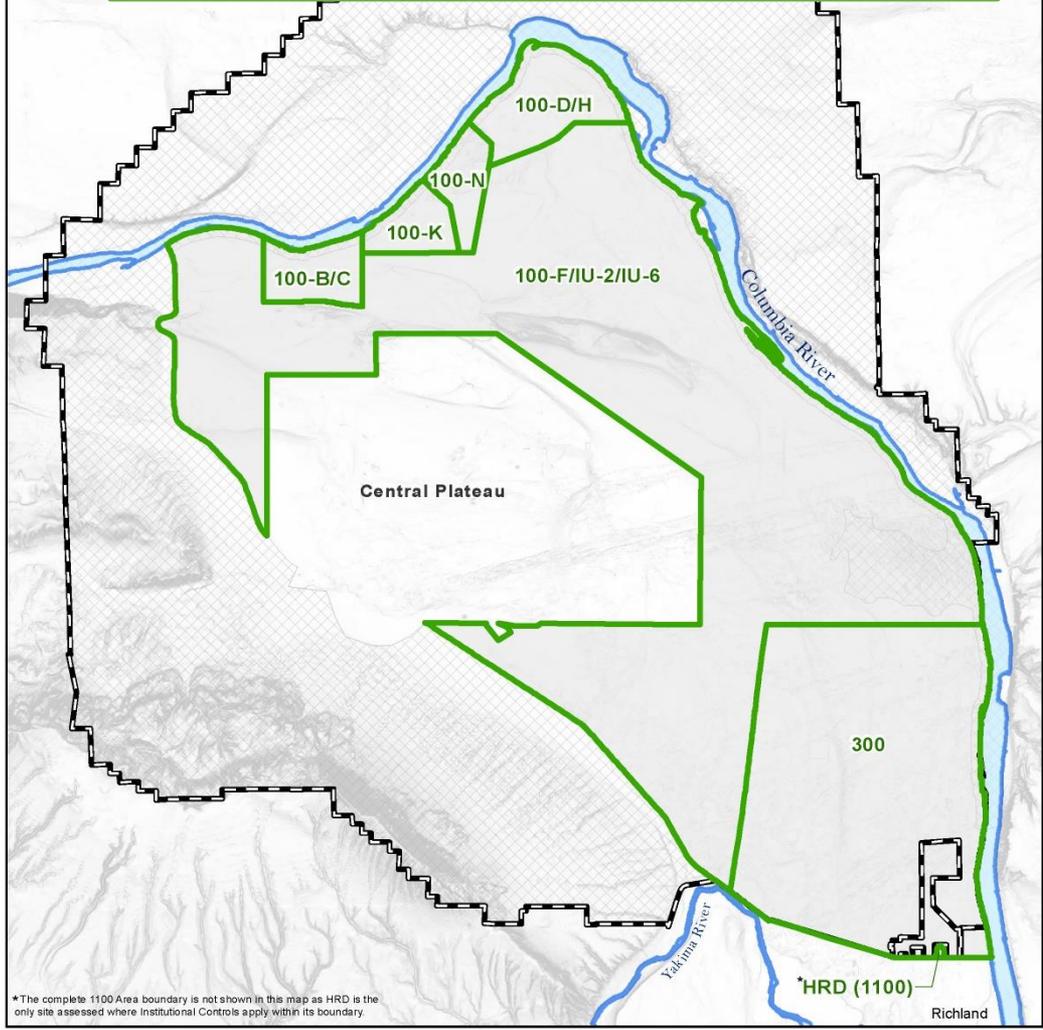
618-10 Site Assessed on April 15, 2019

MSA 2019 Annual Assessment – Focus on River Corridor

- 220 waste sites assessed for compliance with IC requirements
 - Systematic field walk-downs, reviews of aerial imagery, and vehicle surveys (depending on the size of the site and the type of topography)
- Reviewed for applicable specific IC requirements listed in decision documents
- MSA publishes Annual Sitewide IC Assessment Report each fall



River Corridor Assessment Areas
Includes 220 waste sites with ICs located within the
River Corridor (approximately 220 square miles)



*The complete 1100 Area boundary is not shown in this map as HRD is the only site assessed where Institutional Controls apply within its boundary.

**Hanford Site
MSA 2019 Geographical Decision Areas Assessed**

- Geographical Decision Areas
- Hanford Reach National Monument
- Hanford Site

0 1 2 3 4 5
Miles

Basemap: 10m Digital Elevation Model
MSA Geospatial Information Technology
Services: Reference Map As of 12:49:19 PM 9/10/2019
20190710_RES_GDA_2019AssessedAreas_85x11_Rev1



Institutional Control Categories & Types

Access Controls

- Warning Notices (i.e., signs)
- Entry Restrictions
- Fencing

Land-Use Management

- Land-use and real property controls
- Site Evaluations and Site Excavation Permits
- Enhanced Recharge
- Irrigation Control



Wye Barricade -- Entry restrictions for access control requiring badging and security checkpoint.



Warning signs in Spanish and English along Columbia River near 100-F Area.





Institutional Controls Categories & Types

Groundwater-Use Management

- Land-use and real property controls, Site Excavation Permits

Barriers

- Engineered controls (e.g., signs and fencing)

Information Controls

- Notifications and restrictions (trespassing events)
- Notice in Deed

Miscellaneous

- Administrative

HANFORD SITE
EXCAVATION PERMIT
Home Screen - Dashboard 1
DEANNA ROHLFING - ACTIVITY DASHBOARD

Dashboard Report Create Permit or Revision

Permit Requests

Company: All

There are no permits in your queue.

Permit Reviews

There are no reviews in your queue.

Permit Number	Status	Due Date
There are no reviews listed.		

Contact Site Excavation Services

For questions or information concerning the Hanford Site Excavation Permit application, please contact Brian Harmon:
Phone: 373-6528
Email: brian_c_harmon@rl.gov





2019 Institutional Control Results

Access Controls - Warning Notices

- Completed assessment of “No Trespassing” signs along the Columbia River
 - Replaced approximately 160 damaged or missing signs in FY 2019





2019 Institutional Control Results

Access Controls - Warning Notices (cont'd)

- Hazardous Area warning signs required by decision documents are in place (2 repaired/replaced in 2019)
- Approximately 55 “No Trespassing” signs along road perimeter were found to be damaged or illegible due to general weathering or fire
 - Signs fabricated, installation pending

Access Controls - Entry Restrictions

- Active badging program and barricades in place to control unauthorized entry
- Damaged fences were observed in 11 locations
 - Repairs have been completed in FY 2019



Sign at 300 Area North Parking Lot Entrance Repaired this FY.





2019 Institutional Control Results

Land-Use Management

- No changes in land-use designations occurred in FY 2019 (e.g., industrial use)
- LTS reviewed 26 Site Evaluations in FY 2019 to ensure land-use ICs are maintained
- LTS approval is mandatory on Site Excavation Permits:
 - >135 excavation permit applications were evaluated in FY 2019 for IC compliance
- No substantial disturbances or natural subsidence/erosion found on waste sites with ICs
- MSA assessed 36 waste sites in the 300 Area Industrial Complex with the enhanced recharge IC:
 - Improving/maintaining drainage systems and barriers in place (e.g., asphalt barriers) to support the enhanced recharge IC
 - LTS facilitates regular 300 Area Hanford Contractor Interface meetings
 - LTS is working with 300 Area Hanford contractors to minimize impact of discharges from drinking water pipeline flushing / fire-hydrant tests
 - new flushing discharge locations/directions were established (e.g., 331 Facility event)





2019 Institutional Control Results

Groundwater-Use Management

- Wells to be drilled at Hanford are reviewed through the Site Excavation Permit Application process

Barriers – Engineered Controls

- Controls are in place to maintain the integrity of cap at the Horn Rapids Landfill

Information Controls – Notifications

- 10 reportable trespassing incidents on Hanford (October 2018 – August 2019)

All ICs in LTS managed areas were observed to be in-place in 2019



Porcupine Observed Near 100-D



Bald Eagle Observed Near 100-H



Curlew Observed Near 100-H



Bee Pollinating Orange Globe Mallow





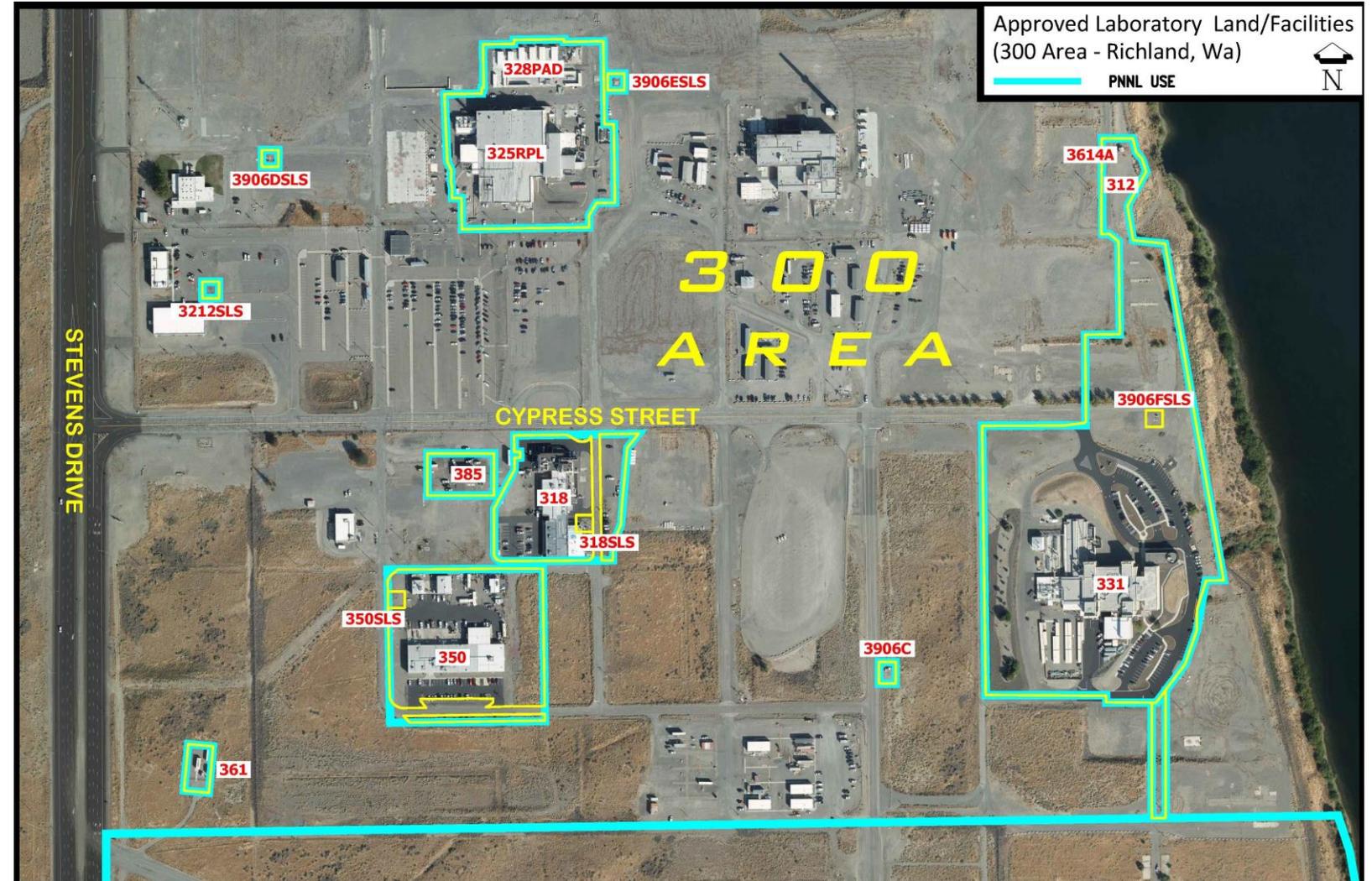
300Area Institutional Controls - PNNL Input

September 19, 2019

DL Edwards

PNNL 300Area Operations

- Research and Facility Operations for RPL/325, 331, 318, 385, 312, 361, 3614A, 3906C, and 350.
- Operate the 300Area sanitary sewer (City of Richland) and 300Area drinking water treatment (385) and supply system.





Institutional Controls – PNNL

- Entry restrictions – badging and facility postings, adhere to MSA postings/barricades/notices.
- 300Area excavations performed under the Hanford Excavation Permit process:
 - 2 fire hydrant replacements, roof stairwell addition at 318, RPL/325 fire riser 1 and 2 replacement
 - RPL stormwater drainage re-route, coordinated with LTS on flow path to mitigate IC impacts.
- Groundwater from 399-4-12 is periodically used (during interruption of service in river water from 312) as a backup source for the 331 fish laboratory.
- Discharges to ground (>2K gallons) are routed through CHPRC and LTS for approval.
 - Line flushing to maintain drinking water to 300Area facilities/residents.
 - Walkdowns of events with LTS, revisions to drainage areas

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 9, 2019.



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

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

- Waste Site 100-K-47:1
 - Continued excavation and load out of soil, and demolition and load out of the concrete box culvert. Approximately 90% complete.
- Waste Site 100-K-47:2
 - Continued excavating and stockpiling overburden. Approximately 85% of overburden has been stockpiled.

100K Area Report
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- Waste Site 116-KE-2
 - Continued soil excavation and load out. Remediation will continue until the excavation design depth of 60 feet below ground surface has been reached at which time verification sampling will be performed. Current depth is approximately 48 ft. below ground surface.
- Waste Site 100-K-99
 - Conducted additional remediation to remove residual radiological contamination identified during verification sampling.

Ancillary Facility Deactivation and Demolition (D&D)

- Completed asbestos abatement in the 165-K West Power Control Building.
- Started removing residual oily water from the 166-K East Fuel Storage Bunker.
- Demolished and disposed of the 166-AKE structure in preparation for 166-K East demolition.

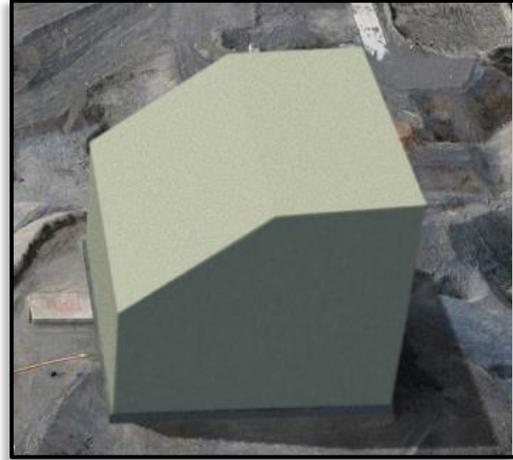


166-KE prepared for demolition
(165-KE Power Control Building in Background)

100K Area Report
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105-K East Reactor Interim Safe Storage (ISS)



Conceptual Design of the 105-K East Safe Storage Enclosure

- The architecture engineering (AE) contractor completed the Safe Storage Enclosure (SSE) design modification package, and is resolving the last of the CHPRC review comments.
- 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 commenced.
- The plan remains to complete the design modification and structural engineering updates and be poised to issue a request for proposal to construct the SSE by the end of FY2019.
- Started removal of asbestos in the reactor building.
 - Removed select transite panels and began framing to create safe storage enclosure observation windows in the outer walls of the building for use after the SSE is constructed.
 - Started removal of lead bricks, unneeded lead shielding, fluorescent light bulbs and light ballasts along the tour path on multiple floors.

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*Glycol Lines Prepared for
Wrap and Cut Removal*



*Removal of PCB ballasts
From Light Fixtures*



*Observation Window in Transite Panel
(closed)*



*Observation Window in Transite Panel
(open)*

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 Schedule

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 Schedule for 105-KE, 105-KW TBD

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

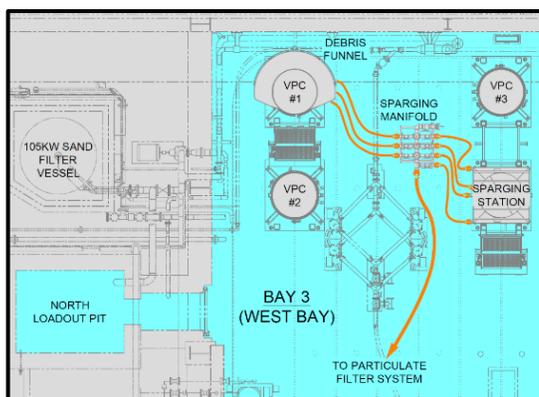
- (9/30/24) - On Schedule

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

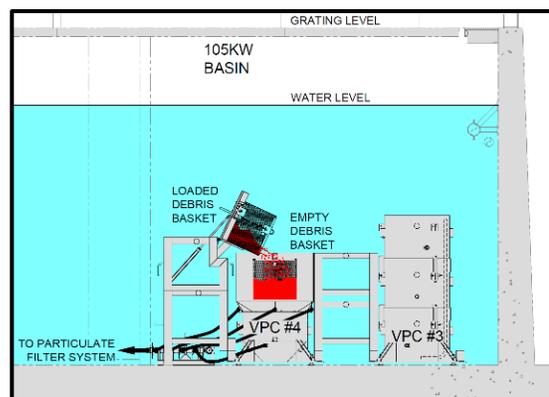
- (12/31/19) – On Schedule
- With the completion of sludge removal, plans are to start in-basin deactivation work in earnest on 10/7/19. Activities include the following:
 - Deactivation of the Basin Recirculation and Cooling System (BRC). BRC deactivation meets the completion requirements of TPA-M-016-178, *Initiation of 105-KW Fuel Storage Basin Deactivation*.

100K Area Report
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- Clearing the footprint in the K West Basin West Bay for installation of the Vertical Pipe Casing (VPC) System.
- Relocation, inventorying and dose rating below-water debris
- 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 started Vertical Pipe (VPC) System debris washing station fabrication.



Plan View of VPCs Installed in K West Basin



VPC Debris Washing Station

- Progressed issuance of PRC-KC-CN-N-00048, *End-Point Criteria Calculations of Allowable Sludge Residual in Engineered Containers (ECs)*.

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

- (9/30/23) – On Schedule
- EPA is reviewing the decisional 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*.

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

- (12/31/23) – On Schedule

**300 Area Report
300 Area Unit Manager Meeting
September 19, 2019**

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 hot cells, and grout in place in the hot cells for disposal.

324 Building Equipment Installation:

- Completed final REA through Support Assembly (TSA) installation (grout pending). (8/17/19)

Equipment Procurement & Fabrication:

- Continued design and fabrication of equipment:
 - Shielded cradle supporting 324 waste load-out – September delivery
 - B-Cell 10T Crane
 - Universal cutting tool
 - Cell dams

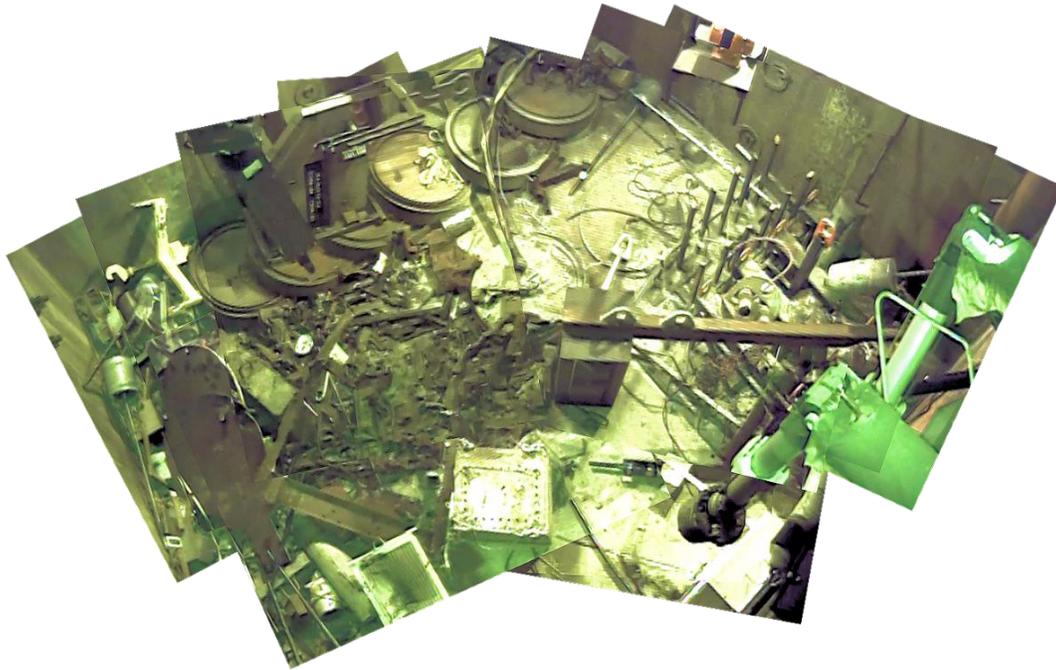
324 Activities:

- Completed North Storage yard construction.
- A-Cell door repaired allowing use of the A-Cell crane (9/6/19)

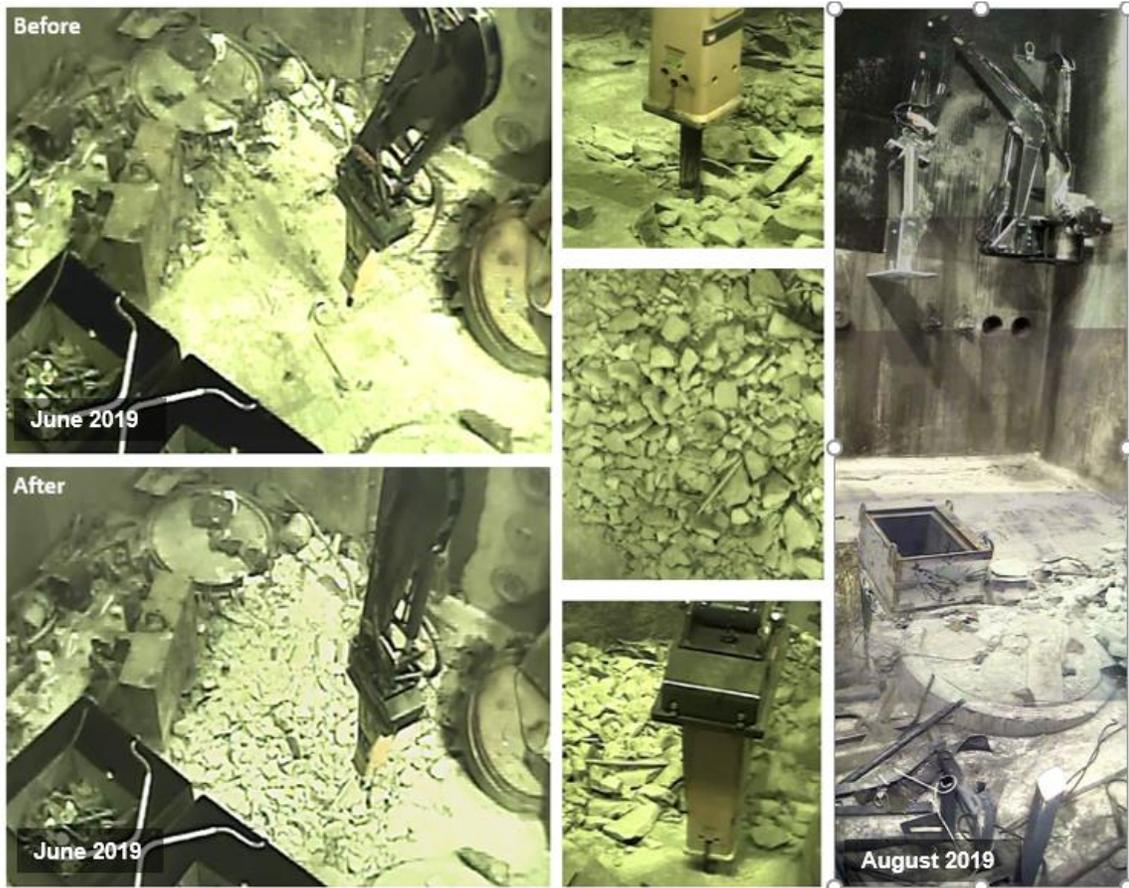
Structural Modifications:

- Received micropile issued for construction design from vendor (8/20/19)
- Completed excavation for temporary shoring to support future horizontal soil stabilization grouting. (9/6/19)
- Room 18/Pilot Hole:
 - Completed drilling second pilot hole (6/14/19-9/7/19)
 - Soil findings (rad contamination) consistent with modeling from PNNL
 - Set maximum soil pre-drilling exposure limit to prevent exceeding Room 18 general area radiation limits from the soil collection drum
 - Implemented improvements controlling contamination generated at the drill rig
 - Implementing enhanced methodology that personnel use to doff PPE and exit Room 18

300 Area Report
300 Area Unit Manager Meeting
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B-Cell Debris Prior to loadout 3/4/19



B-Cell Grout and Debris Removal

**300 Area Report
300 Area Unit Manager Meeting
September 19, 2019**

Mockup:

- Conducted a floor saw installation demonstration. (8/19/19)

Cell Cleanout:

- Continued size reduction and waste bin load out.
- Shipped a total of five boxes (three bins each) of debris to ERDF with a dose on the bins ranging from 50-500 mR. (7/11/19, 7/18/19, 8/15/19, 8/22/19, and 9/3/19)
- Exposed 25% of the stainless steel liner in B-Cell through removal of debris/grout.
- Additional waste bin shipments on hold during troubleshooting of the A/D crane.



Waste Bins Staged in D-Cell

Upcoming Activities:

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

300 Area Report
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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 September 19, 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
1	300-296 Key Milestones	11/15/18 A	06/16/21	-20																																					
2	Complete Install Upper Remote Excavation Arm in B-Cell (3/31/19)		11/15/18 A	0																																					
3	Completion of Core Drilling into Radiochemical Engineering Complex (REC) (6/15/19)		02/21/19 A	0																																					
4	Initiate 324 B-Cell Floor Scoring	10/08/19*		-34																																					
5	FY19 Goal - A, C & D Cells Ready to Receive Waste		10/15/19*	-62																																					
6	Complete 324 Building REC Cleanout		10/22/19*	78																																					
7	Complete Three Test Pilot Holes 2-4, and Grout Two Micro-Pile Holes		10/22/19*	-19																																					
8	FY19 Goal - Complete Three Test Pilot Holes 2-4, and Grout Two Micro-Pile Holes		10/22/19*	-19																																					
9	FY19 Goal - B-Cell Cleanout Complete		11/04/19*	-32																																					
10	FY19 Goal - Readiness Assessment Complete		11/05/19*	-19																																					
11	FY19 Goal - B-Cell Floor Scoring Complete		11/25/19*	-32																																					
12	TPA M-016-85A Complete remote excavation of the 300-296 waste site (Due 9/30/2021)		06/16/21*	-20																																					
13	Mockup Equipment Procurements	05/18/17 A	12/12/18 A	0																																					
14	Mockup Equipment Installation	11/15/17 A	04/23/19 A	0																																					
15	Mockup Training	04/25/18 A	02/08/21	-9																																					
16	324 Bldg - REC Cleanout	09/13/17 A	02/06/20	-17																																					
17	324 Bldg - Interference Removal	10/31/17 A	10/14/19	13																																					
18	324 Bldg - Cell Sealing	01/29/18 A	03/15/21	-6																																					
19	324 Bldg - Core Drilling	01/09/18 A	03/28/19 A	0																																					
20	324 Bldg - Structural Modifications Design	10/11/17 A	09/30/19	0																																					
21	324 Bldg - Structural Modifications Design - Micropiles	12/27/18 A	10/01/19	-10																																					
22	324 Bldg - Structural Modifications - Temp Shoring	06/27/19 A	11/04/19	-15																																					
23	324 Bldg - Structural Modifications - Scabbling/Dowel Drill	03/04/19 A	09/15/20	-10																																					
24	324 Bldg - Structural Modifications - Micropiles	10/02/19	08/04/20	-10																																					
25	324 Bldg - Structural Modifications - Soil Stabilization	11/05/19	09/15/20	-10																																					
26	324 Bldg - Structural Modifications - Pile Cap	03/02/20	11/05/20	-10																																					
27	324 Bldg - Equipment Procurements	09/14/17 A	09/29/20	0																																					
28	324 Bldg - Equipment Installations	07/16/18 A	03/22/21	-9																																					
29	324 Bldg - B-Cell Debris Removal	07/02/18 A	12/17/19	-36																																					
30	324 Bldg - Readiness Assessment	12/17/18 A	12/05/19	-10																																					
31	324 Bldg - B-Cell Floor Scoring	10/08/19	11/25/19	-17																																					
32	324 Bldg - B-Cell Floor Removal	12/19/19	03/04/20	-10																																					
33	324 Bldg - B-Cell Soil Excavation (To the Footers)	04/08/20	09/16/20	-10																																					
34	324 Bldg - B-Cell Soil Excavation (Below Footers)	11/09/20	04/29/21	-9																																					

100/300 Area Project Managers Meeting
Groundwater Summary by OU (*July - August 2019 Data*)
September 19, 2019
100-K Area Groundwater Operable Unit

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

- CERCLA Process Implementation:
 - RL Transmitted the 100-KR-1, 100-KR-2, and 100-KR-4 Operable Units Remedial Investigation, Draft B (DOE/RL-2010-97) to EPA on May 3, 2019. EPA requested a second extended review to September 16, 2019 on August 16, 2019.
 - Provided RL the 100-KR-1, 100-KR-2, and 100-KR-4 Operable Units Feasibility Study (DOE/RL-2018-22), Decision Draft on May 10, 2019. The RL review period was extended from June 8, 2019 to July 18, 2019. Received RL's comments on July 22, 2019.
 - Received RL and EPA's approval on the drilling SAP, addendum 7 (DOE/RL-2013-36-ADD7) at the end of August 2019. This SAP includes the 100-KR-4 proposed wells for FY-20.
 - Received RL and EPA's approval on TPA-CN-0858 to DOE/RL-2013-33 early in August, 2019. This CN updates the RD/RAWP to incorporate results from the KW P&T rebound study, reflects status change of six wells, adds previously missed controlling sampling documents, and removes the reference to cancelled Milestone M-016-110-T04.
 - Received RL and EPA's approval on the TPA-CN-0857 to DOE/RL-2013-29 end of July, 2019. This CN incorporates wells drilled in late 2018, removes the unfiltered Cr(VI) requirement, and updates to the sampling frequency based on observations through the end of calendar year 2018.
 - Received RL, EPA and Ecology's approval on TPA-CN-0859 to DOE/RL-97-01 in July 2019. This CN amends DOE/RL-97-01, *Interim Action Waste Management Plan for the 100-HR-3 and 100-KR-4 Operable Units*, Rev. 6, to incorporate proposed FY-20 wells to be drilled for both 100-HR-3 and 100-KR-4. For 100-HR-3, this CN includes 6 of the 10 wells proposed to be drilled. The other four wells were included in a previous CN (TPA-CN-0808). For 100-KR-4, three additional wells are included, with the fourth covered by TPA-CN-0808. Also, for 100-KR-4 well 199-K-173 is being removed as it was decommissioned in 2018.
 - RL provided the 100-KR-4 explanation of signification difference (ESD) for cost increase in the Interim Action ROD. ESD was provided to EPA for review on May 30, 2019.
 - A meeting was held on July 17, 2019 with EPA Region 10 and the United States Geological Survey (USGS) to discuss the 100-KR-4 technical impracticability (TI) waiver on June 14, 2019. EPA will provide comments on the TI with their review of the 100-KR-1, 100-KR-2, and 100-KR-4 Operable Units FS.
 - A meeting was held with RL and EPA on August 6, 2019 to define a draft outline for the presentation to the RAP subcommittee. The discussion is on proceeding with a Technical Impracticability (TI) waiver for Sr-90 compared to a Monitored Natural Attenuation (MNA) alternative. A follow on meeting with RL and EPA was held August 27, 2019 to discuss the TI –vs- MNA presentation.
- 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 to operate during the months of July and August 2019. By August 12, 2019 hexavalent chromium (Cr(VI)) concentrations had dropped below the DWS of 48 µg/L. At that time, the infiltration gallery was turned off and allowed to drain while switching back to normal P&T extraction and injection operations. Between May 28, 2019 and August 12, 2019, approximately 26.7 million gallons of water was sent to the leach field. Figure KR-1 shows Cr(VI) results through the end of August 2019. Since the infiltration gallery was shutdown on August 12, 2019, Cr(VI) concentration have declined after an initial increase in 199-K-205 (Figure KR-2).

100/300 Area Project Managers Meeting
Groundwater Summary by OU (July - August 2019 Data)
September 19, 2019

- Remedial Actions & System Modifications:
 - In July 2019, the average pumping rates were 259, 234, and 912 gpm for the KR4, KW, and KX systems, respectively.
 - In August 2019, the average pumping rates were 261, 287, and 913 gpm for the KR4, KW, and KX systems, respectively.
 - Figures KR-3 through KR-5 present the monthly volume of groundwater treated and mass of hexavalent chromium removed through August 2019. For July and August the total mass removed for KW alone was 4.5 kg, which is a result of the KW Soil Flushing Treatability test, bringing the overall mass removed during the treatability test up to about 11 kg.
 - 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 July and August 2019 are:

Month	Gallons Treated (in millions)	Hexavalent Chromium Removed (kg)
July	62.7	4.6
August	64.8	4.9

- FY 2019 (October 2018 through August 2019) P&T performance to date:

P&T System	Treated (mgal)	Removed (kg)
KR4	123.2	1.7
KW	126.6	14.9
KX	431	24.9
Total	680	41.4

100/300 Area Project Managers Meeting
Groundwater Summary by OU (July - August 2019 Data)
September 19, 2019

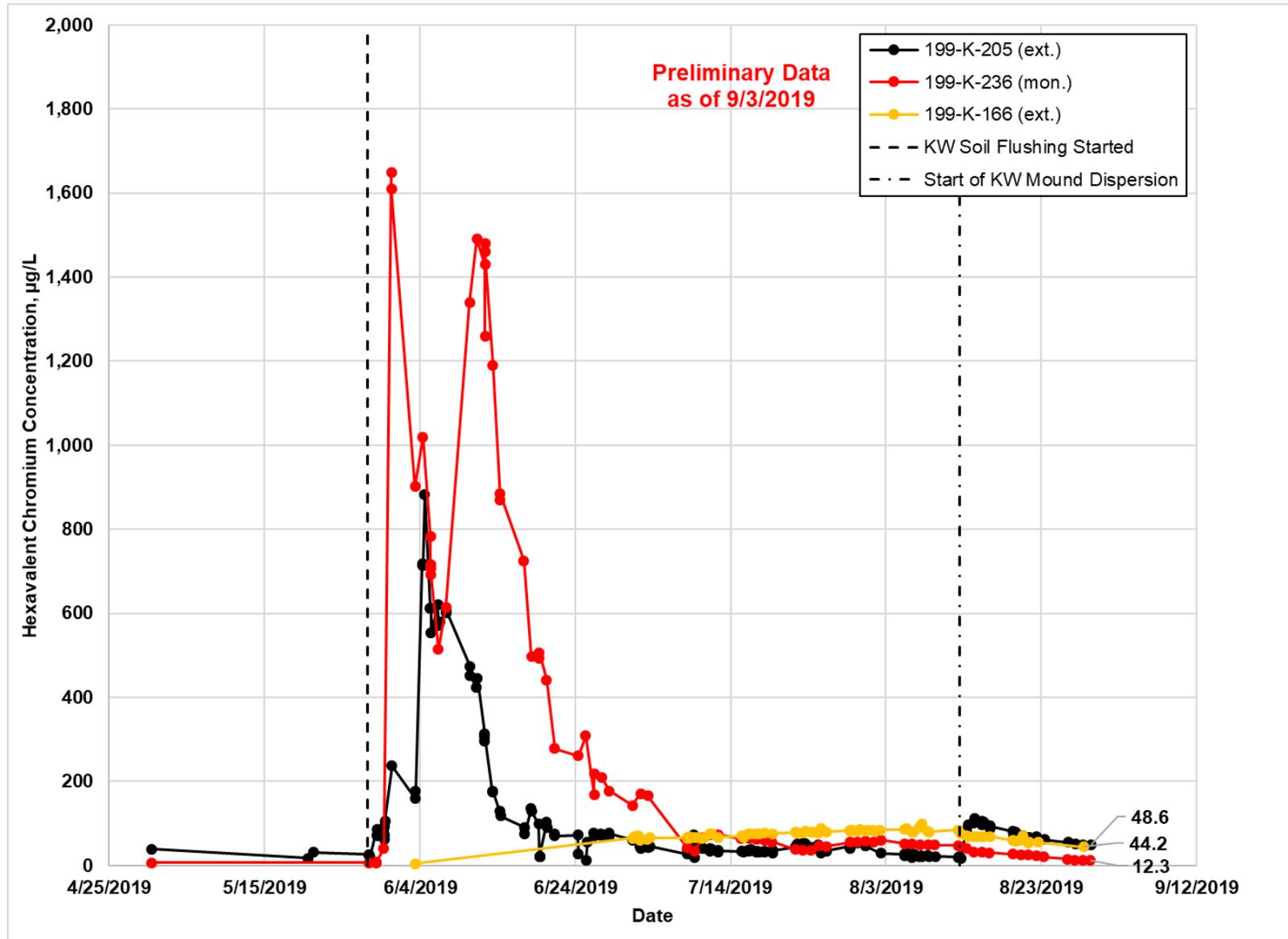


Figure KR-1. Observed Cr(VI) Concentrations during the KW Soil Flushing Treatability Test

100/300 Area Project Managers Meeting
Groundwater Summary by OU (July - August 2019 Data)
September 19, 2019

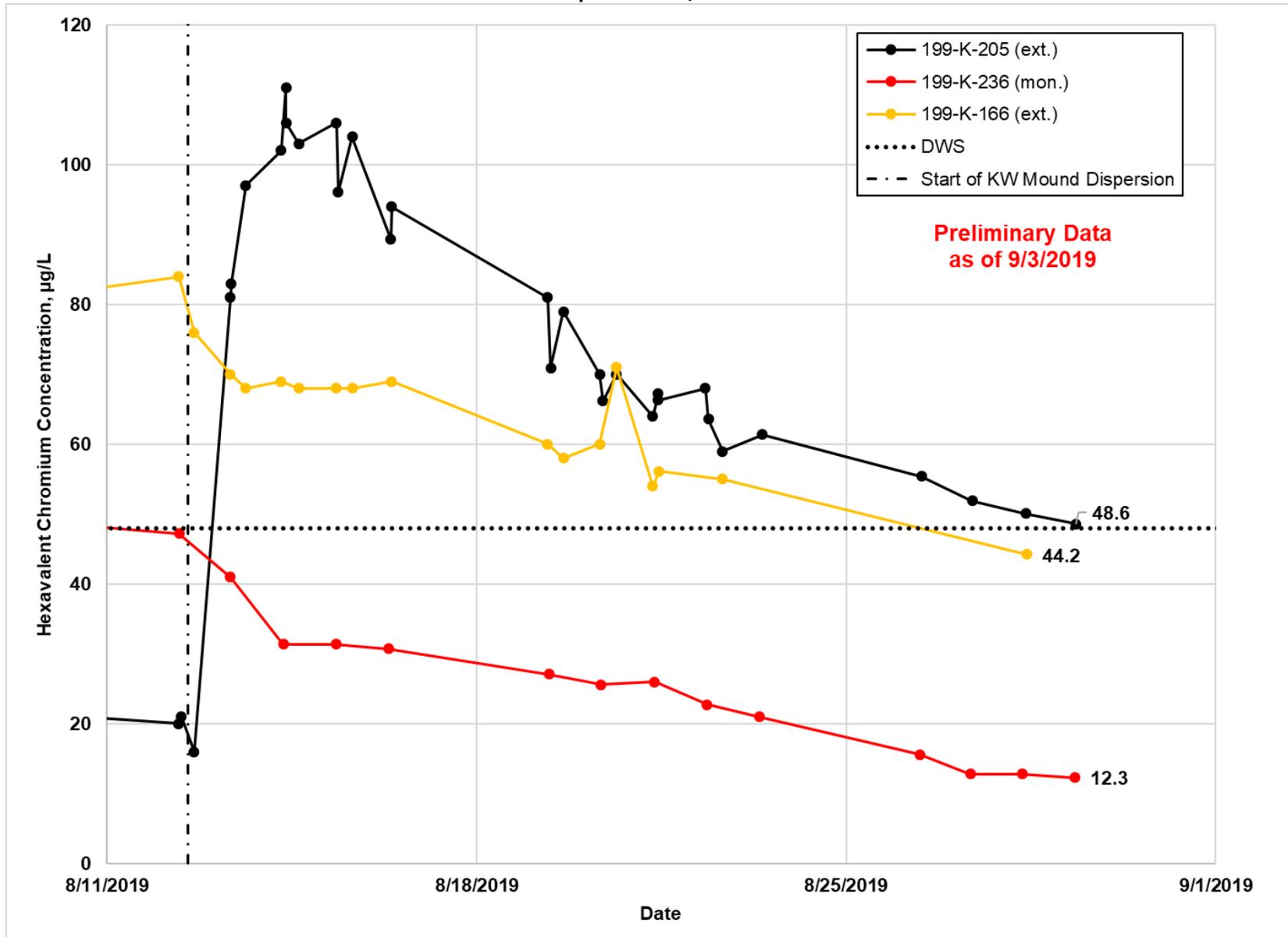
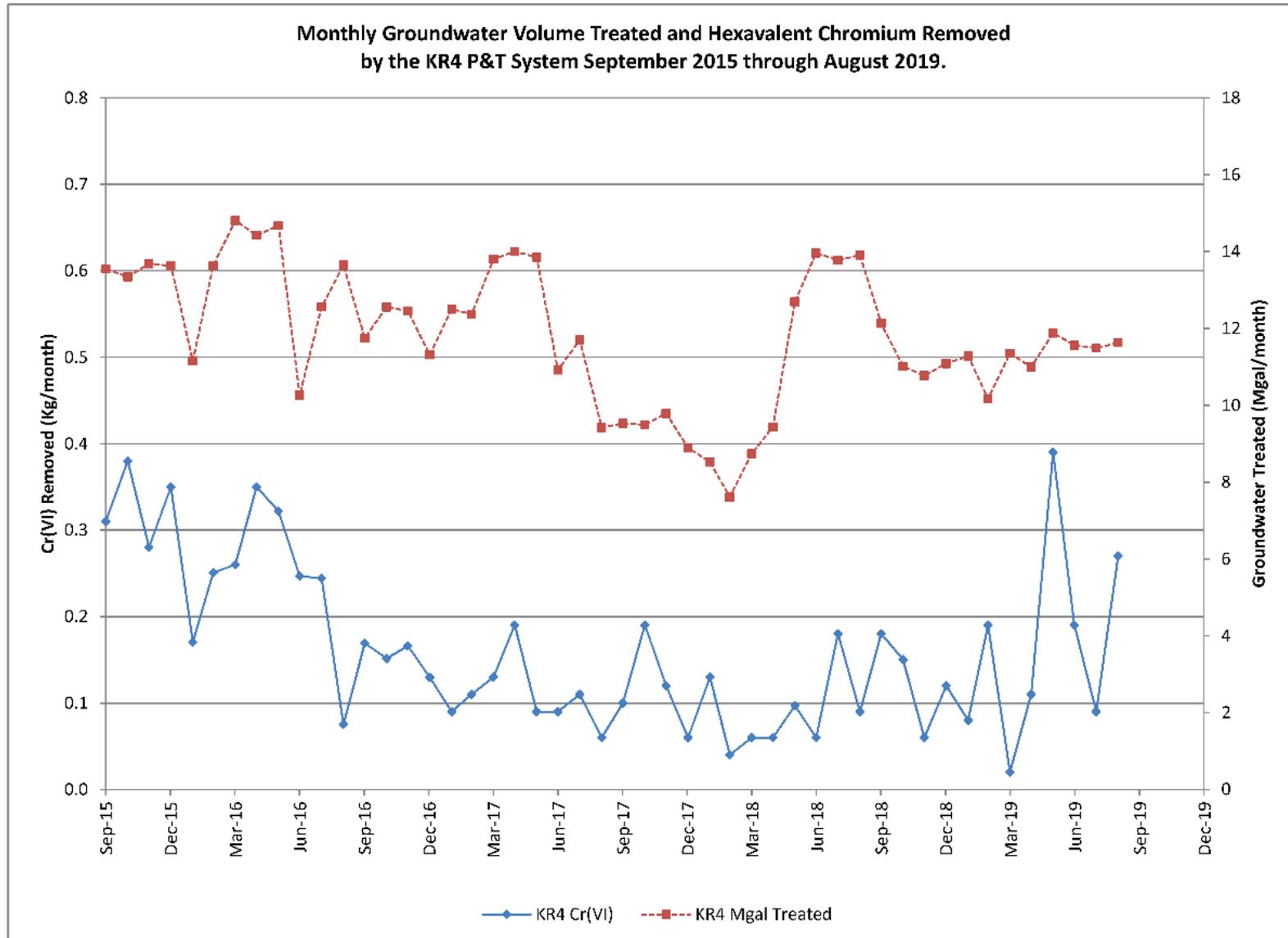


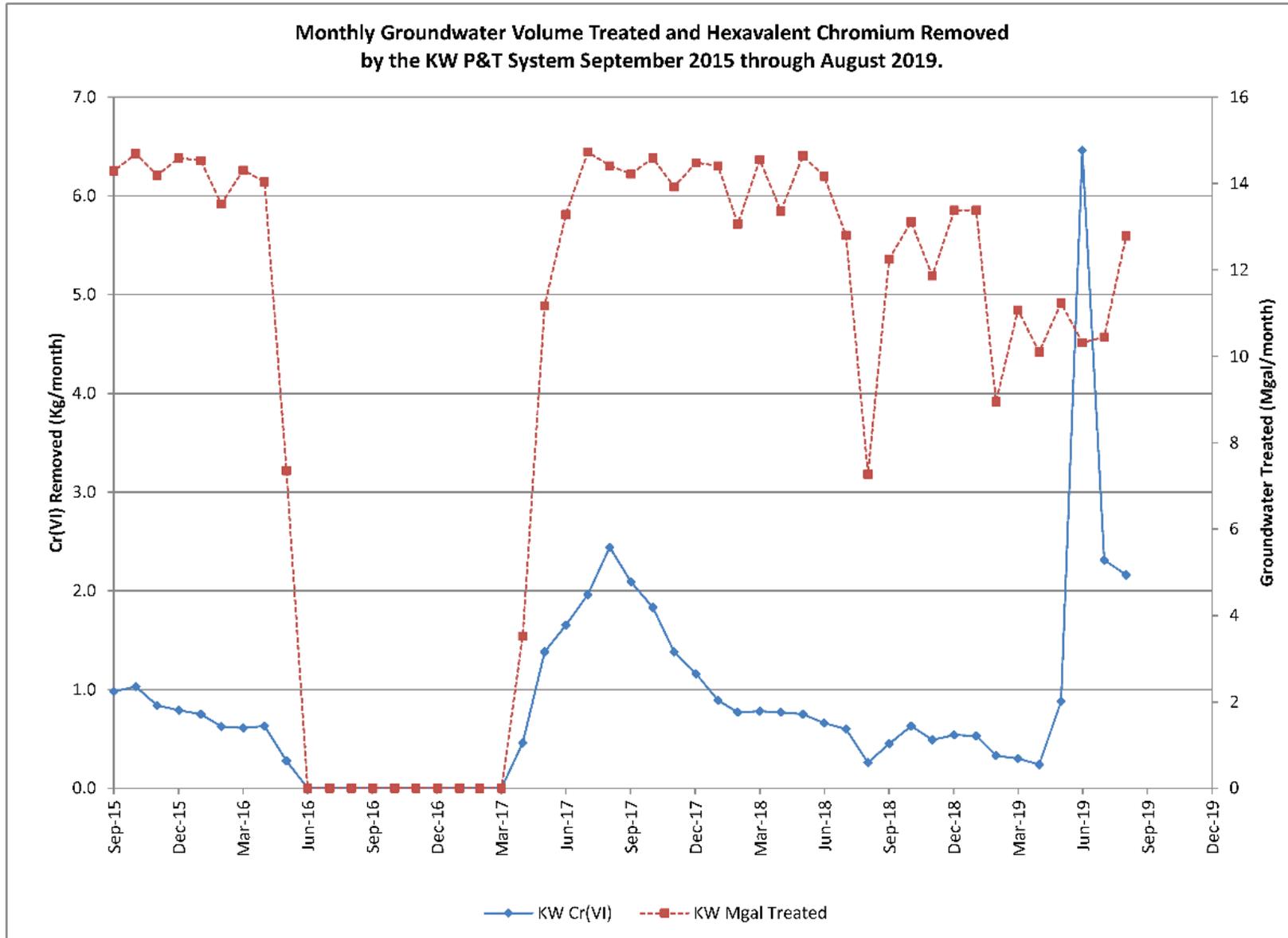
Figure KR-2. Observed Cr(VI) Concentration after August 12, 2019

100/300 Area Project Managers Meeting
Groundwater Summary by OU (July - August 2019 Data)
September 19, 2019



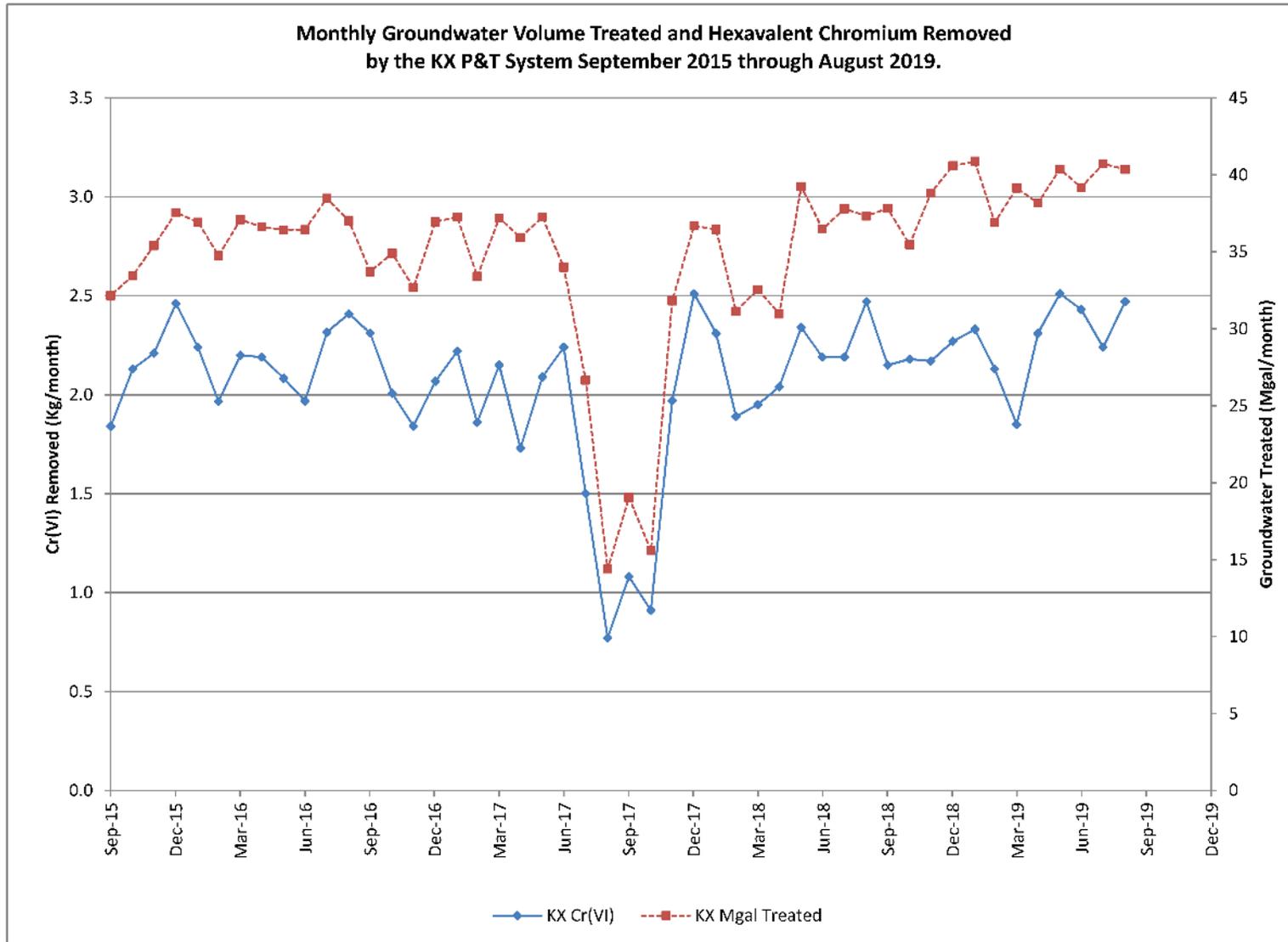
**Figure KR-3. Monthly Cr(VI) Removed and Groundwater Volume Treated by KR4 P&T
September 2015 through August 2019.**

100/300 Area Project Managers Meeting
Groundwater Summary by OU (July - August 2019 Data)
September 19, 2019



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

100/300 Area Project Managers Meeting
Groundwater Summary by OU (July - August 2019 Data)
September 19, 2019



*

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

100/300 Area Project Managers Meeting
Groundwater Summary by OU (July - August 2019 Data)
September 19, 2019

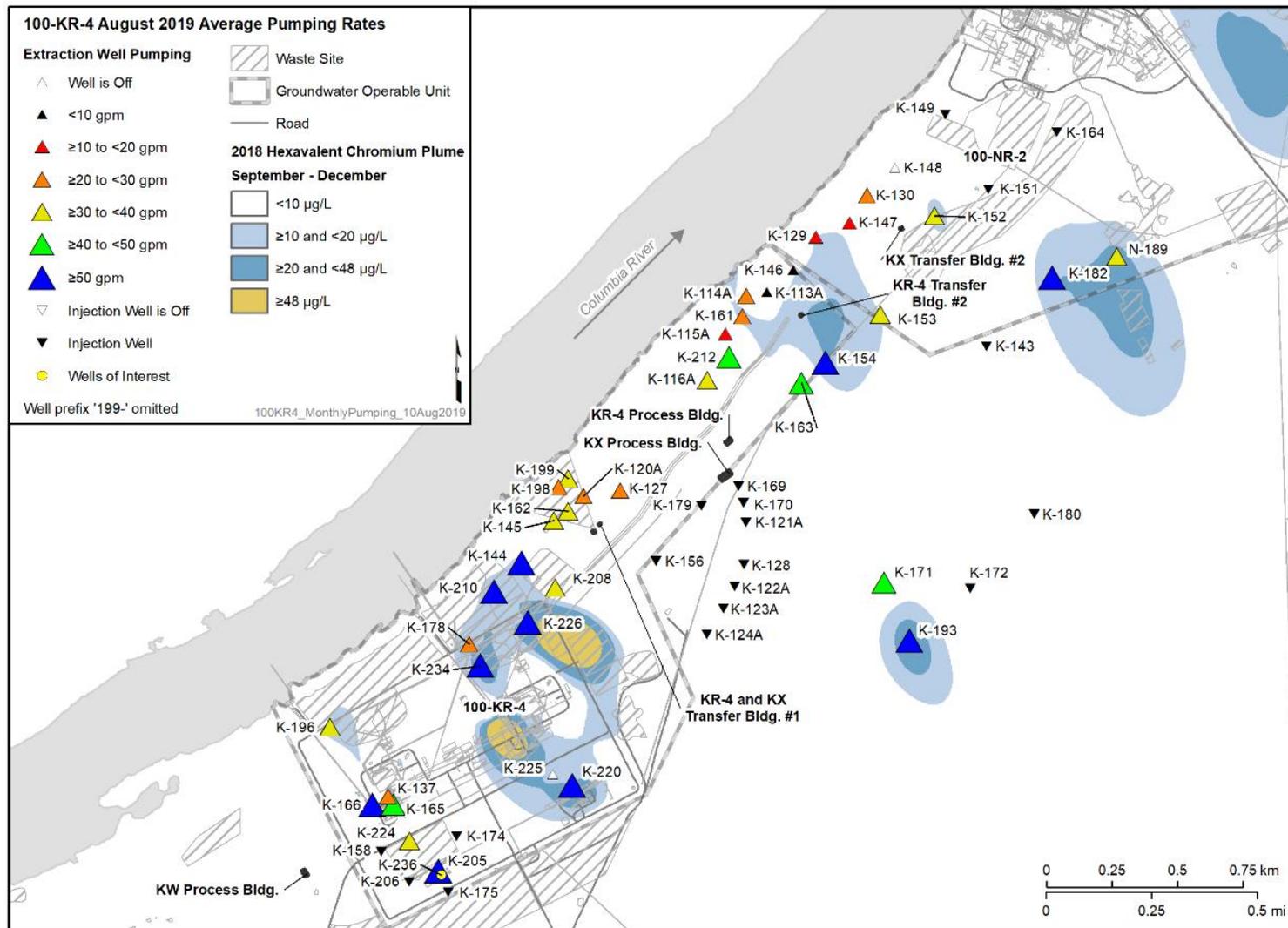


Figure KR-6. August 2019 Average Pumping Rates for the 100-KR-4 P&T System

Regulatory Agency Comments: None

100/300 Area Project Managers Meeting
Groundwater Summary by OU (*July - August 2019 Data*)
September 19, 2019
100-BC Area Groundwater Operable Unit

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

- CERCLA Process Implementation:
 - The Proposed Plan (PP) is being finalized (Rev. 0) and is scheduled for transmittal to RL in September 2019 and the public comment period is scheduled to begin October 7, 2019.
- Monitoring & Reporting:
 - June 2019 water-level data indicate that groundwater flow was toward the north and no reversed gradient was present near the Columbia River.
 - Data from five wells sampled in June were loaded into HEIS. Cr(VI) concentrations declined in well 199-B3-1, 199-B3-46, and 199-B3-52 and remained steady in 199-B3-47. Figure BC-1 shows well locations and Figures BC-2 and BC-3 show Cr(VI) trends. Strontium-90 concentrations remained within previously established ranges, with a maximum of 33.8 pCi/L in 199-B3-1. Tritium remained below the DWS.
 - Hyporheic sampling points (HSPs) C8860, C8861, and three nearby aquifer tubes were sampled in July 2019. Concentrations in C8861 and the adjacent, shallow aquifer tube AT-B-5-S declined from April 2019 (Figure BC-4). The decreases were not due to dilution with river water; specific conductance was consistent between December 2018 and April and July 2019. Cr(VI) in downstream shallow aquifer tube AT-B-7-S Cr(VI) remained in the previously established range. The concentration in upstream HSP C9960 was also consistent with previous results (15.4 ug/L). These locations will be sampled in September along with the rest of the routine aquifer tubes and HSPs.
 - All wells in the 100-BC-5 groundwater monitoring network are scheduled for sampling in October 2019.

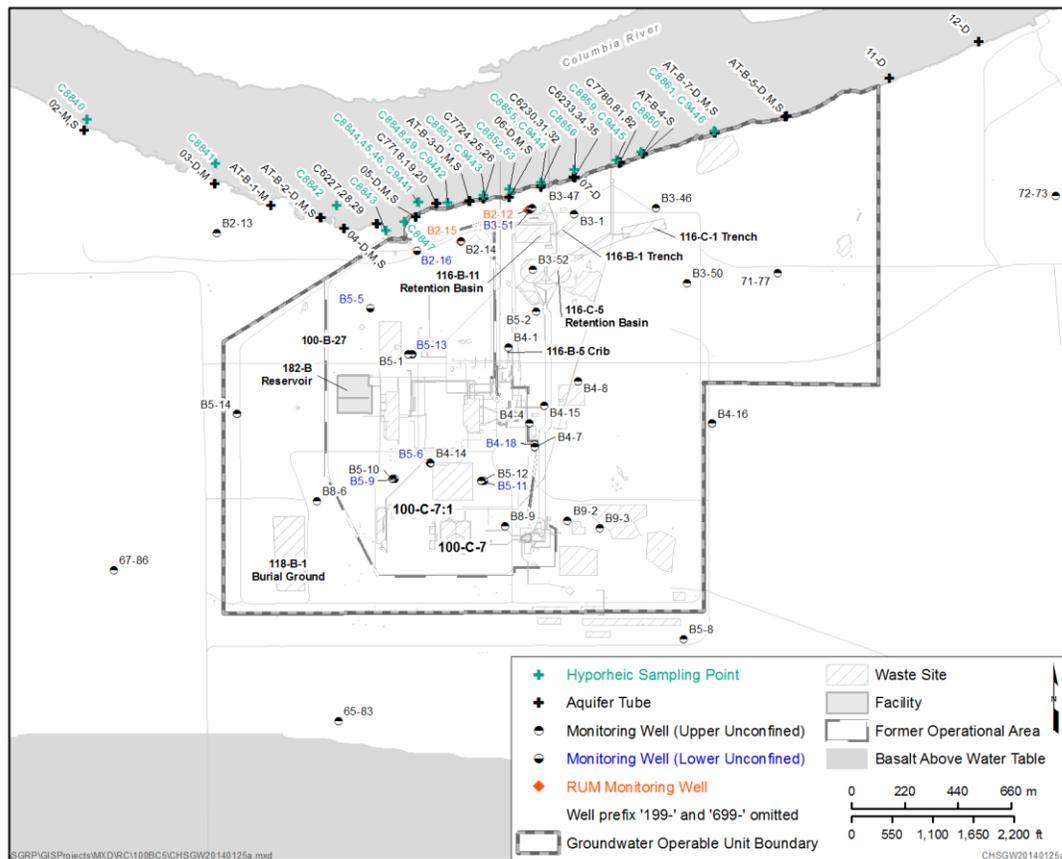


Figure BC-1. Locations of Wells and Aquifer Tubes in 100-BC Area

100/300 Area Project Managers Meeting
Groundwater Summary by OU (July - August 2019 Data)
September 19, 2019
199-B3-1, 199-B3-46, 199-B3-52
Hexavalent Chromium (ug/L)

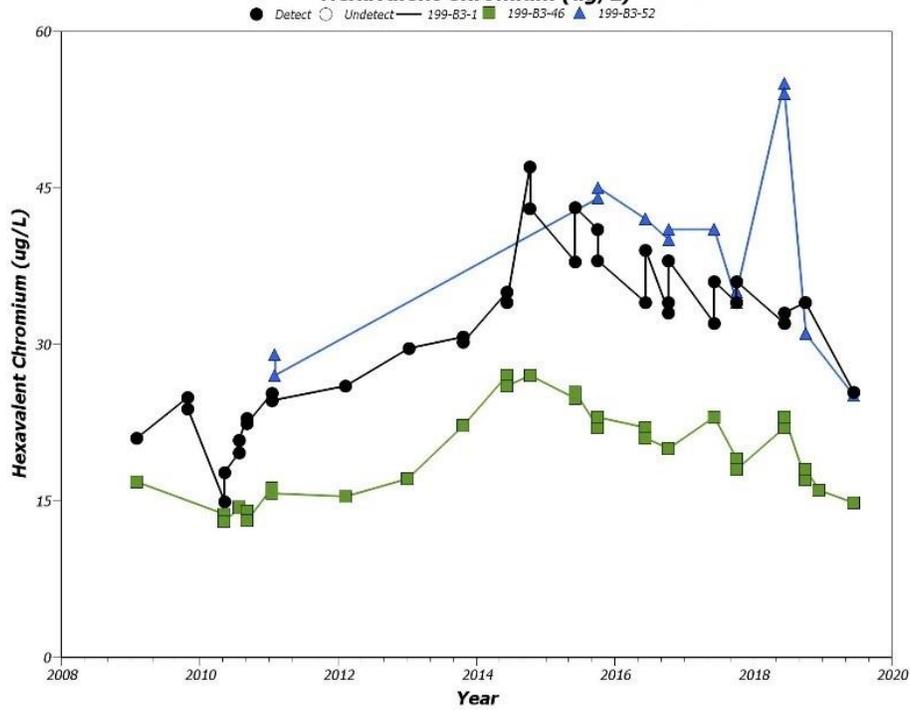


Figure BC-2. Cr(VI) Concentrations in Wells 199-B3-1, 199-B3-46, and 199-B3-52 in Northern 100-BC Area

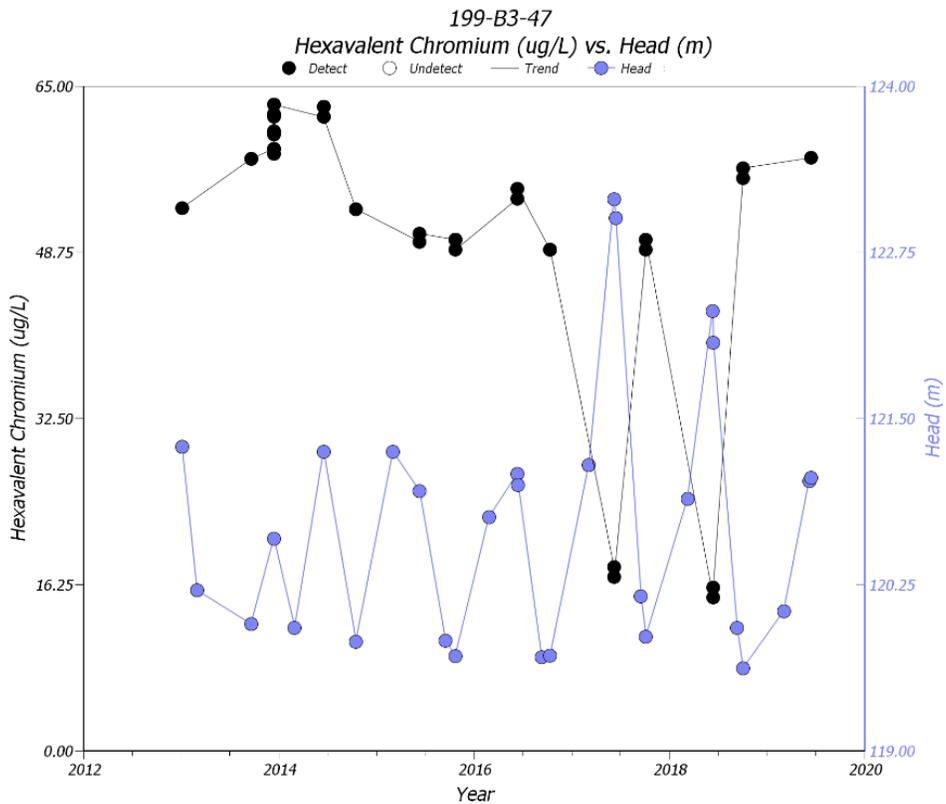


Figure BC-3. Cr(VI) Concentrations and Water Levels in Well 199-B3-47

100/300 Area Project Managers Meeting
Groundwater Summary by OU (July - August 2019 Data)
September 19, 2019
AT-B-5-S, AT-B-7-S, C8861
Filtered Hexavalent Chromium (ug/L)

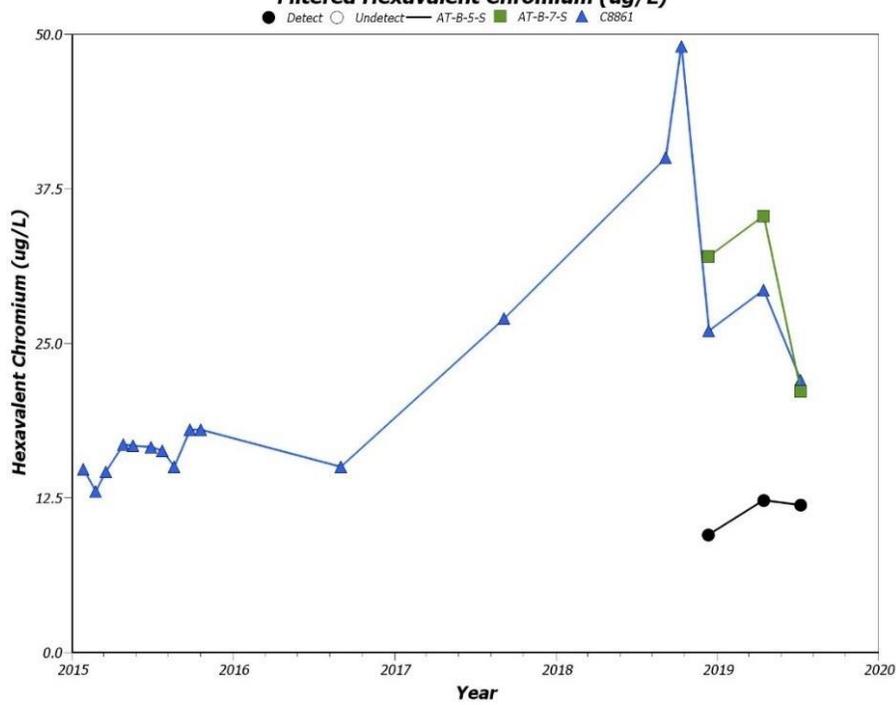


Figure BC-4. Cr(VI) in 100-BC Aquifer Tubes and HSP

Regulatory Agency Comments: None

100/300 Area Project Managers Meeting
Groundwater Summary by OU (*July - August 2019 Data*)
September 19, 2019
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 comments on August 28, 2019 for changes to align with schedule for issuance of the 100-N RI/FS and ROD.
 - Completed RL comment resolution/incorporation on the Draft B 100-N RI/FS. Incorporated Cr(VI) modeling results from the 100-K RI/FS on the portion of the Cr(VI) plume originating from 100-K that is exclusively in the 100-NR-2 groundwater OU boundary into the 100-N RI/FS based on path forward from the June 27, 2019 with RL, EPA, Ecology, and CHPRC on this subject. Provided presentation to Ecology on August 28, 2019 on basis for not carrying Cr(VI) as a COC in the remedial alternatives of the 100-N RI/FS.
- Remedial Actions:
 - The next quarterly biovent vapor samples are scheduled for September 2019.
 - 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 was provided to Ecology on August 23, 2019 for comment. Comments expected on October 7, 2019. Three boreholes are planned for sample collection.
- Product Recovery:
 - The sorbent sponge assemblies in wells 199-N-18 and 199-N-183 were replaced on August 29, 2019. A total of 250 grams of product was recovered since the last sponge changeout on June 25, 2019. The sponge change-out frequency has changed bi-monthly to monthly. The sponges will be removed during the upcoming bioventing system respirometry test scheduled for October through November of 2019 for the low river stage period. The sponges are being removed during the respirometry test to allow the well head to be sealed for vapor sampling during the test.
- Monitoring and Reporting:
 - The high river sampling of aquifer tubes C7934, C7935, and C7936 were sampled on June 11, 2019 as scheduled. Strontium-90 and tritium results through June 2019 are shown in Figures NR2-1 and NR2-2. They will be sampled next in June 2020.

100/300 Area Project Managers Meeting
Groundwater Summary by OU (July - August 2019 Data)
September 19, 2019

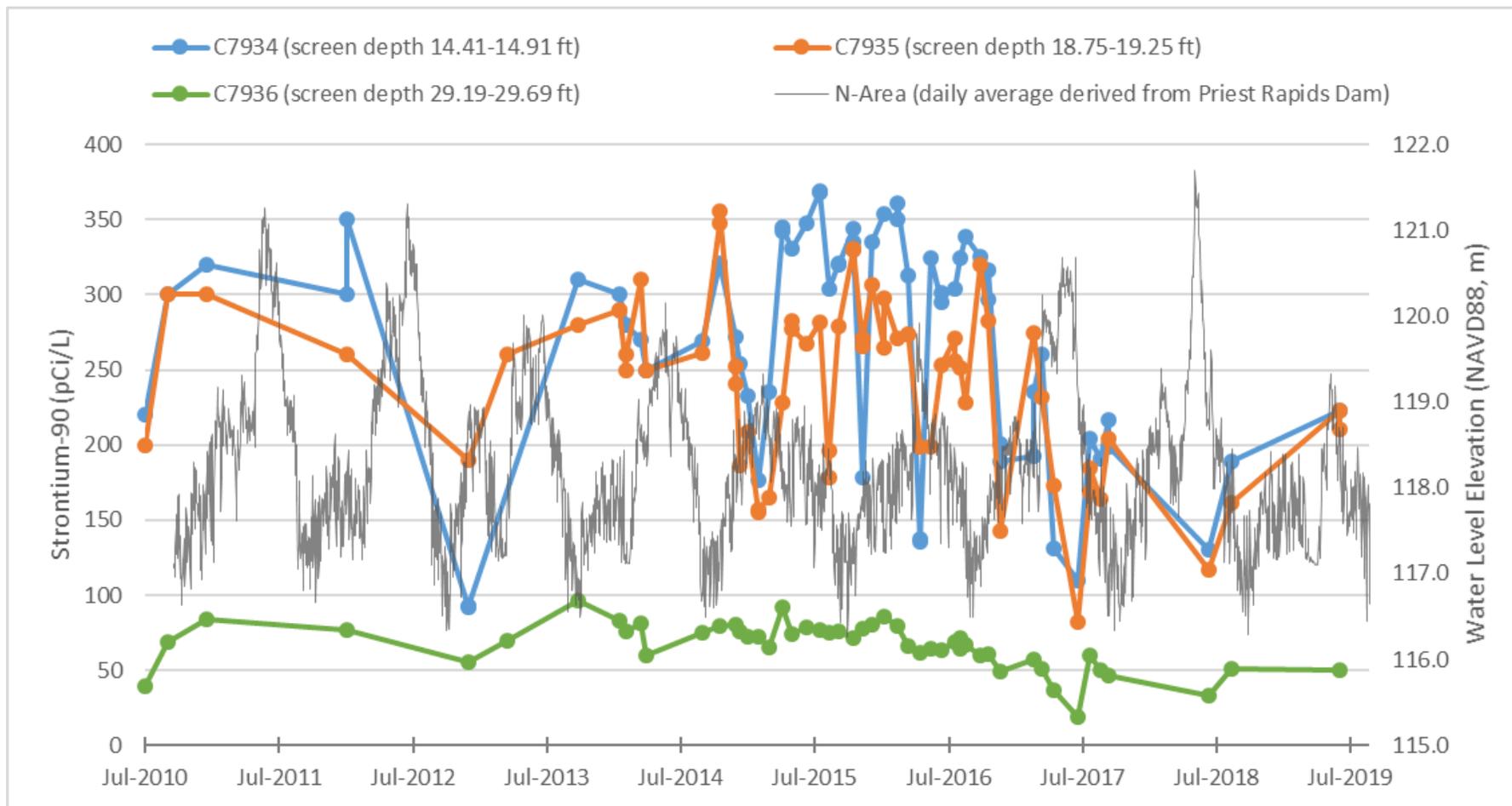


Figure NR2-1. Strontium-90 Time series for Aquifer Tubes C7934, C7935, and C7936 through June 2019.

100/300 Area Project Managers Meeting
Groundwater Summary by OU (July - August 2019 Data)
September 19, 2019

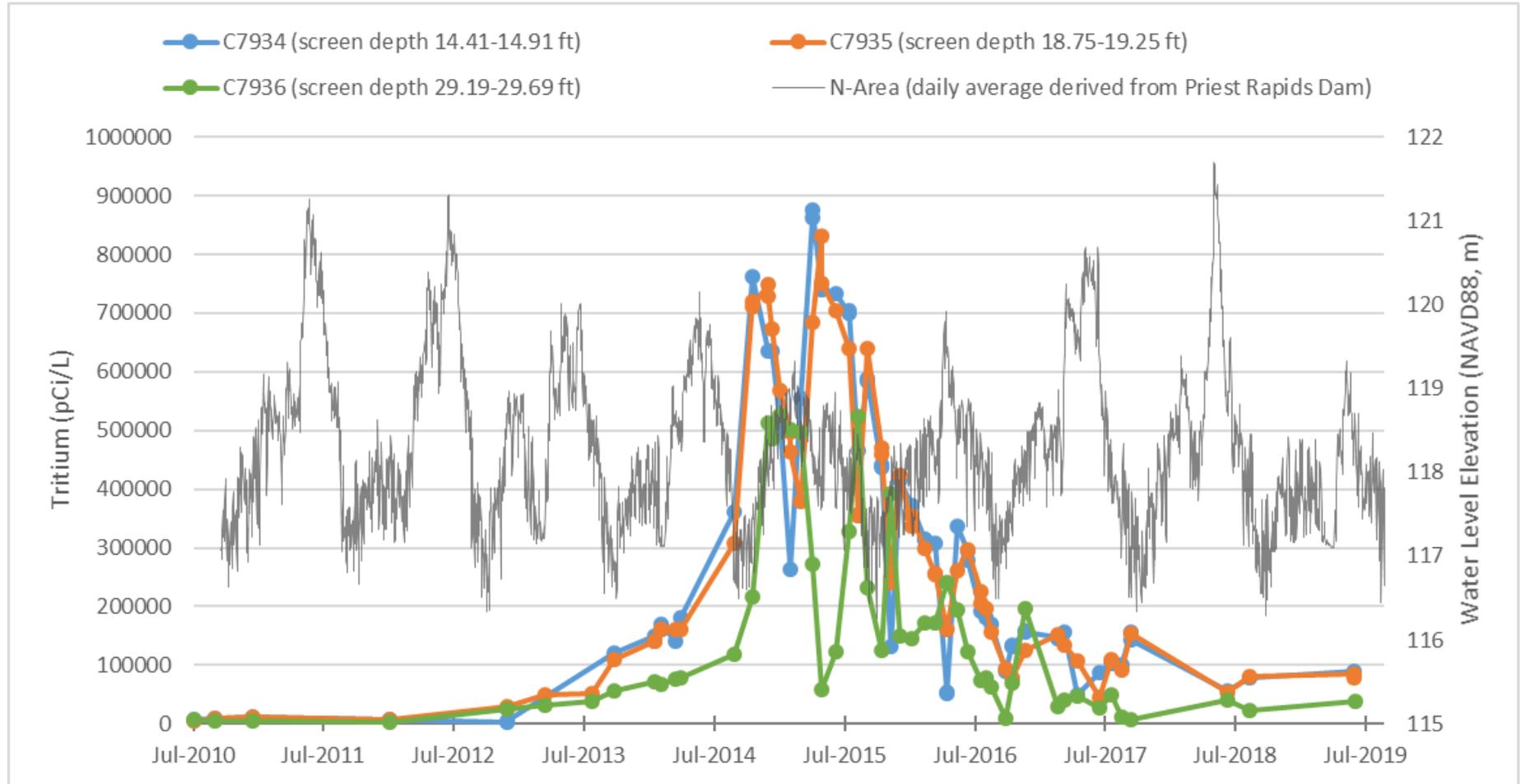


Figure NR2-3. Tritium Time series for Aquifer Tubes C7934, C7935, and C7936 through June 2019.

Regulatory Agency Comments: None

100/300 Area Project Managers Meeting
Groundwater Summary by OU (*July - August 2019 Data*)
September 19, 2019

100-D/H Areas Groundwater Operable Unit

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

- CERCLA Process Implementation:
 - Ecology’s comments on the Remedial Design/Remedial Action Work Plan (RD/RAWP) and accompanying Waste Management Plan (WMP) have been resolved. Completion of these two documents; however, is pending resolution of Ecology and EPA’s request that the WMP and SAP be incorporated into the RD/RAWP. DOE is reviewing this request.
 - Provided Ecology with comment responses and text changes for the Well Installation SAP (DOE/RL-2013-35-ADD12). Comment resolution and finalization of the document is anticipated this coming week.
 - Provided TPA-CN-ADD10 to Ecology for review and comment. The CN updates 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 July and August 2019 are:

Month	Gallons Treated (in millions)	Hexavalent Chromium Removed (kg)
July	56.2	4.4
August	59.3	5.9

- FY 2019 (October 2018 through August 2019) P&T performance to date:

P&T System	Treated (mgal)	Removed (kg)
DX	302	25.2
HX	248	24.7
Total	550	49.9

- 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 Cr(VI) concentration spike for the last data point in Figure HR-3 is the result of starting RUM extraction at well (199-H3-22) which has Cr(VI) concentrations at 300 µg/L and a flow rate of approximately 132 l/min (35gpm).

100/300 Area Project Managers Meeting
Groundwater Summary by OU (July - August 2019 Data)
September 19, 2019

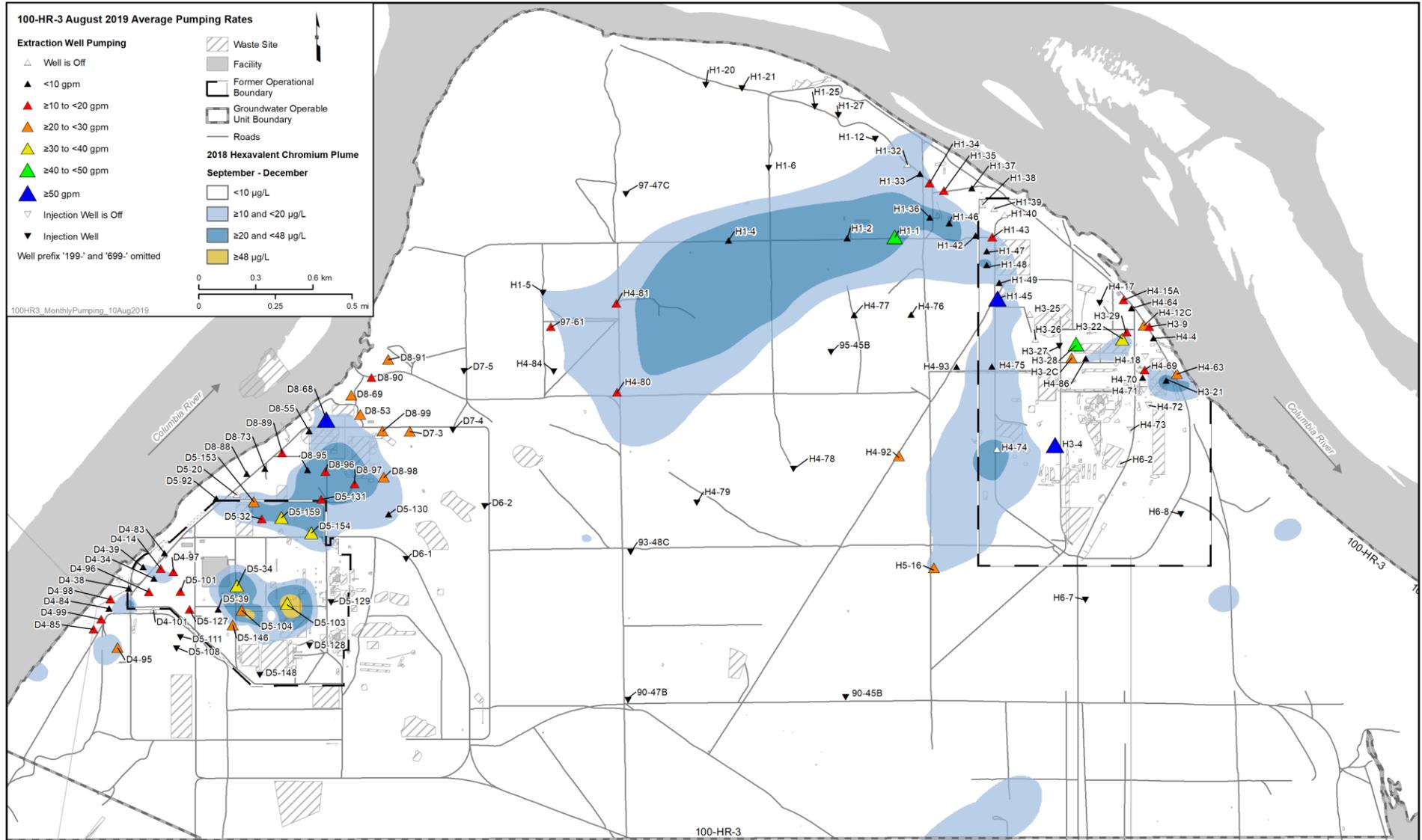


Figure HR-1. August 2019 Average Pumping Rates for the 100-HR-3 P&T System

**100/300 Area Project Managers Meeting
Groundwater Summary by OU (July - August 2019 Data)
September 19, 2019**

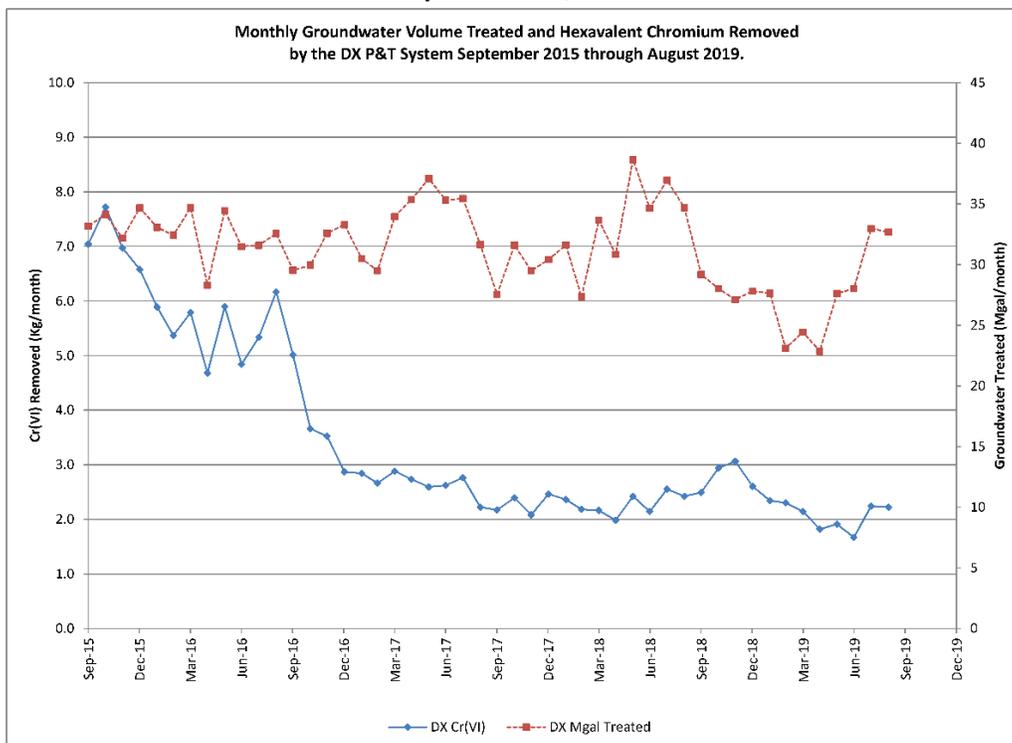


Figure HR-2. Monthly Cr(VI) Removed and Groundwater Volume Treated by DX P&T, September 2015 through August 2019.

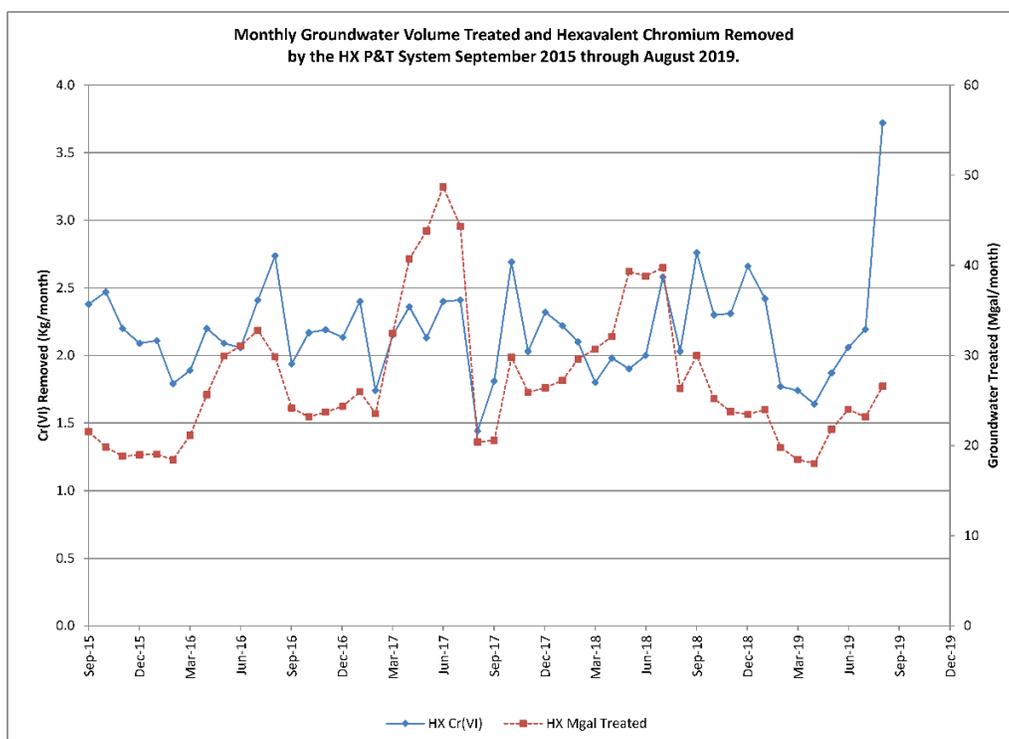


Figure HR-3. Monthly Cr(VI) Removed and Groundwater Volume Treated by HX P&T, September 2015 through August 2019.

Regulatory Agency Comments: None

100/300 Area Project Managers Meeting
Groundwater Summary by OU (*July - August 2019 Data*)
September 19, 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:
 - Six new monitoring wells were drilled and constructed in July and August 2019 (Figure FR-1). One borehole (C9873) was drilled and then decommissioned because it was dry, and well 699-70-29 was successfully installed in an alternative location. Groundwater samples were collected from the new wells after development. Laboratory data had not yet been received.
 - Data from sixteen wells sampled in June 2019 were loaded into HEIS. Results are discussed below.
 - In central 100-F, TCE increased in 199-F5-45 and 199-F5-48 in June, exceeding the cleanup level for the first time in the latter well. Figure FR-1 shows well locations and Figure FR-2 shows TCE trends. Concentrations remained low in nearby wells 199-F5-4, 199-F5-56, and 199-F5-46. Other nearby wells have not been sampled for TCE recently, so TCE was added in the next scheduled sampling events.
 - Nitrate remained within or below previously established ranges in June, with a maximum of 214 mg/L in well 699-71-34.
 - Cr(VI) declined or remained steady in central 100-F Area wells, with a maximum of 23.6 µg/L in well 199-F5-46.

100/300 Area Project Managers Meeting
Groundwater Summary by OU (July - August 2019 Data)
September 19, 2019

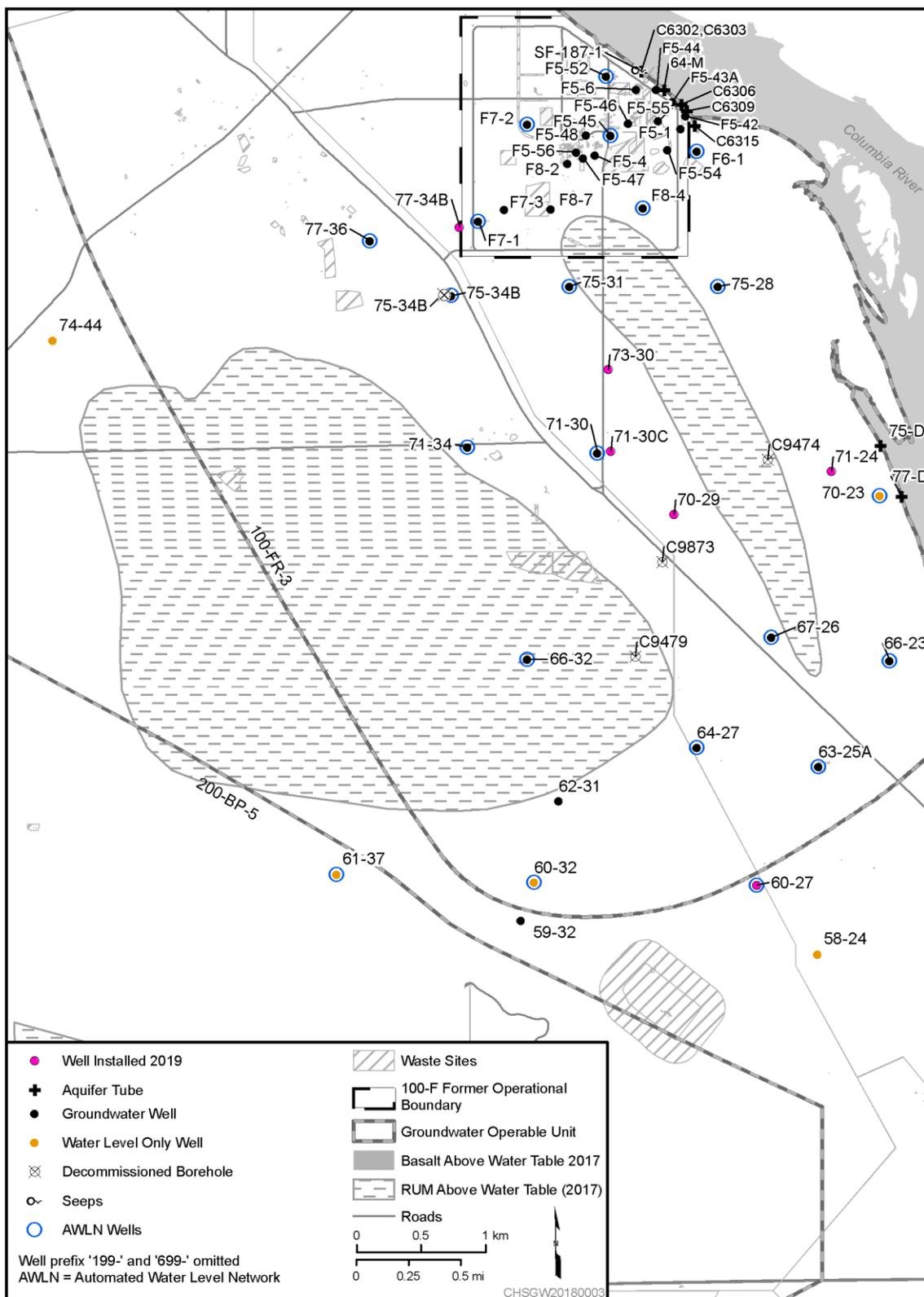


Figure FR-1. 100-FR-3 Groundwater Monitoring Network, Including New Monitoring Wells

100/300 Area Project Managers Meeting
Groundwater Summary by OU (July - August 2019 Data)
September 19, 2019
199-F5-45, 199-F5-46, 199-F5-48
Trichloroethene (ug/L)

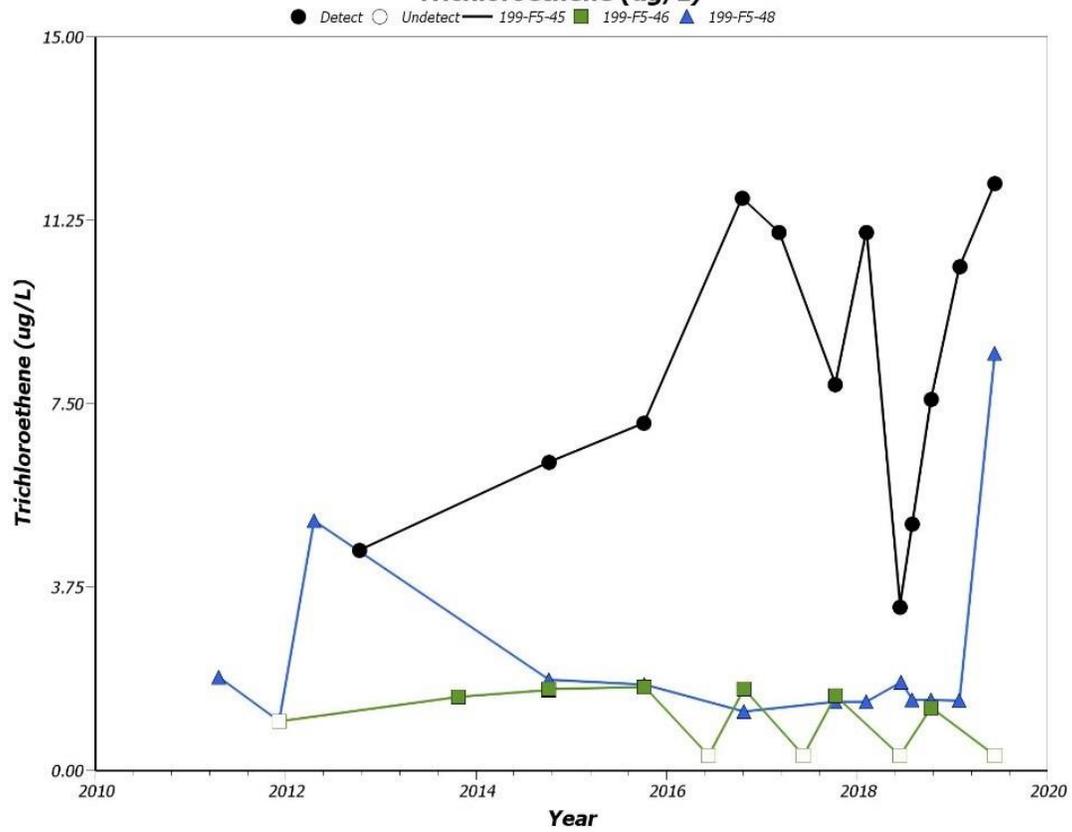


Figure FR-2. TCE Concentrations in Central 100-F Area Wells

Regulatory Agency Comments: None

100/300 Area Project Managers Meeting
Groundwater Summary by OU (*July - August 2019 Data*)
September 19, 2019
300 Area Groundwater Operable Unit

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

- CERCLA Process Implementation:
 - Nothing new to report.
- Remedial Actions:
 - Sequential extraction and flow through column leach testing was completed on July 10, 2019 for uranium sequestration Stage B post-injection borehole soil samples delivered to PNNL in April and again in May 2019 for sequential extraction and column leach testing.
- Monitoring & Reporting:

Uranium Sequestration

- No additional uranium sequestration sampling is planned for these 24 wells in the Stage B monitoring network.
 - Twenty-four wells (15 screened in the aquifer and 9 screened in the periodically rewetted zone) (Figure FF5-1) were sampled daily, weekly, and monthly during and after Stage B polyphosphate injections. The required sampling was completed in April 2019.
 - A high river stage sampling event at all 24 wells was completed as planned in June 2019.
- Monthly sampling at 13 aquifer wells will continue through October 2019. Thirteen wells were sampled as planned in June, July, and August 2019. The next sampling event is scheduled for September 2019.

300 Area Industrial Complex

- The next CERCLA sampling event for long-term monitoring wells is scheduled for September 2019.
- The next AEA sampling event is scheduled for September 2019.
- Quarterly sampling is scheduled to begin in October 2019 for the AEA (399-4-16) well construction and development downgradient of the 324 Building which was completed in June 2019.
- The next CERCLA sampling event for uranium fate and transport model calibration wells Industrial Complex Area is scheduled for December 2019.

618-10 Burial Ground/316-4 Crib

- All four CERCLA wells were sampled as planned in August 2019. The next CERCLA sampling event is scheduled for November 2019.
- One AEA well scheduled for sampling in could not be completed because a gravel pad around the well is needed for access. The pad is scheduled to be installed once the cultural clearance is complete. The next AEA sampling event is scheduled for November 2019, but will be missed.
- Well construction and development at AEA replacement well 699-S6-E3B at the 618-10 Burial Ground was completed in August 2019. The initial sampling event is scheduled for November 2019.

618-11 Burial Ground

- The next CERCLA sampling event is scheduled for October 2019.
- The next AEA sampling event is scheduled for October 2019. These wells are part of the Energy Northwest (ENW) groundwater monitoring network and will be sampled by ENW and the data shared with RL.

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 (*July - August 2019 Data*)
September 19, 2019

300 Area Process Trenches (316-5) RCRA Monitoring

- The next RCRA sampling event is scheduled for September 2019 (see Figure FF5-2).

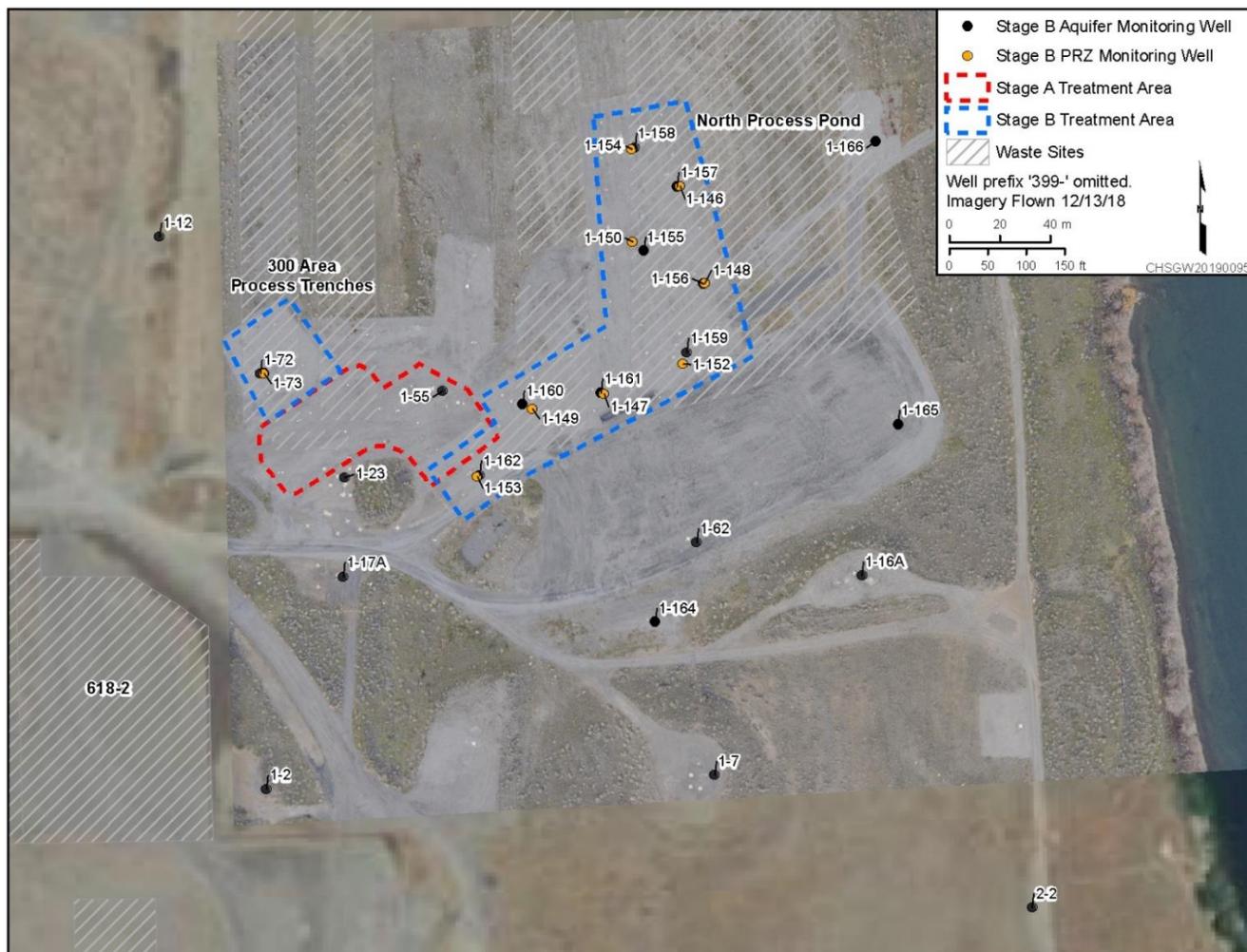


Figure FF5-1. 300 Area Uranium Sequestration Monthly Monitoring Wells

100/300 Area Project Managers Meeting
Groundwater Summary by OU (July - August 2019 Data)
September 19, 2019

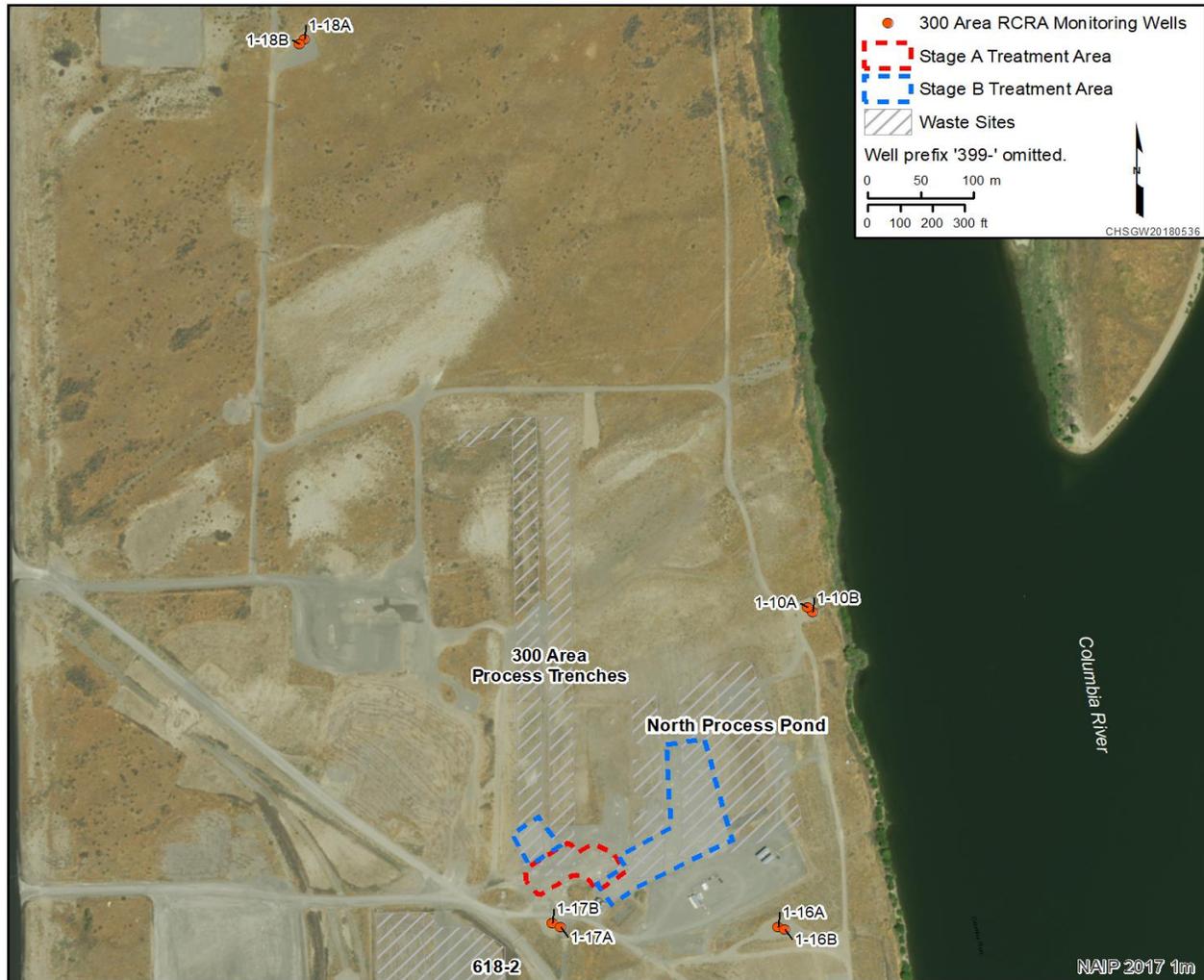
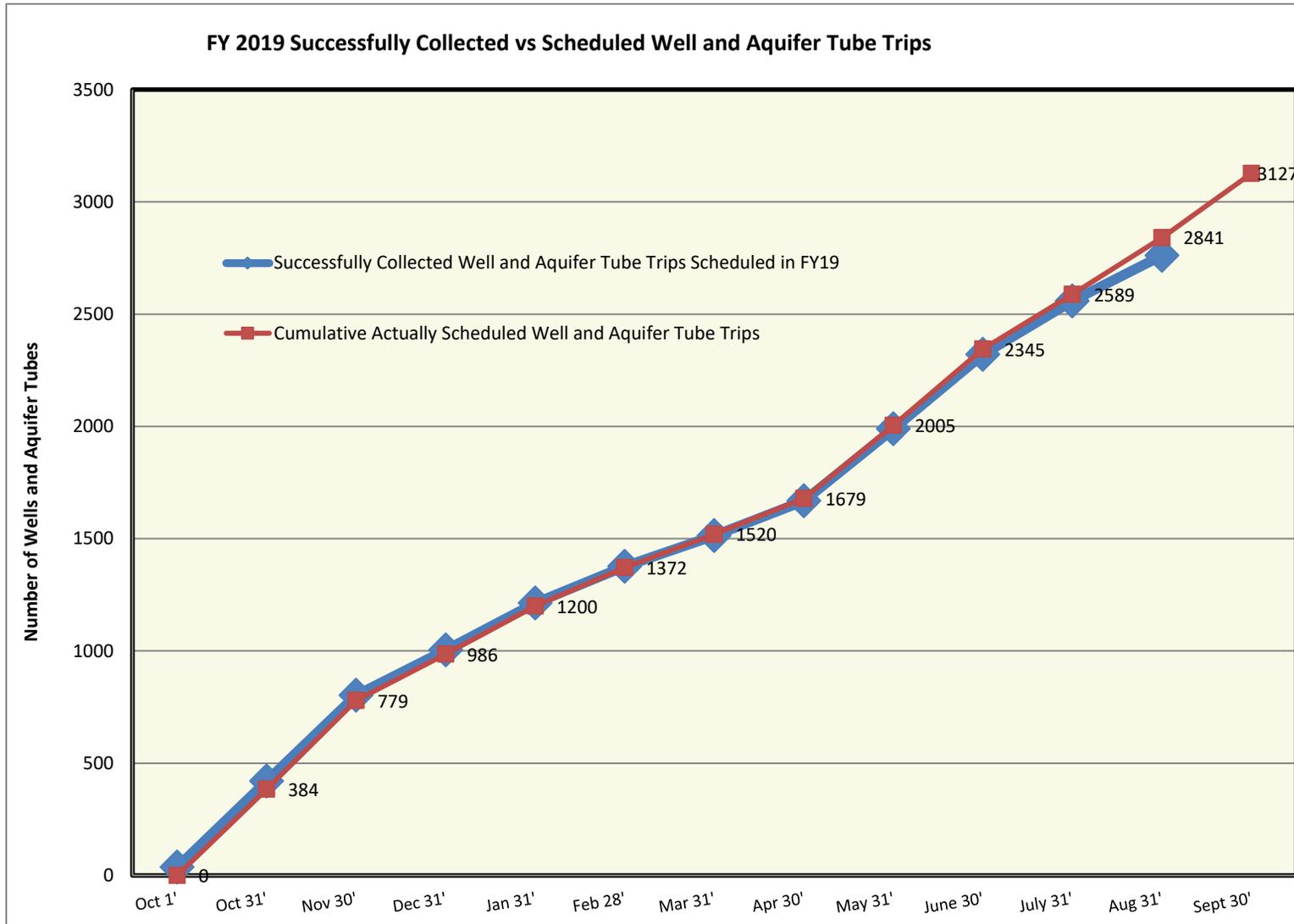


Figure FF5-2. 300 Area Process Trenches RCRA Monitoring Wells

Regulatory Agency Comments:

100/300 Area Project Managers Meeting
Groundwater Summary by OU (July - August 2019 Data)
September 19, 2019
Hanford Annual Groundwater Sampling Program Performance
2019 Results for Samples Completed versus Sample Scheduled



Regulatory Agency Comments: None

100/300 Area Project Managers Meeting
Groundwater Summary by OU (*July - August 2019 Data*)
September 19, 2019
Documents Submitted to the AR

Document Number	Document Title	Referencing Document
SGW-61094_R0	BOREHOLE SUMMARY REPORT FOR THE INSTALLATION OF FOUR MONITORING WELLS AT THE 100-KR-4 OPERABLE UNIT, FY 2017	SGW-63359_R0
SGW-62712_R0	BOREHOLE SUMMARY REPORT FOR THE INSTALLATION OF WELLS 199-K-231 (C9919), 199-K-232 (C9920) AND 199-K-234 (C9922) IN THE 100-KR-4 OU, FY18	SGW-63359_R0
SGW-63047_R0	BOREHOLE SUMMARY REPORT FOR THE INSTALLATION OF WELLS 199-K-235 (C9973) AND 100-K-236 (C9974) IN THE 100-KR-4 OU, FY19	SGW-63359_R0
WCH-128258	POST-DEMOLITION SUMMARY REPORT FOR THE 166-N FUEL OIL PUMP HOUSE, 166-N FUEL OIL UNLOADING STATION, AND 1715-N FUEL OIL STORAGE TANKS 1-5, CCN 128258	DOE/RL-2019-24_R0

Approved Change Notices

Document Number	Document Title
TPA-CN-0772	DOE/RL-2000-41, Interim Action Waste Management Plan for the 100-NR-2 Operable Unit, Rev. 1
TPA-CN-0773	DOE/RL-97-01, Interim Action Waste Management Plan for the 100-HR-3 and 100-KR-4 Operable Units, Rev. 6
TPA-CN-0774	DOE/RL-2014-44-ADD2, Remedial Design Report/Remedial Action Work Plan Addendum for the 100-F/IU Groundwater, Rev. 0
TPA-CN-0775	DOE/RL-2000-56, Waste Management Plan for the 300-FF-5 Operable Unit, Rev. 2

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
September 19, 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.

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.

Path Forward

- Continue to resolve Ecology’s comments.
- Preparing TPA Change Notice for revising Work Plan (DOE/RL-2012-64, Rev. 0) based on briefing with Ecology and EPA on June 4, 2019.
 - Proposed developing site-specific Tier 2 ecological screening level for Remedial Investigation.
 - Add tasks for Feasibility Study. There is currently no direction on development of Feasibility Study for 100-OL-1 OU.

100-OL-1 Operable Unit Report
100/300 Area Unit Manager Meeting
September 19, 2019

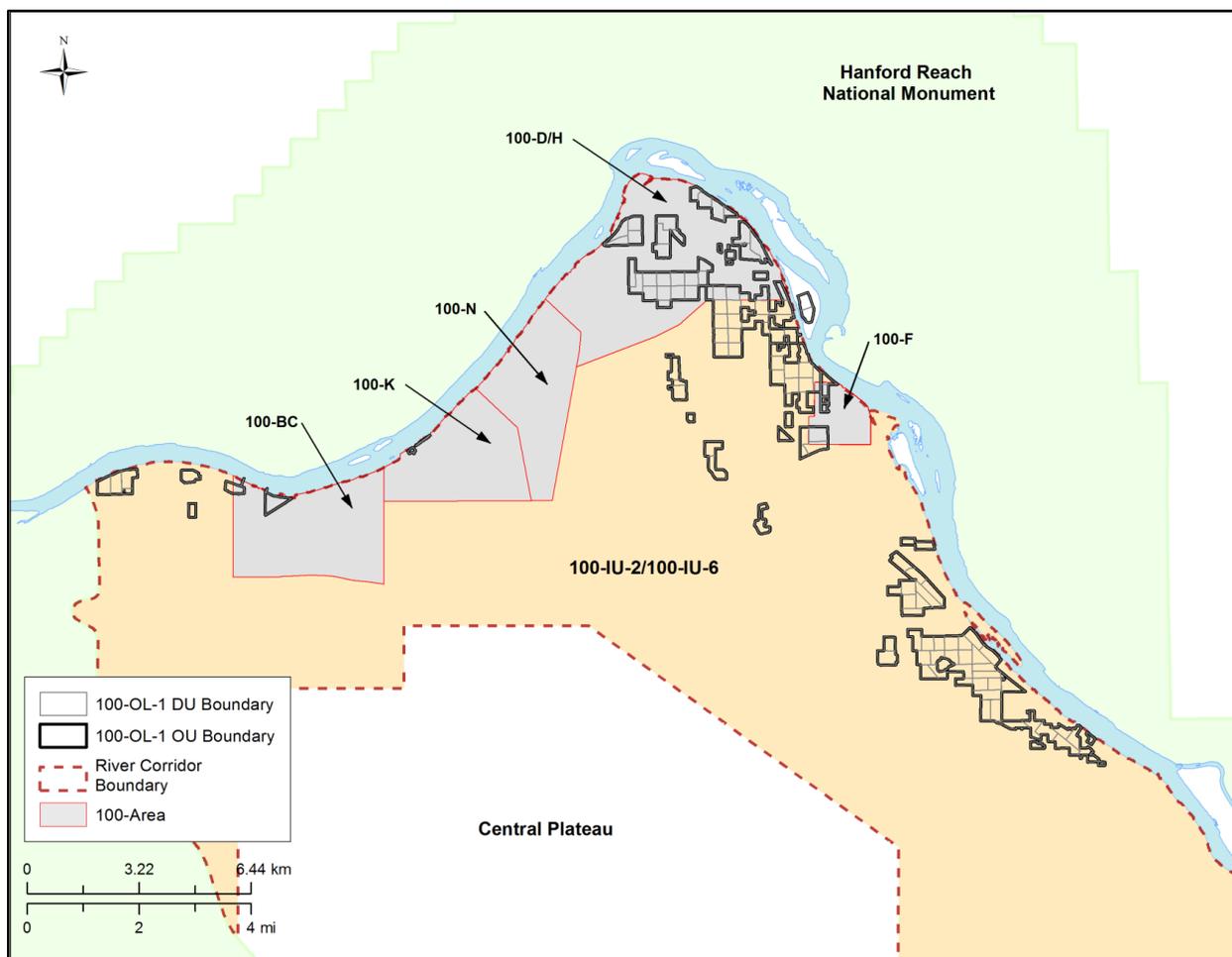


Figure 1. The 100-OL-1 OU and Associated Decision Units across the River Corridor of the Hanford Site.

100/300 Area UMM
Action Items List
September 19, 2019

CHPRC-1904244
ATTACHMENT 12

Open (O)/ Closed (X)	Action No.	Co.	Actionee	Project	Action Description	Status
X	185		Bill Faught		Schedule monthly 100-N status meetings to discuss RI/FS.	Meetings scheduled through the end of CY2019