

# Please distribute to the following:

## 100/300 AREA UNIT MANAGER MEETING ATTENDANCE AND DISTRIBUTION

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| French, Mark      | Mark.French@rl.doe.gov       | A6-38 | DOE   |
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| Guzzetti, Chris   | Guzzetti.Christopher@epa.gov | A3-46 | EPA   |
| Hadley, Karl A    | karl.hadley@wch-rcc.com      | H4-21 | WCH   |

### NOTE FOR ADMIN RECORD:

#### TPA Milestones

M-015-79  
M-016-00C  
M-016-143  
M-016-173  
M-016-175  
M-016-176  
M-016-177  
M-016-178  
M-016-181  
M-016-186  
M-093-27  
M-093-28

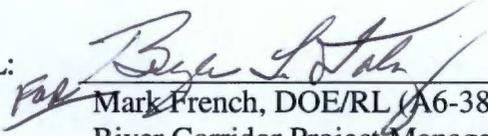
#### Operable Units

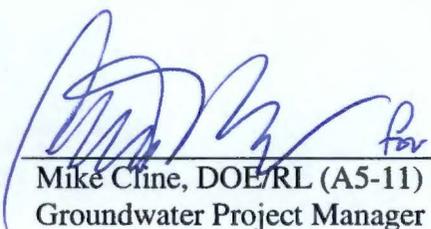
100-BC-1  
100-BC-2  
100-BC-5  
100-FR-3  
100-HR-3  
100-IU-2  
100-IU-6  
100-KR-4  
100-NR-2  
300-FF-5

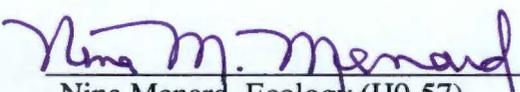


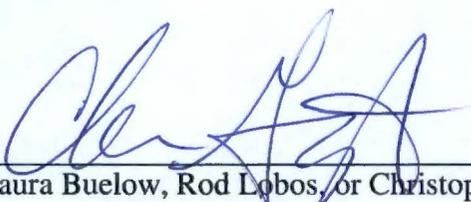
100/300 AREA UNIT MANAGERS MEETING  
APPROVAL OF MEETING MINUTES

December 10, 2015

APPROVAL:  Date 1/14/16  
Mark French, DOE/RL (A6-38)  
River Corridor Project Manager

APPROVAL:  Date 1/14/16  
Mike Cline, DOE/RL (A5-11)  
Groundwater Project Manager

APPROVAL:  Date 1/14/16  
Nina Menard, Ecology (H0-57)  
Environmental Restoration Project  
Manager

APPROVAL:  Date <sup>CR</sup> 1/14/16  
Laura Buelow, Rod Lobos, or Christopher  
Guzzetti, EPA (B1-46)  
100 Area Project Manager

## 100 & 300 AREA UNIT MANAGER MEETING MINUTES

**Groundwater and Source Operable Units; Facility Deactivation, Decontamination, Decommission, and Demolition (D4); Interim Safe Storage (ISS); Field Remediation (FR); Mission Completion; and 100-K Sludge Treatment Project and 100-K Facility Demolition and Soil Remediation Projects**

**December 10, 2015**

### **ADMINISTRATIVE**

- **Next Unit Manager Meeting (UMM)** – The next meeting will be held January 14, 2016, at the Washington Closure Hanford (WCH) Office Building, 2620 Fermi Avenue, Room C209.
- **Attendees/Delegations** – Attachment A is the list of attendees. Representatives from each agency were present to conduct the business of the UMM.
- **Approval of Minutes** – The November 12, 2015, meeting minutes were approved by the U.S. Environmental Protection Agency (EPA), Washington State Department of Ecology (Ecology), and U.S. Department of Energy, Richland Operations Office (RL).
- **Action Item Status** – The status of action items was reviewed and updates were provided (see Attachment B).
- **Agenda** – Attachment C is the Regular Session meeting agenda.

### **EXECUTIVE SESSION (Tri-Parties Only)**

An Executive Session was not held by RL, EPA, and Ecology prior to the December 10, 2015, UMM.

### **100-K AREA (GROUNDWATER, SOILS, D4/ISS)**

Attachment 1 provides status and information for groundwater. Attachment 2 provides a status of the 100-K Sludge Treatment Project and the 100-K Facility Demolition and Soil Remediation projects. No issues were identified and no agreements or action items were documented.

### **100-B/C AREA (GROUNDWATER, SOILS, D4/ISS)**

Attachment 1 provides status and information for groundwater. Attachment 3 provides status and information for Washington Closure Hanford (WCH) Closure Operations activities at the 100 areas (B/C, D, H, and N), 618-10, and the 300 Area. Attachment 4 provides the Field Remediation schedule for 100-B, 100-D, 100-H, 100-N, and 100-IU-2/6. No issues were identified and no agreements or action items were documented.

### **100-N AREA (GROUNDWATER, SOILS, D4/ISS)**

Attachment 1 provides status and information for groundwater. Attachment 3 provides status and information for WCH Closure Operations activities at the 100 areas (B/C, D, H, and N), 618-10, and the 300 Area. Attachment 4 provides the Field Remediation schedule for 100-B, 100-D, 100-H, 100-N, and 100-IU-2/6. No issues were identified and no agreements or action items were documented.

### **100-D & 100-H AREAS (GROUNDWATER, SOILS, D4/ISS)**

Attachment 1 provides status and information for groundwater. Attachment 3 provides status and information for WCH Closure Operations activities at the 100 areas (B/C, D, H, and N), 618-10, and the 300 Area. Attachment 4 provides the Field Remediation schedule for 100-B, 100-D, 100-H, 100-N, and 100-IU-2/6. No issues were identified and no agreements or action items were documented.

### **100-F & 100-IU-2/100-IU-6 AREAS (GROUNDWATER, SOILS, D4/ISS)**

Attachment 1 provides status and information for groundwater. Attachment 3 provides status and information for WCH Closure Operations activities at the 100 areas (B/C, D, H, and N), 618-10, and the 300 Area. Attachment 4 provides the Field Remediation schedule for 100-B, 100-D, 100-H, 100-N, and 100-IU-2/6. No issues were identified and no agreements or action items were documented.

### **300 AREA – 618-10/11 (GROUNDWATER, SOILS)**

Attachment 3 provides status and information for WCH Closure Operations activities at the 100 areas (B/C, D, H, and N), 618-10, and the 300 Area. No issues were identified and no agreements or action items were documented.

### **300 AREA - GENERAL (GROUNDWATER, SOILS, D4/ISS)**

Attachment 1 provides status and information for groundwater. Attachment 3 provides the 100 areas (B/C, D, H, and N), 618-10, and the 300 Area. No issues were identified and no action items were documented.

Agreement 1: Attachment 5 provides an EPA and DOE approved Tri-Party Agreement change notice TPA-CN-700 to update the *Remedial Design Report/Remedial Action Work Plan Addendum for the 300 Area Groundwater*, DOE/RL-2014-13-ADD2, Revision 0, by replacing Figure 7-1, Schedule for Groundwater Implementation, with an updated schedule.

### **ORCHARD LANDS**

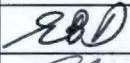
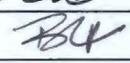
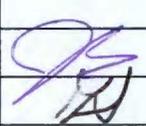
A meeting is scheduled for next week to finalize the work plan. No issues were identified and no agreements or action items were documented.

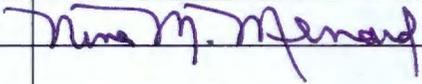
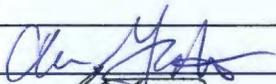
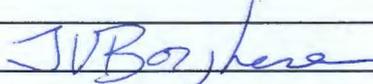
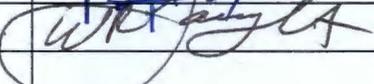
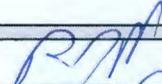
# Attachment A

100/300 AREA UNIT MANAGER MEETING

ATTENDANCE

December 10, 2015

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# Attachment B

100/300 Area UMM  
Action List  
December 10, 2015

| Open (O)/<br>Closed (X) | Action<br>No. | Co. | Actionee | Project | Action Description | Status |
|-------------------------|---------------|-----|----------|---------|--------------------|--------|
|                         |               |     |          |         |                    |        |

# Attachment C

100/300 Area Unit Manager Meeting  
December 10, 2015  
Washington Closure Hanford Building  
2620 Fermi Avenue, Richland, WA 99354  
Room C209; 2:00 p.m.

Administrative:

- Approval and signing of previous meeting minutes
- Update to Action Items List
- Next UMM (1/14/2016, Room C209)

Open Session: Project Area Updates - Groundwater, Field Remediation, D4/ISS:

- 100-K Area (Steve Balone, Roger Quintero)
- 100-B/C Area (Greg Sinton, Tom Post)
- 100-N Area (Greg Sinton, John Neath)
- 100-D & 100-H Areas (Steve Balone, John Neath)
- 100-F & 100-IU-2/6 Areas (Greg Sinton, John Neath)
- 300 Area - 618-10/11 exclusively (Jamie Zeisloft)
- 300 Area (John Sands/Rudy Guercia)
- Orchard Lands (John Sands)

Special Topics/Other

Adjourn

# Attachment 1

## **Unit Managers Meeting – December 2015 (November Data)**

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### **Summary Hanford Sampling Program**

Hanford's overall Site groundwater monitoring program managed by CHPRC (River Corridor and Central Plateau) coordinates collection of groundwater samples from wells and aquifer tubes, as well as surface water samples from springs. Sample trips are scheduled by target month and prioritized based on project needs. Target sample dates (months) are chosen to minimize the number of sample trips by temporally aligning requests from multiple activities for a single location into a single trip where practical.

For Fiscal Year 2016 Hanford's overall Site groundwater monitoring program has 2,852 sample trips scheduled for collection. We have successfully completed 600 of 846 sample trips scheduled for October 2015 through November 2015.

### **Sample Trip Status by Month Scheduled and Month Collected**

Specifically for November 2015 (FY 2016, month two) the program successfully completed 249 of the 349 groundwater sampling trips scheduled for November 2015, and 351 of the 497 trips scheduled for October 2015. Additionally 89 trips scheduled for Fiscal year 2015 were collected in November which brings the total number of Fiscal Year 2015 trips to be collected to 3,089 of 3,120 scheduled. Eighty of the 89 remaining sample trips are 300 Area special study sample trips.

The specific wells, aquifer tubes, and springs sampled in the river corridor areas during November 2015 are listed in Table 1.

### **Awaiting Sample Trips**

Of the Fiscal Year 2015 and 2016 sample trips scheduled for November 2015 and prior, there are 279 that are awaiting collection. Of these, 3 require maintenance, 7 have access restrictions, 8 are being evaluated for cancellation or rescheduling, 138 are associated with special studies, 1 is awaiting drilling, and 122 are awaiting collection at the month end.

Table 2 presents the sample trips for only the river corridor that were not successfully completed in November. Sample trips in Table 2 are grouped by fiscal month scheduled and groundwater interest area. This table clearly shows that the number of awaiting well trips decreases with time from the schedule date. Reasons for sample trips to be awaiting include, but are not limited to, issues such as well maintenance, weather conditions, access restrictions, and resource limitations.

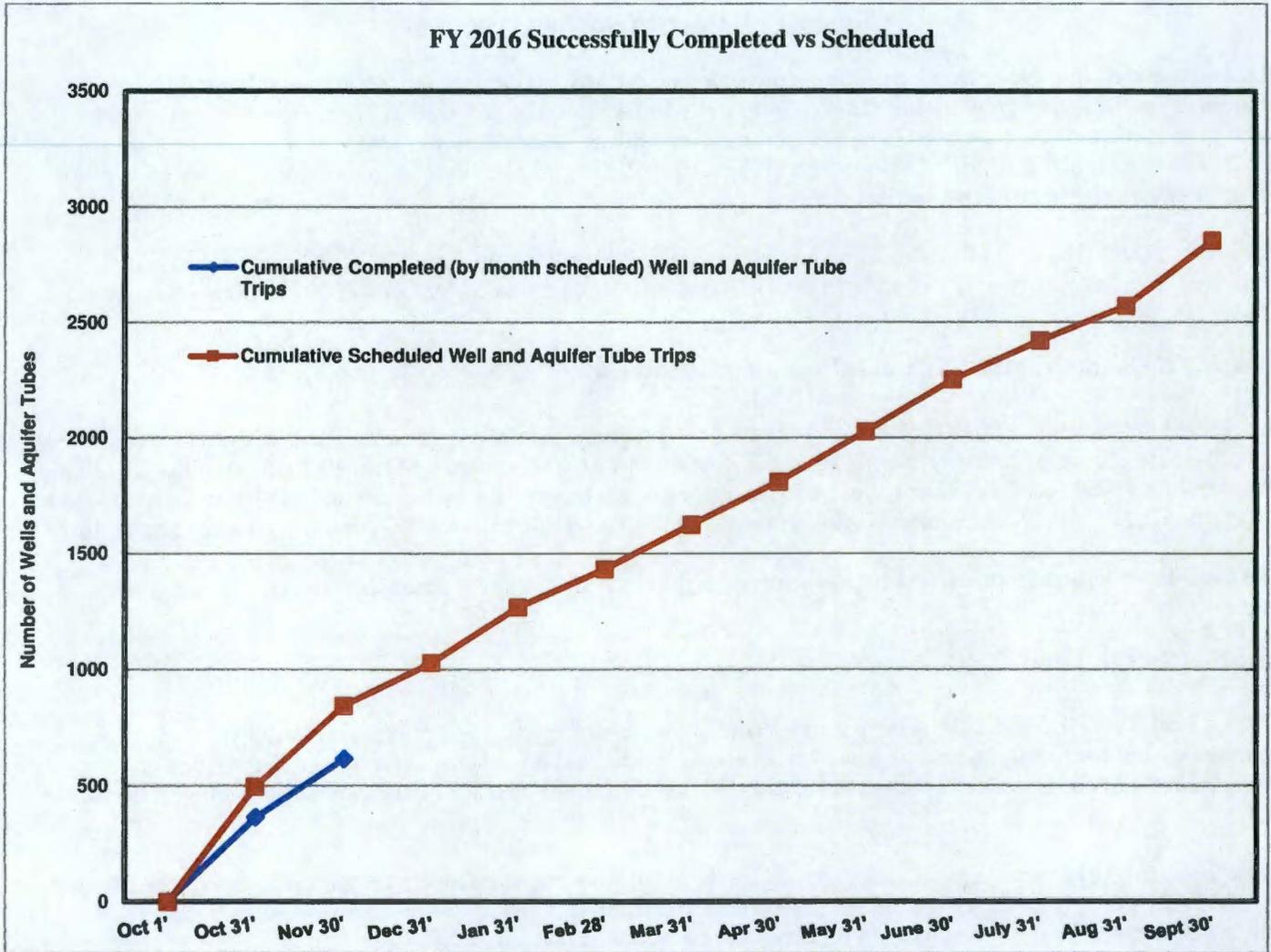
### **Upcoming Sample Trips**

Sample trips for the river corridor only, scheduled for collection in December 2015 (and not collected before the target sample month) are listed in Table 3.

### **Data Access**

The sampling results are available in HEIS and can be accessed from the Environmental Dashboard Application which can be accessed from the HLAN at <https://ehs.chprc.rl.gov/eda/> or from the internet at <https://ehs.hanford.gov/eda/>.

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**Operable Unit Specifics**

**100-KR-4 Groundwater Operable Unit (Mike Drewett/Chuck Miller/Jason Hulstrom)**

- CERCLA Process Implementation:
  - ✓ The RI/FS and PP documents are on hold pending 100-K East Reactor waste site characterization and modeling (wells 116-KE-3 and UPR-100-K-1). PNNL conducting leach testing with the final report scheduled for completion mid-January 2016.
  - ✓ Monitoring Plan: The Draft A documents (Interim O&M Plan, Interim RD/RAWP, and Interim Groundwater Monitoring Plans) are being revised to incorporate applicable 100-HR-3 comments and the pH value engineering evaluation. These documents will be issued in December 2015.
- Remedial Actions & System Modifications:
  - ✓ The volume of groundwater treated and mass of Cr(VI) removed for the 100-K P&T systems (**KX, KR-4, and KW**) during November 2015 are:
    - Treated 63.3 million gallons (61.5 October).
    - Removal 3.3 kg of hexavalent chromium (3.5 October)
  - ✓ The current influent and effluent Cr(VI) concentrations (measure once weekly) for the three K systems (measured November 30, 2015) are:
    - 100-KR4 – Influent = 9 µg/L; Effluent = less than detection
    - 100-KW – Influent = 14 µg/L; Effluent = less than detection
    - 100-KX – Influent = 19 µg/L; Effluent = 2 µg/L
  - ✓ FY 2016 P&T performance to date:

| <u>P&amp;T System</u>    | <u>Treated (mgal)</u> | <u>Removed (kg)</u> |
|--------------------------|-----------------------|---------------------|
| KR-4                     | 27.0                  | 0.7                 |
| KW                       | 28.9                  | 1.9                 |
| KX                       | 68.9                  | 4.3                 |
| <b>100-KR-4 OU TOTAL</b> | <b>124.8</b>          | <b>6.9</b>          |

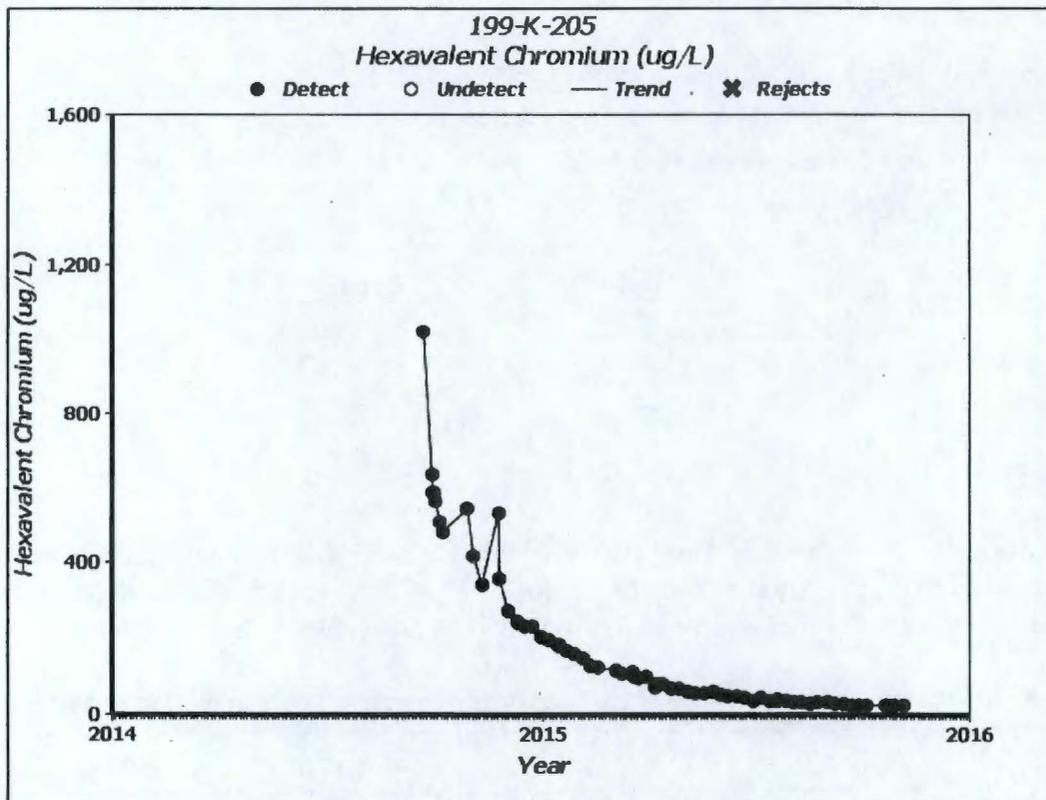
- ✓ For November 2015, all three pump and treat systems operated at 100% (fully on-line) and the 30-day average pumping rates were 317 gpm, 329 gpm, and 820 gpm for the KR-4, KW, and KX systems, respectively. A summary of the number of extraction and injection wells in the three systems is shown in Table K-1.

**Table K-1. Summary of the Number of Extraction and Injection Wells in the Three Systems**

| Wells                      | KR4  |      | KX   |      | KW   |      | TOTAL |         |
|----------------------------|------|------|------|------|------|------|-------|---------|
|                            | 2014 | 2015 | 2014 | 2015 | 2014 | 2015 | 2015  | Current |
| Number of extraction wells | 12   | 12   | 18   | 19   | 11   | 11   | 42    | 42      |
| Number of injection wells  | 5    | 5    | 9    | 9    | 4    | 4    | 18    | 18      |

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- ✓ All KR-4 system extraction wells and injection wells are currently in service. The KR-4 hexavalent chromium concentration in extracted water continues to be below site cleanup requirements. The system remains in service to provide hydraulic capture of groundwater inland of the river.
- ✓ At the KW system Wells 199-K-132, 199-K-139, and 199-K-166 remain off-line to allow increased pumping along the central axis of the plume. Extraction Well 199-K-205, located at the former 183-KW Head House vicinity, continues operating at an extraction rate of 120 gpm and provides the highest concentration of hexavalent chromium; however, concentrations in this well are exhibiting a consistent decreasing trend.
- ✓ The current concentration in Well 199-K-205 is 23 µg/L. The concentration time series for Well 199-K-205 since the time it was placed in extraction service is shown in Figure K-1
- ✓ All injection wells are in service. Most of the monitoring and extraction wells in the vicinity of KW pump and treat system have exhibited hexavalent chromium concentrations below the interim remedial action target of 20 µg/L during 2015.
- ✓ Figure K-2 illustrates the time series of hexavalent chromium concentrations at other selected wells in the KW vicinity compared to the 20 µg/L target concentration.
- ✓ Figure K-3 shows the location of the wells indicated in Figure K-2.



**Figure K-1. Well 199-K-205 Hexavalent Chromium Concentration Time Series.**

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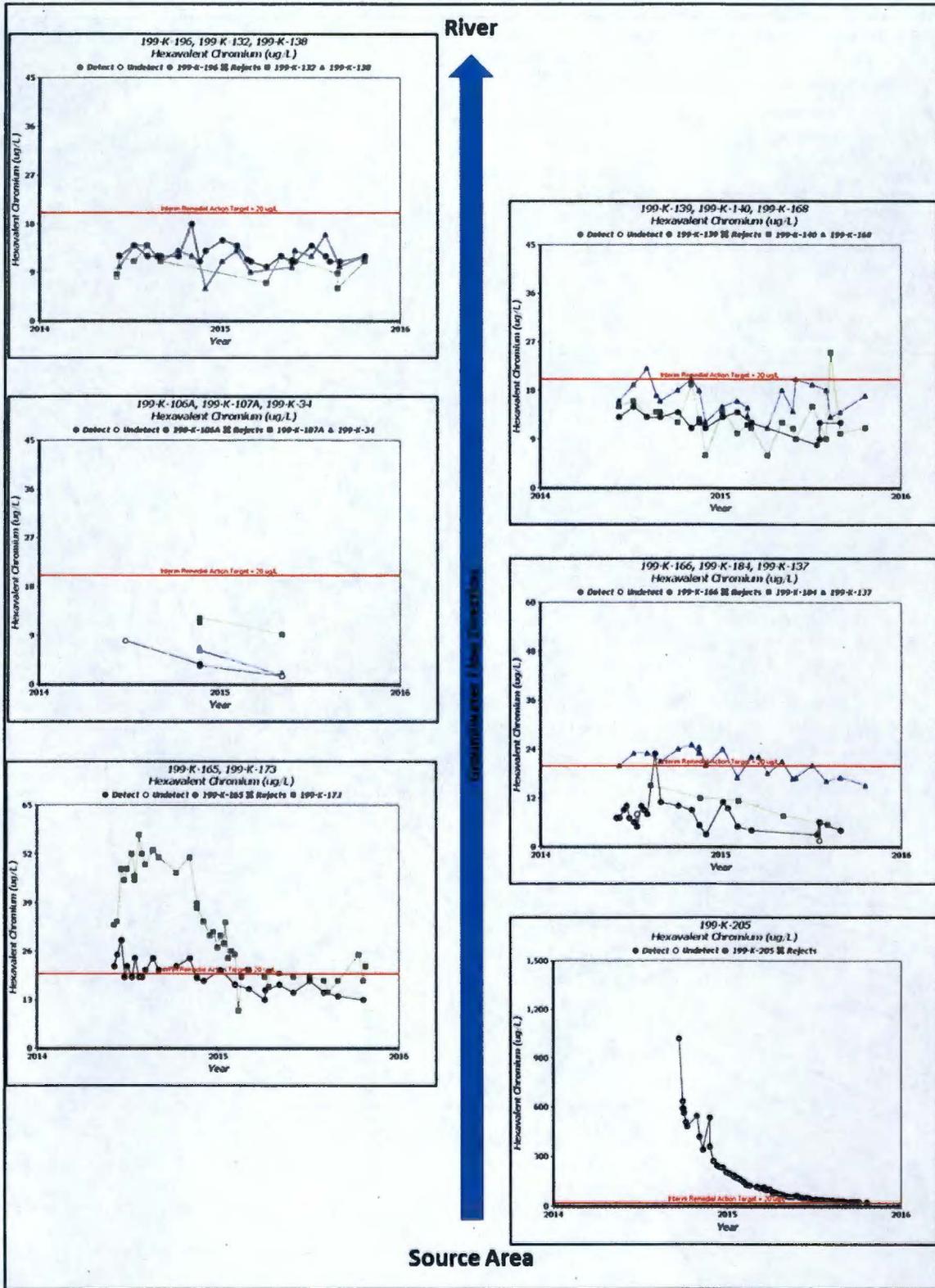


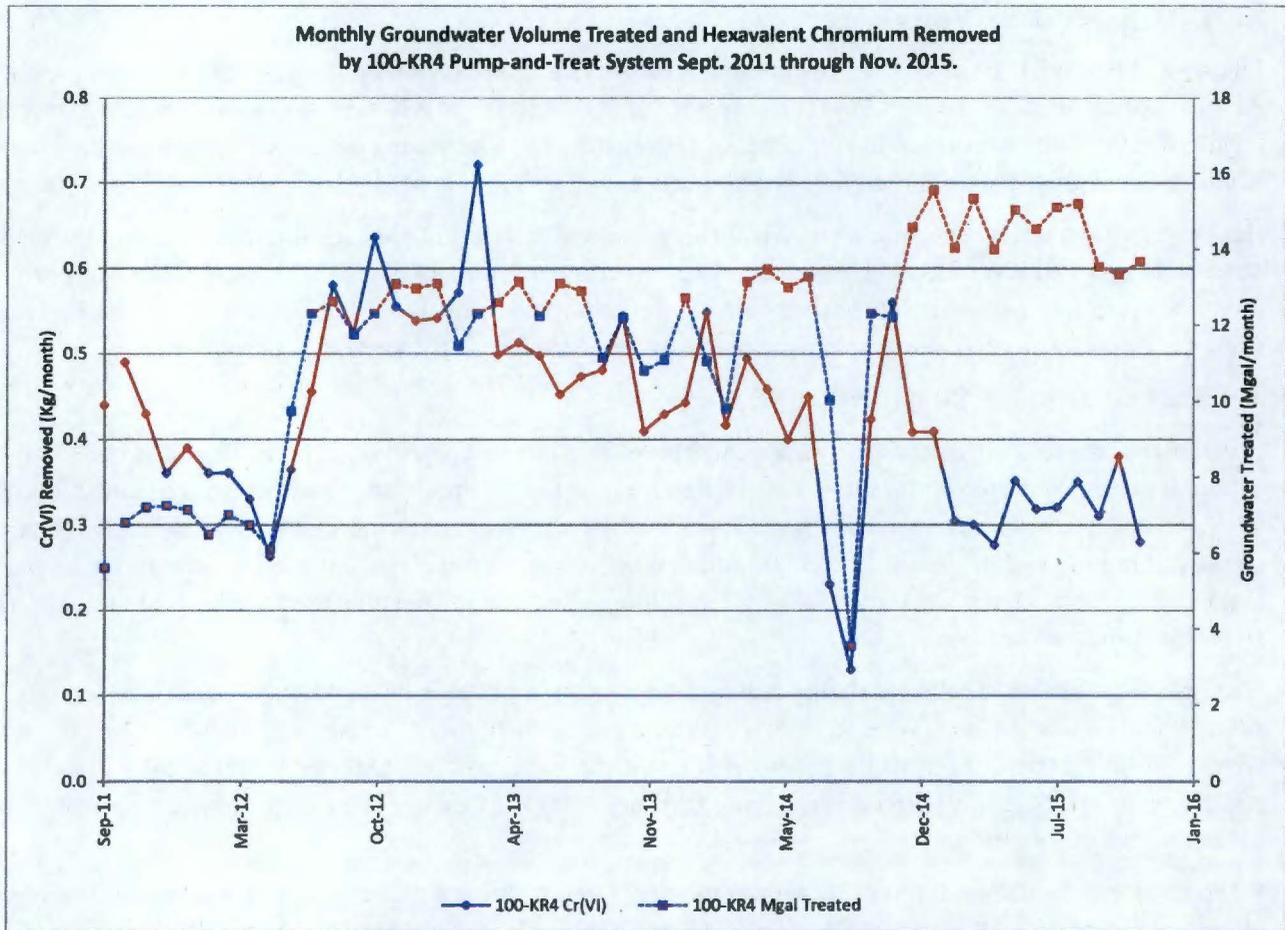
Figure K-2. Comparison of Hexavalent Chromium Concentration in Groundwater Wells along Flow Path from KW Head House to Columbia River during 2014 and 2015.



**100/300 Areas Unit Managers Meeting  
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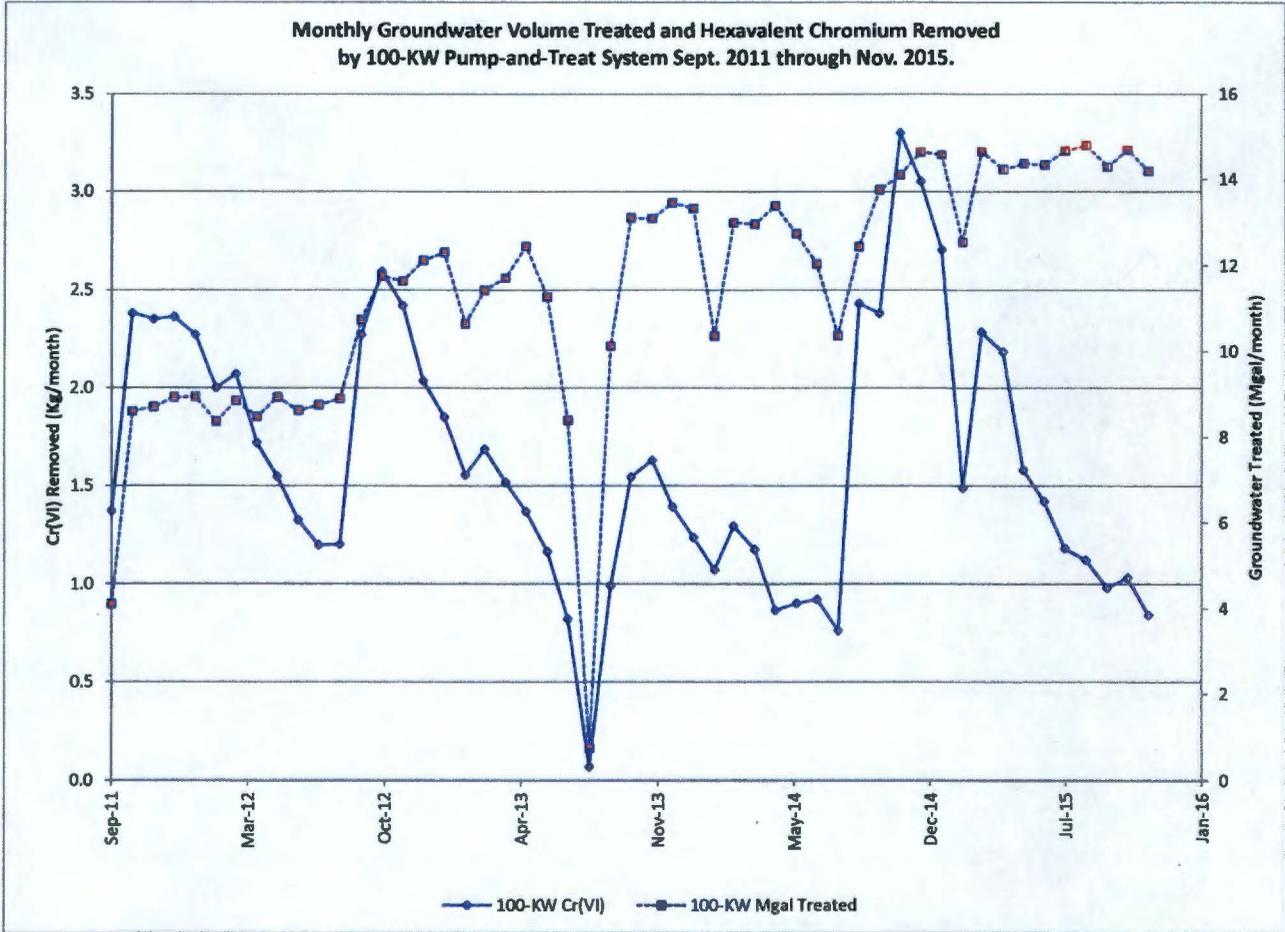
- ✓ All KX system extraction wells are in service.
- ✓ Figures K-4 through K-6 present the groundwater treatment rate and hexavalent chromium removal information. As indicated in the curves below, Cr(VI) mass removal at KR-4, KW, and KX have generally decreased in recent months due to continued optimization of remedial performance (e.g., increasing the overall system pumping rates, while extracted groundwater concentrations decrease).
- ✓ Hexavalent chromium concentration at 199-K-205 has declined to 22 µg/L, although this still represents the highest concentration at 100-KW. This single well continues to account for most of the Cr(VI) entering the KW system due to pumping rate and persistent elevated chromium concentration. Pumping is being currently focused on wells along the axis of the Cr(VI) plume where peripheral wells are exhibiting reduced Cr(VI) concentrations.
- **Characterization Activities in Vicinity of 105-KE Reactor**
  - ✓ Evaluation of the soil and groundwater analytical data collected from Well 199-K-222 (the second of two subsurface characterization borings near 105-KE Reactor) continued. Preliminary observations and initial laboratory analyses indicated that radiological contamination is present across the vadose zone thickness. Notably elevated concentrations of cesium-137 and strontium-90 were observed at elevations corresponding with the bottom of the foundation of the former 105-KE Fuel Storage Basin and also within the periodically-rewettered zone above the current water table.
  - ✓ A sample of groundwater collected during drilling from a location just beneath the water table exhibited elevated strontium-90, carbon-14, and low level detects of tritium and technetium-99. These measurements are consistent with the historical release of contaminated water from the fuel storage basin. Elevated strontium-90, carbon-14, and tritium have historically been observed downgradient of 105-KE Reactor, along with periodic detections of low concentrations of technetium-99.
  - ✓ When complete, the results of this characterization activity will be documented in a Field Investigation Report and ultimately incorporated into the 100-KR-4 RI/FS report. The newly-completed Well 199-K-222, along with recently-completed Well 199-K-221 (located adjacent to the former 116-KE-3 Crib and Reverse Well) will be placed in monitoring service.
- **Soil Remediation in Vicinity of 183-KE Head House**
  - ✓ Shallow soil remediation at selected waste sites in the vicinity of 183-KE Head House is underway. These activities include removal of foundation works and shallow soil excavation (i.e., to about 10 feet below grade). Existing groundwater monitoring Wells 199-K-36 and 199-K-188 are remaining in service during the soil excavation.

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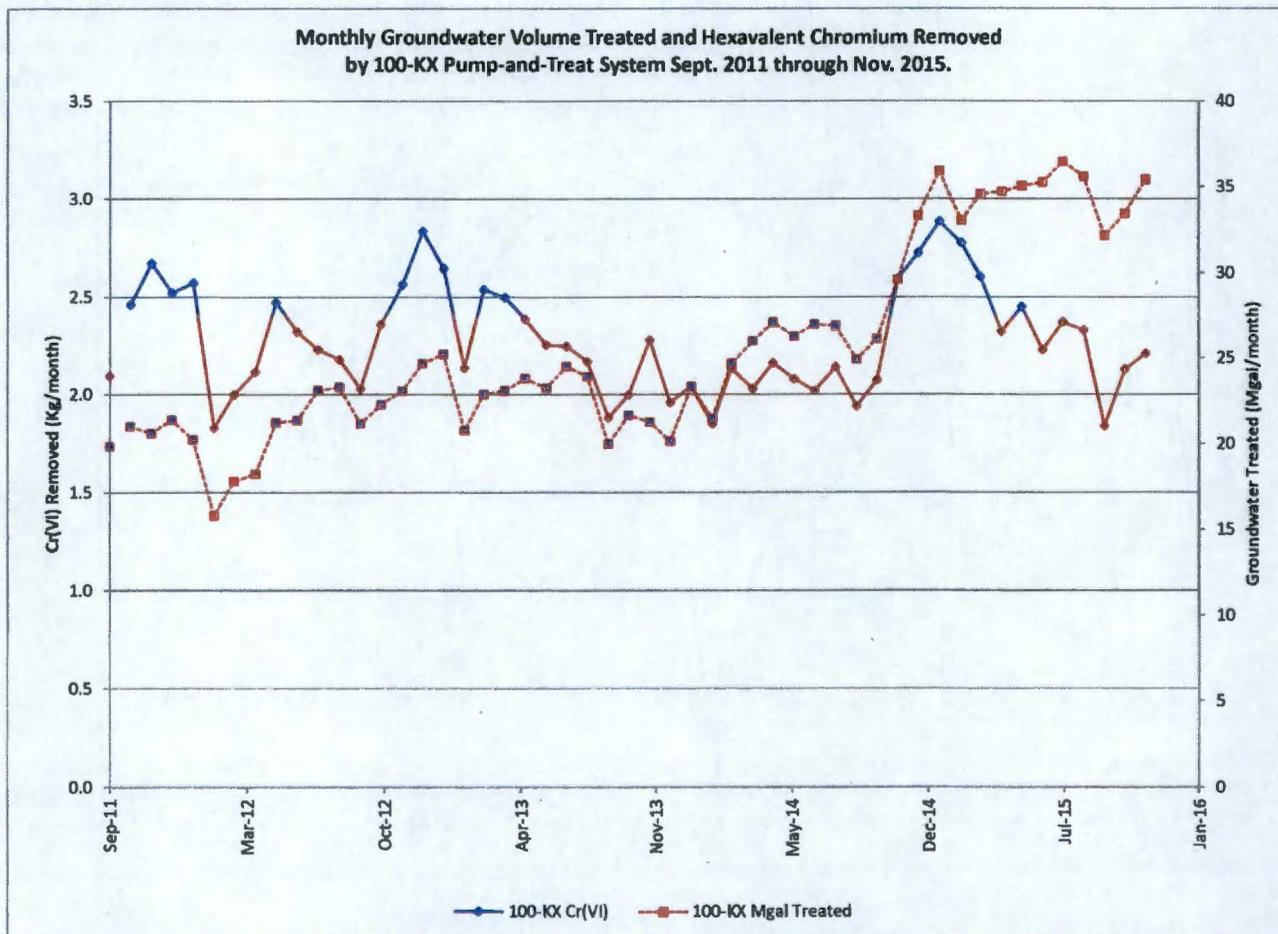
**Figure K-4. Monthly Cr(VI) Removed and Groundwater Volume Treated by 100-KR-4 Pump-and-Treat, September 2011 through November 2015.**

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**Figure K-5. Monthly Cr(VI) Removed and Groundwater Volume Treated by 100-KW Pump-and-Treat, September 2011 through November 2015.**

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**Figure K-6. Monthly Cr(VI) removed and groundwater volume treated by 100-KX pump-and-treat, September 2011 through November 2015.**

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**100-BC-5 Groundwater Operable Unit – Robert Evans/Mary Hartman**

- Milestone M-015-79: Due 12/15/2016 for the CERCLA RI/FS Report and Proposed Plan for the 100-BC-1, 100-BC-2 and 100-BC-5 Operable Units
- CERCLA Process Implementation:
  - ✓ Draft A of the groundwater sampling and analysis plan that will cover the 3-to-5 year period between completion of the RI and groundwater remedy implementation has completed RL review. The plan was submitted to the regulatory agencies on October 1, 2015.
  - ✓ The Project Team held a storyboard workshop to discuss themes for the RI/FS Report.
- Monitoring & Reporting:
  - ✓ Additional analytical results from the monitoring wells and HSPs sampled in October 2015 were received. Results were within previously established ranges.
  - ✓ A field crew removed data loggers from 4 hyporheic sampling points in early December. <sup>12/15/15</sup> The data loggers have been recording water level, temperature, and specific conductance at hourly intervals.

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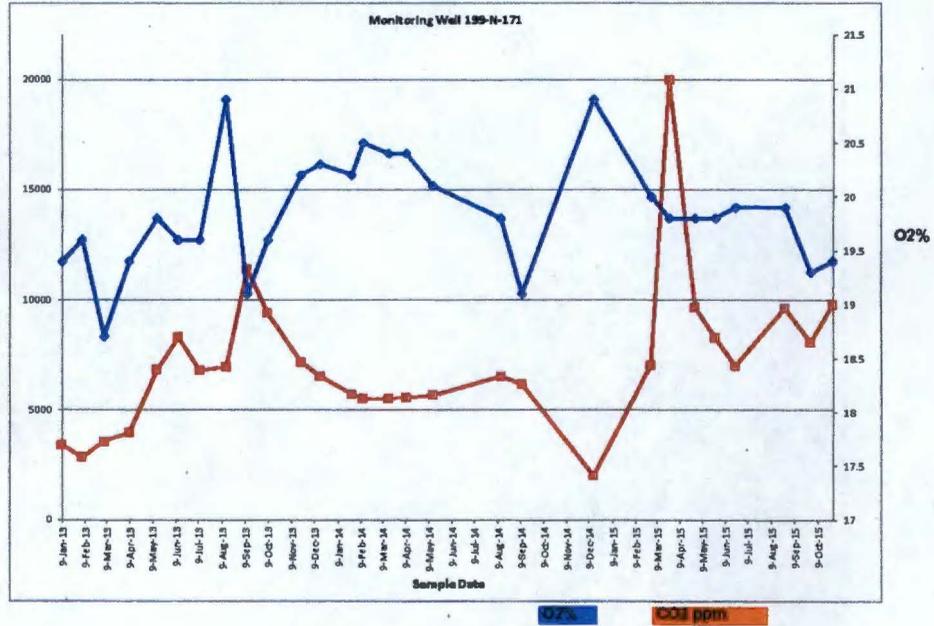
**100-NR-2 Groundwater Operable Unit – Bill Faught/Virginia Rohay/Art Lee**

- CERCLA Process Implementation
  - ✓ Revised Chapter 6 red-lines and the associated RCR form (incorporating the new waste sites) were provided to Ecology for review on February 9, 2015. Comments on this revised text arrived from Ecology on May 21, 2015. Responses continue to be shared.
  - ✓ Revised Chapter 7 red-lines and the associated RCR form were completed and sent to Ecology February 26, 2015. We anticipate resolving the single remaining comment within the extension period (December 2015).
  - ✓ The numerical modeling performed for Draft A is being revisited.
  - ✓ The project extension for comment response will expire December 31, 2015.
- Remedial Actions
  - Bioventing** –
    - ✓ Figure NR-1 provides a chart showing bioventing well gas sample results for monitoring wells 199-N-171 and 199-N-169. Monthly vapor sample measurements were completed.
  - Product Recovery** –
    - ✓ The revised “smart sponges” configuration will be replaced at the end of December. The assembly was last changed out on September 29, 2015.
  - Aquifer Tubes** –
    - ✓ Tubes C7934, C7935, and C7936 are located adjacent to one another (Figure NR-2), with screens at depths of **14.41 ft. (C7934), 18.75 ft. (C7935), and 29.19 ft. (C7936)**. All three aquifer tubes were sampled on October 26, 2015 and November 19, 2015. Tritium and strontium-90 concentration trends are shown in Figures NR-4 and NR-5, respectively.
    - ✓ The RCRA monitoring wells scheduled for September 2015 were sampled on September 14 through 17, 2015, and September 28, 2015. One RCRA monitoring well (199-N-2) had electrical issues with the pump and could not be sampled. The well will be sampled after the issue has been corrected. The next sampling event is scheduled for March 2016.

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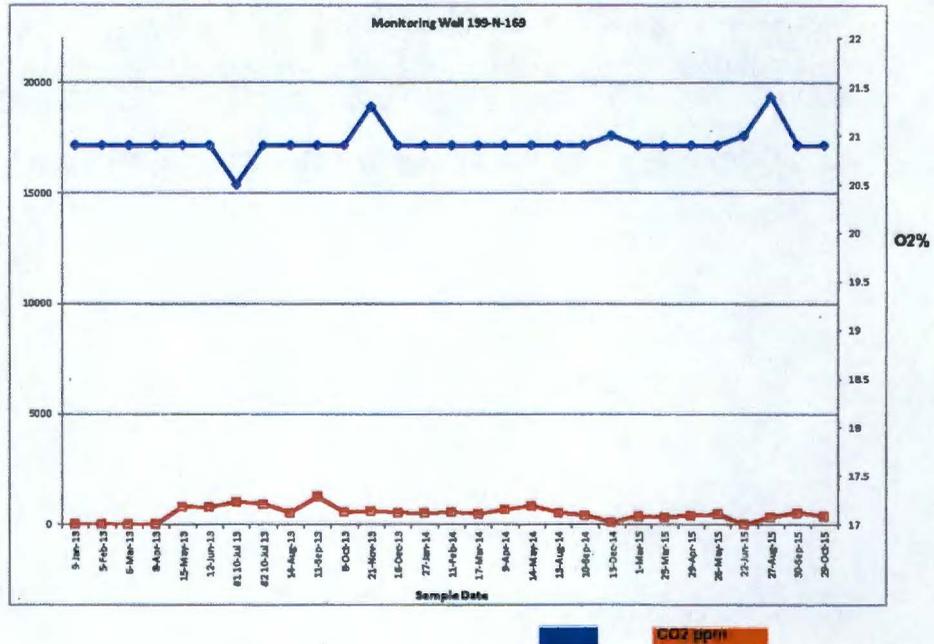
**Well 199-N-171**

| Date      | O2%  | CO2 ppm |
|-----------|------|---------|
| 9-Jan-13  | 19.4 | 3400    |
| 5-Feb-13  | 19.6 | 2840    |
| 6-Mar-13  | 18.7 | 3570    |
| 8-Apr-13  | 19.4 | 3980    |
| 15-May-13 | 19.8 | 6820    |
| 12-Jun-13 | 19.6 | 8290    |
| 10-Jul-13 | 19.6 | 6800    |
| 14-Aug-13 | 20.9 | 6940    |
| 11-Sep-13 | 19.1 | 11400   |
| 8-Oct-13  | 19.6 | 9380    |
| 21-Nov-13 | 20.2 | 7160    |
| 16-Dec-13 | 20.3 | 8520    |
| 27-Jan-14 | 20.2 | 5720    |
| 11-Feb-14 | 20.5 | 5520    |
| 17-Mar-14 | 20.4 | 5520    |
| 9-Apr-14  | 20.4 | 5580    |
| 14-May-14 | 20.1 | 5670    |
| 13-Aug-14 | 19.8 | 6520    |
| 10-Sep-14 | 19.1 | 6180    |
| 15-Dec-14 | 20.9 | 2000    |
| 1-Mar-15  | 20   | 7020    |
| 25-Mar-15 | 19.8 | 20000   |
| 29-Apr-15 | 19.8 | 8650    |
| 26-May-15 | 19.8 | 8280    |
| 22-Jun-15 | 19.9 | 7000    |
| 27-Aug-15 | 19.9 | 9620    |
| 30-Sep-15 | 19.3 | 8070    |
| 29-Oct-15 | 19.4 | 9770    |



**Well 199-N-169**

| Date         | O2%  | CO2 ppm |
|--------------|------|---------|
| 9-Jan-13     | 20.9 | 0       |
| 6-Feb-13     | 20.9 | 0       |
| 6-Mar-13     | 20.9 | 0       |
| 8-Apr-13     | 20.9 | 0       |
| 16-May-13    | 20.9 | 800     |
| 12-Jun-13    | 20.9 | 760     |
| #1 10-Jul-13 | 20.5 | 1020    |
| #2 10-Jul-13 | 20.9 | 920     |
| 14-Aug-13    | 20.9 | 530     |
| 11-Sep-13    | 20.9 | 1250    |
| 8-Oct-13     | 20.9 | 550     |
| 21-Nov-13    | 21.3 | 600     |
| 16-Dec-13    | 20.9 | 530     |
| 27-Jan-14    | 20.9 | 500     |
| 11-Feb-14    | 20.9 | 550     |
| 17-Mar-14    | 20.9 | 470     |
| 9-Apr-14     | 20.9 | 660     |
| 14-May-14    | 20.9 | 840     |
| 13-Aug-14    | 20.9 | 520     |
| 10-Sep-14    | 20.9 | 410     |
| 15-Dec-14    | 21   | 100     |
| 1-Mar-15     | 20.9 | 360     |
| 25-Mar-15    | 20.9 | 325     |
| 29-Apr-15    | 20.9 | 410     |
| 26-May-15    | 20.9 | 460     |
| 22-Jun-15    | 21   | 0       |
| 27-Aug-15    | 21.4 | 330     |
| 30-Sep-15    | 20.9 | 530     |
| 29-Oct-15    | 20.9 | 360     |



**Figure NR-1. Bioventing Wells 199-N-169 and 199-N-171 Monthly Sampling Results.**

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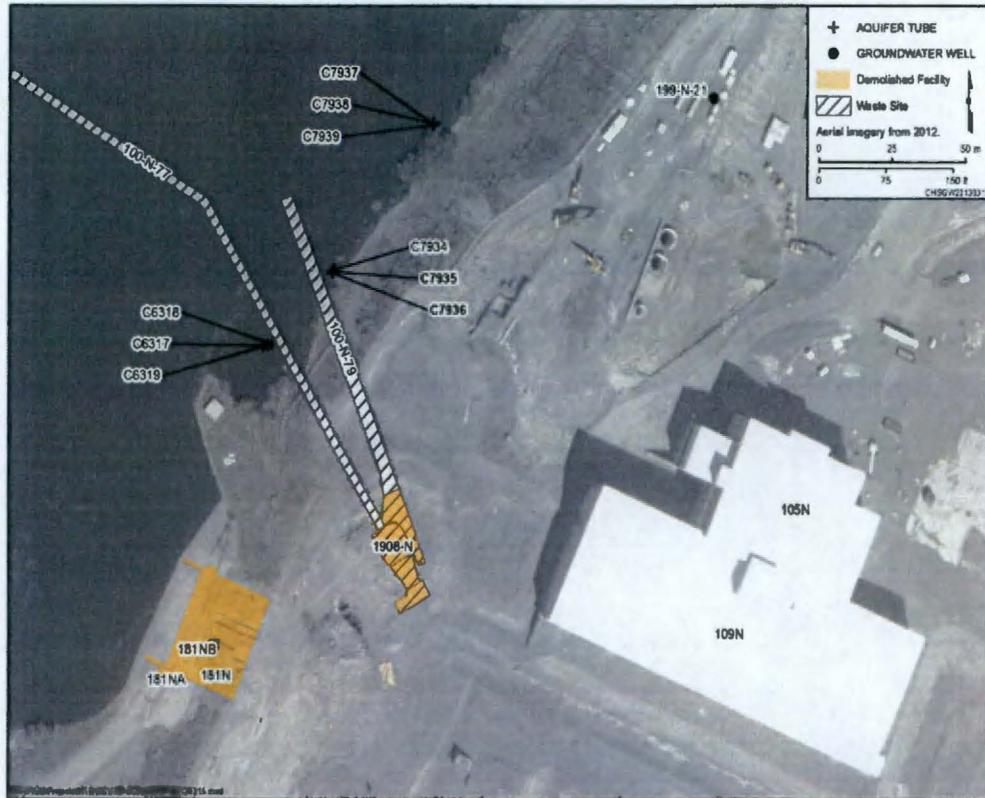


Figure NR-2. Locations of Aquifer Tubes C7934, C7935, and C7936.

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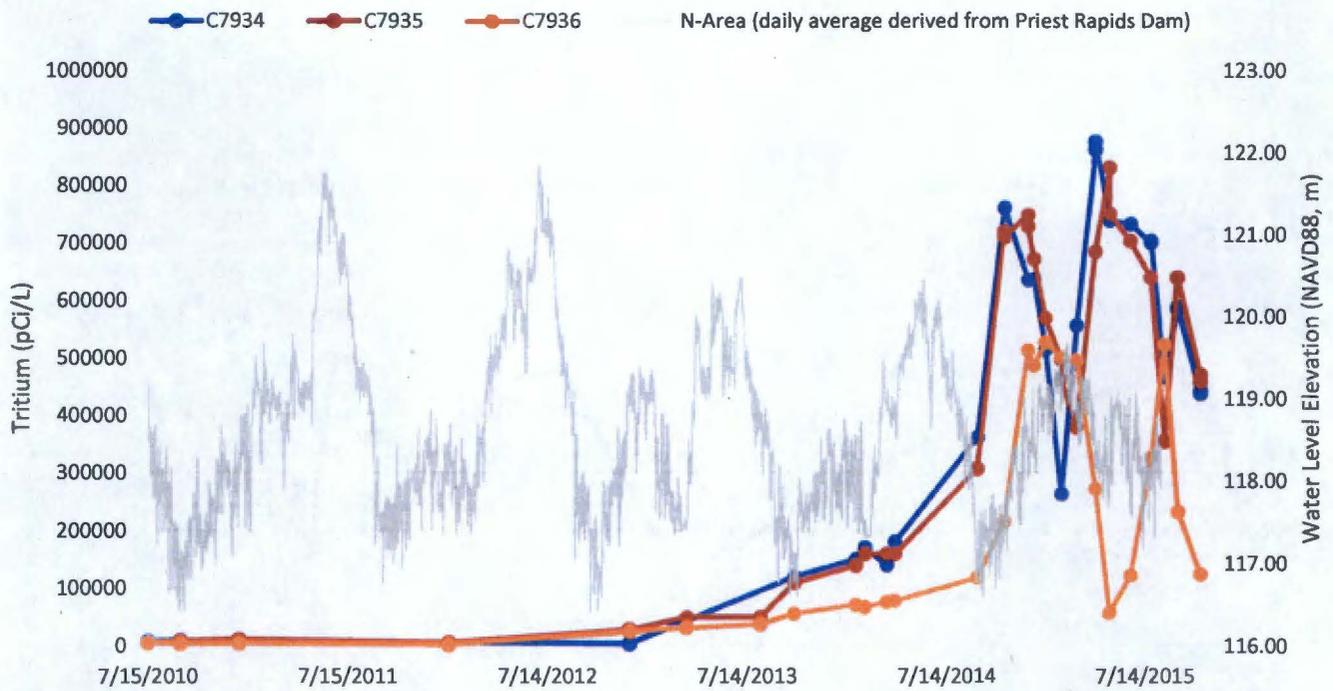
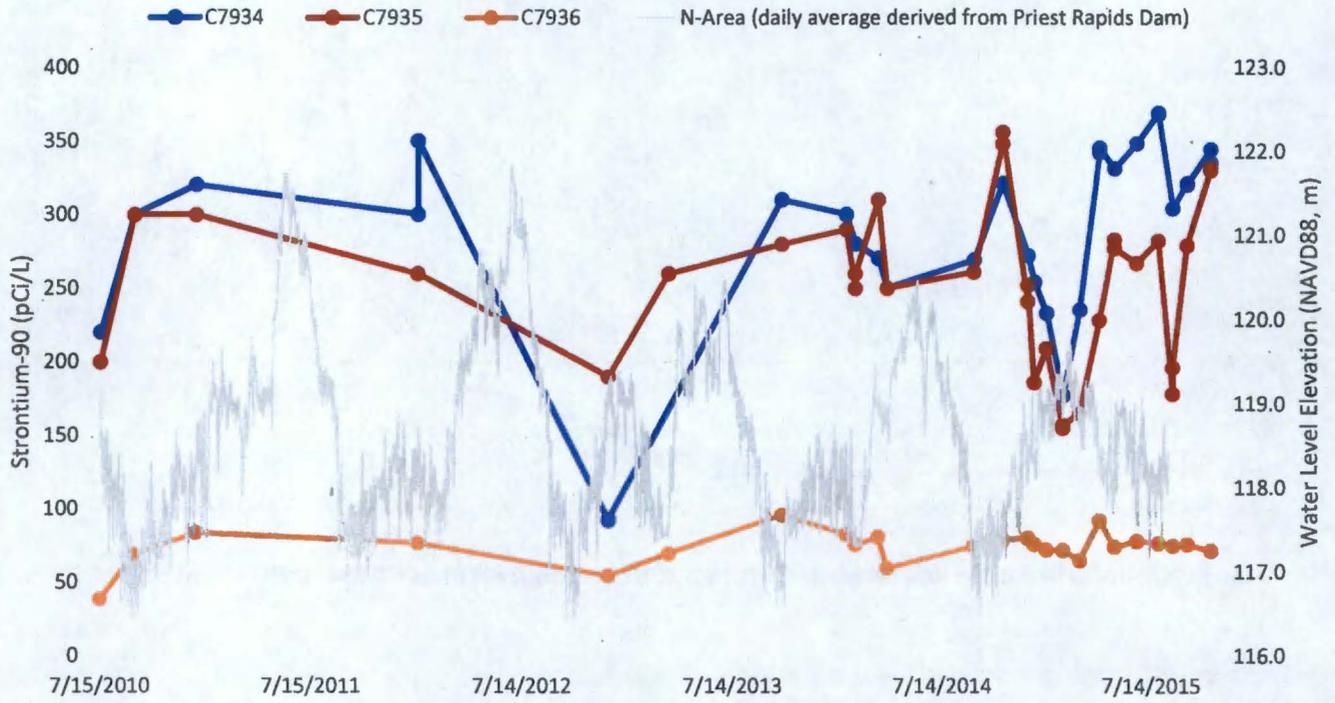


Figure NR-4. Tritium Trends through October 2015 at Aquifer Tubes C7934, C7935, and C7936.

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**Figure NR-5. Strontium-90 Trends through October 2015 at Aquifer Tubes C7934, C7935, and C7936.**

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**100-HR-3 Groundwater Operable Unit – Mike Drewett/Kris Ivarson**

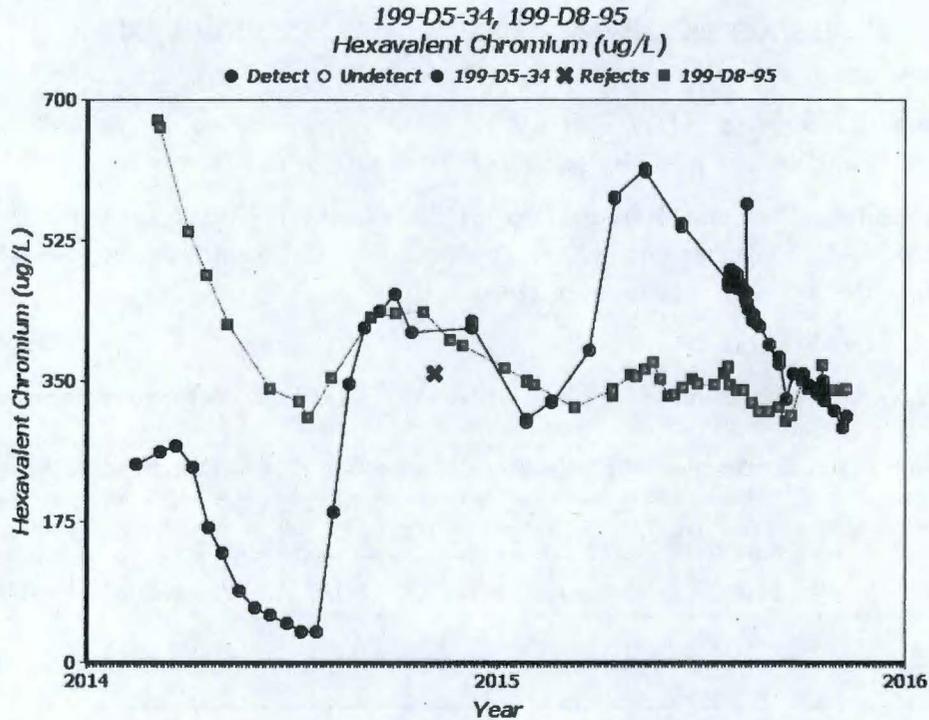
- CERCLA Process Implementation:
  - ✓ EPA legal comments were received on November 9, 2015. RL reviewing comments for required changes/updates to the PP. Working towards meeting proposed issuance of PP to public by mid-January 2016.
  - ✓ Interim RD/RAWP, Interim Monitoring Plan, and Interim O&M Plan, Draft A plans were transmitted to Ecology on September 30, 2014. All comments have been resolved or conceptual agreement reached. Working towards January 2016 submittal of Rev. 0 for all three documents.
- Remedial Actions & System Modifications
  - ✓ A summary of the number of extraction and injection wells in the DX and HX P&T systems is shown in Table H-1.

**Table H-1. Summary of the Number of Extraction and Injection Wells in the 100-HR-3 Systems**

| Wells  | DX   |      | HX   |      | Total                     |
|--|------|------|------|------|---------------------------|
|  | 2014 | 2015 | 2014 | 2015 | Current- as of 10/31/2015 |
| <b>Number of extraction wells</b>  | 44   | 46   | 31   | 34   | 80                        |
| <b>Number of injection wells</b>   | 14   | 11   | 14   | 16   | 27                        |
| <b>Notes:</b><br>DX system Well 199-D8-55 was not used for injection in 2014, but was operational as an extraction well<br>Four injection wells for DX are remain connected, but are not counted in 2015 since they are not operating. |      |      |      |      |                           |

- ✓ All FY15 well realignments are completed and operational. Realignments for FY16 are in planning stages.
- ✓ Drilling of the seven (7) WCH replacement wells is anticipated to start in early 2016, possibly as early as February.
- ✓ Well 199-D5-34 (south plume) and Well 199-D8-95 (north plume) currently have the highest levels of Cr(VI) in 100-HR-3 at 306µg/L and 340µg/L, respectively as of November 9, 2015. Concentrations in Well 199-D5-34, located in the southern portion of 100-D have been declining consistently since the connection to the P&T system was completed in July of 2015. In the northern plume area, concentrations in Well 199-D8-95 have stabilized (Figure H-1). A new extraction well is planned for this area to increase mass removal.

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**Figure H-1. Hexavalent Chromium Trends in Wells 199-D5-34 and 199-D8-95.**

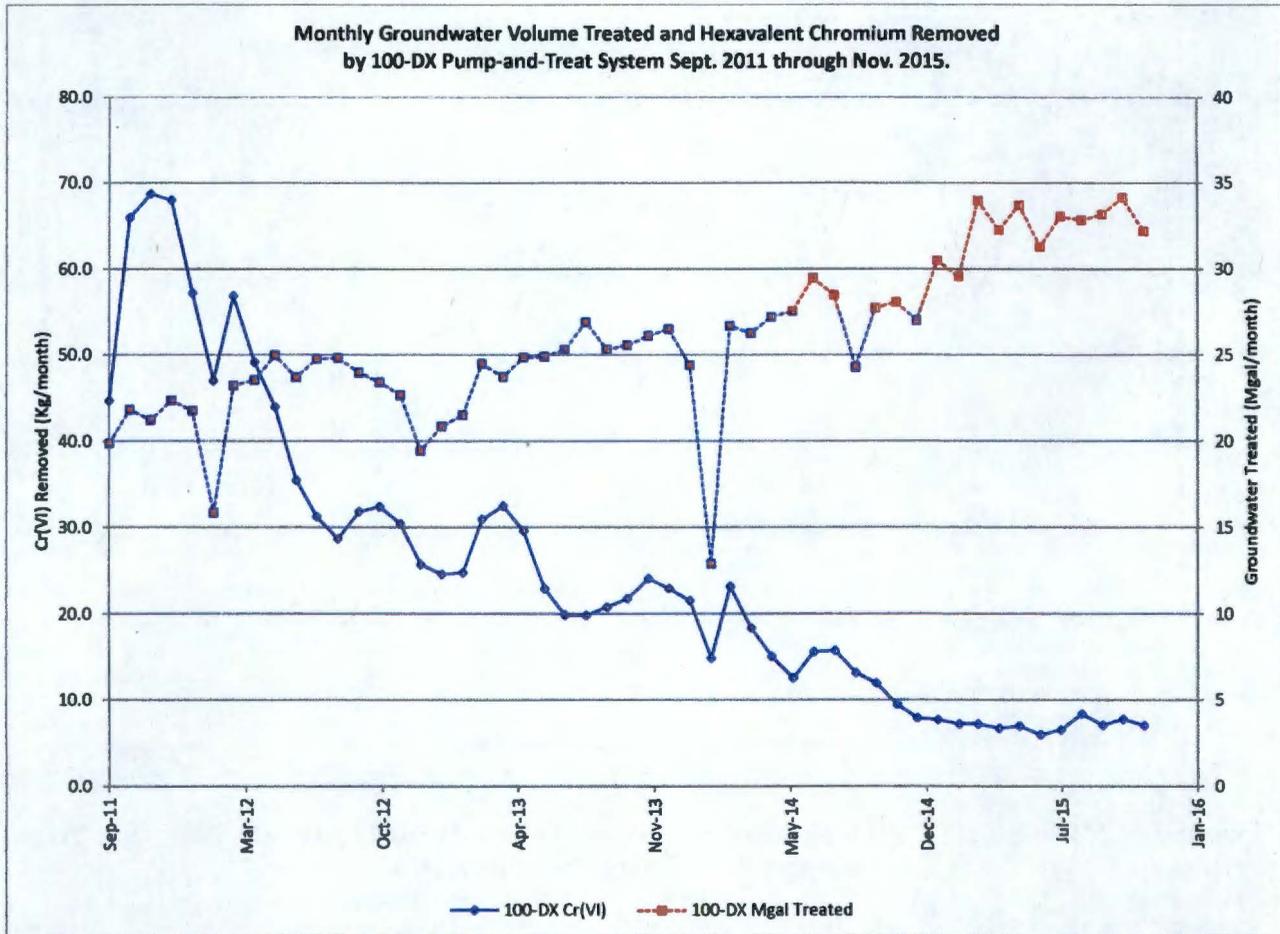
- ✓ The highest concentrations of Cr(VI) at HX are between 60 to 70µg/L, reported in several extraction wells in the Horn. Concentrations have increased from low levels to over 60 µg/L in Wells 199-H1-42 and 199-H1-45 as a result of the well realignments completed in FY15. The movement of the plume to the extraction wells in this area appears to be a result of injection at Well 699-95-45B, located in the Horn, south of the plume mass.
- ✓ November 2015 monthly performance for the combined **DX** and **HX** systems:
  - Treated: 51.0 million gallons (54.0 in October)
  - Removed: 9.17 kg of Cr(VI) (10.2 in October)
- ✓ FY 2016 P&T performance to date:

| <u>P&amp;T System</u> | <u>Treated (mgal)</u> | <u>Removed (kg)</u> |
|-----------------------|-----------------------|---------------------|
| DX                    | 66.3                  | 14.7                |
| HX                    | 38.6                  | 4.7                 |
| <b>TOTAL</b>          | <b>104.9</b>          | <b>19.4</b>         |

- ✓ Summaries of the volume of groundwater treated and Cr(VI) removed for the 100-DX and 100-HX pump-and-treat systems are shown in Figures H-2 and H-3, respectively. A general reduction in Cr(VI) mass removal over time, a function of progress of remediation with associated reduction in groundwater contaminant concentration, is exhibited at both DX and HX. The drop in concentrations is more pronounced at DX, where concentrations were previously at very high levels. Influent concentrations at DX continue to decline as remediation progresses.
- ✓ The current influent and effluent Cr(VI) concentrations (measure once weekly) for the two 100-HR-3 systems (as measured on November 24, 2015, for DX and November 30, 2015, for HX) are:

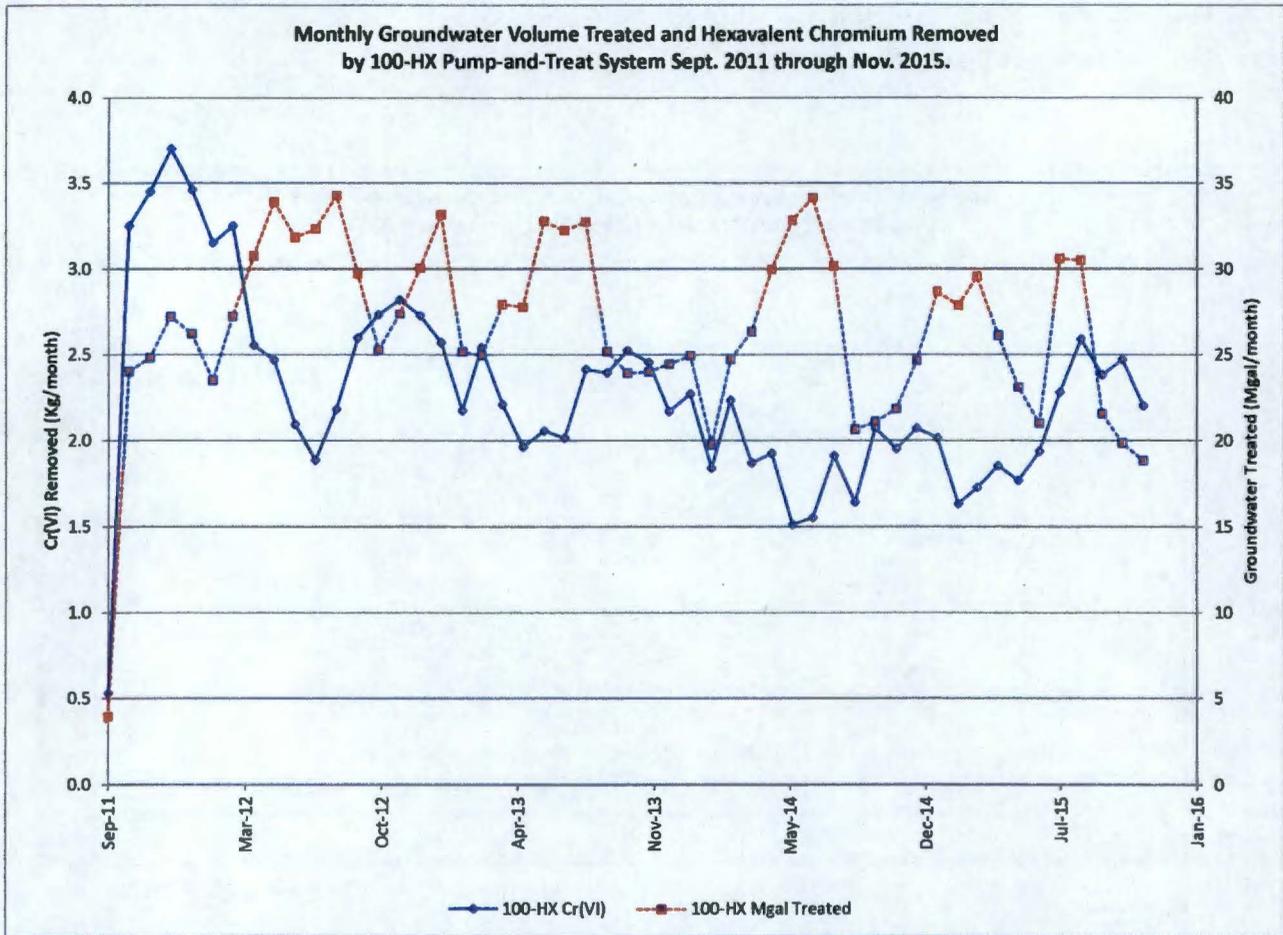
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- DX – Influent = 54  $\mu\text{g/L}$ ; Effluent = less than detection
- HX – Influent = 32  $\mu\text{g/L}$ ; Effluent = 4  $\mu\text{g/L}$



**Figure H-2. Monthly Cr(VI) Removed and Groundwater Volume Treated by 100-DX Pump-and-Treat, September 2011 through November 2015.**

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**Figure H-3. Monthly Cr(VI) Removed and Groundwater Volume Treated by 100-HX Pump-and-Treat, September 2011 through November 2015.**

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**100-FR-3 Groundwater Operable Unit – Robert Evans/Mary Hartman**

- CERCLA Process Implementation:
  - ✓ Revision 0 of the RDR/RW WP was delivered to EPA on August 18, 2015.
  - ✓ Initiated planning to prepare for mobilization and installation of the monitoring well component of the remedial action. RL, EPA, and CHPRC staked locations for eight new monitoring wells in September.
- Monitoring & Reporting:
  - ✓ Groundwater monitoring wells were sampled as scheduled in November, completing the fall sampling event. Results were within previously established ranges.
- Installation of Monitoring Wells
  - ✓ The installation of the eight (8) monitoring wells is currently scheduled to begin May 2016.

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**300-FF-5 Groundwater Operable Unit – Patrick Baynes/Virginia Rohay/Randy Hermann**

- CERCLA Process Implementation:
  - ✓ Nothing to report.
- Remedial Actions:
  - ✓ Stage A uranium sequestration activities were initiated on November 6, 2015, and completed on November 18, 2015. Field measurements (e.g., ERT and piezometer conductivity) confirm infiltration reached the aquifer prior to injection into the PRZ. The objectives below have been satisfied:

| Design Parameter                    | INFILTRATION  |               | PRZ INJECTION |               | AQUIFER INJECTION |               |
|-------------------------------------|---------------|---------------|---------------|---------------|-------------------|---------------|
|                                     | RI/SAP Design | Stage A Field | RI/SAP Design | Stage A Field | RI/SAP Design     | Stage A Field |
| <b>Average Concentration (mg/L)</b> |               |               |               |               |                   |               |
| monosodium phosphate                | 5,699         | 6,454         | 9,409         | 9,742         | 9,409             | 9,747         |
| pyrophosphate                       | 665           | 757           | 1,097         | 1,085         | 1,097             | 1,109         |
| <b>Volume (gal)</b>                 | 972,000       | 881,953       | 432,000       | 473,565       | 432,000           | 444,245       |

Slightly less than 972,000 gallons was infiltrated but based on field data collected during Stage A operations the chemical distribution goals have been achieved.

- ✓ Stage A equipment demobilization was initiated on November 18, 2015. Post-infiltration/injection groundwater monitoring was initiated on November 20, 2015.
- Monitoring & Reporting:
  - ✓ 300 Area Industrial Complex: The next sampling event is scheduled for December 2015.
  - ✓ 618-10 Burial Ground/316-4 Crib: Samples have been collected at three of the five wells scheduled for sampling in June. One well (699-S6-E4L) was decommissioned on August 26, 2015. The other well (699-S6-E4B) was sampled on November 13, 2015. The next sampling event is scheduled for December 2015.
  - ✓ 618-11 Burial Ground: All five wells were sampled as scheduled on October 26, 2015. The next sampling event is scheduled for October 2016.
  - ✓ 300 Area Process Trenches (316-5) RCRA Monitoring: The wells were sampled on September 9 and 11, 2015. The next sampling event is scheduled for December 2015.

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**Hanford Sampling Program Information**

**Table 1. Wells, Aquifer Tubes, and Spring in the River Corridor Areas Successfully Sampled In November 2015**

| 100-BC | 100-FR     | 100-HR-D   | 100-HR-H              | 100-KR     | 100-NR    | 1100-EM | 300-FF   |
|--------|------------|------------|-----------------------|------------|-----------|---------|----------|
|        | 199-F7-2   | 199-D2-11  | 100-H SPRING<br>145-1 | 199-K-106A | 199-K-149 |         | 399-1-24 |
|        | 199-F8-2   | 199-D4-39  | 199-H1-35             | 199-K-107A | 199-K-150 |         | 399-1-25 |
|        | 199-F8-4   | 199-D4-55  | 199-H2-1              | 199-K-108A | 199-N-2   |         | 399-1-36 |
|        | 199-F8-7   | 199-D4-65  | 199-H3-10             | 199-K-11   | C7934     |         | 399-1-37 |
|        | 699-60-32  | 199-D4-77  | 199-H3-3              | 199-K-110A | C7935     |         | 399-1-65 |
|        | 699-62-31  | 199-D4-83  | 199-H3-4              | 199-K-111A | C7936     |         | 399-1-65 |
|        | 699-63-25A | 199-D5-103 | 199-H3-5              | 199-K-112A |           |         | 399-1-65 |
|        | 699-64-27  | 199-D5-104 | 199-H3-6              | 199-K-113A |           |         | 399-1-65 |
|        | 699-66-23  | 199-D5-106 | 199-H3-7              | 199-K-114A |           |         | 399-1-65 |
|        |            | 199-D5-132 | 199-H3-9              | 199-K-115A |           |         | 399-1-65 |
|        |            | 199-D5-133 | 199-H4-12C            | 199-K-116A |           |         | 399-1-65 |
|        |            | 199-D5-142 | 199-H4-15A            | 199-K-118A |           |         | 399-1-65 |
|        |            | 199-D5-143 | 199-H4-16             | 199-K-119A |           |         | 399-1-65 |
|        |            | 199-D5-145 | 199-H4-46             | 199-K-120A |           |         | 399-1-65 |
|        |            | 199-D5-146 | 199-H4-49             | 199-K-125A |           |         | 399-1-65 |
|        |            | 199-D5-147 | 199-H4-84             | 199-K-127  |           |         | 399-1-65 |
|        |            | 199-D5-34  | 199-H4-85             | 199-K-129  |           |         | 399-1-66 |
|        |            | 199-D5-38  | 199-H4-86             | 199-K-13   |           |         | 399-1-67 |
|        |            | 199-D5-39  | 199-H5-1A             | 199-K-133  |           |         | 399-1-67 |
|        |            | 199-D5-41  | 199-H6-1              | 199-K-134  |           |         | 399-1-67 |
|        |            | 199-D5-92  | 199-H6-3              | 199-K-135  |           |         | 399-1-67 |
|        |            | 199-D5-97  | 199-H6-4              | 199-K-136  |           |         | 399-1-67 |
|        |            | 199-D6-3   | 44-M                  | 199-K-137  |           |         | 399-1-67 |
|        |            | 199-D8-71  | 45-D                  | 199-K-138  |           |         | 399-1-67 |
|        |            | 699-93-48A | 45-M                  | 199-K-139  |           |         | 399-1-67 |
|        |            | 699-95-48  | 45-S                  | 199-K-140  |           |         | 399-1-67 |
|        |            | 699-95-51  | 47-D                  | 199-K-141  |           |         | 399-1-67 |
|        |            | 699-96-52B | 47-M                  | 199-K-142  |           |         | 399-1-67 |
|        |            | 699-97-51A | 50-M                  | 199-K-144  |           |         | 399-1-67 |
|        |            | 699-98-49A | 52-D                  | 199-K-145  |           |         | 399-1-69 |
|        |            | 699-98-51  | 52-M                  | 199-K-153  |           |         | 399-1-72 |
|        |            | C7645      | 52-S                  | 199-K-154  |           |         | 399-1-73 |
|        |            | C7646      | 54-D                  | 199-K-157  |           |         | 399-1-74 |
|        |            | C7647      | 54-M                  | 199-K-161  |           |         | 399-1-74 |
|        |            | C7648      | 54-S                  | 199-K-162  |           |         | 399-1-74 |
|        |            | DD-49-1    | 699-94-41             | 199-K-163  |           |         | 399-1-74 |
|        |            | DD-49-2    | 699-94-43             | 199-K-166  |           |         | 399-1-74 |





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**Table 2. Fiscal Year 2015 and 2016 Sample Trips in the River Corridor Areas awaiting at the end of November 2015**

| Quarter Scheduled | GWIA     | Sample Type  | Site Name     | Schedule Date | Frequency | Months Remain | Status        | Comment                                      |
|-------------------|----------|--------------|---------------|---------------|-----------|---------------|---------------|--|
| FY 2015 Q1        | 100-KR   | SPRING       | SK-077-1      | 10/1/2014     | Annual    | 0             | Late          | Review for Cancellation                      |
| FY 2015 Q3        | 100-HR-D | AQUIFER TUBE | DD-39-1       | 5/1/2015      | Biannual  | 0             | Late          | Review for Cancellation                      |
| FY 2015 Q4        | 100-HR-D | WELL         | 199-D8-73     | 9/1/2015      | Quarterly | 0             | Late          | Review for Cancellation                      |
|                   | 100-HR-H | WELL         | 199-H1-39     | 9/1/2015      | Quarterly | 0             | Late          | Review for Cancellation                      |
|                   |          | WELL         | 199-H1-40     | 8/1/2015      | Quarterly | 0             | Late          | Review for Cancellation                      |
|                   |          | WELL         | 199-H1-6      | 9/1/2015      | Quarterly | 0             | Late          | Review for Cancellation                      |
|                   | 100-NR   | WELL         | 199-N-333     | 9/1/2015      | Quarterly | 0             | Late          | Maintenance Required, Unsuccessful 9/18/2015 |
|                   |          | WELL         | 199-N-343     | 9/1/2015      | Annual    | 9             |               | Maintenance Required, Unsuccessful 9/30/2015 |
|                   |          | AQUIFER TUBE | C6134         | 7/20/2015     | Annual    | 7             |               | Access Restricted                            |
|                   |          | AQUIFER TUBE | C6331         | 9/1/2015      | Annual    | 9             |               |  |
|                   |          | AQUIFER TUBE | N116mArray-0A | 7/20/2015     | Quarterly | 0             | Late          | Review for Cancellation                      |
|                   |          | AQUIFER TUBE | N116mArray-0A | 9/1/2015      | Quarterly | 0             | Late          | Review for Cancellation                      |
|                   | 300-FF   | WELL         | 399-1-65      | 9/27/2015     | Annual    | 9             |               | Special Study                                |
|                   |          | WELL         | 399-1-67      | 9/27/2015     | Annual    | 9             |               | Special Study                                |
|                   |          | WELL         | 399-1-70      | 9/27/2015     | Annual    | 9             |               | Special Study                                |
|                   |          | WELL         | 399-1-71      | 9/27/2015     | Annual    | 9             |               | Special Study                                |
|                   |          | WELL         | 399-1-76      | 9/27/2015     | Annual    | 9             |               | Special Study                                |
|                   |          | WELL         | 399-1-77      | 9/27/2015     | Annual    | 9             |               | Special Study                                |
|                   |          | WELL         | 399-1-78      | 9/27/2015     | Annual    | 9             |               | Special Study                                |
|                   |          | WELL         | 399-1-79      | 9/27/2015     | Annual    | 9             |               | Special Study                                |
|                   |          | WELL         | 399-1-80      | 9/27/2015     | Annual    | 9             |               | Special Study                                |
|                   |          | WELL         | 399-1-81      | 9/27/2015     | Annual    | 9             |               | Special Study                                |
| WELL              |          | 399-1-82     | 9/27/2015     | Annual        | 9         |               | Special Study |  |
| WELL              |          | 399-1-83     | 9/27/2015     | Annual        | 9         |               | Special Study |  |
| WELL              |          | 399-1-84     | 9/27/2015     | Annual        | 9         |               | Special Study |  |
| WELL              |          | 399-1-85     | 9/27/2015     | Annual        | 9         |               | Special Study |  |
| WELL              | 399-1-86 | 9/27/2015    | Annual        | 9             |           | Special Study |               |  |
| WELL              | 399-1-87 | 9/27/2015    | Annual        | 9             |           | Special Study |               |  |
| FY 2016 Q1        | 100-BC   | WELL         | 199-B2-14     | 10/1/2015     | Annual    | 10            |               | Access Restricted                            |
|                   | 100-FR   | AQUIFER TUBE | 77-D          | 10/1/2015     | Annual    | 10            |               |  |

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| Quarter Scheduled | GWIA         | Sample Type  | Site Name | Schedule Date | Frequency | Months Remain | Status | Comment |
|-------------------|--------------|--------------|-----------|---------------|-----------|---------------|--------|---------|
|                   | 100-HR-D     | WELL         | 199-D5-20 | 10/1/2015     | Quarterly | 1             |        |         |
|                   |              | AQUIFER TUBE | 36-M      | 11/1/2015     | Annual    | 11            |        |         |
|                   |              | AQUIFER TUBE | 36-S      | 11/1/2015     | Annual    | 11            |        |         |
|                   |              | AQUIFER TUBE | 38-D      | 11/1/2015     | Annual    | 11            |        |         |
|                   |              | AQUIFER TUBE | 38-M      | 11/1/2015     | Annual    | 11            |        |         |
|                   |              | AQUIFER TUBE | AT-D-1-D  | 11/1/2015     | Annual    | 11            |        |         |
|                   |              | AQUIFER TUBE | AT-D-1-M  | 11/1/2015     | Annual    | 11            |        |         |
|                   |              | AQUIFER TUBE | AT-D-1-S  | 11/1/2015     | Annual    | 11            |        |         |
|                   |              | AQUIFER TUBE | AT-D-2-M  | 11/1/2015     | Annual    | 11            |        |         |
|                   |              | AQUIFER TUBE | AT-D-2-S  | 11/1/2015     | Annual    | 11            |        |         |
|                   |              | AQUIFER TUBE | AT-D-3-D  | 11/1/2015     | Annual    | 11            |        |         |
|                   |              | AQUIFER TUBE | AT-D-3-M  | 11/1/2015     | Annual    | 11            |        |         |
|                   |              | AQUIFER TUBE | AT-D-3-S  | 11/1/2015     | Annual    | 11            |        |         |
|                   |              | AQUIFER TUBE | AT-D-4-D  | 11/1/2015     | Annual    | 11            |        |         |
|                   |              | AQUIFER TUBE | AT-D-4-M  | 11/1/2015     | Annual    | 11            |        |         |
|                   |              | AQUIFER TUBE | AT-D-4-S  | 11/1/2015     | Annual    | 11            |        |         |
|                   |              | AQUIFER TUBE | AT-D-5-D  | 11/1/2015     | Annual    | 11            |        |         |
|                   |              | AQUIFER TUBE | AT-D-5-M  | 11/1/2015     | Annual    | 11            |        |         |
|                   |              | AQUIFER TUBE | C6266     | 11/1/2015     | Biannual  | 5             |        |         |
|                   |              | AQUIFER TUBE | C6267     | 11/1/2015     | Biannual  | 5             |        |         |
|                   |              | AQUIFER TUBE | C6268     | 11/1/2015     | Biannual  | 5             |        |         |
|                   |              | AQUIFER TUBE | C6269     | 11/1/2015     | Biannual  | 5             |        |         |
|                   |              | AQUIFER TUBE | C6270     | 11/1/2015     | Biannual  | 5             |        |         |
|                   |              | AQUIFER TUBE | C6271     | 11/1/2015     | Biannual  | 5             |        |         |
|                   | AQUIFER TUBE | C6272        | 11/1/2015 | Annual        | 11        |               |        |         |
|                   | AQUIFER TUBE | C6275        | 11/1/2015 | Annual        | 11        |               |        |         |
|                   | AQUIFER TUBE | C6278        | 11/1/2015 | Annual        | 11        |               |        |         |

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| Quarter Scheduled | GWIA | Sample Type  | Site Name   | Schedule Date | Frequency | Months Remain | Status | Comment |
|-------------------|------|--------------|-------------|---------------|-----------|---------------|--------|---------|
|                   |      | AQUIFER TUBE | C6281       | 11/1/2015     | Annual    | 11            |        |         |
|                   |      | AQUIFER TUBE | C6282       | 11/1/2015     | Annual    | 11            |        |         |
|                   |      | AQUIFER TUBE | DD-06-2     | 11/1/2015     | Annual    | 11            |        |         |
|                   |      | AQUIFER TUBE | DD-06-3     | 11/1/2015     | Annual    | 11            |        |         |
|                   |      | AQUIFER TUBE | DD-12-2     | 11/1/2015     | Annual    | 11            |        |         |
|                   |      | AQUIFER TUBE | DD-12-4     | 11/1/2015     | Annual    | 11            |        |         |
|                   |      | AQUIFER TUBE | DD-15-2     | 11/1/2015     | Annual    | 11            |        |         |
|                   |      | AQUIFER TUBE | DD-15-3     | 11/1/2015     | Annual    | 11            |        |         |
|                   |      | AQUIFER TUBE | DD-15-4     | 11/1/2015     | Annual    | 11            |        |         |
|                   |      | AQUIFER TUBE | DD-16-3     | 11/1/2015     | Annual    | 11            |        |         |
|                   |      | AQUIFER TUBE | DD-16-4     | 11/1/2015     | Annual    | 11            |        |         |
|                   |      | AQUIFER TUBE | DD-17-2     | 11/1/2015     | Annual    | 11            |        |         |
|                   |      | AQUIFER TUBE | DD-17-3     | 11/1/2015     | Annual    | 11            |        |         |
|                   |      | AQUIFER TUBE | DD-39-1     | 11/1/2015     | Biannual  | 5             |        |         |
|                   |      | AQUIFER TUBE | DD-41-1     | 11/1/2015     | Biannual  | 5             |        |         |
|                   |      | AQUIFER TUBE | DD-41-2     | 11/1/2015     | Biannual  | 5             |        |         |
|                   |      | AQUIFER TUBE | DD-41-3     | 11/1/2015     | Biannual  | 5             |        |         |
|                   |      | AQUIFER TUBE | DD-42-2     | 11/1/2015     | Biannual  | 5             |        |         |
|                   |      | AQUIFER TUBE | DD-42-3     | 11/1/2015     | Biannual  | 5             |        |         |
|                   |      | AQUIFER TUBE | DD-42-4     | 11/1/2015     | Biannual  | 5             |        |         |
|                   |      | AQUIFER TUBE | DD-43-2     | 11/1/2015     | Biannual  | 5             |        |         |
|                   |      | AQUIFER TUBE | DD-43-3     | 11/1/2015     | Biannual  | 5             |        |         |
|                   |      | AQUIFER TUBE | DD-44-3     | 11/1/2015     | Biannual  | 5             |        |         |
|                   |      | AQUIFER TUBE | DD-44-4     | 11/1/2015     | Biannual  | 5             |        |         |
|                   |      | AQUIFER TUBE | Redox-1-3.3 | 11/1/2015     | Biannual  | 5             |        |         |
|                   |      | AQUIFER TUBE | Redox-1-6.0 | 11/1/2015     | Biannual  | 5             |        |         |
|                   |      | AQUIFER TUBE | Redox-2-6.0 | 11/1/2015     | Biannual  | 5             |        |         |

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| Quarter Scheduled | GWIA     | Sample Type  | Site Name          | Schedule Date | Frequency | Months Remain | Status | Comment           |
|-------------------|----------|--------------|--------------------|---------------|-----------|---------------|--------|-------------------|
|                   |          | AQUIFER TUBE | Redox-3-3.3        | 11/1/2015     | Biannual  | 5             |        |                   |
|                   |          | AQUIFER TUBE | Redox-3-4.6        | 11/1/2015     | Biannual  | 5             |        |                   |
|                   |          | AQUIFER TUBE | Redox-4-3.0        | 11/1/2015     | Biannual  | 5             |        |                   |
|                   |          | AQUIFER TUBE | Redox-4-6.0        | 11/1/2015     | Biannual  | 5             |        |                   |
|                   | 100-HR-H | SPRING       | 100-H SPRING 150-1 | 11/1/2015     | Annual    | 11            |        |                   |
|                   |          | SPRING       | 100-H SPRING 152-2 | 11/1/2015     | Annual    | 11            |        |                   |
|                   |          | SPRING       | 100-H SPRING 153-1 | 11/1/2015     | Annual    | 11            |        |                   |
|                   |          | WELL         | 199-H1-32          | 11/1/2015     | Quarterly | 2             |        |                   |
|                   |          | WELL         | 199-H1-33          | 11/1/2015     | Quarterly | 2             |        |                   |
|                   |          | WELL         | 199-H1-37          | 11/1/2015     | Quarterly | 2             |        |                   |
|                   |          | WELL         | 199-H1-38          | 11/1/2015     | Quarterly | 2             |        |                   |
|                   |          | WELL         | 199-H1-40          | 11/1/2015     | Quarterly | 2             |        |                   |
|                   |          | WELL         | 199-H1-7           | 11/1/2015     | Quarterly | 2             |        |                   |
|                   |          | WELL         | 199-H1-8           | 10/1/2015     | Quarterly | 1             |        | Awaiting Drilling |
|                   |          | WELL         | 199-H4-11          | 11/1/2015     | Quarterly | 2             |        |                   |
|                   |          | WELL         | 199-H4-12A         | 11/1/2015     | Quarterly | 2             |        |                   |
|                   |          | WELL         | 199-H4-4           | 11/1/2015     | Quarterly | 2             |        |                   |
|                   |          | WELL         | 199-H4-65          | 11/1/2015     | Quarterly | 2             |        |                   |
|                   |          | WELL         | 199-H4-8           | 11/1/2015     | Annual    | 11            |        |                   |
|                   |          | AQUIFER TUBE | 48-M               | 11/1/2015     | Annual    | 11            |        |                   |
|                   |          | AQUIFER TUBE | 48-S               | 11/1/2015     | Annual    | 11            |        |                   |
|                   |          | AQUIFER TUBE | 49-D               | 11/1/2015     | Annual    | 11            |        |                   |
|                   |          | AQUIFER TUBE | 50-S               | 11/1/2015     | Annual    | 11            |        |                   |
|                   |          | WELL         | 699-90-34          | 10/1/2015     | Quarterly | 1             |        | Access Restricted |
|                   |          | AQUIFER TUBE | AT-H-1-D           | 11/1/2015     | Annual    | 11            |        |                   |
|                   |          | AQUIFER TUBE | AT-H-1-M           | 11/1/2015     | Annual    | 11            |        |                   |
|                   |          | AQUIFER TUBE | AT-H-1-S           | 11/1/2015     | Annual    | 11            |        |                   |
|                   |          | AQUIFER TUBE | AT-H-2-D           | 11/1/2015     | Annual    | 11            |        |                   |
|                   |          | AQUIFER TUBE | AT-H-2-M           | 11/1/2015     | Annual    | 11            |        |                   |
|                   |          | AQUIFER TUBE | AT-H-2-S           | 11/1/2015     | Annual    | 11            |        |                   |
|                   |          | AQUIFER TUBE | AT-H-3-D           | 11/1/2015     | Annual    | 11            |        |                   |

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| Quarter Scheduled | GWIA   | Sample Type  | Site Name                           | Schedule Date | Frequency | Months Remain | Status        | Comment       |
|-------------------|--------|--------------|-------------------------------------|---------------|-----------|---------------|---------------|---------------|
|                   |        | AQUIFER TUBE | AT-H-3-S                            | 11/1/2015     | Annual    | 11            |               |               |
|                   |        | AQUIFER TUBE | C5682                               | 11/1/2015     | Annual    | 11            |               |               |
|                   |        | AQUIFER TUBE | C6290                               | 11/1/2015     | Annual    | 11            |               |               |
|                   |        | AQUIFER TUBE | C6291                               | 11/1/2015     | Annual    | 11            |               |               |
|                   |        | AQUIFER TUBE | C6293                               | 11/1/2015     | Annual    | 11            |               |               |
|                   |        | AQUIFER TUBE | C6299                               | 11/1/2015     | Annual    | 11            |               |               |
|                   |        | AQUIFER TUBE | C6300                               | 11/1/2015     | Annual    | 11            |               |               |
|                   |        | AQUIFER TUBE | C6301                               | 11/1/2015     | Annual    | 11            |               |               |
|                   |        | AQUIFER TUBE | C7649                               | 11/1/2015     | Annual    | 11            |               |               |
|                   |        | AQUIFER TUBE | C7650                               | 11/1/2015     | Annual    | 11            |               |               |
|                   | 100-KR | SPRING       | 100-K SPRING 68-1                   | 10/1/2015     | Annual    | 10            |               |               |
|                   |        | WELL         | 199-K-124A                          | 11/1/2015     | Biannual  | 5             |               |               |
|                   |        | WELL         | 199-K-188                           | 11/1/2015     | Quarterly | 2             |               |               |
|                   |        | WELL         | 199-K-23                            | 11/1/2015     | Biannual  | 5             |               |               |
|                   |        | WELL         | 199-K-36                            | 11/1/2015     | Biannual  | 5             |               |               |
|                   |        | AQUIFER TUBE | AT-K-4-M                            | 10/1/2015     | Annual    | 10            |               |               |
|                   |        | AQUIFER TUBE | DK-04-2                             | 10/1/2015     | Annual    | 10            |               |               |
|                   | 100-NR | RIVER WATER  | River water adjacent to C6317/18/19 | 10/1/2015     | Annual    | 10            |               |               |
|                   |        | RIVER WATER  | River water adjacent to C7934/35/36 | 10/1/2015     | Annual    | 10            |               |               |
|                   |        | RIVER WATER  | River water adjacent to C7937/38/39 | 10/1/2015     | Annual    | 10            |               |               |
|                   | 300-FF | WELL         | 399-1-24                            | 10/4/2015     | Annual    | 10            |               | Special Study |
|                   |        | WELL         | 399-1-24                            | 10/11/2015    | Annual    | 10            |               | Special Study |
|                   |        | WELL         | 399-1-24                            | 10/18/2015    | Annual    | 10            |               | Special Study |
|                   |        | WELL         | 399-1-25                            | 10/4/2015     | Annual    | 10            |               | Special Study |
|                   |        | WELL         | 399-1-25                            | 10/11/2015    | Annual    | 10            |               | Special Study |
|                   |        | WELL         | 399-1-25                            | 10/18/2015    | Annual    | 10            |               | Special Study |
|                   |        | WELL         | 399-1-36                            | 10/4/2015     | Annual    | 10            |               | Special Study |
|                   |        | WELL         | 399-1-36                            | 10/11/2015    | Annual    | 10            |               | Special Study |
|                   |        | WELL         | 399-1-36                            | 10/18/2015    | Annual    | 10            |               | Special Study |
|                   |        | WELL         | 399-1-37                            | 10/4/2015     | Annual    | 10            |               | Special Study |
|                   | WELL   | 399-1-37     | 10/11/2015                          | Annual        | 10        |               | Special Study |               |

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|                   |      | WELL        | 399-1-37  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-65  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-65  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-65  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-65  | 10/19/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-65  | 10/22/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-65  | 10/23/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-65  | 10/24/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-65  | 10/25/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-65  | 10/26/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-66  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-66  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-66  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-67  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-67  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-67  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-67  | 10/19/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-67  | 10/22/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-67  | 10/23/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-67  | 10/24/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-67  | 10/25/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-67  | 10/26/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-69  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-69  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-69  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-70  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-70  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-70  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-71  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-71  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-71  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-72  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-72  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-72  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-73  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-73  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-73  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-74  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-74  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-74  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-74  | 10/19/2015    | Annual    | 10            |        | Special Study |

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|                   |      | WELL        | 399-1-74  | 10/22/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-74  | 10/23/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-74  | 10/24/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-74  | 10/25/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-74  | 10/26/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-75  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-75  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-75  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-75  | 10/19/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-75  | 10/22/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-75  | 10/23/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-75  | 10/24/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-75  | 10/25/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-75  | 10/26/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-76  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-76  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-76  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-77  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-77  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-77  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-77  | 10/22/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-77  | 10/23/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-77  | 10/24/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-77  | 10/25/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-77  | 10/26/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-78  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-78  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-78  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-79  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-79  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-79  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-80  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-80  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-80  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-81  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-81  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-81  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-81  | 10/19/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-81  | 10/22/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-81  | 10/23/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL        | 399-1-81  | 10/24/2015    | Annual    | 10            |        | Special Study |

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| Quarter Scheduled | GWIA | Sample Type  | Site Name | Schedule Date | Frequency | Months Remain | Status | Comment       |
|-------------------|------|--------------|-----------|---------------|-----------|---------------|--------|---------------|
|                   |      | WELL         | 399-1-81  | 10/25/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-81  | 10/26/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-82  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-82  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-82  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-83  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-83  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-83  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-84  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-84  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-84  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-85  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-85  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-85  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-86  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-86  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-86  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-87  | 10/4/2015     | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-87  | 10/11/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-87  | 10/18/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-87  | 10/22/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-87  | 10/23/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-87  | 10/24/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-87  | 10/25/2015    | Annual    | 10            |        | Special Study |
|                   |      | WELL         | 399-1-87  | 10/26/2015    | Annual    | 10            |        | Special Study |
|                   |      | AQUIFER TUBE | C6368     | 10/1/2015     | Annual    | 10            |        |               |
|                   |      | AQUIFER TUBE | C6378     | 10/1/2015     | Annual    | 10            |        |               |

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**Table 3. Groundwater Sampling Locations in the River Corridor Areas Scheduled to be sampled in December 2015**

| 100-BC | 100-FR | 100-HR-D   | 100-HR-H  | 100-KR    | 100-NR         | 1100-EM and Richland North | 300-FF       |
|--------|--------|------------|-----------|-----------|----------------|----------------------------|--------------|
|        |        | 199-D3-2   | 199-H1-1  | 199-K-203 | 199-N-165      | 699-S30-E15A               | 399-1-1      |
|        |        | 199-D4-1   | 199-H1-2  | 199-K-204 | 199-N-71       | 699-S31-E10A               | 399-1-10A    |
|        |        | 199-D4-14  | 199-H1-25 |           | C6132          | 699-S31-E10C               | 399-1-10B    |
|        |        | 199-D4-22  | 199-H1-27 |           | C6323          | 699-S31-E8A                | 399-1-16A    |
|        |        | 199-D4-23  | 199-H1-3  |           | C7881          | 699-S36-E13A               | 399-1-16B    |
|        |        | 199-D4-25  | 199-H1-34 |           | C7934          | 699-S37-E14                | 399-1-17A    |
|        |        | 199-D4-27  | 199-H1-36 |           | C7935          | 699-S41-E12                | 399-1-17B    |
|        |        | 199-D4-31  | 199-H1-39 |           | C7936          | 699-S42-E8A                | 399-1-18A    |
|        |        | 199-D4-32  | 199-H1-4  |           | C7937          |                            | 399-1-18B    |
|        |        | 199-D4-36  | 199-H1-42 |           | C7938          |                            | 399-1-7      |
|        |        | 199-D4-38  | 199-H1-43 |           | C7939          |                            | 399-2-1      |
|        |        | 199-D4-4   | 199-H1-45 |           | N116mArray-0A  |                            | 399-2-2      |
|        |        | 199-D4-48  | 199-H1-46 |           | N116mArray-10A |                            | 399-3-9      |
|        |        | 199-D4-62  | 199-H1-6  |           | N116mArray-11A |                            | 399-4-10     |
|        |        | 199-D4-7   | 199-H3-2A |           | N116mArray-15A |                            | 399-4-14     |
|        |        | 199-D5-103 | 199-H3-2C |           | N116mArray-1A  |                            | 399-4-7      |
|        |        | 199-D5-104 | 199-H4-10 |           | N116mArray-2A  |                            | 399-8-1      |
|        |        | 199-D5-123 | 199-H4-13 |           | N116mArray-3A  |                            | 399-8-5A     |
|        |        | 199-D5-125 | 199-H4-45 |           | N116mArray-4A  |                            | 699-S19-E13  |
|        |        | 199-D5-126 | 199-H4-5  |           | N116mArray-6A  |                            | 699-S27-E9A  |
|        |        | 199-D5-145 | 199-H4-63 |           | N116mArray-8A  |                            | 699-S28-E12  |
|        |        | 199-D5-146 | 199-H4-64 |           | N116mArray-9A  |                            | 699-S29-E16A |
|        |        | 199-D5-15  | 199-H4-69 |           | NVP1-1         |                            | 699-S6-E4A   |
|        |        | 199-D5-16  | 199-H4-70 |           | NVP1-2         |                            | 699-S6-E4B   |
|        |        | 199-D5-34  | 199-H4-75 |           | NVP1-3         |                            | 699-S6-E4E   |
|        |        | 199-D5-38  | 199-H4-76 |           | NVP1-4         |                            | 699-S6-E4K   |
|        |        | 199-D5-39  | 199-H4-77 |           | NVP1-5         |                            |              |
|        |        | 199-D5-43  | 199-H4-83 |           | NVP2-115.1     |                            |              |
|        |        | 199-D8-5   | 199-H4-90 |           | NVP2-115.4     |                            |              |
|        |        | 199-D8-53  | 199-H4-91 |           | NVP2-115.7     |                            |              |
|        |        | 199-D8-54A |           |           | NVP2-116.0     |                            |              |
|        |        | 199-D8-54B |           |           | NVP2-116.3     |                            |              |
|        |        | 199-D8-68  |           |           |                |                            |              |
|        |        | 199-D8-69  |           |           |                |                            |              |
|        |        | 199-D8-70  |           |           |                |                            |              |
|        |        | 199-D8-72  |           |           |                |                            |              |
|        |        | 199-D8-73  |           |           |                |                            |              |

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| 100-BC | 100-FR | 100-HR-D  | 100-HR-H | 100-KR | 100-NR | 1100-EM and<br>Richland North | 300-FF |
|--------|--------|-----------|----------|--------|--------|-------------------------------|--------|
|        |        | 199-D8-88 |          |        |        |                               |        |
|        |        | 199-H1-5  |          |        |        |                               |        |
|        |        | 199-H4-80 |          |        |        |                               |        |
|        |        | 199-H4-81 |          |        |        |                               |        |
|        |        | 199-H4-82 |          |        |        |                               |        |

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**Documents for AR Submission**

| <b>Number</b>                     | <b>Title</b>   | <b>Referencing Doc/Driver</b>  |
|-----------------------------------|--|--|
| ECF-300FF5-11-0152, 2012          | VOC Modeling in Support of 300 Area FF-5 RI/FS Document, Rev. 0, CH2M HILL Plateau Remediation Company, Richland, Washington.                  | supports the 2015 GW Monitoring Plan update for the 300 Area                       |
| ECF-Hanford-13-0020, Rev. 3, 2015 | Process for Constructing a Three-dimensional Geological Framework Model of the Hanford Site 100 Area   | SGW-46279, Rev. 3  |
| ECF-Hanford-15-0001, Rev. 0, 2015 | Description of Groundwater Calculations and Assessments for the Calendar Year 2014 (CY2014) 100 Areas Pump and Treat Report                    | cleared Dec. 2015  |
| SGW-34955                         | KX Pump & Treat System Design Description  | referenced in the 100-KR-4 and or 100-HR-3 Interim Action RD/RAWP, O&M, and/or SAP |
| SGW-34556                         | Description of Work for the Installation of Twenty-three Wells to Support the 100-KR-4 Pump and Treat Expansion                                | referenced in the 100-KR-4 and or 100-HR-3 Interim Action RD/RAWP, O&M, and/or SAP |
| WMP-30101                         | Description of Work for the Installation of Four Wells at the 100-KW Pump and Treat System for the 100-KR-4 Groundwater Operable Unit, FY 2006 | referenced in the 100-KR-4 and or 100-HR-3 Interim Action RD/RAWP, O&M, and/or SAP |
| WMP-29491, 2006                   | Design Criteria for the KW Pump and Treat, Rev. 0, Fluor Hanford, Inc.   | referenced in the 100-KR-4 and or 100-HR-3 Interim Action RD/RAWP, O&M, and/or SAP |
| WMP-29795                         | 100 K-West Pump & Treat System Design Description  | referenced in the 100-KR-4 and or 100-HR-3 Interim Action RD/RAWP, O&M, and/or SAP |

# Attachment 2

**100K Area Report**  
**100/300 Area Unit Manager Meeting**  
**December 10, 2015**

**RL-0012 Sludge Treatment Project**

TPA Milestone **M-016-177**, *Complete 105-KW sludge transfer equipment installation.*  
(9/30/17) – On Schedule

- Statements of Work for ECRTS equipment procurement have been grouped into 20 separate procurement sets. Twelve sets are in progress, seven have been completed, and one remains to be developed.
- The first of 24 total STCSs has been fabricated and received. Plans are to fabricate 12 STSC Vessels in FY16 with the final 11 STSC Vessels in FY17.
- RL continues review of the updated Preliminary Documented Safety Analysis (PDSA) and Safety Design Strategy (SDS). KW Basin integrated Documented Safety Analysis (DSA) development has begun. The integrated DSA combines the ECRTS PDSA and the KW Basin Final Safety Analysis Report into a single safety basis document.
- K West Basin Annex construction acceptance testing continues.
- The construction subcontractor has mobilized at KW Basin and started Engineered Container re-lidding.

TPA Milestone **M-016-175**, *Begin sludge removal from 105-KW Fuel Storage Basin*  
(9/30/18) – On Schedule

- ECRTS tooling and equipment fabrication, testing, and operating procedure and training development continue.
- Specifications are being developed for Pre-operational Acceptance Testing to be performed at MASF.

TPA Milestone **M-016-176**, *Complete sludge removal from 105-KW Fuel Storage Basin*  
(12/31/19) – On Schedule

- Initiation of this milestone follows completion of Milestone M-016-175.

TPA Milestone **M-016-178**, *Initiate deactivation of 105-KW Fuel Storage Basin.*  
(12/31/19) – On Schedule

- The following pre-deactivation actions are underway:
  - Integrated Water Treatment System garnet filter media removal system design continues.
  - Sand filter backwash solids samples have been consolidated and prepared for analysis by PNNL. Analyses will be performed and a summary letter report will be provided to CHPRC in early January.
  - Dose to curie modeling continues of basin below-water debris utilizing dose rates, buoyant weights, and observations collected by KW Basin Operations. Basin east bay modeling is nearly completed and center bay modeling is approximately 50% complete. This characterization data will become a key input to the calculation to demonstrate compliance with ERDF waste acceptance criteria for 105-KW Basin.

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

- The preliminary treatment and packaging site evaluation report and the remedial design/remedial action work plan (DOE/RL-2011-15) for sludge treatment and packaging have been issued.

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

(9/30/23) – On Schedule

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

(12/31/23) – On Schedule

### **RL-0041 K Facility Demolition and Soil Remediation**

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

- Excavation of nine waste sites within the AB waste site area near the 100KE head house began in October. After excavation to ten feet, in-process samples taken on November 20, 2015. Sample results were returned on December 1. Additional analysis for metals using the toxicity characteristic leaching procedure (TCLP) is be performed on samples from two of the waste sites.
- Three more waste sites were added to the subcontract for remedial action (remove, treat, dispose) in the AB area. In-process sampling of the additional sites is scheduled for December 18, 2015.

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.*

(9/30/2024) - On Schedule

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

(9/30/24) - On Schedule

# Attachment 3

# December 10, 2015 Unit Manager's Meeting

## Closure Operations Status

### 100 Areas (B/C, D, H, N)

Revegetation is continuing as described below:

- Completed re-contouring of 1607D, 147D, and Area's #1, #2, #3, #4, #5, #6, #9, #10.
- Re-contoured and de-compacted 100-D-31:11, 100-D-31:12, the CTA and Area #8.
- Completed seed bed prep (spring tothing, seeding, ring rolling) at 1607D, 147D, Area's #1, #2, #3, #4 and Area #10.
- Completed planting at 1607D, 147D, Area #1, #2, and continuing to plant area #3.
- Straw delivery is currently at 80% complete.

### 618-10

#### **Trench Remediation**

- Continuing primary/secondary sorting, drum retrieval, and load-out.
- Implementing corrective actions following contamination event on 11/16/15 to return to concrete drum processing.
- WCH activities related to the remediation of the 316-4 waste site have been placed on hold.

#### **VPU Remediation**

- Twelve (12) VPUs in Row 2 have been augered and characterized (in-situ) to date.
- Results of the in-situ characterization have, thus far, shown that the ranking calculation has been conservative in regard to radiological contamination. This includes the highest ranked VPU in WCH's scope (VPU #24) which has also met the ERDF Waste Acceptance Criteria.
- A clamshell to retrieve wastes from the VPUs has been purchased and delivered to the site and is currently being tested on a mock up VPU.

### 300 Area

#### **324 Building**

- Continuing S&M (min-safe operations) through FY 16.
- Revising abated and unabated TEDE calculations.
- Began working with DOE and Ecology on RCRA Part A Permit and Closure Plan

#### **300-288:2**

- Remediation of Phase I progressing well. Currently estimated to complete in January, 2016.
- Work Instruction for waste site 288:2 was signed by DOE and EPA on 11/16/2015. The instruction includes a placeholder to add the west side (Phase II) once the excavation is complete.
- Remediation of the west side (Phase II) of waste site 288:2 recently added to WCH scope of work.

#### **300 Area Removal Action Work Plan**

- EPA comments recently received and being incorporated into RAWP.

#### **WSRFs/CVPs**

- 300-277 Pending

# Attachment 4

| Activity ID | Activity Name | TPA Year | RD | % Cmpl | Start | Finish | SVar 10/5 | FVar 10/5 | SVar LstWk | FVar LstWk | FY2016 |   |   |   |   |   |   |   |   |   |  |  |
|-------------|---------------|----------|----|--------|-------|--------|-----------|-----------|------------|------------|--------|---|---|---|---|---|---|---|---|---|--|--|
|             |               |          |    |        |       |        |           |           |            |            | D      | J | F | M | A | M | J | J | A | S |  |  |

**Dan Elkins**

**100 B/C**

**100 Area Revveg**

|          |                               |    |   |    |            |           |     |     |   |   |  |  |  |  |  |  |  |  |  |  |
|----------|-------------------------------|----|---|----|------------|-----------|-----|-----|---|---|--|--|--|--|--|--|--|--|--|--|
| BB524E10 | Reveg 100-B-35:1 (11.5 Acres) | 17 | 3 | 0% | 11-Jan-16* | 13-Jan-16 | -27 | -25 | 0 | 0 |  |  |  |  |  |  |  |  |  |  |
|----------|-------------------------------|----|---|----|------------|-----------|-----|-----|---|---|--|--|--|--|--|--|--|--|--|--|

**100 D**

**100 Area Revveg**

|             |   |    |    |       |             |             |     |     |    |    |  |  |  |  |  |  |  |  |  |  |
|-------------|---|----|----|-------|-------------|-------------|-----|-----|----|----|--|--|--|--|--|--|--|--|--|--|
| RD67D51500  | Reveg 1607-D5 (0.09 acres)                      | 17 | 0  | 100%  | 05-Nov-15 A | 03-Dec-15 A | -2  | -16 | 0  | -3 |  |  |  |  |  |  |  |  |  |  |
| RD1506500   | Reveg 100-D-50:6 (5.22 acres)                   | 16 | 0  | 100%  | 09-Nov-15 A | 03-Dec-15 A | 33  | 20  | 0  | -3 |  |  |  |  |  |  |  |  |  |  |
| CBB0516J    | Reveg 100-D-31:11/12 (21.41 acres)              | 16 | 3  | 26.7% | 09-Nov-15 A | 09-Dec-15   | -4  | -16 | 0  | -4 |  |  |  |  |  |  |  |  |  |  |
| DRVGDSTR    | Reveg 100-D Disturbed Areas (12.0 acres)        |    | 10 | 10%   | 10-Nov-15 A | 22-Dec-15   |     |     | 0  | -4 |  |  |  |  |  |  |  |  |  |  |
| CBB0556E10  | Reveg 147-D ISRM Pond (3.92 acres)              | 17 | 0  | 100%  | 10-Nov-15 A | 03-Dec-15 A | 33  | 22  | 0  | -3 |  |  |  |  |  |  |  |  |  |  |
| 100D100A432 | Reveg 100-D-100 - 54.06 acres (incl stockpiles) | 16 | 8  | 26%   | 11-Nov-15 A | 17-Dec-15   | 9   | 8   | 0  | -4 |  |  |  |  |  |  |  |  |  |  |
| CBB0537E    | Reveg 100-D-72 (0.83 acres)                     | 16 | 1  | 20%   | 11-Nov-15 A | 07-Dec-15   | 12  | 0   | 0  | -4 |  |  |  |  |  |  |  |  |  |  |
| D104RVGFY16 | Reveg 100-D-104 Stockpile (2.75 acres)          | 16 | 2  | 0%    | 07-Dec-15*  | 08-Dec-15   |     |     | 0  | 0  |  |  |  |  |  |  |  |  |  |  |
| D30RVGFY16  | Reveg 100-D-30 stockpile (2.75 acres)           | 16 | 2  | 0%    | 07-Dec-15*  | 08-Dec-15   |     |     | -2 | -2 |  |  |  |  |  |  |  |  |  |  |
| RD05509140  | Reveg 100-D-50:9 (1.32 acres)                   | 16 | 1  | 0%    | 10-Dec-15   | 10-Dec-15   | 22  | 22  | -4 | -4 |  |  |  |  |  |  |  |  |  |  |
| CBC0604E    | Reveg 118-D-1 (2.51 acres)                      | 17 | 1  | 0%    | 14-Dec-15   | 14-Dec-15   | -21 | -17 | -4 | -4 |  |  |  |  |  |  |  |  |  |  |
| CBC0507E    | Reveg 100-D-28:1 (0.33 acres) (tied to D-50:6)  | 17 | 1  | 0%    | 14-Dec-15   | 14-Dec-15   | -21 | -21 | -4 | -4 |  |  |  |  |  |  |  |  |  |  |
| RD05507140  | Reveg 100-D-50:7 (5.74 acres)                   | 16 | 2  | 0%    | 15-Dec-15   | 16-Dec-15   | -22 | -22 | -4 | -4 |  |  |  |  |  |  |  |  |  |  |
| CBC0608E    | Reveg 118-D-5 (0.25 acres)                      | 17 | 1  | 0%    | 17-Dec-15   | 17-Dec-15   | 13  | 13  | -4 | -4 |  |  |  |  |  |  |  |  |  |  |
| CBC0609E    | Reveg 118-DR-1 (1.0 acres)                      | 17 | 1  | 0%    | 17-Dec-15   | 17-Dec-15   | 13  | 13  | -4 | -4 |  |  |  |  |  |  |  |  |  |  |
| CBC0518E    | Reveg 100-D-106 (1.37 Acres)                    | 16 | 1  | 0%    | 17-Dec-15   | 17-Dec-15   | -17 | -17 | -4 | -4 |  |  |  |  |  |  |  |  |  |  |
| CBB0404E    | Reveg 120-D-2 (0.5 acres)                       | 16 | 1  | 0%    | 17-Dec-15   | 17-Dec-15   | 13  | 13  | -4 | -4 |  |  |  |  |  |  |  |  |  |  |
| CBB0546E    | Reveg 100-D-86:3 (4.33 acres)                   | 16 | 1  | 0%    | 17-Dec-15   | 17-Dec-15   | -18 | -18 | -4 | -4 |  |  |  |  |  |  |  |  |  |  |
| CBB0535E    | Reveg 100-D-69 (2.82 Acres)                     | 16 | 1  | 0%    | 17-Dec-15   | 17-Dec-15   | 12  | 12  | -4 | -4 |  |  |  |  |  |  |  |  |  |  |
| DRVGCTA     | Reveg 100-D CTA (10.76 acres)                   |    | 3  | 0%    | 21-Dec-15   | 28-Dec-15   |     |     | -4 | -4 |  |  |  |  |  |  |  |  |  |  |
| CBB0550E    | Reveg 100-D-99 (0.37 Acres)                     | 16 | 1  | 0%    | 21-Dec-15   | 21-Dec-15   | 13  | 13  | -4 | -4 |  |  |  |  |  |  |  |  |  |  |
| CBB0548E    | Reveg 100-D-97 (0.37 acres)                     | 16 | 1  | 0%    | 21-Dec-15   | 21-Dec-15   | -12 | -12 | -4 | -4 |  |  |  |  |  |  |  |  |  |  |
| CBB0544E    | Reveg 100-D-85:2 (5.79 acres)                   | 16 | 2  | 0%    | 21-Dec-15   | 22-Dec-15   | -7  | -8  | -4 | -4 |  |  |  |  |  |  |  |  |  |  |
| CBB0558E    | Reveg 100-D-75:1 (6.11 acres)                   | 16 | 1  | 0%    | 22-Dec-15   | 22-Dec-15   | -19 | -19 | -4 | -4 |  |  |  |  |  |  |  |  |  |  |
| DRVGTRLR    | Reveg 100-D Trailer Village (2.95 acres)        |    | 1  | 0%    | 28-Dec-15   | 28-Dec-15   |     |     | -4 | -4 |  |  |  |  |  |  |  |  |  |  |
| CBB0545E    | Reveg 100-D-86:1 (4.96 acres)                   | 16 | 2  | 0%    | 28-Dec-15   | 29-Dec-15   | -8  | -9  | -4 | -4 |  |  |  |  |  |  |  |  |  |  |

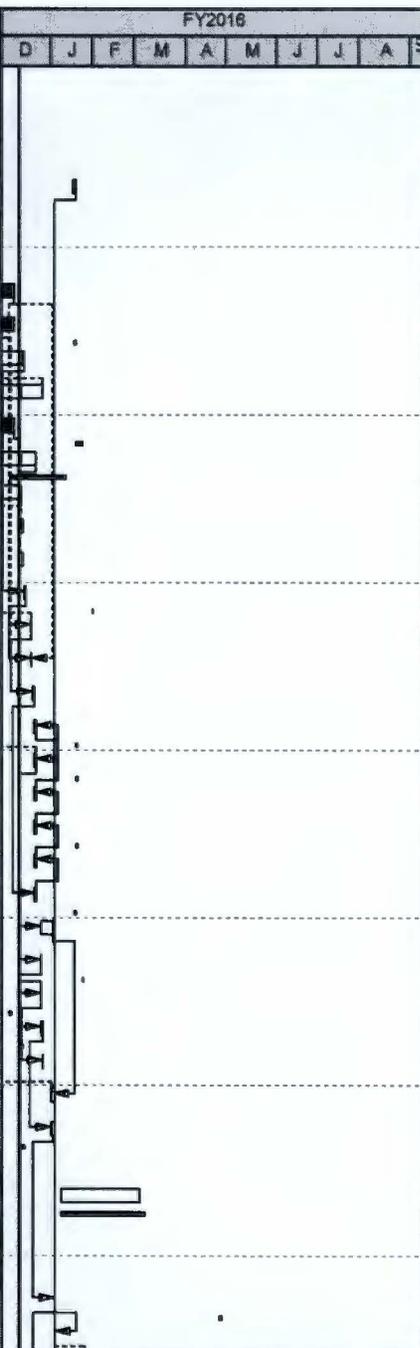
**Well Replacements**

|             |  |    |    |    |            |           |   |   |   |   |  |  |  |  |  |  |  |  |  |  |
|-------------|--|----|----|----|------------|-----------|---|---|---|---|--|--|--|--|--|--|--|--|--|--|
| 100D100A408 | Well Replacement @ 100-D (REA-184) 4 wells | 16 | 31 | 0% | 04-Jan-16* | 25-Feb-16 | 0 | 1 | 0 | 0 |  |  |  |  |  |  |  |  |  |  |
|-------------|--|----|----|----|------------|-----------|---|---|---|---|--|--|--|--|--|--|--|--|--|--|

**100 H**

**100 Area Revveg**

|          |  |    |   |    |           |           |     |     |    |    |  |  |  |  |  |  |  |  |  |  |
|----------|--|----|---|----|-----------|-----------|-----|-----|----|----|--|--|--|--|--|--|--|--|--|--|
| HB404E20 | Reveg 116-H-9 (0.40 acre)                  | 17 | 1 | 0% | 30-Dec-15 | 30-Dec-15 | 62  | 62  | -4 | -4 |  |  |  |  |  |  |  |  |  |  |
| HB900F1  | Reveg 100-H-3 (0.3 acres) (tied with H-43) | 17 | 1 | 0% | 30-Dec-15 | 30-Dec-15 | -29 | -29 | -4 | -4 |  |  |  |  |  |  |  |  |  |  |



◆ Milestone    % Complete

▬ Actual Work    ▬ Remaining Work

▬ Actual Critical    ▬ Critical Remaining Work

Field Remediation

1 of 6

Print date: 08-Dec-15. Data date: 07-Dec-15. TASK filters: POW , POW Format.









| Activity ID              | Activity Name  | TPA Year | RD | % Cmpl | Start     | Finish    | SVar 10/5 | FVar 10/5 | SVar LstWk | FVar LstWk | FY2016 |   |   |   |   |   |   |   |   |   |  |  |  |
|--------------------------|--|----------|----|--------|-----------|-----------|-----------|-----------|------------|------------|--------|---|---|---|---|---|---|---|---|---|--|--|--|
|                          |  |          |    |        |           |           |           |           |            |            | D      | J | F | M | A | M | J | J | A | S |  |  |  |
| <b>Misc. Restoration</b> |  |          |    |        |           |           |           |           |            |            |        |   |   |   |   |   |   |   |   |   |  |  |  |
| MRNSS100N1               | MR Re-mob to 100-N                                     | N        | 16 | 0%     | 21-Mar-16 | 14-Apr-16 |           |           | -4         | -4         |        |   |   |   |   |   |   |   |   |   |  |  |  |
| M513NF031                | 100-N Culturally Sensitive MR Debris and Fence Removal | N        | 17 | 0%     | 18-Apr-16 | 16-May-16 | -1        | -1        | -4         | -4         |        |   |   |   |   |   |   |   |   |   |  |  |  |
| M516N02                  | 100-N removal report revision                          | N        | 16 | 0%     | 17-May-16 | 14-Jun-16 | -1        | -1        | -4         | -4         |        |   |   |   |   |   |   |   |   |   |  |  |  |

◆ Milestone    % Complete  
 □ Actual Work    □ Remaining Work  
 ■ Actual Critical    ■ Critical Remaining Work

**Field Remediation**  
 6 of 6

Print date: 08-Dec-15. Data date: 07-Dec-15. TASK filters: POW , POW Format.

# Attachment 5

### TRI-PARTY AGREEMENT

|  |                        |   |
|--|------------------------|---|
| Change Notice Number<br>TPA-CN- 700  | TPA CHANGE NOTICE FORM | Date:<br>11/17/15                       |
| Document Number, Title, and Revision:<br>DOE/RL-2014-13-ADD2, Remedial Design Report/Remedial Action Work Plan Addendum for the 300 Area Groundwater, REV. 0 |                        | Date Document Last Issued:<br>June 2015 |
| Originator: Patrick A. Baynes  |                        | Phone: 509-372-3583                     |

**Description of Change:**  
Figure 7-1, Schedule for Groundwater Remedy Implementation, is being replaced with an updated schedule.

M.W. Cline and B.W. Simes agree that the proposed change  
**DOE** **Lead Regulatory Agency**  
 modifies an approved work plan/document and will be processed in accordance with the Tri-Party Agreement Action Plan, Section 9.0, *Documentation and Records*, and not Chapter 12.0, *Changes to the Agreement*.

Figure 7-1 on Page 7-2 is being replaced with a new figure to reflect the following changes:

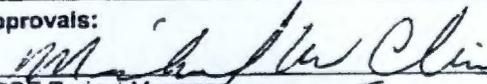
- Stage A Uranium Sequestration System Installation Report - the effort to prepare and issue this report is expanded from a 3 month effort to be finished in the first quarter of FY 2016 to a 9 month effort to be finished in the third quarter of FY 2016.
- Stage A Delivery Performance Report - the effort to prepare and issue this report is expanded from a 4 month effort to be finished in the first quarter of FY 2016 to a 16 month effort to be finished in the first quarter of FY 2017.
- Stage B Piezometer/Well Installation - the Stage B uranium sequestration implementation is delayed from FY 2016 until FY 2017.
- Stage B Uranium Sequestration System Installation Report - the effort to prepare and issue this report is expanded from a 5 month effort to be finished in the first quarter of FY 2017 to a 14 month effort to be finished in the second quarter of FY 2018.
- Stage B Infiltration/Injection - the Stage B uranium sequestration implementation is delayed from FY 2016 until FY 2017. This activity also includes demobilization.
- Uranium Sequestration Completion Report - this report is delayed from the fourth quarter of FY 2017 to the fourth quarter of FY 2018.

Note: Include affected page number(s): 7-2.

**Justification and Impacts of Change:**

The schedule duration for preparation and issuance of the Stage A Delivery Performance Report is being changed to better reflect the time required to obtain the necessary data for the report. Three (3) boreholes will be drilled and sampled 4 weeks after the final injection. The samples will be analyzed for uranium and leachability. The leachability testing takes ~110 days. The analysis results will be used to generate the final 3-D STOMP model which will take ~ 20 days. The 3-D STOMP model will be used to support preparation of the report. The report will then go through the typical document review and approval process which takes ~ 90 days. The Stage B uranium sequestration implementation is being deferred until FY 2017 due to site priorities. The schedule duration for preparation and issuance of the Uranium Sequestration Completion Report is being changed consistent with the discussion above.

**Approvals:**

|   |            |   |
|---|------------|---|
|  | 11/17/2015 | <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved |
| DOE Project Manager   | Date       |   |
|  | 11/30/2015 | <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved |
| EPA Project Manager   | Date       |   |
| N/A   |            | <input type="checkbox"/> Approved <input type="checkbox"/> Disapproved            |
|   |            | <input type="checkbox"/> Approved <input type="checkbox"/> Disapproved            |
| Ecology Project Manager   | Date       |   |

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| TASK   | FY14 |    | FY15 |    | FY16 |    | FY17 |    | FY18 |    | Total |
|--|------|----|------|----|------|----|------|----|------|----|-------|
|  | 3Q   | 4Q | 1Q   | 2Q | 3Q   | 4Q | 1Q   | 2Q | 3Q   | 4Q |       |
| <b>RDR/RAWP</b>  |      |    |      |    |      |    |      |    |      |    |       |
| Regulatory Review of Integrated RDR/RAWP and Addenda     |      |    |      |    |      |    |      |    |      |    |       |
| Final Approval of Integrated RDR/RAWP and Addenda        |      |    |      |    |      |    |      |    |      |    |       |
| <b>Remedy Implementation SAP</b>                         |      |    |      |    |      |    |      |    |      |    |       |
| Remedy Implementation SAP                                |      |    |      |    |      |    |      |    |      |    |       |
| M-016-110-105  |      |    |      |    |      |    |      |    |      |    |       |
| <b>Stage A</b>   |      |    |      |    |      |    |      |    |      |    |       |
| Supplemental Post-ROD Field Investigation                |      |    |      |    |      |    |      |    |      |    |       |
| Supplemental Post-ROD Field Investigation Summary        |      |    |      |    |      |    |      |    |      |    |       |
| Stage A Piezometer/Well Installation                     |      |    |      |    |      |    |      |    |      |    |       |
| Stage A Uranium Sequestration System Installation Report |      |    |      |    |      |    |      |    |      |    |       |
| Stage A Infiltration/Injection                           |      |    |      |    |      |    |      |    |      |    |       |
| Stage A Delivery Performance Report                      |      |    |      |    |      |    |      |    |      |    |       |
| <b>Stage B</b>   |      |    |      |    |      |    |      |    |      |    |       |
| Stage B Piezometer/Well Installation                     |      |    |      |    |      |    |      |    |      |    |       |
| Stage B Uranium Sequestration System Installation Report |      |    |      |    |      |    |      |    |      |    |       |
| Stage B Infiltration/Injection                           |      |    |      |    |      |    |      |    |      |    |       |
| Uranium Sequestration Completion Report                  |      |    |      |    |      |    |      |    |      |    |       |
| <b>Groundwater Monitoring and Reporting</b>              |      |    |      |    |      |    |      |    |      |    |       |

DOE-RL-2014-13-ADD2, REV. 0

Figure 7-1. Schedule for Groundwater Remedy Implementation

| Task   | FY14 |    | FY15 |    | FY16 |    | FY17 |    | FY18 |    | FY19 |
|--|------|----|------|----|------|----|------|----|------|----|------|
|  | 3Q   | 4Q | 1Q   | 2Q | 3Q   | 4Q | 1Q   | 2Q | 3Q   | 4Q | 1Q   |
| <b>RDR/RAWP</b>  |      |    |      |    |      |    |      |    |      |    |      |
| Regulatory Review of Integrated RDR/RAWP and Addenda     |      |    |      |    |      |    |      |    |      |    |      |
| Final Approval of Integrated RDR/RAWP and Addenda        |      |    |      |    |      |    |      |    |      |    |      |
| <b>Remedy Implementation SAP</b>                         |      |    |      |    |      |    |      |    |      |    |      |
| Remedy Implementation SAP                                |      |    |      |    |      |    |      |    |      |    |      |
| M-016-110-105  |      |    |      |    |      |    |      |    |      |    |      |
| <b>Stage A</b>   |      |    |      |    |      |    |      |    |      |    |      |
| Supplemental Post-ROD Field Investigation                |      |    |      |    |      |    |      |    |      |    |      |
| Supplemental Post-ROD Field Investigation Summary        |      |    |      |    |      |    |      |    |      |    |      |
| Stage A Piezometer/Well Installation                     |      |    |      |    |      |    |      |    |      |    |      |
| Stage A Uranium Sequestration System Installation Report |      |    |      |    |      |    |      |    |      |    |      |
| Stage A Infiltration/Injection                           |      |    |      |    |      |    |      |    |      |    |      |
| Stage A Delivery Performance Report                      |      |    |      |    |      |    |      |    |      |    |      |
| <b>Stage B</b>   |      |    |      |    |      |    |      |    |      |    |      |
| Stage B Piezometer/Well Installation                     |      |    |      |    |      |    |      |    |      |    |      |
| Stage B Uranium Sequestration System Installation Report |      |    |      |    |      |    |      |    |      |    |      |
| Stage B Infiltration/Injection                           |      |    |      |    |      |    |      |    |      |    |      |
| Uranium Sequestration Completion Report                  |      |    |      |    |      |    |      |    |      |    |      |
| <b>Groundwater Monitoring and Reporting</b>              |      |    |      |    |      |    |      |    |      |    |      |

Figure 7-1, Schedule for Groundwater Remedy Implementation