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DISTRIBUTION
PROJECT MANAGERS MEETING,
200 AREA GROUNDWATER and SOURCE OPERABLE UNITS
March 16, 2017

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Minutes of the 200 Area Project Managers' Meeting of March 16, 2017 are attached. Minutes are comprised of the following:

Attachment 1	**Attachments List**
Attachment 2	**Signature Page**
Attachment 3	**Agenda**
Attachment 4	**Attendance Record**
Attachment 5	**Agreements and Issues List**
Attachment 6	**Milestones and Operations-Meeting Minutes**
	- **November 2016 – December 2016 Data**
Attachment 7	**Milestones and Operations-Meeting Minutes**
	- **January 2017 - February 2017 Data**
Attachment 8	**Groundwater Monitoring Report**
	- **November 2016 – December 2016 Data**
Attachment 9	**Groundwater Monitoring Report**
	- **January 2017 - February 2017 Data**
Attachment 10	**Photographs of 241-CX-70**
Attachment 11	**Scoping Summary: 241-CX-70**
Attachment 12	**Previous Subsidence and Tank Diagrams**
Attachment 13	**Approved TPA Change Notices**
	- **TPA-CN-0750 (March PMM)**
	- **TPA-CN-0754 (March PMM)**
	- **TPA-CN-0758 (January PMM)**
	- **TPA-CN-0759 (January PMM)**
	- **TPA-CN-0761 (January PMM)**
	- **TPA-CN-0776 (March PMM)**
Attachment 14	**Documents for the Administrative Record**
Attachment 15	**Action Item List**

Meeting Minutes Transmittal/Approval
Project Managers' Meeting
200 Area Groundwater and Source Operable Units
March 16, 2017

APPROVAL: _____ **DATE:** 3/16/2017
Michael Cline, 200 Area Unit Manager, DOE/RL

APPROVAL: R. Long for _____ **DATE:** 3/16/2017
Al Farabee, 200 Area Project Manager, DOE/RL

APPROVAL: _____ **DATE:** 3/16/17
Emerald Laija, 200 Area Project Manager, EPA

APPROVAL: _____ **DATE:** 3/16/17
Nina Menard, 200 Area Project Manager, Ecology

HFFACO Action Plan Section 4.1 requires signature of agreements and commitments made during the Project Manager Meeting. Approval of these minutes documents approval of agreements and commitments documented in Attachment 4 and 5 to these minutes. Approval does not apply to any other attachments, which are included in these minutes for informational purposes.

200 AREA PROJECT MANAGERS MEETING

March 16, 2017

AGENDA – This meeting will capture the regularly scheduled information in addition to the information that was to have been presented in the January meeting, cancelled due to inclement weather.

- November/December Data
- January/February Data
  - Operational Status and Milestones by OU
    - Deep Vadose Zone
    - 200-EA-1 and 200-IS-1
    - 200-SW-2
    - 200-SW-1
    - 200-BC-1 and 200-WA-1
    - 200-CW-1, 200-CW-3, 200-OA-1
    - 200-BP-5 and 200-PO-1
    - M-015 Milestone Series
    - 200-PW-1/3/6 and 200-CW-5
    - 200-UP-1
    - 200-ZP-1
    - 200 Area Groundwater
    - M-016 Milestone Series
    - M-024 Milestone Series
    - 200 Area RCRA TSD Closures
    - Canyon Facilities

- Approved TPA Change Notices
  - TPA-CN-0750 (March PMM)
  - TPA-CN-0776 (March PMM)
  - TPA-CN-0754 (January PMM)
  - TPA-CN-0758 (January PMM)
  - TPA-CN-0759 (January PMM)
  - TPA-CN-0761 (January PMM)
- Documents for the Administrative Record
- Action Items
- Next Meeting TBD *(May 18, 2017) Need to confirm CY 2017 schedule and location*

200 Area Project Managers' Status Meeting
March 16, 2017

PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
Kate Amrhein	DOE	ZP-1/UP-1 Lead	376-9391
Stewart Cimon	DOE		(541) 963-0853
J V Borghese	CHPRC	TPA	373-3884

200 Area Project Managers' Status Meeting
March 16, 2017

PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
Danny Beers	WDOH	Regulator	509-943-6505
RD Hildebrand	DOE	DOE	509-373-9626
Michael Cline	DOE	DOE	509-376-6070
Roberta Day	CHPRC	PRC	509.539.0232
Gretchen M. Hanson	CHPRC	PRC	509 539.9044
Mostafa Kamal	DOE	DOE	509-376-0295
Craig Cameron	EPA	Man.	509 376-8665
Emerald Laija	EPA	—	509-376-4919

200 Area Project Managers' Status Meeting
March 16, 2017

PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
NINA M. MENARD	ECOLOGY	PROJECT MANAGER	509-372-7941
KIM WELSCH	ECOLOGY	DOC LEAD	372-7882
BOB LONG	DOE-RL		376-7754
JOE AXTELL	DOE-RL	200 WA-1 + BC-1	373-6687
Ben Vannah	DOE-RL	OA1/EA1	376-9623

200 Area Project Managers' Meeting
Agreements and Issues List
March 16, 2017

Agreement: None

Issue: None

Announcements: None

Delegations for March 16, 2017 PMM Meeting:

EPA

DOE Robert Long for Al Farabee

200 AREA PROJECT MANAGERS' MEETING

Milestones and Operation November - December 2016 Status by OU
March 16, 2017 (for January 19, 2017 cancellation)

Deep Vadose Zone 200-DV-1 Ecology Lead (RL –Jim Hanson, CHPRC – Mark Byrnes)

- A TPA change notice is being prepared for DOE/RL-2010-88, Rev. 0, *SAP for the Uranium Sequestation Pilot Test* and DOE/RL-2010-87, Rev. 0, *Field Test Plan for the Uranium Sequestration Pilot Test* to make adjustments to the original proposed injection/monitoring well network due to problems encountered in FY2016 during the attempted installation of the injection well. These problems resulted in the injection well being converted to a monitoring well.
- Two addenda are being prepared for DOE/RL-2011-104, Rev. 0, *Characterization SAP for the 200–DV-1 OU*. One addendum is being prepared to include additional analyses to be performed on soil samples to support the evaluation of the monitored natural attenuation alternative in the feasibility study. A second addendum is being prepared to address additional shallow soil sampling and analyses required to support the baseline risk assessment.
- Laboratory analyses continues to be performed by PNNL on soil core samples to support the monitored natural attenuation alternatve in the feasibility study.

Regulatory Agency Comments: N/A

200-IS-1 Ecology Lead (RL- Doug Hildebrand, CHPRC – Bert Day)

- Awaiting Ecology comments on Change Package C-13-01. DOE provided the updated Change Package C-13-01 and four other change packages to better align the waste sites within the 200-IS-1 OU and several other OUs to Ecology on October 20, 2016, for review/comments.

M-015-112: Submit Draft B, 200-IS-1 OU Pipeline System Waste Sites RFI/CMS/RI/FS WP to Ecology, including a schedule of completion dates for major tasks and deliverables, 2/28/2014.

- Status: Dispute resolution. The parties are currently working on identifying the Work Plan scope (i.e., change package C-13-01), TSD identification, and associated revised delivery schedule. The dispute resolution is currently extended to March 16, 2017.

Regulatory Agency Comments: N/A

200-EA-1 Ecology Lead (RL- Doug Hildebrand and Ben Vannah, CHPRC – Bert Day)

- Continued scoping efforts for preparation of the RFI/CMS & RI/FS work plan.
- Initiated waste site scoping summary review workshops with Ecology.
- Initiated preparation of chapters 1 and 2 of the RFI/CMS & RI/FS work plan.

M-015-92A: Submit a RFI/CMS & RI/FS work plan for the 200-EA-1 OU (200 East Inner Area) to Ecology, 9/30/17

- Status: On Schedule.

Regulatory Agency Comments: N/A

200-SW-2 Ecology Lead (RL- Doug Hildebrand, CHPRC – Bert Day)

- Finalizing Field Summary Report for the Central Plateau Aerial Radiological Survey.
- Coordinating with Ecology in support of upcoming HAB RAP workshop presentation.

Regulatory Agency Comments: N/A

200-SW-1 Ecology Lead (RL- Doug Hildebrand)

- No work planned for FY2017.

Regulatory Agency Comments: N/A

200-BC-1 and 200-WA-1 EPA Lead (RL- John Sands, CHPRC – Patrick Baynes)

- Resolved EPA comments on DOE/RL-2010-49, Rev. 0, *Remedial Investigation/Feasibility Study Work Plan 200-WA-1 and 200-BC-1 Operable Units*. The document should be cleared for signature and release in January 2017.

Regulatory Agency Comments:

200-BP-5 and 200-PO-1 Ecology Lead (RL – James Hanson, CHPRC – Curt Wittreich)

- Issued the Rev 0 Action Memorandum for 200-BP-5 Operable Unit Groundwater Extraction, DOE/RL-2016-41.
- Transmitted the Draft A 200-BP-5 RI Report and Draft A 200-PO-1 RI Report Addendum to Ecology on August 11, 2015, for review. This review has been held up due to Ecology's concerns over the groundwater model proposed in the RI reports. RL received an Ecology letter dated December 28, 2016, accepting the Central Plateau model for 200-BP-5 and 200-PO-1 OUs with stipulations. Preparing a response to the letter.
- Provided updated comment dispositions to Ecology comments received on the Draft A 200-BP-5 Groundwater Sampling and Analysis Plan. Held comment resolution meetings on November 2 and December 21, 2016, and a third meeting is scheduled for the end of January.

Regulatory Agency Comments: N/A

200-PW-1/3/6 and CW-5 EPA Lead (RL- Robert Long, CHPRC – Patrick Baynes)

- Nothing new to report; not funded in FY2017.

Regulatory Agency Comments:

200-UP-1 EPA Lead (RL – Kate Amrhein, CHPRC – Curtis Wittreich, PNNL-D. Wellman [I-129])

- Completed drilling for two (699-32-64 and 699-30-63) of three 8-inch chromium plume wells. Continued the drilling of two 8-inch uranium plume wells (299 W19-125 and 299 W19-123).
- Revising the drilling SAP to include all 24 wells to be installed in support of TPA Milestone M-016-193, including four additional chromium plume characterization wells.
- Received approval of TPA CN -754 for the 200-UP-1 waste management plan that added 5 new FY2017 wells.

M-016-193: Complete the remedial design investigation of the SE chromium plume, including the installation of new wells and evaluation of the GW monitoring data and install monitoring wells needed for remedy performance monitoring as defined in the UP-1 RD/RA WP, 9/30/2017.

- Status: At risk. Preparing TPA Change Package to extend TPA Milestone M-016-193 out one year to September 30, 2018. A one year extension is needed to allow the aquifer to recover from reducing conditions caused during drilling in support of the chromium plume investigation, and to install additional chromium plume wells to further characterize the plume boundary. Also preparing a second corresponding TPA change notice for the 200-UP-1 RD/RAWP to incorporate the extended milestone and to identify a total of 24 wells to be completed under the milestone.

Regulatory Agency Comments: N/A

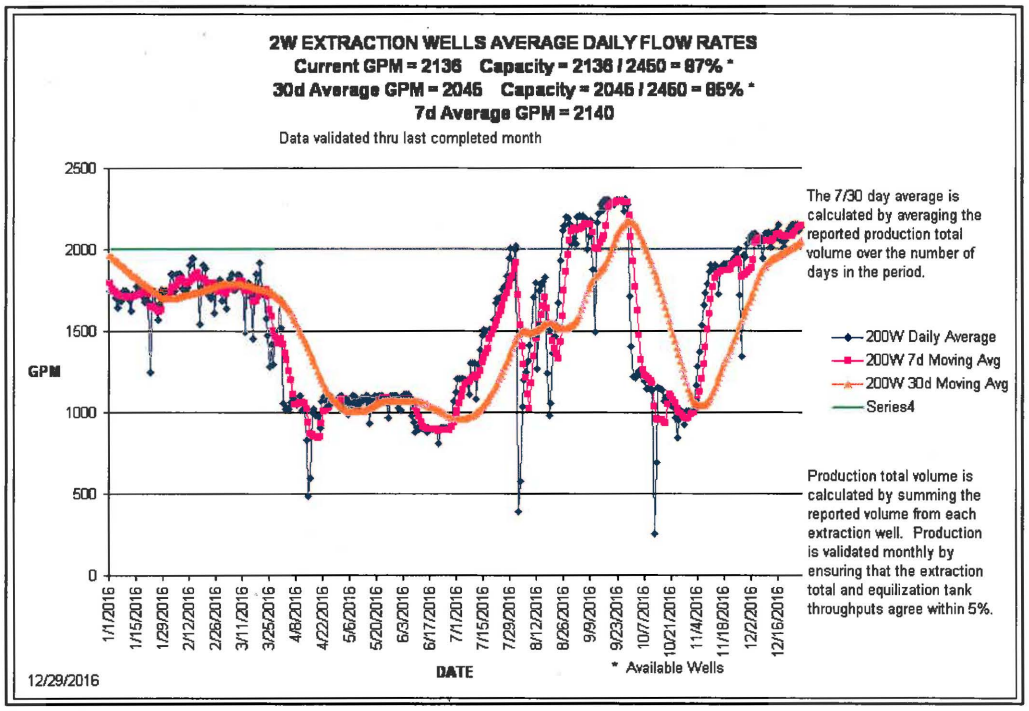
200-ZP-1 EPA Lead (RL – James Hanson, CHPRC – Mark Byrnes)

- Drafted TPA change notice TPA-CN-0776 to update the 200 West P&T operations and maintenance plan to add four injection wells and three monitoring wells being drilled in FY2017.
- Continued working on the preparation of an extraction/injection well data base for 200 Area wells.
- Worked with 200-UP-1 team to prepare a draft annotated outline for the updated 200-ZP-1 RD/RAWP.
- Continued working on tasks supporting the updating of the Central Plateau Groundwater Model.

Regulatory Agency Comments: N/A

200 Area Groundwater/200 West P&T Facility

- Treated 212M gallons of water in FY2017 to date, which included the removal of:
  - 15,880 kgs of nitrate
  - 439kgs of carbon tetrachloride
  - 19.5 kgs of chromium
  - 2.6 kgs of uranium
  - 3.7 Ci of Tc-99



M-024 Well Installation Ecology Lead (RL-Ben Vannah, CHPRC-Dave Capelle)

- Nothing new to report. *Status table will be added here.*

M-024-68-T01: Conclude discussions of well commitments initiated under M-024-58.

- Status: On Schedule. Due 8/1/2017.

M-024-68: Complete Construction of all wells listed for CY2017 and before identified in TPA Change Package M-024-14-01.
- Status: Completed 09/01/2016. Due 12/31/2017.

Regulatory Agency Comments: N/A

200 Area RCRA TSD Closures Ecology Lead (RL – Mostafa Kamal, CHPRC – Bert Day)
- Reviewing 216-A-29 ditch, 216-A-36B crib, 216-A-37-1 crib, and 216-B-63 trench waste site scoping information in support of Closure Plan preparation.

Regulatory Agency Comments: N/A

U Plant Canyon EPA Lead (RL – Wade Woolery, CHPRC – TBD)
- Nothing to report.

Regulatory Agency Comments: N/A

Canyon Facilities EPA/Ecology Lead (RL – Ray Corey, CHPRC –Jennie Stults)
- EECA for REDOX public comment scheduled to run through January 20, 2017; request for extension to public comment period has been received and RL is evaluating.
- Proposal for B Plant EE/CA actions submitted to Ecology on November 17, 2016; RL is awaiting a response (M-085-074).

M-085-80A: Submit a DQO report to assess the structural integrity of the PUREX storage tunnels 1 and 2, 9/30/2017
- Status: On Schedule.

Regulatory Agency Comments: N/A

Waste Site Removal Ecology Lead (RL- Al Farabee, CHPRC – Darren Corriel)
- Nothing to report.

M-016-250: Submit to Ecology for approval a three year rolling prioritized schedule consistent with site-wide clean-up priorities to implement waste site removal actions per Action Memoranda (DOE/RL-2009-37, DOE/RL-2009-48 and DOE/RL-2009-86), 3/31/2016 and annually thereafter.
- Status: On Schedule.

Regulatory Agency Comments: N/A

Monthly Performance Report Assessment
The DOE project manager agrees with the contractor's (CHPRC) monthly site performance report.

Central Plateau Milestones due post 9/30/2017

MS#	Title	Due Date
M-015-00	Complete RI/FS for non-tank and non-canyon OUs	6/30/2026

MS#	Title	Due Date
M-015-21A	Submit BP-5/PO-1 FS/PP	6/30/2018
M-015-93C	Initiate characterization field work for the 200-SW-2 OU	9/30/2018
M-015-91B	Submit FS/PP for 200-BC-1/200-WA-1 OUs	7/31/2021
M-015-92B	Submit RFI/CMS, RI/FS, and Proposed CA Decision proposed plan for 200-EA-1	11/30/2022
M-015-93B	Submit RFI/CMS & RI/FS Study Report and proposed CAD/PP for 200-SW-2 OU	1/31/2023
M-015-92C	Submit RFI/CMS & RI/FS Study report and proposed CAD/PP for the 200-IS-1 OU to Ecology	3/31/2023
M-015-38B	Submit FS/PP for 200-CW-1, 200-CW-3 and 200-OA-1 OUs	7/31/2023
M-015-98	Complete remedial investigation of U Plant related waste sites located in 200-WA-1 in accordance with the WA-1 RI/FS Work Plan	6/30/2019
M-015-99	Complete remedial investigation of PFP related waste sites located in 200-WA-1 in accordance with the WA-1 RI/FS Work Plan.	6/30/2019
M-015-110B	Submit CMS & FS and Proposed CAD/PP for 200-DV-1 OU	9/30/2023
M-024-58K	Initiate Discussions of Well Commitments	6/1/2018
M-024-69-T01	Conclude discussions of well commitments initiated under M-024-58	8/1/2018
M-024-69	Complete construction of all wells listed for CY18 and before as listed in M-24-15-01	12/31/2018
M-016-00	Complete remedial actions for non-tank and non-canyon OUs	9/30/2042
M-016-86	Complete remedial actions for 618-11 Burial Ground	9/30/2021
M-016-200A	Complete U Plant canyon demolition	9/30/2024
M-016-200B	Complete U Plant barrier construction	9/30/2027
M-085-82	Submit proposals for expedited response actions for one or more of the Tier 1 or Tier 2 facilities in the PUREX geographic area	12/31/2017
M-085-74	Submit proposals for expedited response actions for one or more of the Tier 1 and Tier 2 facilities in the B Plant geographic area	6/30/2018
M-085-70	Submit RI/FS Work Plan for 200-CB-1	9/30/2019
M-085-72	Submit RAWP to implement the approved Action Memorandum for 224-B	9/30/2020
M-085-80	Submit RI/FS Work Plan for 200-CP-1	9/30/2020
M-085-100	Submit a RAWP to implement the approved Action Memorandum for 224-T	9/30/2020
M-085-90	Submit RI/FS Work Plan for 200-CR-1	9/30/2021

MS#	Title	Due Date
M-085-76	Initiate response actions for the B Plant geographic area	9/30/2025
M-085-84	Initiate response actions for the PUREX geographic work	9/30/2025
M-085-01	Submit change package to establish a date for major milestone M-085-00	6/30/2026
M-037-10	Complete Unit-Specific closure requirements for six TSD units	9/30/2020
M-037-13	Complete unit-specific closure requirements for 241-CX Tank System	9/30/2022
M-037-11	Complete unit-specific closure requirements for 216-B-3 Main Pond System and 216-S-10 Pond and Ditch	9/30/2024

200 AREA PROJECT MANAGERS' MEETING

Milestones and Operation – January - February 2017 Status by OU
March 16, 2017

Deep Vadose Zone 200-DV-1 Ecology Lead (RL –Jim Hanson, CHPRC – Mark Byrnes)

- Revised TPA change notices were provided for review March 3, 2017, for DOE/RL-2010-88, Rev. 0, *SAP for the Uranium Sequestration Pilot Test* and DOE/RL-2010-87, Rev. 0, *Field Test Plan for the Uranium Sequestration Pilot Test* to make adjustments to the original proposed injection/monitoring well network due to problems encountered in FY2016 during the attempted installation of the injection well. These problems resulted in the injection well being converted to a monitoring well.
- Ecology and EPA were provided the two addenda that were prepared for DOE/RL-2011-104, Rev. 0, *Characterization SAP for the 200–DV-1 OU* on January 25, 2017. One addendum was prepared to include additional analyses to be performed on soil samples to support the evaluation of the monitored natural attenuation alternative in the feasibility study. The second addendum was prepared to address additional shallow soil sampling and analyses required to support the baseline risk assessment. EPA comments on the two addendums were delivered to Ecology on February 14, 2017. A meeting was held March 1, 2017, to review comment resolution with EPA. Ecology's comments are due March 10, 2017.
- Laboratory analyses performed by PNNL on soil core samples collected from the first 22 of 26 boreholes is complete. Two reports have been prepared and are undergoing internal review. One report is titled "Contaminant Attenuation and Transport Characterization for S- and T Complex". The second report is titled "Geochemical, Microbial, and Physical Characterization at B-Complex".
- The Operations Acceptance Testing for the BP-5 cross-site transfer line resumed February 22, 2017, with YE-27 (BP5 well) transferring water to the Uranium System Inlet Tank (USIT). Perched water wells (YE-29 and YE-30) successfully transferred water February 27, 2017, to the new external transfer tank (ETT-Y32).
- The Uranium Reactive Gas Sequestration Treatability Test is a gas-phased technology chosen for deep vadose zone field testing. Field testing at the U-8 crib targets a zone of mobile uranium contamination about 40-50 feet deep. A monitoring network in conjunction with pre-and post-treatment soil sampling will evaluate the effectiveness of the technology. The drilling contractor has mobilized on site and will commence drilling the week of March 13, 2017.

Regulatory Agency Comments:

Extraction Transfer Tank (ETT-Y32) and the Leak Detection Overflow Tank (LDOT-Y32) during construction. The Perched Water Tank (PWT-Y31) is in the background.

200-IS-1 Ecology Lead (RL- Doug Hildebrand, CHPRC – Bert Day)

- Awaiting Ecology comments on Change Package C-13-01. DOE provided the updated Change Package C-13-01 and four other change packages to better align the waste sites within the 200-IS-1 OU and several other OUs to Ecology on October 20, 2016, for review/comments.

M-015-112: Submit Draft B, 200-IS-1 OU Pipeline System Waste Sites RFI/CMS/RI/FS WP to Ecology, including a schedule of completion dates for major tasks and deliverables, 2/28/2014.

- Status: Dispute resolution. The parties are currently working on identifying the Work Plan scope (i.e., change package C-13-01), TSD identification, and associated revised delivery schedule. The dispute resolution has been extended to June 30, 2017.

Regulatory Agency Comments: DOE provided status of 241-CX-70 subsidence associated with the shoring box on top of the tank manhole. Ecology requests that pictures be taken to document that the subsidence is in the shoring box and that the tank 241-CX-70 still has integrity

200-EA-1 Ecology Lead (RL- Doug Hildebrand and Ben Vannah, CHPRC – Bert Day)

- Continued scoping efforts for preparation of the RFI/CMS & RI/FS work plan using the workbook approach. This process is taking more time initially, but should significantly reduce the overall schedule for comment resolution based on getting agreement upfront.
- Continued waste site scoping summary review workshops with Ecology.
- Initiated preparation of RFI/CMS & RI/FS work plan chapters 3 and 4, and SAP.

M-015-92A: Submit a RFI/CMS & RI/FS work plan for the 200-EA-1 OU (200 East Inner Area) to Ecology, 9/30/17

- Status: The workbook approach is taking more time initially and the milestone will need to be extended

Regulatory Agency Comments:

200-SW-2 Ecology Lead (RL- Doug Hildebrand, CHPRC – Bert Day)

- Finalizing Field Summary Report for the Central Plateau Aerial Radiological Survey.
- Presented 200-SW-2 OU Work Plan overview at the January 17, 2017, HAB RAP committee meeting.

Regulatory Agency Comments:

200-SW-1 Ecology Lead (RL- Doug Hildebrand)

- No work planned for FY2017.

Regulatory Agency Comments:

200-BC-1 and 200-WA-1 EPA Lead (RL- Joe Axtell, CHPRC – Patrick Baynes)

- Issued Revision 0, DOE/RL-2010-49, Remedial Investigation/Feasibility Study Work Plan 200-WA-1 and 200-BC-1 Operable Units on January 31, 2017.
- Initiated planning to be able to begin characterization in late FY2017.

Regulatory Agency Comments: The test identified in DV-1, the URGS treatability identified in DV-1 is physically located in 200-WA-1 (U-8 Crib)

200-BP-5 and 200-PO-1 Ecology Lead (RL – James Hanson, CHPRC – Curt Wittreich)

- Transmitted the Draft A 200-BP-5 RI Report and Draft A 200-PO-1 RI Report Addendum to Ecology on August 11, 2015, for review. This review has been held up due to Ecology's concerns over the groundwater model proposed in the RI reports. RL received an Ecology letter dated December 28, 2016, accepting the Central Plateau model for 200-BP-5 and 200-PO-1 OUs with stipulations. The timeframe for receipt of Ecology's comments on these reports is unknown.

Regulatory Agency Comments:

200-PW-1/3/6 and CW-5 EPA Lead (RL- Robert Long, CHPRC – Patrick Baynes)

- In November 2015, EPA concurred that the Soil Vapor Extraction (SVE) remedy met the Remedial Action Objectives (RAOs) in the ROD and that SVE activities could be ended. EPA concurrence with the response action report (DOE/RL-2014-48, *Response Action Report for the 200-PW-1 Operable Unit Soil Vapor Extraction Remediation*) in August 2016 closed out the SVE portion of the 200-PW-1 OU remedy in the ROD and initiated activities to terminate SVE operations and vadose zone monitoring.
- Update annually beginning March 2018

Regulatory Agency Comments:

200-UP-1 EPA Lead (RL – Kate Amrhein, CHPRC – Curtis Wittreich, PNNL-D. Wellman [I-129])

- Completed construction of one (699-32-64) and drilling the other two (699-30-63 and 699-32-59) chromium plume wells that are targeted to be completed by the end of March. Following their completion, the collection of quarterly groundwater will begin for all six chromium characterization wells.
- Continued drilling the two 8-inch uranium plume wells (299 W19-125 and 299 W19-123).
- Completed a technical evaluation for capture of the 200-UP-1 uranium plume using hydraulic modeling. The draft capture zone evaluation recommended that well 299 W19-125 (currently being drilled) be used as a third extraction well to improve capture of the uranium plume.
- Revised the drilling SAP to include all 24 wells to be installed in support of TPA Milestone M-016-193. The Final draft SAP was provided to EPA for checking/signature.

M-016-193: Complete the remedial design investigation of the SE chromium plume, including the installation of new wells and evaluation of the GW monitoring data and install monitoring wells needed for remedy performance monitoring as defined in the UP-1 RD/RA WP, 9/30/2017.

- Status: At risk. Completed a TPA Change Package (M-16-16-05) to extend TPA Milestone M-016-193 out one year to September 30, 2018. The package is currently undergoing signature. A one year extension is needed to allow the aquifer to recover from reducing conditions caused during drilling in support of the chromium plume investigation, and to install additional chromium plume wells to further characterize the plume boundary.

Regulatory Agency Comments:

200-ZP-1 EPA Lead (RL – Kate Amrhein, CHPRC – Mark Byrnes)

- Processing TPA change notice TPA-CN-0776 to update the 200 West P&T Operations and Maintenance Plan to add four injection wells and three monitoring wells being drilled in FY2017.
- Working to finalize the Baseline Pump & Treat extraction/injection well data base for 200 Area wells (Uber Table).

- Refining the annotated outline for Rev. 1 to the 200-ZP-1 RD/RAWP. A meeting is scheduled with EPA for March 14, 2017, to walk them through the draft annotated outline.
- A groundwater monitoring redundancy analysis was recently completed on the 200-ZP-1 groundwater monitoring network. A meeting will be scheduled in the near future to walk EPA through the conclusions and recommendations from this evaluation.

Regulatory Agency Comments:

200 Area Groundwater/200 West P&T Facility

- Treated 387M gallons of water in FY2017 to date, which included the removal of:
  - 27,302 kgs of nitrate
  - 801 kgs of carbon tetrachloride
  - 34 kgs of chromium
  - 5.1 kgs of uranium
  - .65 Ci of Tc-99

M-024 Well Installation Ecology Lead (RL-Kathy Higgins, CHPRC-Dave Capelle)

- Nothing new to report. There are five CY2018 M-024 wells planned for drilling in FY2017. Cultural and ecological (C&E) is statused below, however, drilling has not been initiated on any of these wells.
  - C9616 299-E26-80 216-A-29 C&E complete - PO-1 OU
  - C9617 299-E25-238 216-A-29 C&E complete - PO-1 OU
  - C9618 299-E25-239 216-A-29 C&E complete - PO-1 OU
  - C9615 699-44-43C 216-B-3 Pond C&E complete - BP-5
  - C9630 299-E25-95 216-A37-1 C&E issued - PO-1 OU

M-024-68-T01: Conclude discussions of well commitments initiated under M-024-58.

- Status: On Schedule. Due 8/1/2017.

M-024-68: Complete Construction of all wells listed for CY2017 and before identified in TPA Change Package M-024-14-01.

- Status: Completed 09/01/2016. Due 12/31/2017.

Regulatory Agency Comments:

200 Area RCRA TSD Closures Ecology Lead (RL – Mostafa Kamal, CHPRC – Bert Day)

- Initiating discussions with Ecology regarding the 216-A-29 ditch, 216-A-36B crib, 216-A-37-1 crib, and 216-B-63 trench waste site scoping information and waste designations in support of Closure Plan preparation.
- Initiating 216-A-37-1 crib closure strategy in preparation for Closure Plan kick-off and storyboard discussion with Ecology.

Regulatory Agency Comments: Ecology is requesting DOE to hold off on initiating closure strategy for 216-A-37-1 until the end of April, 2017, when Ecology will present closure plan templates for DOE's review.

U Plant Canyon EPA Lead (RL – Robert Long, CHPRC – TBD)

- Nothing to report.

Regulatory Agency Comments:

Canyon Facilities EPA/Ecology Lead (RL – Robert Long, CHPRC –George Jackson)

- Awaiting comments on the Tier 2 B Plant RAWP (DOE/RL-2016-46) which was sent to Ecology on August 2, 2016.
- Awaiting response on the 276-BA RCRA Closure Plan (DOE/RL-2015-70) and proposal, which were sent to Ecology on October 20, 2016.
- Awaiting comments on the Tier 2 PUREX RAWP (DOE/RL-2016-47), which was sent to Ecology on November 14, 2016.
- Awaiting approval of TPA-CN-0750 to add 215C to the scope of the Tier 2 Miscellaneous Facilities RAWP (DOE/RL-2016-50).
- Awaiting response on proposal for B Plant EE/CA actions submitted to Ecology on November 17, 2016, (M-085-074).
- EECA for REDOX public comment period ended February 3, 2017; additional comments were received February 27, 2017. Completed draft responses to comments received through February 3, 2017 on February 15, 2017.
- Continued development of SAP and RAWP for REDOX.
- Continued development of Tier 2 Miscellaneous Facilities RAWP (DOE/RL-2016-50).

M-085-80A: Submit a DQO report to assess the structural integrity of the PUREX storage tunnels 1 and 2, 9/30/2017

- Status: On Schedule.

Regulatory Agency Comments:

Waste Site Removal Ecology Lead (RL- Al Farabee, CHPRC – Darren Corriel)

- Nothing to report.

M-016-250: Submit to Ecology for approval a three year rolling prioritized schedule consistent with site-wide clean-up priorities to implement waste site removal actions per Action Memoranda (DOE/RL-2009-37, DOE/RL-2009-48 and DOE/RL-2009-86), 3/31/2016 and annually thereafter.

- Status: On Schedule.

Regulatory Agency Comments: The March 2017 M-016-250 discussions did occur where RL provided the draft change package to Ecology and will be providing it to EPA for their review

Monthly Performance Report Assessment

The DOE project manager agrees with the contractor's (CHPRC) monthly site performance report.

Central Plateau Milestones due post 9/30/2017

MS#	Title	Due Date
	Fiscal Year 2018	
M-085-82	Submit proposals for expedited response actions for one or more of the Tier 1 or Tier 2 facilities in the PUREX geographic area	12/31/2017
M-024-58K	Initiate Discussions of Well Commitments	6/1/2018
M-015-21A	Submit BP-5/PO-1 FS/PP	6/30/2018
M-085-74	Submit proposals for expedited response actions for one or more of the Tier 1 and Tier 2 facilities in the B Plant geographic area	6/30/2018
M-024-69-T01	Conclude discussions of well commitments initiated under M-024-58	8/1/2018
M-015-93C	Initiate characterization field work for the 200-SW-2 OU	9/30/2018
M-016-255	DOE shall complete the removal of all waste sites for FY2018 as identified in TPA Change Package M-16-16-01.	9/30/2018
	Fiscal Year 2019	
M-024-69	Complete construction of all wells listed for CY18 and before as listed in M-24-15-01	12/31/2018
M-015-98	Complete remedial investigation of U Plant related waste sites located in 200-WA-1 in accordance with the WA-1 RI/FS Work Plan	6/30/2019
M-015-99	Complete remedial investigation of PFP related waste sites located in 200-WA-1 in accordance with the WA-1 RI/FS Work Plan.	6/30/2019
M-085-70	Submit RI/FS Work Plan for 200-CB-1	9/30/2019
	Fiscal Year 2020	
M-085-72	Submit RAWP to implement the approved Action Memorandum for 224-B	9/30/2020
M-085-80	Submit RI/FS Work Plan for 200-CP-1	9/30/2020
M-085-100	Submit a RAWP to implement the approved Action Memorandum for 224-T	9/30/2020
M-037-10	Complete Unit-Specific closure requirements for six TSD units	9/30/2020
	Fiscal Year 2021	
M-015-91B	Submit FS/PP for 200-BC-1/200-WA-1 OUs	7/31/2021
M-016-86	Complete remedial actions for 618-11 Burial Ground	9/30/2021

M-085-90	Submit RI/FS Work Plan for 200-CR-1	9/30/2021
	Fiscal Year 2022	
M-037-13	Complete unit-specific closure requirements for 241-CX Tank System	9/30/2022
	Fiscal Year 2023	
M-015-92B	Submit RFI/CMS, RI/FS, and Proposed CA Decision proposed plan for 200-EA-1	11/30/2022
M-015-93B	Submit RFI/CMS & RI/FS Study Report and proposed CAD/PP for 200-SW-2 OU	1/31/2023
M-015-92C	Submit RFI/CMS & RI/FS Study report and proposed CAD/PP for the 200-IS-1 OU to Ecology	3/31/2023
M-015-38B	Submit FS/PP for 200-CW-1, 200-CW-3 and 200-OA-1 OUs	7/31/2023
M-015-110B	Submit CMS & FS and Proposed CAD/PP for 200-DV-1 OU	9/30/2023
	Fiscal Year 2024	
M-016-200A	Complete U Plant canyon demolition	9/30/2024
M-037-11	Complete unit-specific closure requirements for 216-B-3 Main Pond System and 216-S-10 Pond and Ditch	9/30/2024
	Fiscal Year 2025-2027	
M-085-76	Initiate response actions for the B Plant geographic area	9/30/2025
M-085-84	Initiate response actions for the PUREX geographic work	9/30/2025
M-085-01	Submit change package to establish a date for major milestone M-085-00	6/30/2026
M-016-200B	Complete U Plant barrier construction	9/30/2027

Project Managers Meeting – March 2017 (November and December Data)

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.

FY 2016 Sample Trip Status by Month Scheduled

For Fiscal Year 2016 Hanford's overall Site groundwater monitoring program has 2,818 sample trips scheduled for collection. Prior to November 2016 the program had successfully completed 2793 of the FY 2016 sample trips. During November 2016 (FY 2017, month two) the program successfully completed 1 sample trip scheduled for August 2016 and 4 sample trips scheduled for September 2016. This brings the total of August 2016 sample trips completed to 135 of 140 scheduled and September 2016 sample trips completed to 248 of 258 scheduled. The total of Fiscal Year 2016 sample trips completed at the end of December is 2,798.

FY 2017 Sample Trip Status by Month Scheduled (November and December 2016)

For Fiscal Year 2017 Hanford's overall Site groundwater monitoring program has 2,634 sample trips scheduled for collection. During November 2016 (FY 2017, month two) the program successfully completed 32 sample trips scheduled for October 2016 and 253 sample trips scheduled for November 2016. During November the program also collected 3 sample trips scheduled for December ahead of schedule. In November 2016 an additional 3 sample trips scheduled for December 2017 were completed ahead of schedule. This brings the total of Fiscal Year 2017 sample trips completed to at the end of November 2016 to 640.

During December 2016 (FY 2017, month three) the program successfully completed 2 sample trips scheduled for October 2016, 4 sample trips scheduled for November, and 191 sample trips scheduled for December 2016. This brings the total of October 2016 sample trips completed to 330 of 347 scheduled, the total of November 2016 sample trips to be completed to 303 of 325 scheduled, and the total of December sample trips to be completed to 204 of 260. This brings the total of Fiscal Year 2017 sample trips completed to at the end of November 2016 to 837.

FY 2016 Sample Trip Status by Month Collected (November and December 2016)

During November 2016, 5 Fiscal Year 2016 sample trips were successfully completed of which 1 was scheduled for August 2016 and 4 were scheduled for September. No Fiscal Year 2016 sample trips were completed in December 2016.

FY 2017 Sample Trip Status by Month Collected (November and December 2016)

During November 2016, 288 Fiscal Year 2017 sample trips were successfully completed of which 32 were scheduled for October 2016, 253 were scheduled for November 2016, and 3 were scheduled for December.

The specific wells, aquifer tubes, and springs sampled in the central plateau during November 2016 are listed in Table 1. The specific wells, aquifer tubes, and springs sampled in the central plateau during December 2016 are listed in Table 2.

Awaiting Sample Trips

Of the Fiscal Year 2016 and 2017 sample trips scheduled for December 2016 and prior, there are 99 that are awaiting collection. Of these, 2 require maintenance, 17 are being reviewed for cancelation, 8 were unsuccessful, 1 is not accepted, and 72 are awaiting collection at the month end.

Table 3 presents the sample trips for only the river corridor that were not successfully completed as of December. 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 central plateau only, scheduled for collection in January 2017 and February 2017 (and not collected before the target sample month) are listed in Table 4 and Table 5 respectively.

WMA C Tank Farm

WMA C Tank Farm samples for the first quarter of Fiscal Year 2017 were collected on December 2, 4, and 5. WMA C Tank Farm samples for the second quarter of FY-2017 are scheduled to be collected in March. WMA C Tank Farm monitoring wells are listed in Table 6.

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/.

Table 1 Wells, Aquifer Tubes, and Springs in the central plateau Successfully Sampled in November 2016

200-BP	200-PO	200-UP	200-ZP
199-K-183	299-E25-2	299-W26-13	299-W10-1
199-K-183	299-E25-32P	299-W26-14	299-W10-23
199-K-31	299-E25-48	699-30-66	299-W10-24
199-K-31	299-E26-12	699-32-76	299-W10-26
299-E27-17	299-E26-13	699-33-75	299-W10-27
299-E33-20	699-30-57	699-33-76	299-W10-28
299-E33-21			299-W11-39
299-E33-31			299-W11-40
299-E33-32			299-W11-41
299-E33-334			299-W11-42
299-E33-335			299-W11-45
299-E33-337			299-W11-47
299-E33-338			299-W14-11
299-E33-339			299-W14-13

200-BP	200-PO	200-UP	200-ZP
299-E33-361			299-W14-14
299-E33-38			299-W14-15
299-E33-41			299-W14-16
299-E33-42			299-W14-17
299-E33-44			299-W14-18
299-E33-47			299-W14-19
299-E33-48			299-W15-44
299-E33-49			299-W15-763
699-49-55B			299-W15-765
C6236			699-44-64
C6237			
C6238			

Table 2 Wells, Aquifer Tubes, and Springs in the central plateau Successfully Sampled In December 2016

200-BP	200-PO	200-UP	200-ZP
199-K-183	299-E24-20	299-W21-3	699-49-100C
199-K-31	299-E24-22	299-W22-113	
299-E27-11	299-E24-33	299-W22-115	
299-E27-12	299-E25-2	299-W22-116	
299-E27-13	299-E25-237	299-W22-47	
299-E27-14	299-E25-40	299-W22-82	
299-E27-15	299-E25-41	299-W22-83	
299-E27-155	299-E25-42	299-W22-85	
299-E27-16	299-E25-93	299-W22-93	
299-E27-18	299-E25-94	299-W22-94	
299-E27-21	699-25-34B	299-W22-95	
299-E27-22	699-30-57	299-W22-96	
299-E27-23		299-W23-19	
299-E27-24		699-19-88	
299-E27-25		699-29-66	
299-E27-26		699-31-68	
299-E27-7			
299-E33-340			
299-E34-8			

Table 3 Fiscal Year 2016 and 2017 Sample Trips in the central plateau awaiting at the end of December 2016

Qtr Sched	GWIA	SAMP_SITE TYPE	SITE_NAME	SCHEDULE DATE	Frequency	Months Remain	Status	Comment
	200-BP	WELL	299-E33-12	3/1/2016	Annual	2		Unsuccessful 3-4-2016

Qtr Sched	GWIA	SAMP_SITE TYPE	SITE_NAME	SCHEDULE DATE	Frequency	Months Remain	Status	Comment
FY 2016 Q2	200-PO	WELL	699-34-42	1/1/2016	Annual	0	Late	Review for Cancelation, Unsuccessful 1-25-2016
	200-UP	WELL	299-W18-15	2/1/2016	Annual	1		Maintenance Required; Unsuccessful 9-30-2016
FY 2016 Q3	200-BP	WELL	299-E27-4	6/1/2016	Quarterly	0	Late	Review for Cancelation
		WELL	299-E28-32	6/1/2016	Annual	6		
		WELL	699-50-59	4/1/2016	Annual	3		Unsuccessful 4-25-2016
	200-PO	WELL	299-E13-16	4/1/2016	Once Every 2 Years	15		
		WELL	299-E13-7	4/1/2016	Once Every 2 Years	15		
		WELL	299-E25-18	4/1/2016	Annual	3		Maintenance Required; Unsuccessful 4-1-2016
FY 2016 Q4	200-BP	WELL	299-E27-4	9/1/2016	Quarterly	0	Late	Review for Cancelation; Not scheduled in FY 2017
		WELL	299-E28-15	7/1/2016	Annual	6		Unsuccessful 7-20-2016
		WELL	299-E33-10	8/1/2016	Annual	7		
		WELL	299-E33-344	8/1/2016	2 Times Annually	1		
		WELL	299-E33-350	8/1/2016	Annual	7		
		WELL	299-E33-351	8/1/2016	Annual	7		
	200-UP	WELL	299-W19-4	8/1/2016	Annual	7		Unsuccessful 8-02-2016
		WELL	699-17-70	7/1/2016	Annual	6		
FY 2017 Q1	200-BP	WELL	299-E28-5	10/1/2016	2 Times Annually	5		Unsuccessful 10-7-2016
		WELL	299-E33-205	10/1/2016	2 Times Annually	3		
		WELL	299-E33-343	12/1/2016	Annual	11		
		WELL	299-E33-360	12/1/2016	Annual	11		
		WELL	299-E33-50	12/1/2016	Annual	11		
	200-PO	WELL	299-E24-23	12/1/2016	Annual	11		
		WELL	499-S0-7	10/1/2016	Annual	9		
		WELL	499-S0-8	10/1/2016	Annual	9		
		WELL	499-S1-8J	10/1/2016	Annual	9		
		WELL	699-26-38	12/19/2016	Other	0	Late	Review for Cancelation
		AQUIFER TUBE	C6384	10/1/2016	Annual	9		Unsuccessful 9-27-2016
	200-UP	WELL	299-W13-2	11/1/2016	Annual	10		
		WELL	299-W19-115	11/1/2016	Quarterly	1		
		WELL	299-W19-116	11/1/2016	Quarterly	1		Unsuccessful 11-20-2016
		WELL	299-W22-114	12/1/2016	Quarterly	2		
		WELL	699-36-63B	12/1/2016	Quarterly	2		Well Not Accepted
	200-ZP	WELL	299-W14-21	11/1/2016	Annual	10		
		WELL	299-W18-7	11/1/2016	Annual	10		
		WELL	299-W5-2	11/1/2016	Annual	10		
		WELL	699-48-96	12/1/2016	Annual	11		

Table 4 Groundwater Sampling Locations in the central plateau Scheduled to be sampled in January 2017

200-BP	200-PO	200-UP	200-ZP
199-K-183	299-E17-1	299-W17-3	299-W11-22
199-K-31	299-E17-14	299-W18-21	299-W11-90
299-E26-14	299-E17-15	299-W18-22	299-W15-152
299-E26-15	299-E17-16	299-W18-40	299-W15-17
299-E26-77	299-E17-17	299-W19-44	299-W15-224
299-E26-79	299-E17-18	299-W19-45	299-W15-225
299-E27-5	299-E17-19	299-W19-47	299-W15-30
299-E28-26	299-E17-21	699-19-88	299-W15-83
299-E28-27	299-E17-22	699-38-68A	299-W15-94
299-E28-28	299-E17-23	699-40-62	299-W17-1
299-E28-33	299-E17-25		299-W17-2
299-E32-10	299-E17-26		299-W6-11
299-E32-2	299-E18-1		299-W6-12
299-E32-3	299-E23-1		299-W6-6
299-E32-4	299-E24-18		299-W7-3
299-E32-5	299-E24-21		299-W8-1
299-E32-6	299-E24-24		699-47-80AQ
299-E32-7	299-E25-11		699-48-71
299-E32-8	299-E25-17		699-48-77C
299-E32-9	299-E25-19		699-48-77D
299-E33-266	299-E25-2		699-49-100C
299-E33-28	299-E25-20		699-49-79
299-E33-29	299-E25-25		699-51-75
299-E33-30	299-E25-26		699-51-75P
299-E33-34	299-E25-28		
299-E33-35	299-E25-3		
299-E33-40	299-E25-32P		
699-42-40A	299-E25-32Q		
699-43-41G	299-E25-34		
699-44-39B	299-E25-35		
699-45-42	299-E25-39		
C6236	299-E25-42		
C6237	299-E25-43		
C6238	299-E25-47		
	299-E25-48		
	299-E25-6		
	299-E26-12		
	299-E26-13		
	299-E26-4		

200-BP	200-PO	200-UP	200-ZP
	699-20-E12O		
	699-20-E12S		
	699-2-3		
	699-24-34D		
	699-24-34E		
	699-24-36		
	699-25-34F		
	699-26-33A		
	699-26-38		
	699-31-31		
	699-32-43		
	699-33-56		
	699-36-58B		
	699-37-E4		
	699-40-1		
	699-41-1A		
	699-41-42		
	699-42-42B		
	699-43-3		
	699-43-43		
	699-43-44		
	699-43-45		
	699-46-4		
	699-47-5		
	699-48-7A		
	699-S2-34B		

Table 5 Groundwater Sampling Locations in the central plateau Scheduled to be sampled in February 2017

200-BP	200-PO	200-UP	200-ZP
299-E33-20	299-E17-1	299-W18-15	299-W10-26
299-E33-31	699-24-46	299-W19-105	299-W10-27
299-E33-32		299-W19-107	299-W10-33
299-E33-334		299-W19-115	299-W11-13
299-E33-335		299-W19-116	299-W11-18
299-E33-337		299-W19-123	299-W11-40
299-E33-338		299-W19-125	299-W11-41
299-E33-339		299-W19-18	299-W11-42
299-E33-344		299-W19-34A	299-W11-43
299-E33-38		299-W19-34B	299-W11-47

200-BP	200-PO	200-UP	200-ZP
299-E33-41		299-W19-36	299-W11-48
299-E33-42		299-W19-43	299-W11-49
299-E33-44		299-W19-6	299-W11-87
299-E33-47		299-W23-4	299-W11-88
299-E33-48		699-25-70	299-W12-2
299-E33-49		699-34-72	299-W13-1
		699-35-59	299-W14-13
		699-38-61	299-W14-15
			299-W14-18
			299-W14-72
			299-W15-11
			299-W15-33
			299-W15-36

Table 6. WMA C Quarterly Monitoring Wells

SITE_NAME
299-E27-12
299-E27-13
299-E27-14
299-E27-15
299-E27-155
299-E27-21
299-E27-22
299-E27-23
299-E27-24
299-E27-25
299-E27-26
299-E27-7

Project Managers Meeting – March 2017 (January and February Data)

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.

FY 2016 Sample Trip Status by Month Scheduled

For Fiscal Year 2016 Hanford's overall Site groundwater monitoring program has 2,810 sample trips scheduled for collection. Prior to January 2017 the program had successfully completed 2798 of the FY 2016 sample trips. No additional FY 2016 sample trips were collected in January or February 2017.

FY 2017 Sample Trip Status by Month Scheduled (January and February 2017)

For Fiscal Year 2017 Hanford's overall Site groundwater monitoring program has 2,644 sample trips scheduled for collection.

During January 2017 (FY 2017, month four) the program successfully completed 31 sample trips scheduled for December 2016 and 139 sample trips scheduled for January 2017. This brings the total of December 2016 sample trips completed to 235 of 251 scheduled and the total of January 2017 sample trips to be completed to 139 of 237 scheduled.

During February 2017 (FY 2017, month five) the program successfully completed 51 sample trips scheduled for January 2017 and 147 sample trips scheduled for February. This brings the total of January 2017 sample trips completed to 190 of 237 and the total of February 2017 sample trips completed to 147 of 182 scheduled.

The total number of Fiscal Year 2017 sample trips completed at the end of February 2017 is 1,207.

FY 2017 Sample Trip Status by Month Collected (January and February 2017)

During January 2017, 170 Fiscal Year 2017 sample trips were successfully completed of which 31 were scheduled for December 2016 and 139 were scheduled for January 2017.

During February 2017, 198 Fiscal Year 2017 sample trips were successfully completed of which 51 were scheduled for January 2017 and 147 were scheduled for February 2017.

The specific wells, aquifer tubes, and springs sampled in the central plateau during January 2017 are listed in Table 1. The specific wells, aquifer tubes, and springs sampled in the central plateau during February 2017 are listed in Table 2.

Awaiting Sample Trips

Of the Fiscal Year 2016 and 2017 sample trips scheduled for February 2017 and prior, there are 140 that are awaiting collection. Of these, 1 requires maintenance, 13 are being reviewed for cancelation, 8 were unsuccessful, 11 are part of a special study and have an adjusted schedule, and 107 are awaiting collection at the month end.

Table 3 presents the sample trips for only the central plateau that were not successfully completed as of February. 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 central plateau only, scheduled for collection in March 2017 and April 2017 (and not collected before the target sample month) are listed in Table 4 and Table 5 respectively.

WMA C Tank Farm

WMA C Tank Farm samples for the second quarter of FY-2017 are scheduled to be collected in March. WMA C Tank Farm monitoring wells are listed in Table 6

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/.

Table 1 Wells, Aquifer Tubes, and Springs in the Central Plateau Successfully Sampled In January 2017

200-BP	200-PO	200-UP	200-ZP
299-E26-14	299-E17-1	299-W18-21	299-W15-152
299-E26-15	299-E17-14	299-W18-22	299-W15-17
299-E26-77	299-E17-15	299-W18-40	299-W15-224
299-E26-79	299-E17-16	299-W19-44	299-W15-30
299-E28-26	299-E17-17	299-W19-45	299-W15-83
299-E28-27	299-E17-18	299-W19-47	299-W15-94
299-E28-28	299-E17-19		299-W17-1
299-E32-10	299-E17-22		299-W6-11
299-E32-2	299-E17-23		299-W6-12
299-E32-3	299-E17-25		299-W6-6
299-E32-4	299-E17-26		299-W7-3
299-E32-5	299-E18-1		299-W8-1
299-E32-6	299-E23-1		
299-E32-7	299-E24-18		
299-E32-8	299-E24-21		
299-E32-9	299-E24-24		
299-E33-266	299-E25-11		
299-E33-28	299-E25-17		
299-E33-29	299-E25-19		
299-E33-30	299-E25-2		
299-E33-34	299-E25-20		
299-E33-35	299-E25-25		

200-BP	200-PO	200-UP	200-ZP
299-E33-40	299-E25-26		
699-44-39B	299-E25-28		
699-45-42	299-E25-3		
	299-E25-32P		
	299-E25-32Q		
	299-E25-34		
	299-E25-35		
	299-E25-39		
	299-E25-43		
	299-E25-47		
	299-E25-48		
	299-E25-6		
	299-E26-12		
	299-E26-13		
	299-E26-4		
	699-24-34D		
	699-24-34E		
	699-24-36		
	699-25-34F		
	699-26-33A		
	699-26-38		
	699-26-38		
	699-42-42B		
	699-43-44		
	699-43-45		

Table 2 Wells, Aquifer Tubes, and Springs in the Central Plateau Successfully Sampled In February 2017

200-BP	200-PO	200-UP	200-ZP
199-K-183	299-E17-1	299-W18-15	299-W10-26
199-K-31	299-E17-14	299-W19-105	299-W10-27
299-E33-20	299-E17-15	299-W19-107	299-W10-33
299-E33-20	299-E17-16	299-W19-116	299-W11-13
299-E33-31	299-E17-18	299-W19-34A	299-W11-18
299-E33-32	299-E17-19	299-W19-34B	299-W11-40
299-E33-32	699-2-3	299-W19-36	299-W11-41
299-E33-334	699-24-46	299-W19-43	299-W11-42
299-E33-335	699-31-31	299-W19-6	299-W11-43
299-E33-337	699-32-43	299-W23-4	299-W11-47
299-E33-338	699-33-56	699-25-70	299-W11-48

200-BP	200-PO	200-UP	200-ZP
299-E33-339	699-41-42	699-34-72	299-W11-87
299-E33-38	699-47-5	699-38-61	299-W11-88
299-E33-38	699-48-7A	699-40-62	299-W13-1
299-E33-41			299-W14-11
299-E33-42			299-W14-13
299-E33-44			299-W14-15
299-E33-47			299-W14-18
299-E33-48			299-W14-72
299-E33-49			299-W15-11
699-43-41G			299-W15-33
			699-48-71
			699-48-71
			699-48-77C
			699-48-77D
			699-49-79
			699-51-75
			699-51-75P

Table 3 Fiscal Year 2016 and 2017 Sample Trips in the Central Plateau awaiting at the end of February 2017

Qtr Sched	GWIA	SAMP SITE_TYPE	SITE_NAME	SCHEDULE DATE	Frequency	Months Remain	Status	Comment
FY 2016 Q2	200-BP	WELL	299-E33-12	3/1/2016	Annual	0	Late	Review for Cancelation; Unsuccessful 3-4-2016
	200-PO	WELL	699-34-42	1/1/2016	Annual	0	Late	Review for Cancelation, Unsuccessful 1-25-2016
	200-UP	WELL	299-W18-15	2/1/2016	Annual	0	Late	Review for Cancelation; Successful on 2-22-2017
FY 2016 Q3	200-BP	WELL	299-E28-32	6/1/2016	Annual	3		
		WELL	699-50-59	4/1/2016	Annual	1		Unsuccessful 4-25-2016
	200-PO	WELL	299-E13-16	4/1/2016	Once Every 2 Years	13		
		WELL	299-E13-7	4/1/2016	Once Every 2 Years	13		
		WELL	299-E25-18	4/1/2016	Annual	1		Maintenance Required; Unsuccessful 4-1-2016
FY 2016 Q4	200-BP	WELL	299-E28-15	7/1/2016	Annual	4		Unsuccessful 7-20-2016
		WELL	299-E33-10	8/1/2016	Annual	5		
		WELL	299-E33-344	8/1/2016	2 Times Annually	0	Late	Review for Cancelation
	200-UP	WELL	299-W19-4	8/1/2016	Annual	5		Unsuccessful 8-02-2016
		WELL	699-17-70	7/1/2016	Annual	4		
FY 2017 Q1	200-BP	WELL	299-E28-5	10/1/2016	2 Times Annually	3		Unsuccessful 10-7-2016
		WELL	299-E33-205	10/1/2016	2 Times Annually	1		
		WELL	299-E33-343	12/1/2016	Annual	9		
		WELL	299-E33-360	12/1/2016	Annual	9		

Qtr Sched	GWIA	SAMP SITE_TYPE	SITE_NAME	SCHEDULE DATE	Frequency	Months Remain	Status	Comment
		WELL	299-E33-50	12/1/2016	Annual	9		
	200-PO	WELL	299-E24-23	12/1/2016	Annual	9		
		WELL	499-S0-7	10/1/2016	Annual	7		
		WELL	499-S0-8	10/1/2016	Annual	7		
		WELL	499-S1-8J	10/1/2016	Annual	7		
		AQUIFER TUBE	C6384	10/1/2016	Annual	7		Unsuccessful 9-27-2016
	200-UP	WELL	299-W13-2	11/1/2016	Annual	8		
		WELL	299-W22-114	12/1/2016	Quarterly	0	Late	Review for Cancelation
		WELL	699-36-63B	12/1/2016	Quarterly	0	Late	Review for Cancelation
	200-ZP	WELL	299-W18-7	11/1/2016	Annual	8		
		WELL	299-W5-2	11/1/2016	Annual	8		
		WELL	699-48-96	12/1/2016	Annual	9		
FY 2017 Q2	200-BP	WELL	299-E27-5	1/1/2017	Annual	10		
		WELL	299-E28-33	1/1/2017	Semi-annual	4		
		WELL	299-E33-344	2/1/2017	2 Times Annually	5		
		WELL	699-42-40A	1/1/2017	Annual	10		Unsuccessful on 2-27-2017
		AQUIFER TUBE	C6236	1/30/2017	Other	7		
		AQUIFER TUBE	C6237	1/30/2017	Other	7		
		AQUIFER TUBE	C6238	1/30/2017	Other	7		
	200-PO	WELL	299-E17-21	1/1/2017	Annual	10		Unsuccessful on 1-27-2017
		WELL	299-E25-42	1/1/2017	Other	7		
		WELL	699-20-E12O	1/1/2017	Annual	10		
		WELL	699-20-E12S	1/1/2017	Annual	10		
		WELL	699-36-58B	1/1/2017	Annual	10		
		WELL	699-37-E4	1/1/2017	Annual	10		
		WELL	699-40-1	1/1/2017	Annual	10		
		WELL	699-41-1A	1/1/2017	Annual	10		
		WELL	699-43-3	1/1/2017	Annual	10		
		WELL	699-43-43	1/1/2017	Annual	10		
		WELL	699-46-4	1/1/2017	Annual	10		
		WELL	699-S2-34B	1/1/2017	Other	0	Late	Review for Cancelation
	200-UP	WELL	299-W17-3	1/1/2017	Annual	10		
		WELL	299-W19-115	2/1/2017	Quarterly	2		
		WELL	299-W19-123	2/1/2017	Quarterly	2		
		WELL	299-W19-125	2/1/2017	Quarterly	2		
		WELL	699-19-88	1/1/2017	Quarterly	1		
		WELL	699-35-59	2/1/2017	Annual	11		
		WELL	699-38-68A	1/1/2017	Annual	10		
	200-ZP	WELL	299-W11-22	1/1/2017	Annual	10		

Qtr Sched	GWIA	SAMP SITE_TYPE	SITE_NAME	SCHEDULE DATE	Frequency	Months Remain	Status	Comment
		WELL	299-W11-90	1/1/2017	Annual	10		
		WELL	299-W15-225	1/1/2017	Annual	10		
		WELL	299-W15-36	2/1/2017	Annual	11		
		WELL	299-W17-2	1/1/2017	Annual	10		
		WELL	699-47-80AQ	1/1/2017	Annual	10		
		WELL	699-49-100C	1/1/2017	Quarterly	1		

Table 4 Groundwater Sampling Locations in the Central Plateau Scheduled to be sampled in March 2017

200-BP	200-PO	200-UP	200-ZP
299-E27-12	299-E17-12	299-W21-3	299-W10-14
299-E27-13	299-E17-13	299-W22-114	299-W10-26
299-E27-14	299-E17-18	299-W22-115	299-W10-27
299-E27-15	299-E24-20	299-W22-116	299-W10-29
299-E27-155	299-E24-22	299-W22-47	299-W10-30
299-E27-21	299-E24-33	299-W22-93	299-W10-31
299-E27-22	299-E24-4	299-W23-19	299-W11-41
299-E27-23	299-E25-2	699-26-89	299-W14-11
299-E27-24	299-E25-23	699-29-66	299-W14-13
299-E27-25	299-E25-237	699-30-63	299-W14-18
299-E27-26	299-E25-36	699-31-68	299-W15-42
299-E27-7	299-E25-40	699-32-59	299-W15-46
299-E28-30	299-E25-41	699-32-64	299-W15-49
299-E33-12	299-E25-9	699-34-61	299-W15-50
299-E33-341	299-E25-93	699-35-66A	299-W15-7
299-E33-342	299-E25-94	699-35-78A	299-W18-1
699-49-57A	699-30-57	699-36-63B	299-W18-16
699-49-57B	699-31-53B	699-36-66B	299-W6-3
	699-34-51	699-36-70A	299-W9-2
	699-S2-34B	699-37-66	
	699-S8-19		

Table 5 Groundwater Sampling Locations in the Central Plateau Scheduled to be sampled in April 2017

200-BP	200-PO	200-UP	200-ZP
299-E27-10	299-E13-13	299-W18-260	299-W10-26
299-E27-11	299-E13-14	299-W19-12	299-W10-27
299-E27-16	299-E13-15	299-W19-41	299-W11-41
299-E27-17	299-E13-4	299-W19-42	299-W14-11
299-E27-18	299-E13-5	699-19-88	299-W14-13

200-BP	200-PO	200-UP	200-ZP
299-E27-19	299-E16-1	699-32-62	299-W14-18
299-E27-8	299-E16-2	699-32-70B	299-W14-74
299-E27-9	299-E17-1	699-32-72A	699-43-69
299-E33-205	299-E17-15	699-36-70B	699-45-69A
299-E33-33	299-E17-9		699-45-69C
299-E33-9	299-E25-18		699-47-60
299-E34-10	299-E25-2		699-48-77C
299-E34-12	299-E25-21		699-48-77D
299-E34-2	299-E25-22		699-49-100C
299-E34-8	299-E25-26		
299-E34-9	299-E25-28		
699-42-40C	299-E25-32P		
699-43-41F	299-E25-34		
699-48-50B	299-E25-35		
699-49-55A	299-E25-43		
699-50-56	299-E25-47		
699-50-59	299-E25-48		
699-52-55	299-E26-12		
699-52-55B	299-E26-13		
699-53-47B	699-10-54A		
699-53-48A	699-22-35		
699-53-55B	699-23-34B		
699-53-55C	699-24-33		
699-55-50C	699-24-34D		
699-55-57	699-24-34E		
699-55-60A	699-24-35		
699-57-59	699-24-36		
699-59-58	699-25-33A		
699-60-60	699-25-34B		
699-61-62	699-25-34D		
699-61-66	699-25-34E		
699-64-62	699-25-34F		
	699-26-33A		
	699-26-34A		
	699-26-34B		
	699-26-35A		
	699-26-35C		
	699-26-38		
	699-37-47A		
	699-41-23		

200-BP	200-PO	200-UP	200-ZP
	699-43-45		
	699-46-21B		

Table 6. WMA C Quarterly Monitoring Wells

SITE_NAME
299-E27-12
299-E27-13
299-E27-14
299-E27-15
299-E27-155
299-E27-21
299-E27-22
299-E27-23
299-E27-24
299-E27-25
299-E27-26
299-E27-7

Date Received for Clearance Process (MM/DD/YYYY)

INFORMATION CLEARANCE FORM

A. Information Category

- [ ] Abstract
- [ ] Summary
- [ ] Visual Aid
- [ ] Full Paper
- [ ] Journal Article
- [ ] Internet
- [ ] Software
- [ ] Report
- [x] Other Environmental Insp.

B. Document Number

C. Title

WASHINGTON STATE DEPARTMENT OF ECOLOGY REQUEST FOR COPIES OF TEN PHOTOGRAPHS OF 241-CX-70
LB2017-012

Total Pages - 10

D. Proposed Internet Address

E. Required Information (MANDATORY)

1. Is document potentially Classified? [x] No ( ) Yes

Robert R. Nielson
Manager Required (Print and Sign)

If Yes N/A
ADC Required (Print and Sign) (•) No ( ) Yes Classified

2. Official Use Only (•) No ( ) Yes Exemption No. ____
3. Export Controlled Information (•) No ( ) Yes OUO Exemption No. 3
4. UCNI (•) No ( ) Yes
5. Applied Technology (•) No ( ) Yes OUO Exemption No. 5
6. Other (Specify) N/A

7. Does Information Contain the Following:

a. New or Novel (Patentable) Subject Matter? (•) No ( ) Yes
If "Yes", OUO Exemption No. 3
If "Yes", Disclosure No.: N/A

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(•) No ( ) Yes If "Yes", OUO Exemption No. 4

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9. Release Level? (•) Public ( ) Limited

F. Complete for a Journal Article

1. Title of Journal N/A

G. Complete for a Presentation

1. Title for Conference or Meeting N/A
2. Group Sponsoring
3. Date of Conference
4. City/State
5. Will Information be Published in Proceedings? (•) No ( ) Yes
6. Will Material be Handed Out? (•) No ( ) Yes

H. Information Owner/Author/Requestor

Linda C. Petersen
(Print and Sign)

Responsible Manager

Robert R. Nielson
(Print and Sign)

Approval by Direct Report to President (Speech/Articles Only) N/A
(Print and Sign)

I. Reviewers

	Yes	Print	Signature	Public Y/N (If N, complete J)
General Counsel	[x]	Eric Trotta		Y / N
Office of External Affairs	[ ]			Y / N
DOE	[ ]			Y / N
Other	[ ]			Y / N
Other	[ ]			Y / N
Other	[ ]			Y / N

J. Comments

Ecology Request

Information Clearance Approval

If Additional Comments, Please Attach Separate Sheet

A-6001-401 (REV 5)

CAUTION
INTERNALLY CONTAMINATED SYSTEM LOCATED WITHIN
CONTACT RADIOLOGICAL CONTROL PRIOR TO WORKING ON SYSTEM
WARNING
RESTRICTED ACCESS
SUBSIDENCE AREA.
Potential cave-in.
Severe injury may occur.
Contact: 373-1355

CAUTION
INTERNALLY CONTAMINATED
SYSTEM LOCATED WITHIN
CONTACT
RADIOLOGICAL CONTROL
PRIOR TO WORKING
ON SYSTEM
WARNING
RESTRICTED ACCESS
SUBSIDENCE AREA.
Potential cave-in.
Severe injury may occur.
Contact: 373-1355

DANGER
KEEP OUT

KEEP OUT
Hazardous
Waste
Radioactive
Corrosive

LOAD LIMIT
500 LBS

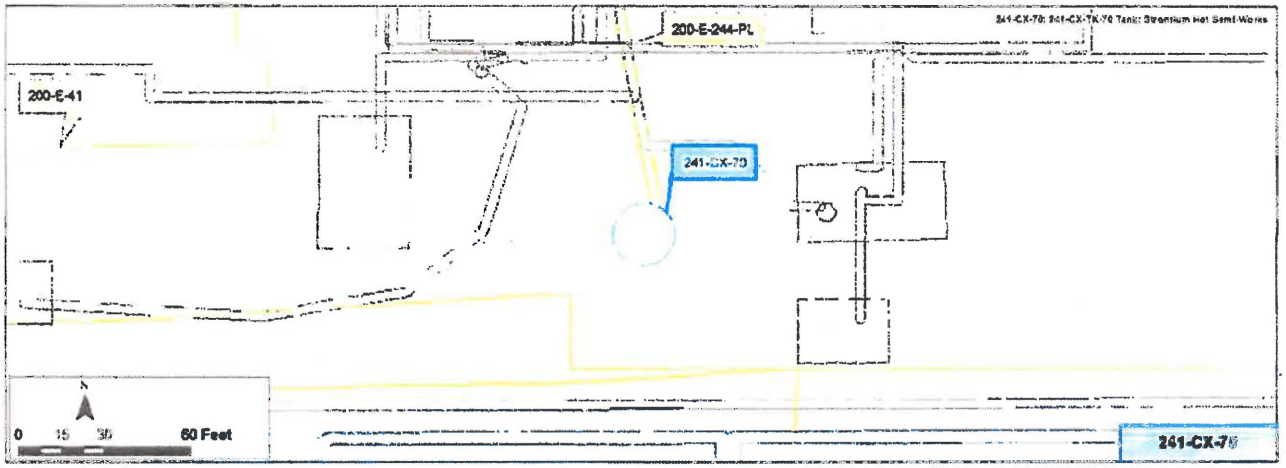
Scoping Summary: 241-CX-70

History

The 241-CX-70 waste site is an inactive underground storage tank used to store high-level process waste from REDOX process flow improvement studies conducted at the Strontium Semiworks (201-C) Facility.

These waste flows are assumed to be similar in composition to REDOX High Level waste (R1). The tank was constructed in 1949 and received waste from 1952-1953. Residual liquid waste was removed in 1979, and residual sludge removal was conducted from 1987-1992. The tank was confirmed empty in 1992. Waste feed lines and risers were isolated and capped as part of the 201-C Strontium Semiworks Complex decommissioning, most likely in 1983.

In Oct-2009, Ecology approved the 241-CX Tank Closure Plan (DOE/RL-2008-51, Rev 1) which stipulates that "...Tank 241-CX-70 and the piping will be clean closed by removal and disposal. If releases to soil occurred, the contaminated soil will be removed and the removal area soils will be sampled in accordance with an approved sampling and analysis plan (Appendix A of this plan) to verify achievement of clean closure standards."



Construction

- Dimensions - 15 ft high x 20 ft diameter, vertical
- Capacity - 30,000 gal
- Material – 1/4 in. stainless steel plate encapsulated in 1 ft thick poured concrete
- Fourteen tank penetrations
- Connections – two 2 in. stainless steel feed lines (200-E-244-PL)
- Buried depth - top of tank 11 ft bgs

Features of Interest

- Four 4 in. stainless steel risers
- Four 12 in. stainless steel risers
- One 10 in. stainless steel vent
- One 42 in. manway
- Two 2 in. stainless steel inlet pipes
- Two 4 in. x 3 in. welded stainless steel tank penetrations with Teflon filled packing glands

Relevant Characterization

- Free liquids were pumped from tank 241-CX-70 to the 101-AY Tank in 1979.
- Approximately 10,300 gal of sludge remained in the tank, which was removed by sluicing from 1987 through 1988.
- Remaining tank contents vacuum removed, and the tank was certified empty in 1991. Dose readings from the empty tank taken Feb-1992 ranged from 5 mrad/hr at the top of the tank to 15,000 mrad/hr at the bottom of the tank.

Waste Streams

- Received R1 high-level waste from pilot plant studies of the REDOX chemical separation process developed for use at S Plant from 1952 through 1953
- Received spent solvents from REDOX ion change waste (RIX), primarily hexone
- Wastes included aluminum and sodium nitrate, sodium and potassium fluoride, zirconium oxide, sodium aluminate, sodium hydroxide, sodium aluminate, chromate, sodium sulfate and mixed fission products
- Corrosive and toxic waste codes (D002, D007, WT02) indicated on the Tank Part A permit

Misc./Other Relevant Information

- In 2004, shoring constructed around and above the manway during the sluicing operations collapsed. The collapse was backfilled and stabilized in 2009.

Site Interfaces

Origin/Termination

- N/A

Site Intersects

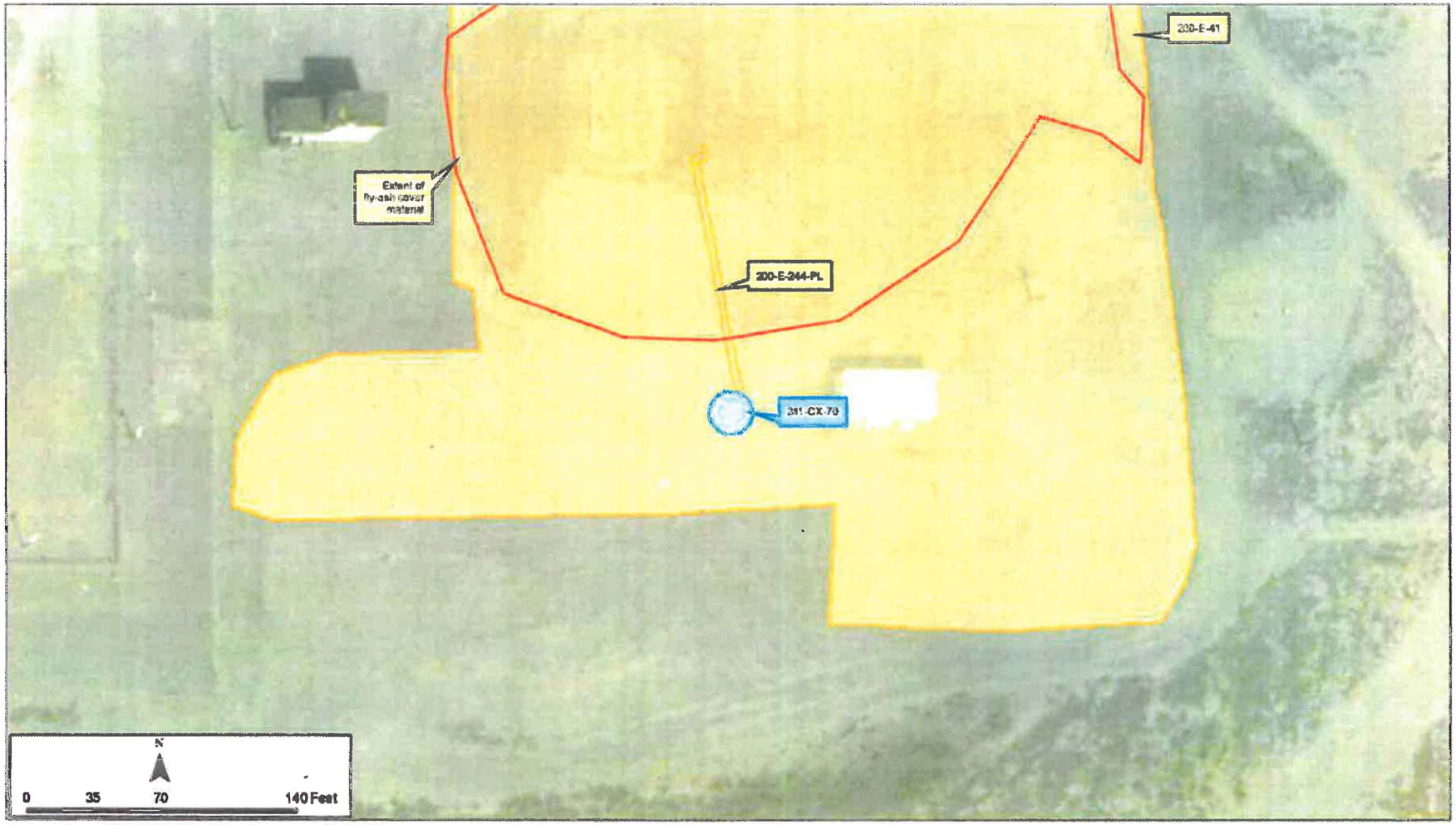
200-IS-1

- 200-E-244-PL

Other

- 200-E-41 (stabilized area)

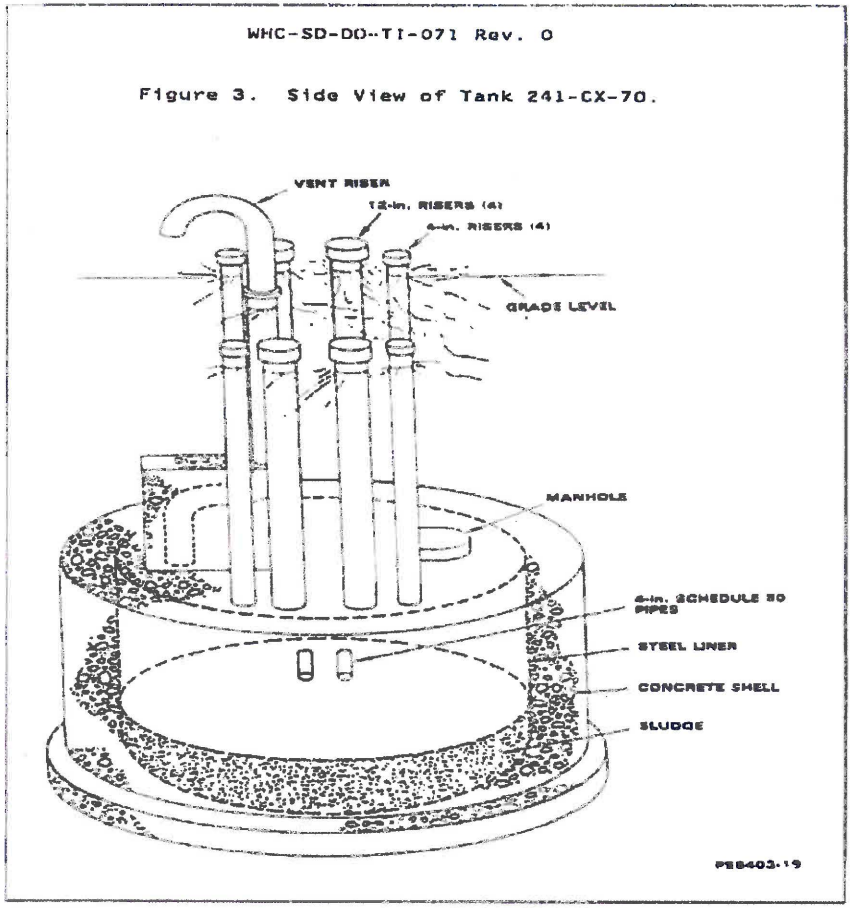
Scoping Summary: 241-CX-70



241-CX-70 Waste Storage Tank Features of Interest

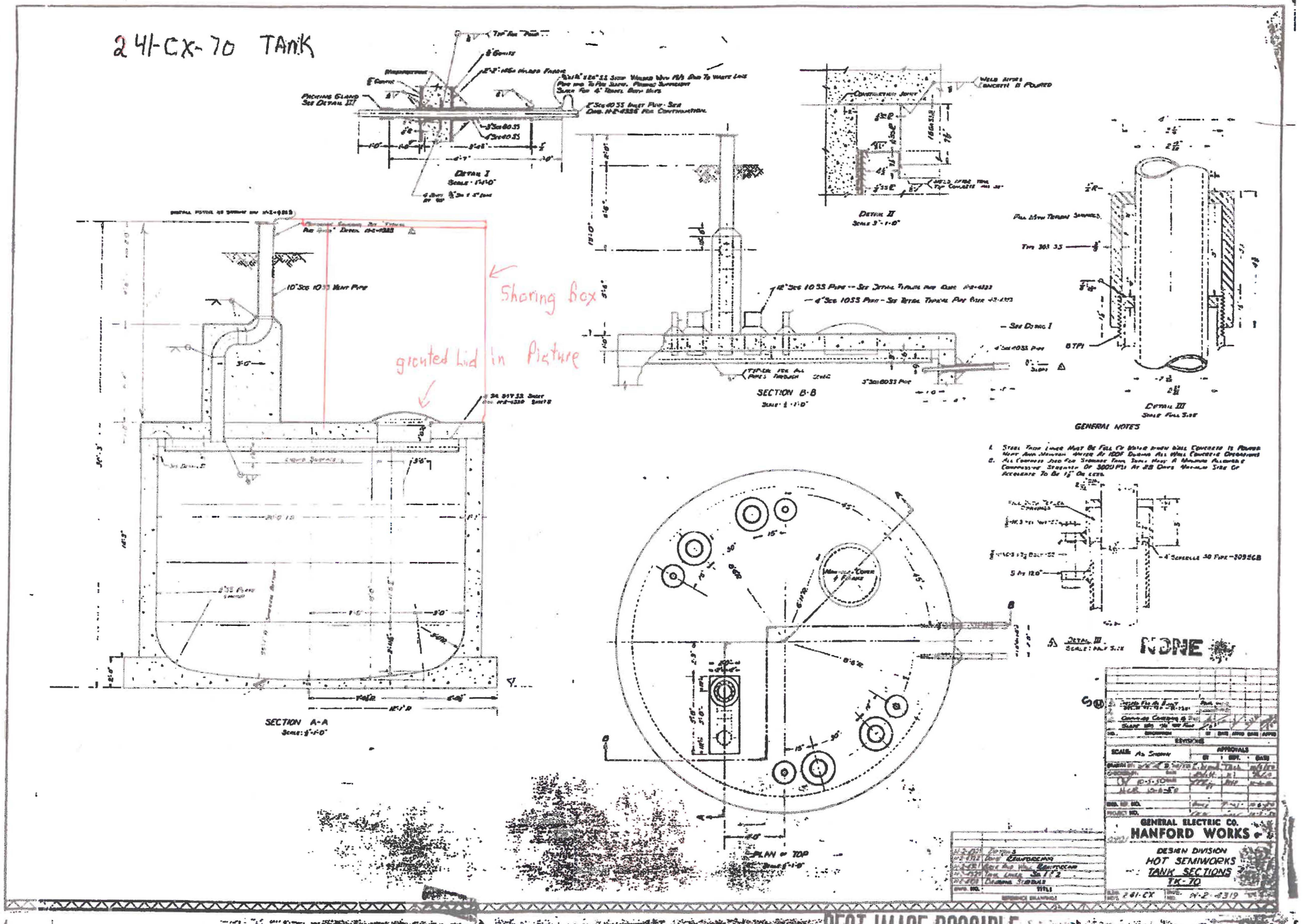
Photo Taken April 2009

Photo Taken August 2009



Previous Subsidence
~~2004?~~ ~~2013??~~

241-CX-70 TANK



BEST IMAGE POSSIBLE

TRI-PARTY AGREEMENT

Change Notice Number TPA-CN- 0750	TPA CHANGE NOTICE FORM	Date: 2/16/17
Document Number, Title, and Revision: DOE/RL-2010-102, Rev 0., *Action Memorandum for Decontamination, Deactivation, Decommissioning, and Demolition (D4) Activities for 200 East Tier 2 Buildings/Structures*		Date Document Last Issued: March 2011
Approved Change Notices Against this Document: TPA-CN-722		
Originator: W.E. Toebe		Phone: 372-2359

Description of Change:
Change to the document is needed to add one structure (215C) to the scope of DOE/RL-2010-102 through inclusion on the list in Table A-1. The proposed change will not modify the decision, but will only add the structure to the scope of the removal action as allowed by the Action Memorandum.

O.A. Farabee (DOE) and S.N. Schleif (Lead Regulatory Agency) agree that the proposed change modifies an approved workplan/document and will be processed in accordance with the Tri-Party Agreement Action Plan, Section 9.0, *Documentation and Records,* and not Chapter 12.0, *Changes to the Agreement.*

Revise Table A-1, see attached Page with additional text denoted by double underline.

Note: Include affected page number(s): Page A-1

Justification and Impacts of Change:
In accordance with the Action Memorandum (DOE/RL-2010-102, Rev 0, Section 1), DOE may evaluate other Hanford buildings/structures with similar characteristics, contaminants, and complexity for potential addition to the scope of the action. Buildings/structures determined to qualify as Tier 2 will be added to Appendix J of the TPA Action Plan and DOE/RL-2010-102.

215C:

The structure meets the criteria for addition to DOE/RL-2010-102 based on the following:

- The structure has similar characteristics, contaminants, and complexity to those evaluated and identified in DOE/RL-2010-102, Appendix A as Tier 2 facilities;
- The structure is chemically and/or radiologically contaminated and requires a CERCLA response action because of potential for substantial threat of release of hazardous substances, but does not qualify as Tier 1 (i.e., it is not a large, heavily shielded metal and concrete structure containing tanks, heavily shielded gloveboxes or hot cells, etc.);
- The structure qualifies for addition to Appendix J of the TPA Action Plan as Tier 2 facilities consistent with Sections 8.1.3 and 8.1.4 of the TPA Action Plan.

Approvals:

R. LONG FOR A. FARABEE — DOE Project Manager	2/22/2017 Date	[X] Approved [ ] Disapproved
N/A — EPA Project Manager	Date	[ ] Approved [ ] Disapproved
Ecology Project Manager	2/23/17 Date	[X] Approved [ ] Disapproved

A Building/Structure List

Table A-1 lists those 200 East Area Tier 2 buildings/structures in the scope of this non-time-critical removal action.

Table A-1. 200 East Area Tier 2 Building/Structure List

Building/Structure ID	Building/Structure Title	Estimated Waste Quantity (tons)
203A	Acid Pump House	9,778
206A	Vacuum Acid Fractionator Building	4,148
209E	Critical Mass Laboratory (including the 296P031 Stack)	12,581
211A	Chemical Makeup Tank Farm & Pumphouse	940
212A	Fission Product Loadout Station	2,918
212B	Fission Product Loadout, Cask Transfer Building	25,244
213A	Fission Product Load-in Station	1,792
215C	Gas Preparation Building	250
216A	Valve Control Facility	18
221BB	Process Steam and Condensate Building	878
221BC	SWP Change House	464
221BD	Laundry Storage Building	1,365
221BF	Air Dryer Building	144
221BK	B Plant Canyon Exhaust Instrumentation Building	2,988
222B	Office Building/Laboratory	4,929
225BA	K1 Filter Pit Encapsulation Facility	386
225BB	K3 Filter Pit Encapsulation Facility	39
225BF	WESF Tanker Loadout Station	331
225E	TEDF Pump Station 2	1,583
241C801	Cesium Loadout Facility	3,478
241CR271	Cold Chemical Makeup Building	2,986
241CX40	Grout Removal Building	413
242B	Radioactive Particle Research Laboratory	3,708
242BL	Cask Loading Building	1,400
252AB	Electrical Substation	3,425
252AC	Electrical Substation	126

TRI-PARTY AGREEMENT

Change Notice Number	TPA CHANGE NOTICE FORM	Date:
TPA-CN- 0754		11/8/2016

Document Number, Title, and Revision:	Date Document Last Issued:
DOE/RL-2016-13, Waste Management Plan for the 200-UP-1 Groundwater Operable Unit, Rev. 0	January 2016

Approved Change Notices Against this Document: N/A

Originator: C. S. Cearlock	Phone: 509-373-0799

Description of Change:
Add 5 wells to Table A-1 of DOE/RL-2016-13, Waste Management Plan for the 200-UP-1 Groundwater Operable Unit, Rev. 0. Installation of some of the wells is optional, but drilling is planned for FY 2017.

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

Table A-1 of DOE/RL-2016-13, Waste Management Plan for the 200-UP-1 Groundwater Operable Unit, Rev. 0, is updated by adding 5 wells planned for drilling in FY 2017. The wells are:

299-W19-126: dual purpose monitoring/extraction for the uranium plume.
699-27-68: monitoring well to delineate the southeast chromium plume (optional).
699-29-55: optional monitoring well to delineate the southeast chromium plume (optional).
699-30-70: optional monitoring well to delineate the southeast chromium plume (optional).
699-31-50: monitoring well to delineate the southeast chromium plume (optional).

Added text is shown in double underline. Deleted text is shown in ~~single line strike through.~~

Note: Include affected page number(s): A-1 and A-2.

Justification and Impacts of Change:
The wells identified above are being added to DOE/RL-2016-13, Waste Management Plan for 200-UP-1 Operable Unit, because the implementation of these 200-UP-1 interim remedial actions will result in the generation of waste.

Well 299-W19-126 is needed to delineate and monitor the uranium plume near U Plant and it may also be converted into an extraction well. The remaining wells are planned to further characterize the chromium plume southeast of the 200 West Area. All or a subset of these wells will be drilled during FY 2017.

The well list updates made by this change will be reflected in the next revision (Rev. 1) of the waste management plan.

Approvals:

DOE Project Manager	Date 11/9/2016	[X] Approved [ ] Disapproved
EPA Project Manager	Date 11/9/2016	[X] Approved [ ] Disapproved
N/A Ecology Project Manager	Date	[ ] Approved [ ] Disapproved

Table A-1. 200-UP-1 Well List

299-E11-1	299-W19-107	299-W22-113[f]
299-E13-14	299-W19-113[e]	299-W22-114[g]
299-E13-19	299-W19-114[e]	299-W22-115
299-E20-1	299-W19-115[g]	299-W22-116
299-E20-2	299-W19-116[g]	299-W23-4
299-W9-2	299-W19-123[g]	299-W23-8
299-W14-56	299-W19-124	299-W23-9
299-W14-57	299-W19-125[g]	299-W23-10
299-W14-58	299-W19-126[h]	299-W23-14
299-W14-71	299-W21-1	299-W23-15
299-W15-37	299-W21-2	299-W23-16
299-W17-3	299-W21-3[g]	299-W23-17
299-W18-15	299-W22-4	299-W23-19
299-W18-20	299-W22-8	299-W23-20
299-W18-21	299-W22-9	299-W23-21
299-W18-22	299-W22-10	299-W23-236
299-W18-29	299-W22-20	299-W27-2
299-W18-30	299-W22-22	299-W26-12
299-W18-31	299-W22-24P	299-W26-13
299-W18-33	299-W22-44	299-W26-14
299-W18-40	299-W22-50	699-17-70
299-W18-250	299-W22-79	699-19-88
299-W18-251	299-W22-80	699-27-68[h]
299-W18-260[f]	299-W22-81	699-29-55[h]
299-W19-1	299-W22-82	699-29-66[g]
299-W19-4	299-W22-84	699-26-89
299-W19-5	299-W22-85	699-30-70[h]
299-W19-6	299-W22-123	699-31-68[g]
299-W19-7	299-W22-23	699-30-57[g]
299-W19-12	299-W22-24R[hi]	699-30-66
299-W19-18	299-W22-24S[hi]	699-32-62
299-W19-20	299-W22-24T[hi]	699-32-70B
299-W19-26	299-W22-26	699-32-72A
299-W19-31	299-W22-28	699-32-76
299-W19-32	299-W22-37	699-33-56
299-W19-34A	299-W22-38	699-33-74
299-W19-34B	299-W22-40	699-33-75
299-W19-35	299-W22-45	699-33-76
299-W19-36	299-W22-46	699-34-61

Table A-1. 200-UP-1 Well List

299-W19-37	299-W22-49	699-32-64
299-W19-39	299-W22-60	699-34-72
299-W19-40	299-W22-69	699-35-59
299-W19-41	299-W22-72	699-35-66A
299-W19-42	299-W22-74	699-35-70
299-W19-43	299-W22-83	699-35-78A
299-W19-44	299-W22-86	699-36-61A
299-W19-45	299-W22-87	699-36-63B[g]
299-W19-46	299-W22-88	699-36-66B
299-W19-47	299-W22-89	699-36-70A
299-W19-48	299-W22-90[b]	699-36-70B
299-W19-49	299-W22-91[b]	699-37-66
(229-W19-50) 299-W19-101[a]	299-W22-92[b]	699-38-61
299-W19-90	299-W22-93[f]	699-38-65
299-W19-91	299-W22-94[c]	699-38-68A
299-W19-92	299-W22-95[d]	699-38-70
299-W19-93	299-W22-96[d]	699-38-70B
299-W19-105	699-30-63	699-38-70C
299-W22-47	699-31-50[h]	699-40-62
299-W22-48	699-32-59	699-40-65

a. During the drilling of Well 299-W19-50, a large rock was encountered that required this well to be redrilled as Well 299-W19-101.

b. S/SX extraction wells were installed in fiscal year 2011.

c. M-24 monitoring wells were installed in fiscal year 2011.

d. 200-UP-1 monitoring wells were installed in fiscal year 2011.

e. 200-UP-1 extraction wells were installed in fiscal year 2014.

f. M-24 monitoring wells were installed in fiscal years 2014 and 2015.

g. Installation is planned for fiscal year 2016.

h. Installation is optional but may occur during fiscal year 2017.

~~h~~i. Included in DOE/RL-2015-14, 2015, *Performance Monitoring Plan for the 200-UP-1 Groundwater Operable Unit Remedial Action*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=0080202H.

TRI-PARTY AGREEMENT

Change Notice Number TPA-CN- 0758	TPA CHANGE NOTICE FORM	Date: December 2016
Document Number, Title, and Revision: DOE/RL-2010-72 Sampling and Analysis Plan for Remediation Wells in the 200-ZP-1 Operable Unit, Revision 2		Date Document Last Issued: June 4, 2014
Approved Change Notices Against this Document: TPA-CN-641		
Originator Mark E. Byrnes		Phone: 509 373-3996

Description of Change:
Figures 1-1, 1-2, and 1-3 need to be revised to include new wells.
Table 1-1 "Estimated Depth of Each Proposed Extraction, Injection, and Monitoring Well," Table 1-2 "Final List of Contaminants of Concern in Groundwater," and Table 3-1 "Well Sample/Measurement Locations and Depth," of the sampling and analysis plan need to be revised to add new wells and to reflect sampling requirements in the new wells.

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

Revised figures in Chapter 1 to include four new injection wells and three monitoring wells.

Sampling requirements for YJ-29, YJ-30, YJ-32, MW-2, MW-3, and MW-8 will be implemented during drilling of new wells.

Inserted text in Table 1-1, Table 1-2, and Table 3-1 is indicated by double underline.

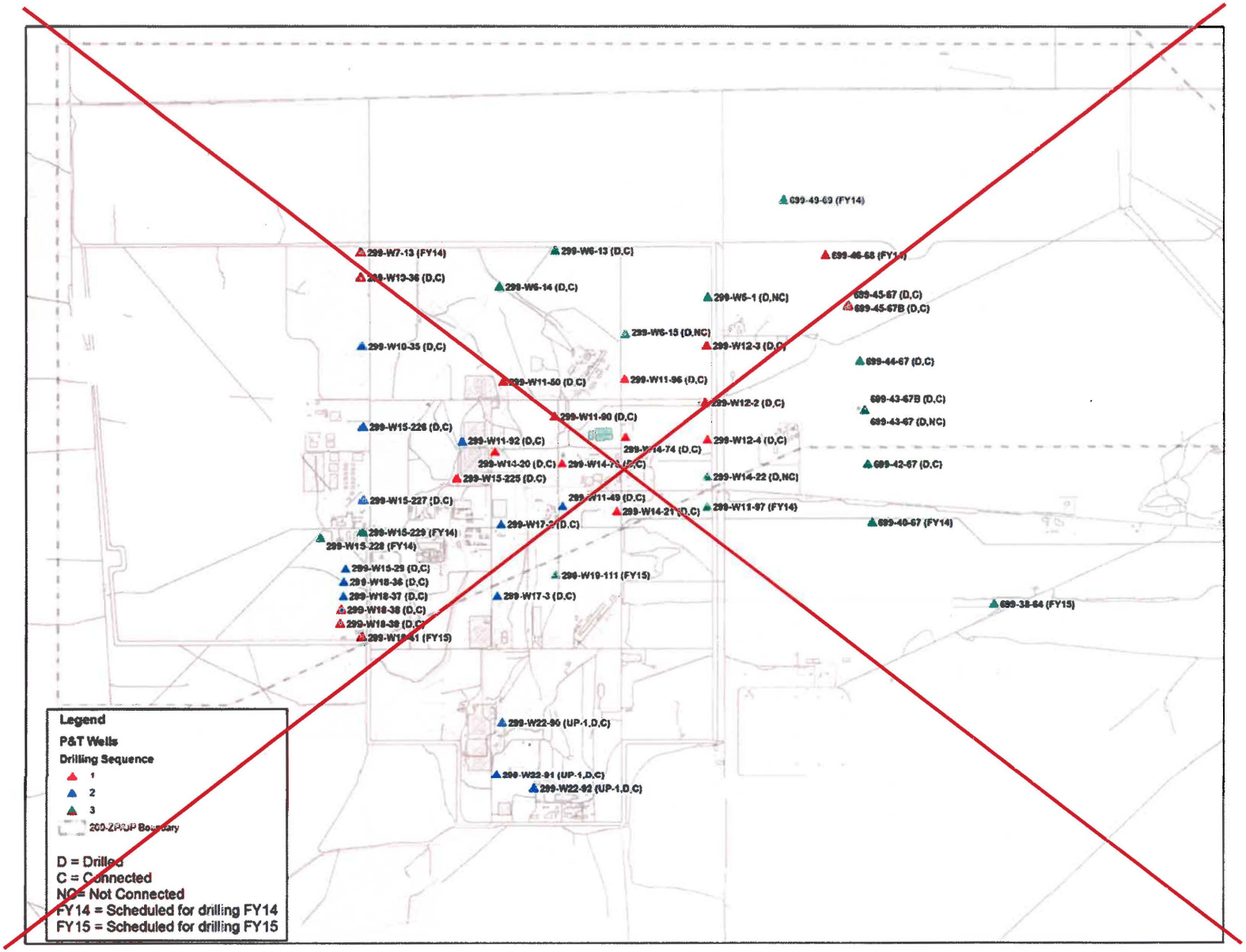
Note: Include affected page number(s): 1-3, 1-4, 1-5, 1-6, 1-7, 3-2, and 3-3

Justification and Impacts of Change:
New injection wells are needed to increase 200 West P&T injection capacity. Additional sampling and analyses are needed during drilling in the vadose zone sediments and sediments below the water table to collect baseline data to support ongoing assessment of injection well performance. Water sample intervals target more permeable (and more representative) formation zones versus sampling every 20 feet below the water table.

New monitoring wells are needed in areas lacking monitoring wells to fill data gaps.

Approvals:

M.W. Cline DOE Project Manager	12/5/2016 Date	X Approved [ ] Disapproved
Laija EPA Project Manager	12/16/2016 Date	X Approved [ ] Disapproved
N/A Ecology Project Manager	Date	[ ] Approved [ ] Disapproved


699-49-69 (FY14)
299-W7-13 (FY14)
299-W6-13 (D,C)
699-46-68 (FY14)
299-W13-36 (D,C)
299-W6-14 (D,C)
299-W6-1 (D,NC)
699-45-67 (D,C)
699-45-67B (D,C)
299-W6-15 (D,NC)
299-W10-35 (D,C)
299-W12-3 (D,C)
699-44-67 (D,C)
299-W11-50 (D,C)
299-W11-96 (D,C)
299-W12-2 (D,C)
699-43-67B (D,C)
299-W11-90 (D,C)
699-43-67 (D,NC)
299-W15-226 (D,C)
299-W11-92 (D,C)
299-W12-4 (D,C)
299-W14-74 (D,C)
299-W14-20 (D,C)
299-W14-75 (D,C)
699-42-67 (D,C)
299-W15-225 (D,C)
299-W14-22 (D,NC)
299-W15-227 (D,C)
299-W11-49 (D,C)
299-W14-21 (D,C)
299-W11-97 (FY14)
299-W17-2 (D,C)
699-40-67 (FY14)
299-W15-229 (FY14)
299-W15-228 (FY14)
299-W15-29 (D,C)
299-W18-36 (D,C)
299-W19-111 (FY15)
299-W18-37 (D,C)
299-W17-3 (D,C)
699-38-64 (FY15)
299-W18-38 (D,C)
299-W18-39 (D,C)
299-W18-41 (FY15)
299-W22-90 (UP-1,D,C)
299-W22-91 (UP-1,D,C)
299-W22-92 (UP-1,D,C)
Legend
P&T Wells
Drilling Sequence
1
2
3
200-ZP/UP Boundary
D = Drilled
C = Connected
NC = Not Connected
FY14 = Scheduled for drilling FY14
FY15 = Scheduled for drilling FY15

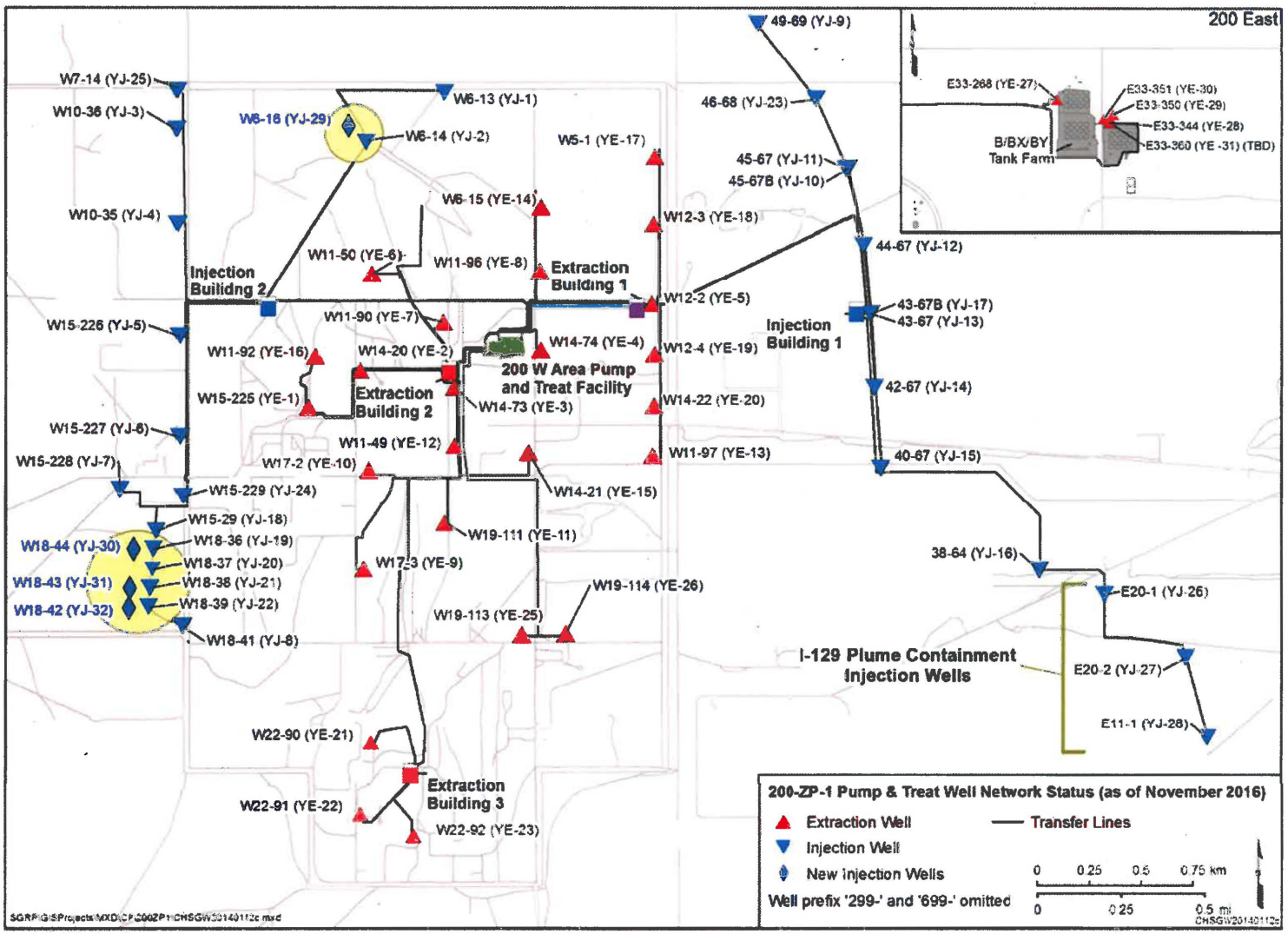
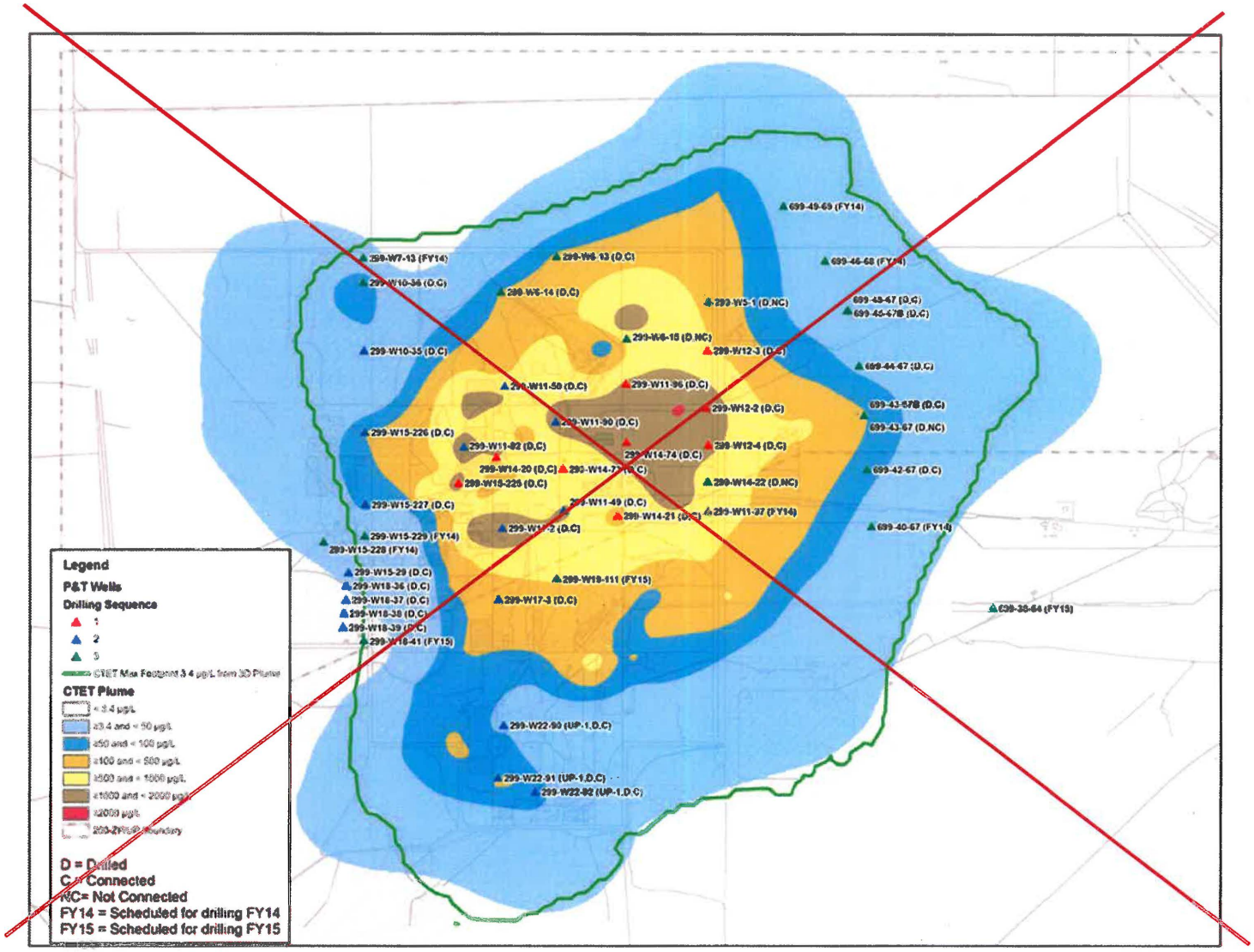


Figure 1-1. Approximate Location of Proposed New Injection Wells (Circled) with Existing Extraction and Injection Wells ~~by Drilling Sequence~~


Legend
P&T Wells
Drilling Sequence
1
2
3
CTET Max Footprint ≥ 4 µg/L from 3D Plume
CTET Plume
< 4 µg/L
≥4 and < 50 µg/L
≥50 and < 100 µg/L
≥100 and < 500 µg/L
≥500 and < 1000 µg/L
≥1000 and < 2000 µg/L
≥2000 µg/L
200-ZP-1 Boundary
D = Drilled
C = Connected
NC= Not Connected
FY14 = Scheduled for drilling FY14
FY15 = Scheduled for drilling FY15
699-49-69 (FY14)
299-W7-13 (FY14)
299-W6-13 (D,C)
699-46-68 (FY14)
299-W10-36 (D,C)
299-W6-14 (D,C)
299-W5-1 (D,NC)
699-48-47 (D,C)
699-45-47B (D,C)
299-W6-15 (D,NC)
299-W10-35 (D,C)
299-W12-3 (D,C)
699-44-47 (D,C)
299-W11-50 (D,C)
299-W11-96 (D,C)
299-W12-2 (D,C)
699-43-67B (D,C)
299-W11-90 (D,C)
699-43-67 (D,NC)
299-W15-226 (D,C)
299-W11-92 (D,C)
299-W12-4 (D,C)
299-W14-74 (D,C)
299-W14-20 (D,C)
299-W14-77 (D,C)
699-42-67 (D,C)
299-W15-225 (D,C)
299-W14-22 (D,NC)
299-W15-227 (D,C)
299-W11-49 (D,C)
299-W14-21 (D,C)
299-W11-37 (FY14)
299-W15-229 (FY14)
299-W11-2 (D,C)
699-40-67 (FY14)
299-W15-228 (FY14)
299-W15-29 (D,C)
299-W18-36 (D,C)
299-W18-37 (D,C)
299-W18-38 (D,C)
299-W18-39 (D,C)
299-W18-41 (FY15)
299-W19-111 (FY15)
299-W17-3 (D,C)
699-38-64 (FY15)
299-W22-90 (UP-1,D,C)
299-W22-91 (UP-1,D,C)
299-W22-92 (UP-1,D,C)

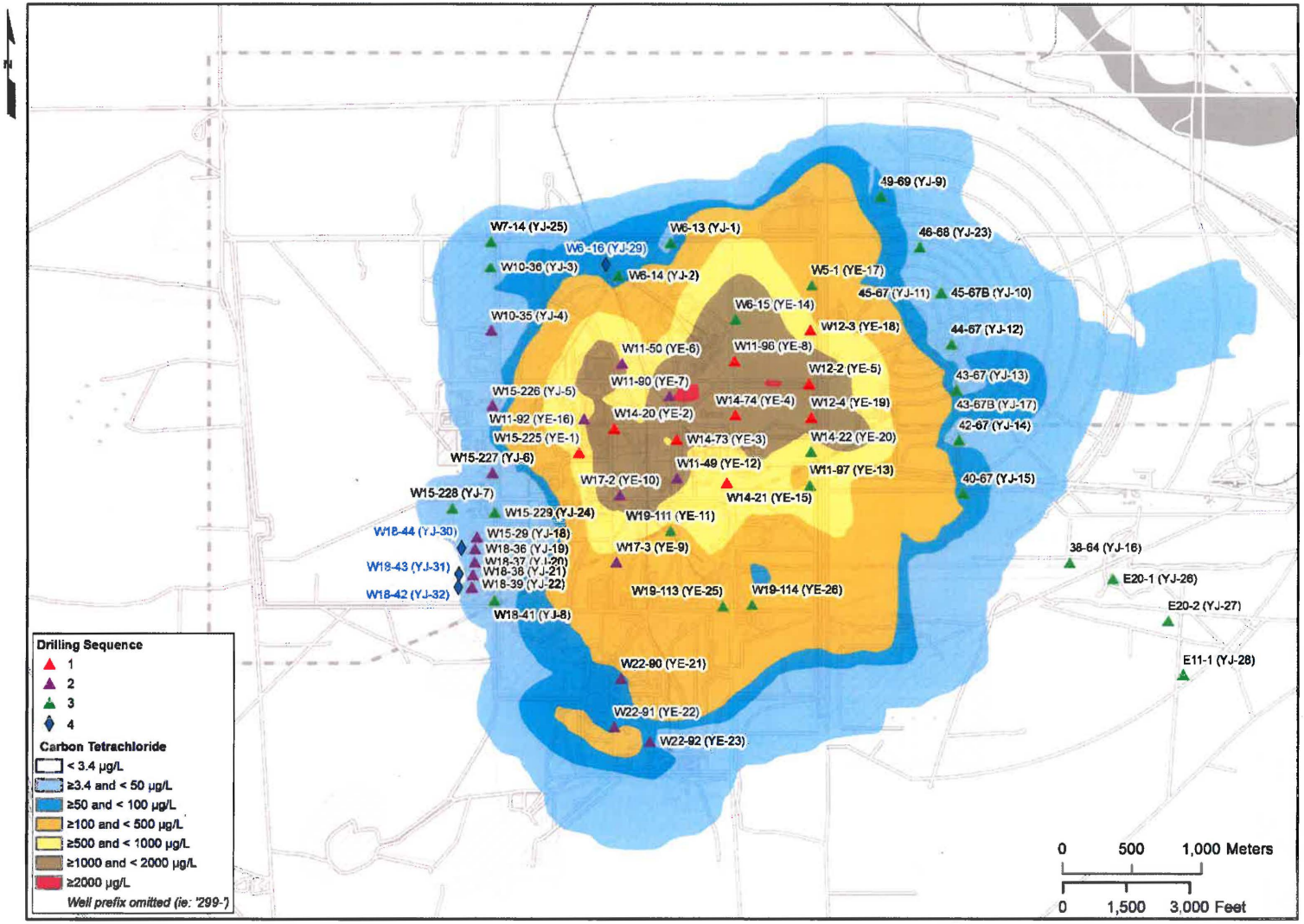
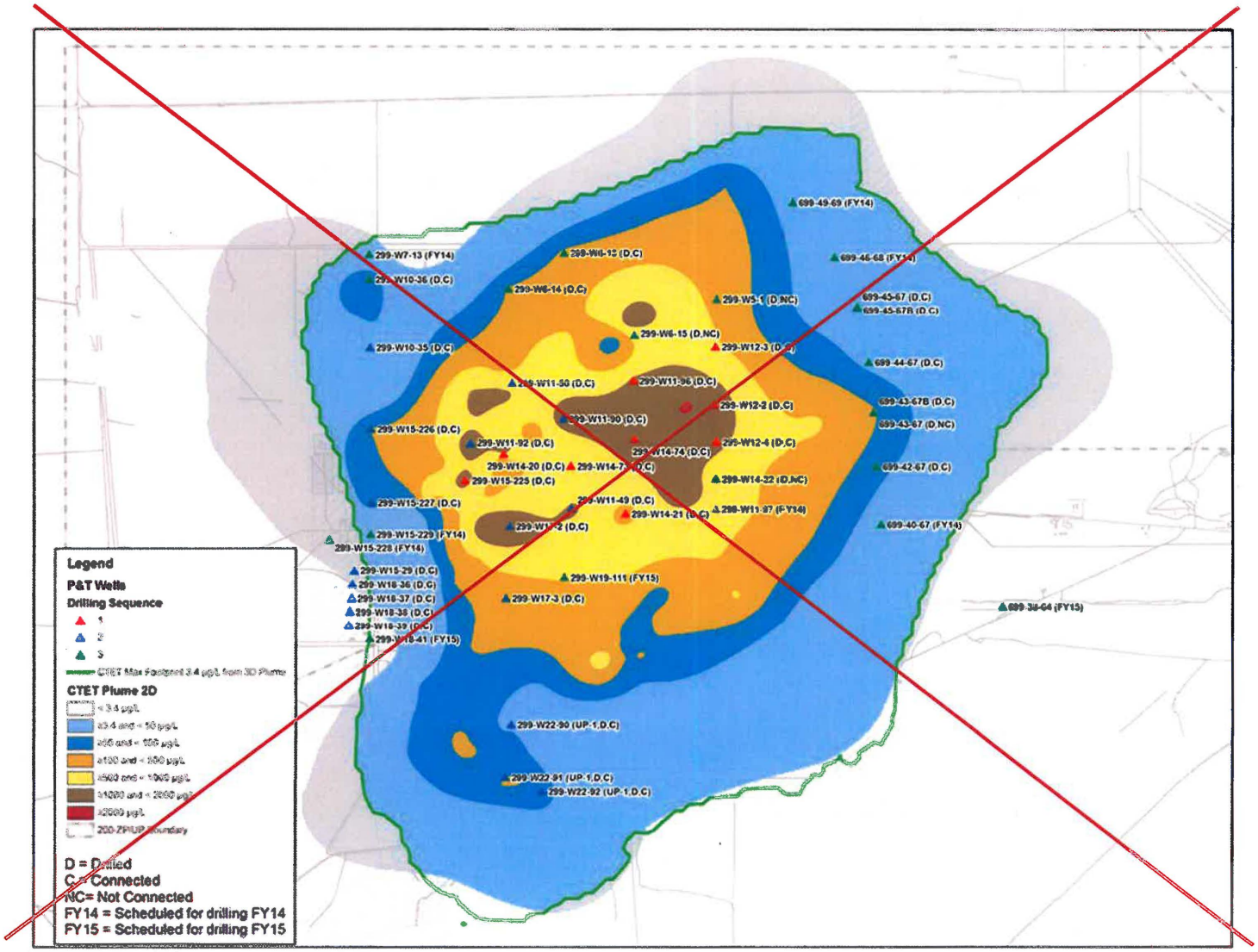


Figure 1-2. 200 West ~~Proposed~~ Well Network with Carbon Tetrachloride Plume Extent


Legend
P&T Wells
Drilling Sequence
1
2
3
CTET Plume 2D
D = Drilled
C = Connected
NC= Not Connected
FY14 = Scheduled for drilling FY14
FY15 = Scheduled for drilling FY15
299-W7-13 (FY14)
299-W10-36 (D,C)
299-W6-14 (D,C)
299-W5-1 (D,NC)
299-W6-15 (D,NC)
299-W10-35 (D,C)
299-W11-50 (D,C)
299-W11-96 (D,C)
299-W12-2 (D,C)
299-W15-226 (D,C)
299-W11-92 (D,C)
299-W12-4 (D,C)
299-W14-20 (D,C)
299-W15-225 (D,C)
299-W14-22 (D,NC)
299-W15-227 (D,C)
299-W11-49 (D,C)
299-W14-21 (D,C)
299-W15-229 (FY14)
299-W15-228 (FY14)
299-W15-29 (D,C)
299-W18-36 (D,C)
299-W18-37 (D,C)
299-W18-38 (D,C)
299-W18-39 (D,C)
299-W18-41 (FY15)
299-W19-111 (FY15)
299-W17-3 (D,C)
299-W22-90 (UP-1,D,C)
299-W22-91 (UP-1,D,C)
299-W22-92 (UP-1,D,C)
699-49-69 (FY14)
699-46-68 (FY14)
699-45-67 (D,C)
699-45-67B (D,C)
699-44-67 (D,C)
699-43-67B (D,C)
699-43-67 (D,NC)
699-42-67 (D,C)
699-40-67 (FY14)
699-38-64 (FY15)

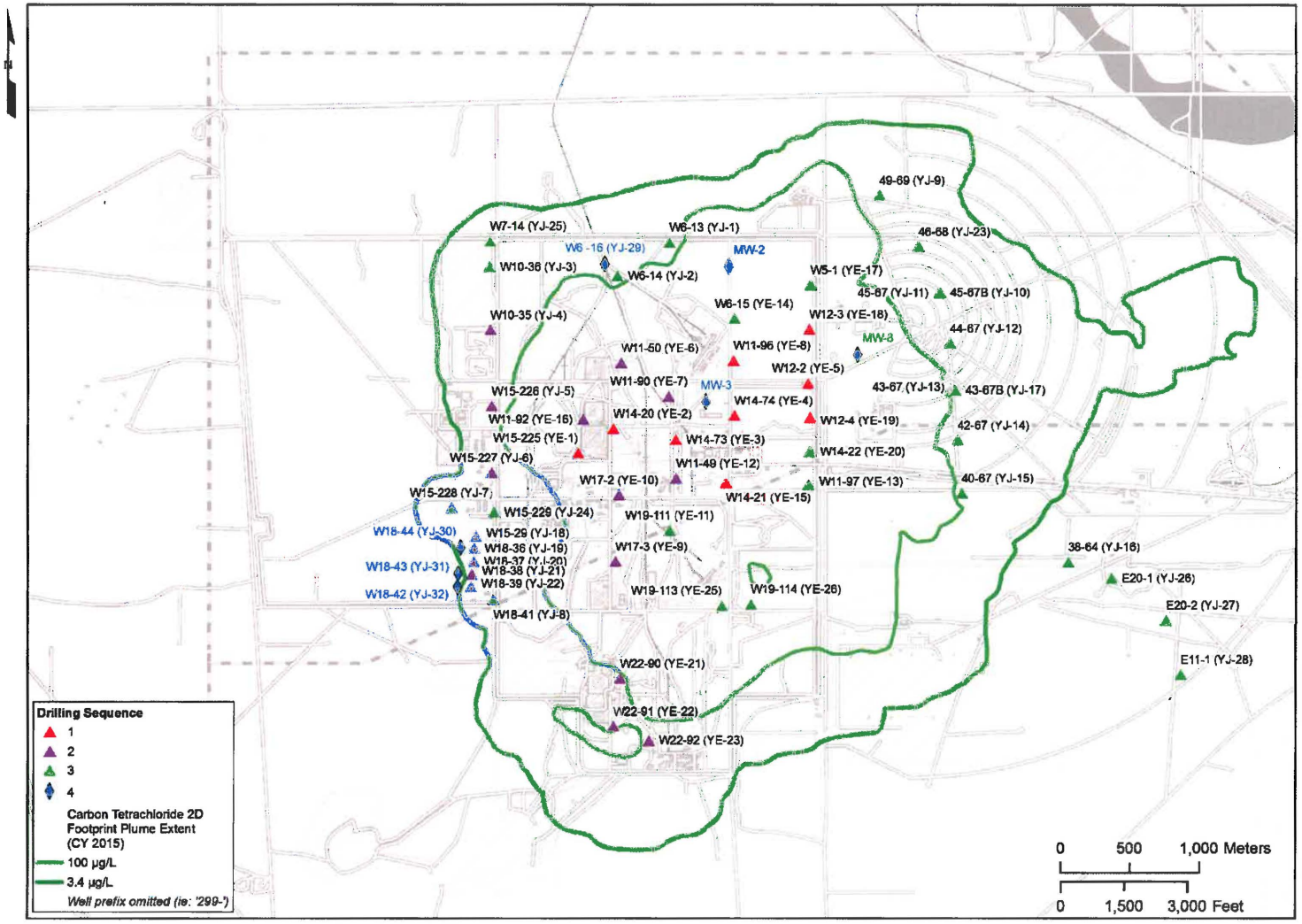


Figure 1-3. ~~Two-Dimensional Distribution of Carbon Tetrachloride~~ Drilling Sequence and Outline of Carbon Tetrachloride Plume at the Cleanup Level (3.4 µg/L)

Table 1-1. Estimated Depth of Each Proposed Extraction, Injection Well, and Monitoring Well

Well Name	Extraction (YE)/ Injection Well(YJ) Monitoring Well (MW)	Estimated Depth to Water (ft bgs)	Estimated Depth to ~~Upper Caliche~~ Cold Creek Unit (ft bgs)	Estimated Depth to Upper Ringold Unit* (ft bgs)	Estimated Depth to Ringold Unit E (ft bgs)	Estimated Depth to Ringold Lower Mud* (ft bgs)	Estimated Depth to Basalt (ft bgs)
299-W6-13	YJ-1	273	56	69	108	NP	450
299-W6-14	YJ-2	256	59	NA	95	NP	465
299-W10-36	YJ-3	246	98	105	131	432	505
299-W15-228	YJ-7	232	160	NA	164	448	561
299-W18-41	YJ-8	219	113	NP	159	443	560
699-49-69	YJ-9	261	100?	NP	173	NP	372
699-45-67B	YJ-10	292	NA	148*	195	314	437
699-44-67	YJ-12	312	105	NP	220	338	472
699-42-67	YJ-14	321	120	270	280	381	535
699-40-67	YJ-15	325	120	270	403	384	530
699-38-64	YJ-16	338	235	NA	286	387	513
699-43-67B	YJ-17	325	118	NP	210	363	495
699-46-68	YJ-23	280	61	NP	193	306	433
299-W15-229	YJ-24	256	158	NA	183	459	564
299-W7-14	YJ-25	252	61	105	134	NP	460
299-W6-16	YJ-29	248	52	NP	76	NP	476
299-W18-44	YJ-30	224	129	NP	154	444	566
299-W18-43	YJ-31	218	123	NP	149	440	570
299-W18-42	YJ-32	212	117	NP	145	434	569
299-W19-111	YE-11	261	144	138	163	437	545
299-W11-97	YE-13	294	152	NA	117?	426?	535
299-W6-15	YE-14	293	110	NA	157?	NP	475
299-W5-1	YE-17	295	100*	NA	159?	NP	460
299-W14-22	YE-20	303	150	NP	180	NP	515
299-W5-2	MW-1	281	100	NP	179	NP	460

Table 1-1. Estimated Depth of Each Proposed Extraction, Injection Well, and Monitoring Well

Well Name	Extraction (YE)/ Injection Well(YJ) Monitoring Well (MW)	Estimated Depth to Water (ft bgs)	Estimated Depth to ~~Upper Caliche~~ Cold Creek Unit (ft bgs)	Estimated Depth to Upper Ringold Unit* (ft bgs)	Estimated Depth to Ringold Unit E (ft bgs)	Estimated Depth to Ringold Lower Mud* (ft bgs)	Estimated Depth to Basalt (ft bgs)
299-W13-2	MW-7	313	152	156	249	411	535
299-W6-17	MW-2	291	75	139	147	NP	478
299-W11-98	MW-3	298	115	149	159	NP	516
699-44-70B	MW-8	317	75	115	184	370	511

Sources: PNNL-13858, *Revised Hydrogeology for the Suprabasalt Aquifer System, 200-West Area and Vicinity, Hanford Site, Washington*, was used to estimate Ringold Unit E outside of the 200 West Area (Plate 7), Ringold lower mud (Plate 5), and top of basalt (Plate 2).

Water levels are estimated from Figure 2.8-2 of DOE/RL-2008-66, *Hanford Site Groundwater Monitoring for Fiscal Year 2008*; March 2008 data.

WHC-SD-EN-TI-014, *Hydrogeologic Model of the 200 West Groundwater Aggregate Area*, was used to estimate the top of the caliche (Figure 2-12), top of upper Ringold (Figure 2-10), and Ringold Unit E (Figure 2-8) in the 200 West Area.

* May not be present.

bgs = below ground surface NA = not available NP = not present ? = questionable selection
YE = extraction well YJ = injection well MW = monitoring well

1.1 Contaminants of Concern

The list of the COCs for the 200-ZP-1 OU presented in Table 1-2 was taken from the ROD (EPA et al., 2008) and was derived from review of the documents identified in Table 1-3. The 200-ZP-1 OU FS report (DOE/RL-2007-28) outlines the statistical measures used for determining the COCs. In addition to the COCs presented in the ROD, other parameters or constituents may be analyzed (including chloroform) to support future MNA monitoring. Standardized reporting lists for certain broad-spectrum U.S. Environmental Protection Agency (EPA) methods (SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update IV-B*; Methods 8260, 200.8, and 300.0) are provided in Appendix A of this SAP. The tables in Appendix A define the standard compound lists for statements of work when developing laboratory contracts for this project using a method-based analysis approach. The results for the analytes listed in these tables will be reported in the Hanford Environmental Information System (HEIS) database in addition to the COCs presented in Table 1-2. If analysis indicates tentatively identified compounds beyond those listed in Table 1-2 or Appendix A, these will also be reported in the HEIS database and will have a "J" (estimated value) qualifier (which identifies it as a tentatively identified compound).

Table 1-2. ~~Final List of Contaminants of Concern in Groundwater~~ Constituents of Interest in Groundwater and in Sediments During Drilling and in Groundwater Post Development

Constituent	CAS Number
Nonradiological Constituents[a] in Groundwater	
Carbon tetrachloride	56-23-5
Chloroform[b]	67-66-3
Chromium, total	7440-47-3
Chromium, hexavalent	18540-29-9
Iron	7439-89-6
Manganese	7439-96-5
Nitrate	14797-55-8
Phosphorous in phosphate	12185-10-3
Total dissolved solids	N/A
Trichloroethene	79-01-6
Radiological Constituents in Groundwater	
Iodine-129	15046-84-1
Technetium-99	14133-76-7
Tritium	10028-17-8
Uranium[a]	7440-61-1
Biofouling Constituents in Sediments	
Total Kjeldahl nitrogen	7727-37-9
Heterotrophic plate count	N/A
Iron related bacteria test (IRB)	N/A
Slime forming bacteria test (SLYM)	N/A
Sulfate reducing bacteria test (SRB)	N/A
Total organic carbon	N/A
Total volatile solids	N/A

Table 1-2. ~~Final List of Contaminants of Concern in Groundwater~~ Constituents of Interest in Groundwater and in Sediments During Drilling and in Groundwater Post Development

Constituent	CAS Number
Constituents of Interest in Groundwater Post Development	
Alkalinity	N/A
Carbonate content (bicarbonate and carbonate)	N/A
Carbon tetrachloride	56-23-5
Chloroform[b]	67-66-3
Chloride	16887-00-6
Chloromethane[b]	74-87-3
cis-1,2-Dichloroethene[b]	156-59-2
Dichloromethane[b]	75-09-2
Chromium, total	7440-47-3
Chromium, hexavalent	18540-29-9
Iodine-129	15046-84-1
Iron	7439-89-6
Manganese	7439-96-5
Nitrate	14797-55-8
Nitrite[b]	14797-65-0
Phosphorus in phosphate	12185-10-3
Sulfate	14808-79-8
Sulfide	18496-25-8
Technetium-99	14133-76-7
Total organic carbon	N/A
Total dissolved solids	N/A
Trichloroethene	79-01-6
Tritium	10028-17-8
Uranium[a]	7440-61-1

Table 1-2. ~~Final List of Contaminants of Concern in Groundwater~~ Constituents of Interest in Groundwater and in Sediments During Drilling and in Groundwater Post Development

Constituent	CAS Number
Vinyl chloride[b]	75-01-4

a. Uranium (total) will also be analyzed as a target constituent. While not a COC specified in the *Record of Decision, Hanford 200 Area 200-ZP-1 Superfund Site, Benton County, Washington* (EPA et al., 2008), it is a COC for the 200-UP-1 Operable Unit to the south.

b. Degradation product; not a COC specified in the 200-ZP-1 Operable Unit Record of Decision (EPA et al., 2008).

CAS = Chemical Abstract Services

COC = contaminant of concern

Table 3-1. Well Sample/Measurement Locations and Depth

Sampling Location	Vadose Zone Sampling Depth, Frequency, and Analysis (ft bgs)	Aquifer Sampling Depth, Frequency, and Analysis (ft bgs)	
		Water Samples	Soil Samples (Sediment) Below Water Table[a]
YE-11, YE-13, YE-14, YE-17, YE-20, YJ-1, YJ-2, YJ-3, YJ-7, YJ-8, YJ-9, YJ-10, YJ-12, YJ-14, YJ-15, YJ-16, YJ-17, YJ-23, MW-1, ~~and~~MW-7, MW-2, MW-3, and MW-8	**Ground surface to water table at each of the new wells:** During drilling, archive grab samples for geological purposes will be collected every 5 ft and where lithology changes occur in one-pint jar and a chip tray from the drill cuttings.	**During drilling, water samples to be collected (in accordance with Section 3.5.6) as follows:** at 20 ft intervals throughout aquifer, unless visual observation in aquifer material change by the field geologist calls for 10 ft intervals for further clarification: • Carbon tetrachloride for quick-turnaround samples[b] • Table 1-2 constituents at standard turnaround time • Field screening parameters (temperature, pH, dissolved oxygen, specific conductance, and NTU)	**During drilling, soil samples to be collected:** • Every 5 ft, grab archive samples will be collected and where lithology changes occur in one-pint jar and a chip tray from the drill cuttings • Every 20 ft, in correlation with aquifer water samples, grab two composite soil samples in pint jars from drill cuttings over the 20 ft interval for field screening grain-size (sieve) analysis
YJ-24 and YJ-25	**Ground surface to water table at each of the new wells:** During drilling, archive grab samples for geological purposes will be collected every 5 ft and where lithology changes occur in one-pint jar and a chip tray from the drill cuttings.	**During drilling, water samples to be collected (in accordance with Section 3.5.6) as follows:** one sample just below the water table, one sample at about the middle of the aquifer (~390 ft bgs), and one sample just above the Ringold lower mud unit. Each sample will be analyzed for volatile organic compounds only.	**During drilling, soil samples to be collected:** • Every 5 ft, grab archive samples will be collected and where lithology changes occur in one-pint jar and a chip tray from the drill cuttings • Every 20 ft, in correlation with aquifer water samples, grab two composite soil samples in pint jars from drill cuttings over the 20 ft interval for field screening grain-size (sieve) analysis
YJ-29, YJ-30, and YJ-32	**Ground surface to water table at each of the new wells during drilling:** • Split-spoon samples for analytical purposes will be collected at about 80	**During drilling, water samples to be collected (in accordance with Section 3.5.6) as follows:** five samples at 240 ft bgs, 260 ft bgs, 290 ft bgs, 340 ft bgs	**During drilling, soil samples to be collected:** • Split-spoon samples for analytical purposes will be collected at about 240

Table 3-1. Well Sample/Measurement Locations and Depth

Sampling Location	Vadose Zone Sampling Depth, Frequency, and Analysis (ft bgs)	Aquifer Sampling Depth, Frequency, and Analysis (ft bgs)	
		Water Samples	Soil Samples (Sediment) Below Water Table[a]
	ft bgs, 140 ft bgs, and 200 ft bgs. Samples to be analyzed for Table 1-2 biofouling constituents at quick turnaround times[c]. • Archive grab samples for geological purposes will be collected every 5 ft and where lithology changes occur in one-pint jar and a chip tray from the drill cuttings.	and 410 ft bgs and one sample collected 10 ft below the Ringold lower mud unit (if present), unless visual observation in aquifer material change by the field geologist calls for additional sampling for further clarification: • Carbon tetrachloride for quick-turnaround samples[b] • Table 1-2 constituents at standard turnaround time • Field screening parameters (temperature, pH, dissolved oxygen, specific conductance, and NTU) Following construction and development of each well, one water sample will be collected and analyzed for Table 1-2 post development constituents at standard turnaround times to provide baseline concentrations for each constituent.	ft bgs, 340 ft bgs, and 410 ft bgs. Samples to be analyzed for Table 1-2 biofouling constituents at quick turnaround times[c]. • Every 5 ft, grab archive samples will be collected and where lithology changes occur in one-pint jar and a chip tray from the drill cuttings. • Every 20 ft, in correlation with aquifer water samples, grab two composite soil samples in pint jars from drill cuttings over the 20 ft interval for field screening grain-size (sieve) analysis.

a. If field screening instruments indicate radiological contamination above background at a given interval, grab two additional pint jar samples. Send one pint jar for 24-hour turnaround gamma-energy analysis and one additional jar for testing based on the gamma-energy analysis results (as determined by the groundwater remediation manager).

b. If samples have elevated organic concentrations, an "E" flag may be applied to the data due to a lack of time for dilutions and re-runs on a quick-turnaround time. The standard turnaround time sample will account for dilutions and re-runs, as applicable.

c. Samples not used ~~should~~ will be archived until a decision about needs for any additional sampling associated with injection well performance are determined then disposed in accordance with Section 3.6.

bgs = below ground surface
YE = extraction wells
YJ = injection wells
NTU = nephelometric turbidity unit

TRI-PARTY AGREEMENT

Change Notice Number	TPA CHANGE NOTICE FORM	Date:
TPA-CN- 0759		11/08/16

Document Number, Title, and Revision:	Date Document Last Issued:
DOE/RL-2009-124, 200 West Pump and Treat Operations and Maintenance Plan, Rev. 5	April 2016

Approved Change Notices Against this Document: TPA-CN-0725

Originator: Bill Barrett | Phone: 373-3985

Description of Change:
Appendix B, in Waste Management Plan for the 200 West Pump and Treat, DOE/RL-2009-124, 200 West Pump and Treat Operations and Maintenance Plan, Rev. 5, is revised to add the location identified in Figure B-3 for storage of investigation derived waste (IDW).

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

Page B-10, Paragraph 1, of Appendix B, Waste Management Plan for the 200 West Pump and Treat, in DOE/RL-2009-124, 200 West Pump and Treat Operations and Maintenance Plan, Rev. 5, is revised to add the location identified in Figure B-3 for storage of IDW. Previously, only the location shown in Figure B-4 was identified. Figure B-4, Page B-11, was revised to clarify the waste storage location and to be consistent with Figure B-1 in the 200-UP-1 Waste Management Plan.

Added text is shown in <u>double underline</u> on page B-10. Figure B-4 is replaced in its entirety.

Note: Include affected page number(s): B-10 & B-11

Justification and Impacts of Change:
The addition of another IDW waste storage area will add efficiency to management of waste that is generated pursuant to the 200-ZP-1 Record of Decision and the 200-UP-1 Interim Record of Decision. Figure B-4 has been changed to match Figure 1 in the 200-UP-1 Waste Management Plan.

Approvals:

M.W. Cline DOE Project Manager	11/17/2016 Date	[X] Approved [ ] Disapproved
Curtis Laija EPA Project Manager	11/17/16 Date	[X] Approved [ ] Disapproved
N/A Ecology Project Manager	Date	[ ] Approved [ ] Disapproved

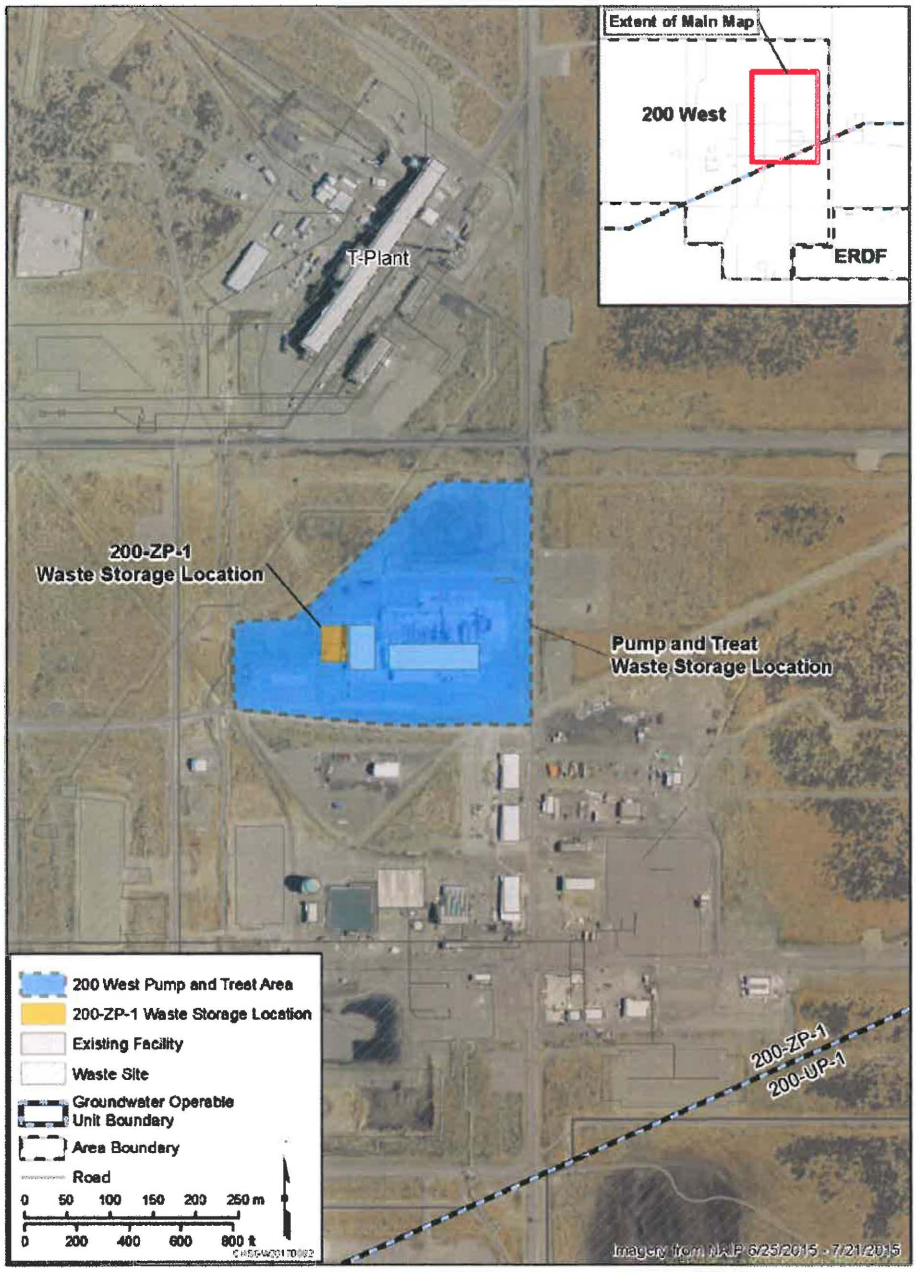


Figure B-3. 200 West P&T Waste Storage Location

The IDW waste (e.g., drill cuttings) may be accumulated near the point of generation while awaiting analytical laboratory test results. IDW also may be accumulated at the 200-ZP-1 *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) waste storage area (Figure B-4) or at the 200-ZP-1 waste storage location at the 200 West P&T waste storage location (Figure B-3). Waste from 200-UP-1 and 200-PW-1 OUs may also be stored at these locations; however, the waste is kept segregated by operable unit and will not be co-mingled. If IDW must be stored for longer than 6 months after designation, concurrence from the lead regulatory agency will be obtained on storage, treatment, and disposal options of the waste, along with the disposition schedule.

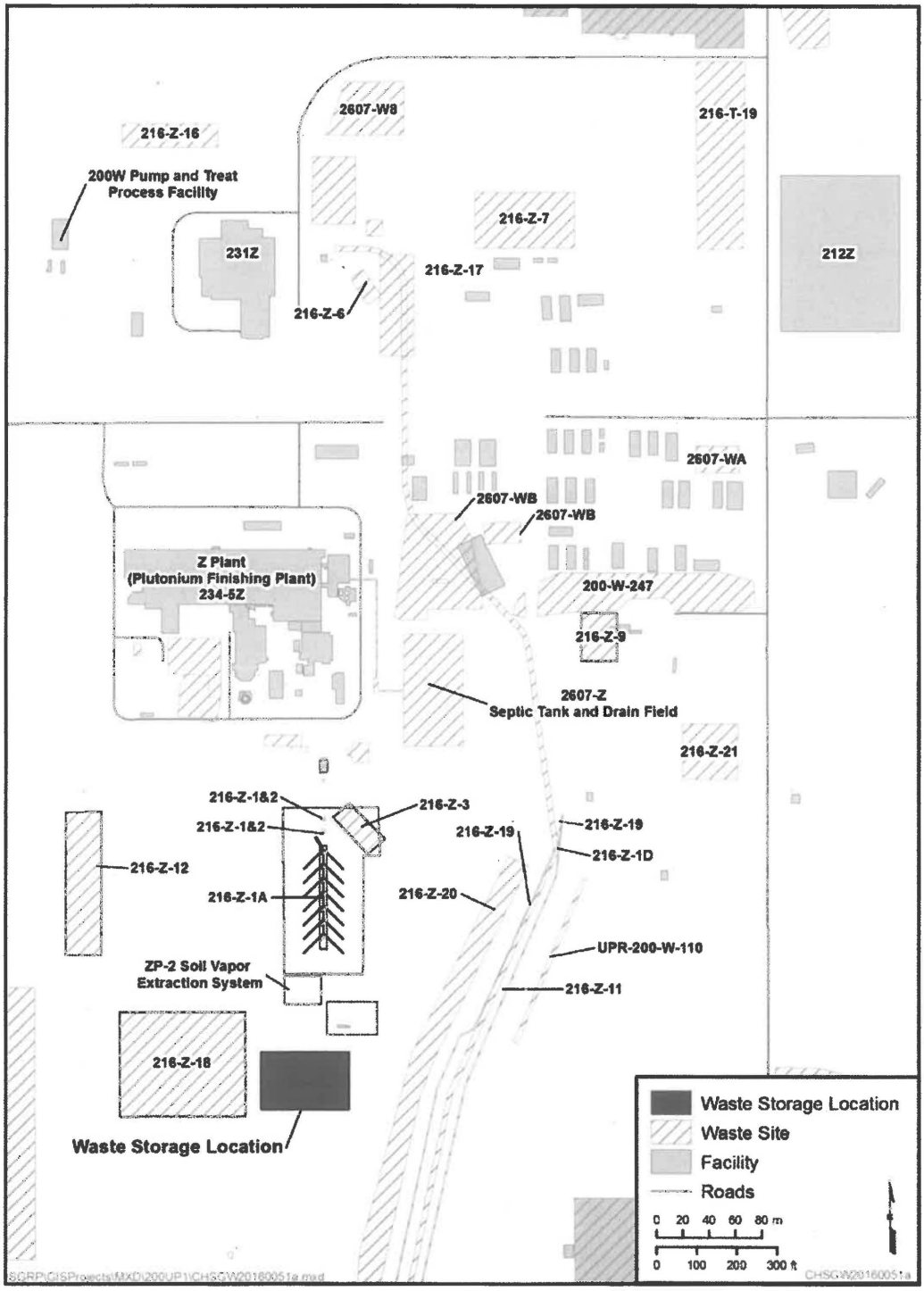


Figure B-4. 200-ZP-1 Waste Storage Location

TRI-PARTY AGREEMENT

Change Notice Number TPA-CN- 0761	TPA CHANGE NOTICE FORM	Date: 11/17/2016
Document Number, Title, and Revision: DOE/RL-2016-13, Waste Management Plan for the 200-UP-1 Groundwater Operable Unit, Rev. 0		Date Document Last Issued: January 2016

Approved Change Notices Against this Document: N/A

Originator: C. S. Cearlock | Phone: 509-373-0799

Description of Change:
Edit the description of the location of the waste storage area in Figure 1, "200-UP-1 Waste Storage Location," of DOE/RL-2016-13, *Waste Management Plan for the 200-UP-1 Groundwater Operable Unit*, Rev. 0.

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

Figure 1, "200-UP-1 Waste Storage Location," of DOE/RL-2016-13, Waste Management Plan for the 200-UP-1 Groundwater Operable Unit, Rev. 0, was updated.

No other text was added or deleted in the document.

Note: Include affected page number(s): 10

Justification and Impacts of Change:
Text in Figure 1, "200-UP-1 Waste Storage Location" is being edited to match that of Figure B-4 of DOE/RL-2009-124, *200 West Pump and Treat Operations and Maintenance Plan*, Rev. 5.

Approvals:

DOE Project Manager	Date 11/17/2016	[X] Approved [ ] Disapproved
EPA Project Manager	Date 11/17/16	[X] Approved [ ] Disapproved
N/A Ecology Project Manager	Date	[ ] Approved [ ] Disapproved

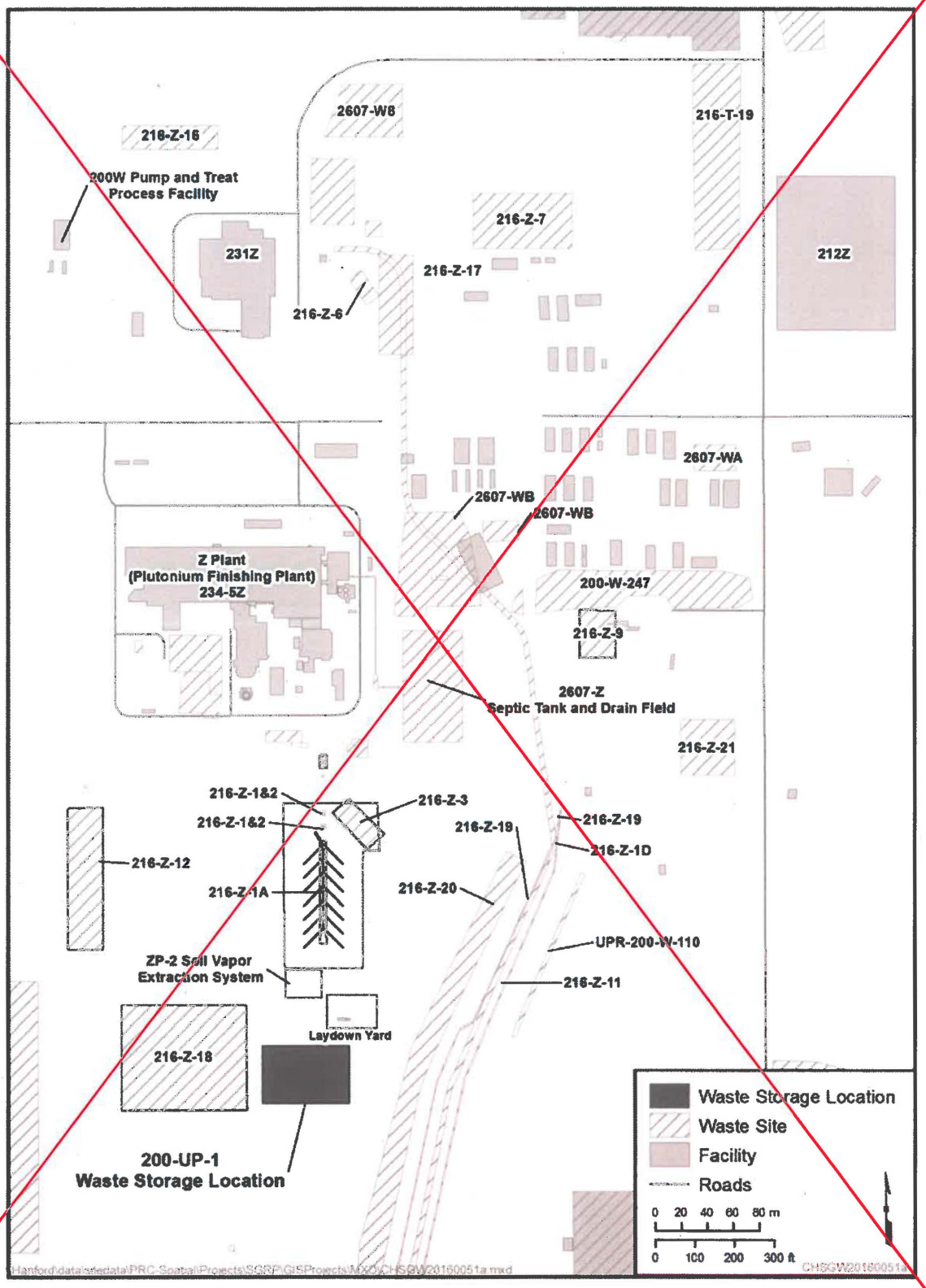


Figure 1. 200-UP-1 Waste Storage Location

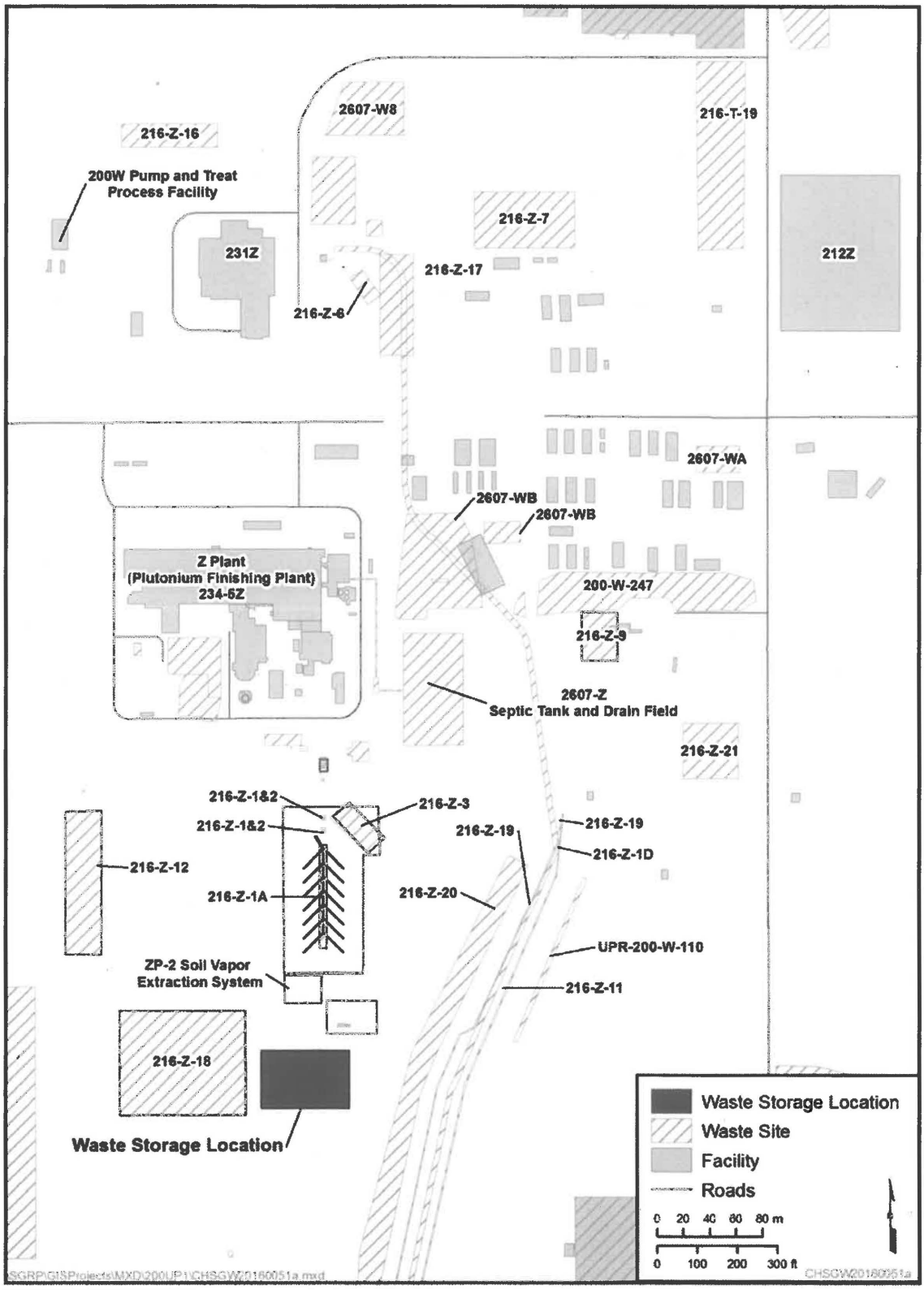


Figure 1. 200-UP-1 Waste Storage Location

TRI-PARTY AGREEMENT

Change Notice Number TPA-CN- 0776	TPA CHANGE NOTICE FORM	Date: February 2017
Document Number, Title, and Revision: DOE/RL-2009-124, 200 West Pump and Treat Operations and Maintenance Plan, Revision 5		Date Document Last Issued: April 2016

Approved Change Notices Against this Document: TPA-CN-0725, TPA-CN-0759, TPA-CN-0771

Originator: W.F. Barrett **Phone:** 509-373-3985

Description of Change:

Table B-1 "200 West Area Groundwater Wells," Table B-2 "200 West P&T Wells," Figure B-1 "200 West Groundwater Well Locations," and Figure B-2 "200 West P&T Well Locations and Contaminant Plumes" are revised to include new injection and monitoring wells.

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

Revised figures and tables to include four new injection wells and six new monitoring wells.

Inserted text in Table B-1 and Table B-2 is indicated by double underline.

Note: Include affected page number(s) B-3, B-5, B-6, and B-7

Justification and Impacts of Change:

New injection wells are needed to sustain and increase 200 West P&T injection capacity and new monitoring wells are needed to fill data gaps in monitoring coverage. The following activities are expected to generate waste subject to the requirements of DOE/RL-2009-124, Appendix B, Waste Management Plan for the 200 West Pump and Treat:

- Construction, modification, and operations and maintenance (O&M) of the 200 West P&T
- Installation, development, testing, monitoring, sampling, and O&M of groundwater monitoring and injection wells
- Subsurface characterization activities, including water level and other in situ groundwater or vadose zone measurements
- Decontamination of equipment, tools, and material
- Process sampling and analysis of samples.

Approvals:

DOE Project Manager	Date 2/28/2017	[X] Approved [ ] Disapproved
EPA Project Manager	Date 3/1/2017	[X] Approved [ ] Disapproved
N/A Ecology Project Manager	Date	[ ] Approved [ ] Disapproved

Table B-1 200 West Area Groundwater Wells

299-W10-1	299-W15-33	299-W19-48	699-36-61A
299-W10-14	299-W15-37	299-W19-49	699-36-66B
299-W10-27	299-W15-42	299-W19-6	699-36-70A
299-W10-30	299-W15-46	299-W21-2	699-36-70B
299-W10-31	299-W15-49	299-W22-47	699-37-66
299-W10-33	299-W15-50	299-W22-72	699-38-61
299-W11-13	299-W15-7	299-W22-86	699-38-65
299-W11-18	299-W15-763	299-W22-87	699-38-68A
299-W11-33Q	299-W15-765	299-W22-88	699-38-70B
299-W11-43	299-W15-83	299-W23-19	699-38-70C
299-W11-45	299-W15-94	299-W23-4	699-40-62
299-W11-47	299-W18-1	299-W26-13	699-40-65
299-W11-48	299-W18-15	299-W27-2	699-43-69
299-W11-87	299-W18-16	299-W5-2	699-44-64
299-W11-88	299-W18-21	299-W6-3	699-45-69A
299-W13-1	299-W18-22	299-W6-6	699-45-69C
299-W13-2	299-W18-40	299-W7-3	699-47-60
299-W14-11	299-W19-105	299-W9-2	699-48-71
299-W14-13	299-W19-107	699-30-66	699-50-74
299-W14-14	299-W19-34A	699-32-62	699-51-63
299-W14-71	299-W19-34B	699-32-72A	299-W10-40 ~~C9625~~[a]
299-W14-72	299-W19-36	699-33-75	299-W10-41 ~~C9626~~[a]
299-W15-11	299-W19-4	699-34-61	299-W10-42 ~~C9627~~[a]
299-W15-152	299-W19-41	699-35-66A	299-W6-17
299-W15-17	299-W19-47	699-35-78A	299-W11-98
			699-44-70B

~~a. Potential new wells to support groundwater monitoring beneath Low Level Waste Management Area 3 in the northwest corner of 200-ZP-1 OU.~~

Table B-2 200 West P&T Wells

Well Code	Well Identification	Well Number
Injection Wells		
YJ-1	C8064	299-W6-13
YJ-2	C8065	299-W6-14
YJ-3	C8066	299-W10-36
YJ-4	C7573	299-W10-35
YJ-5	C7574	299-W15-226
YJ-6	C7575	299-W15-227
YJ-7	C8716	299-W15-228
YJ-8	C8920	299-W18-41
YJ-9	C8786	699-49-69
YJ-10	C8717	699-45-67B
YJ-11	C7578	699-45-67
YJ-12	C8068	699-44-67
YJ-13	C7579	699-43-67
YJ-14	C8069	699-42-67
YJ-15	C8070	699-40-67
YJ-16	C8921	699-38-64
YJ-17	C8386	699-43-67B
YJ-18	B2409	299-W15-29
YJ-19	B2747	299-W18-36
YJ-21	B2757	299-W18-38
YJ-22	B2758	299-W18-39
YJ-23	C8067	699-46-68
YJ-24	C8944	299-W15-229
YJ-25	C9521	299-W7-14
YJ-26	C9482	299-E20-1
YJ-27	C9483	299-E20-2
YJ-28	C9484	299-E11-1
YJ-29	C9561	299-W6-16
YJ-30	C9565	299-W18-44
YJ-31	C9564	299-W18-43
YJ-32	C9563	299-W18-42

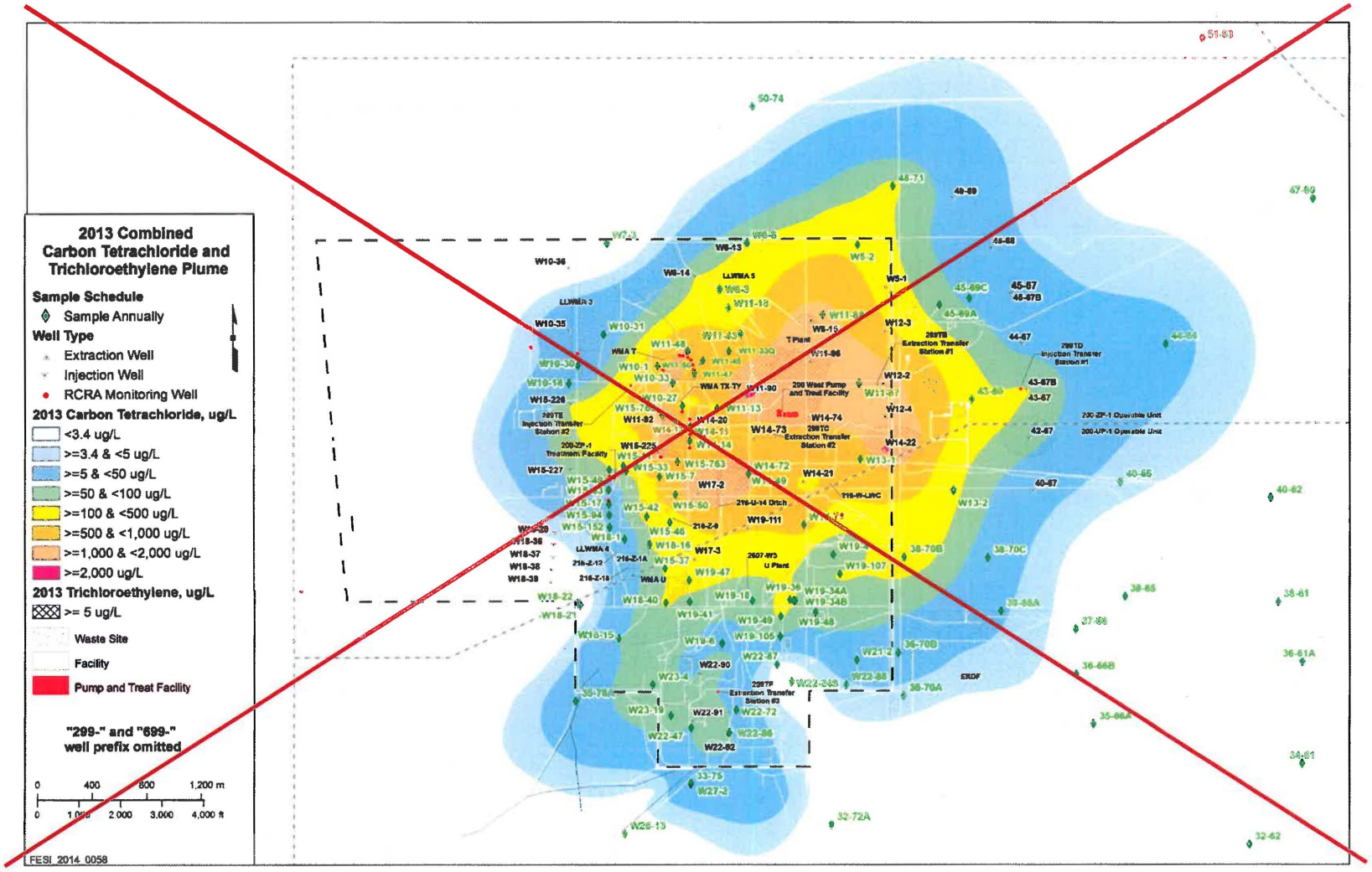


Figure B-1 200 West Groundwater Well Locations

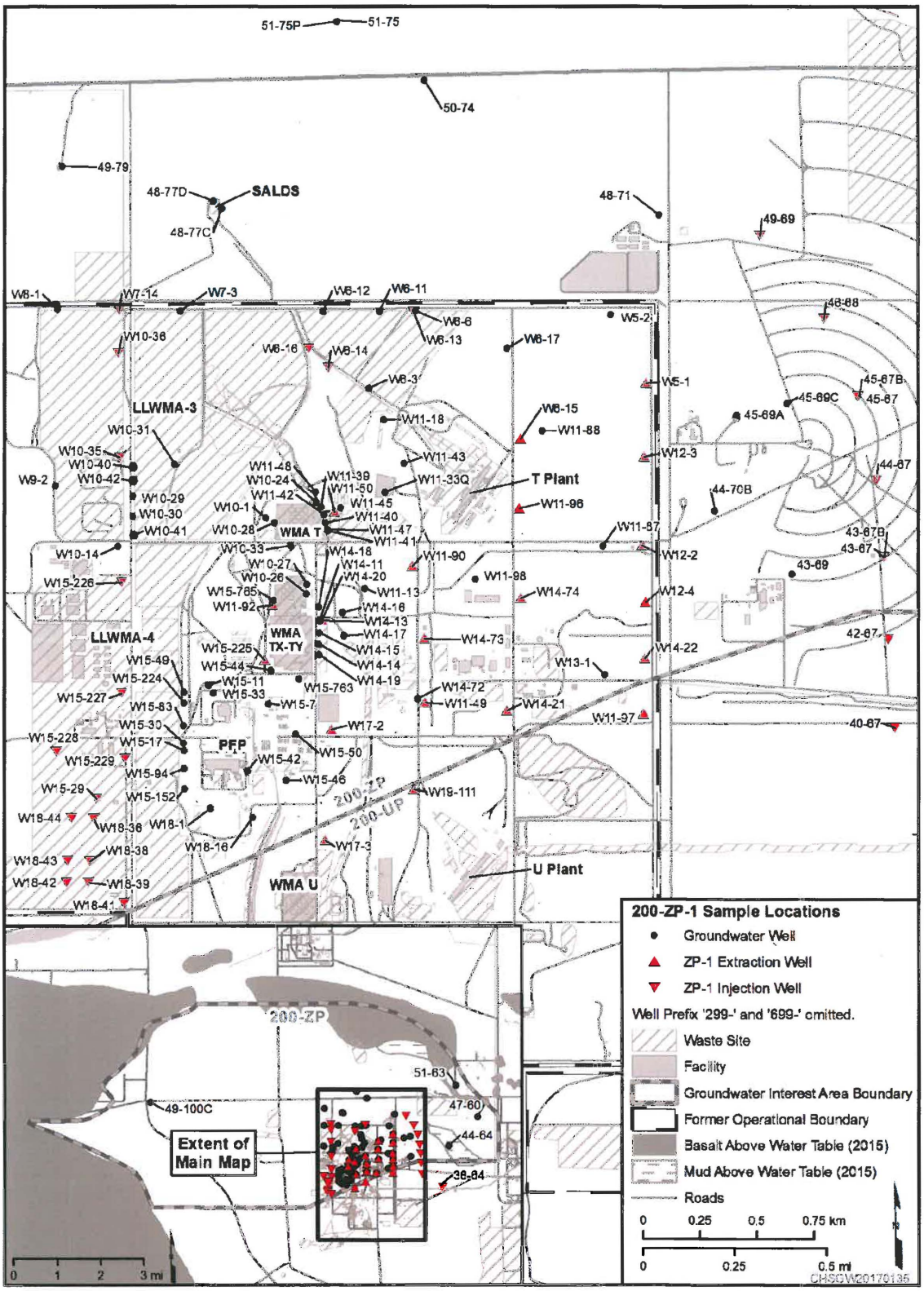


Figure B-2 200 West Groundwater Well Locations

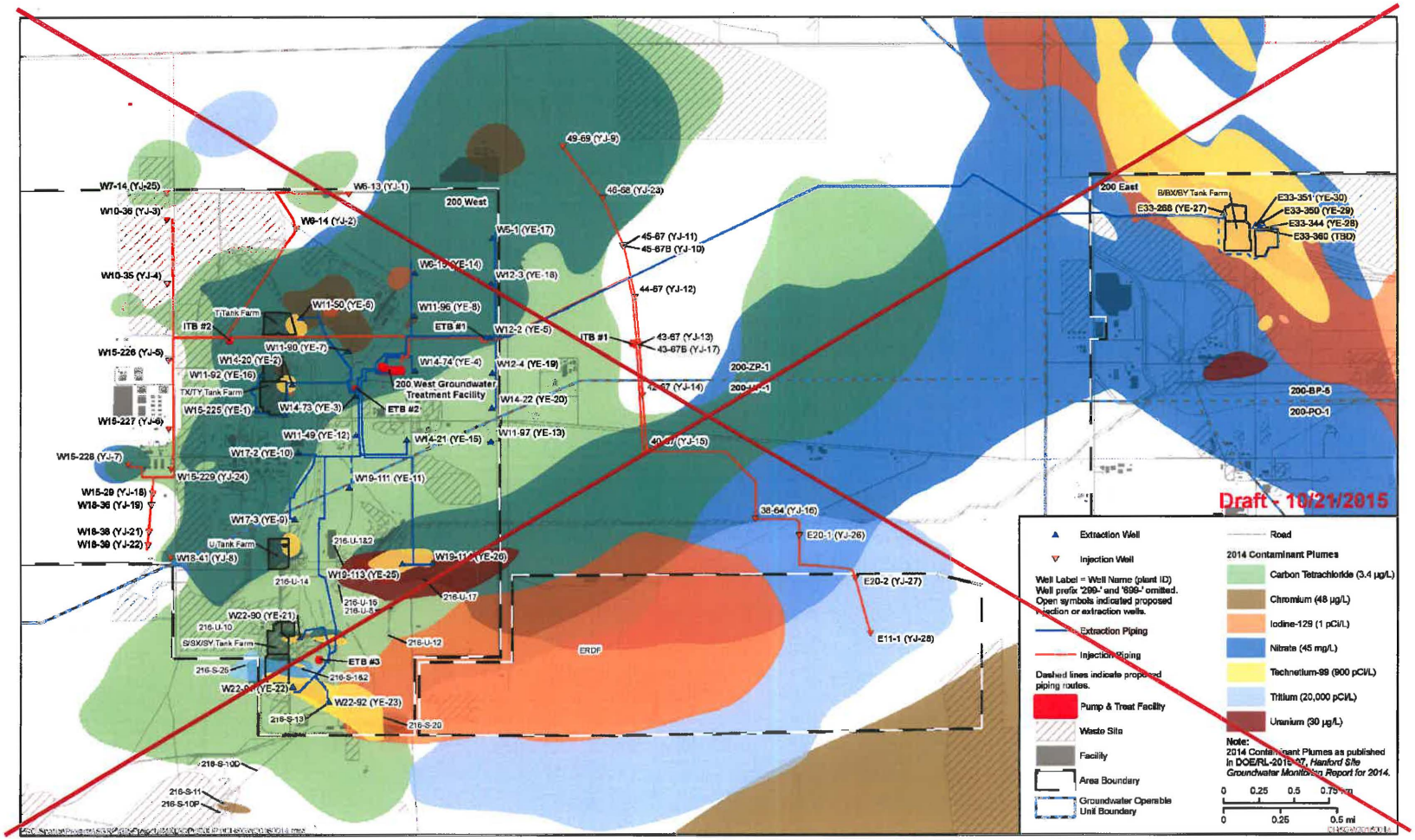


Figure B-3 200 West P&T Well Locations and Contaminant Plumes

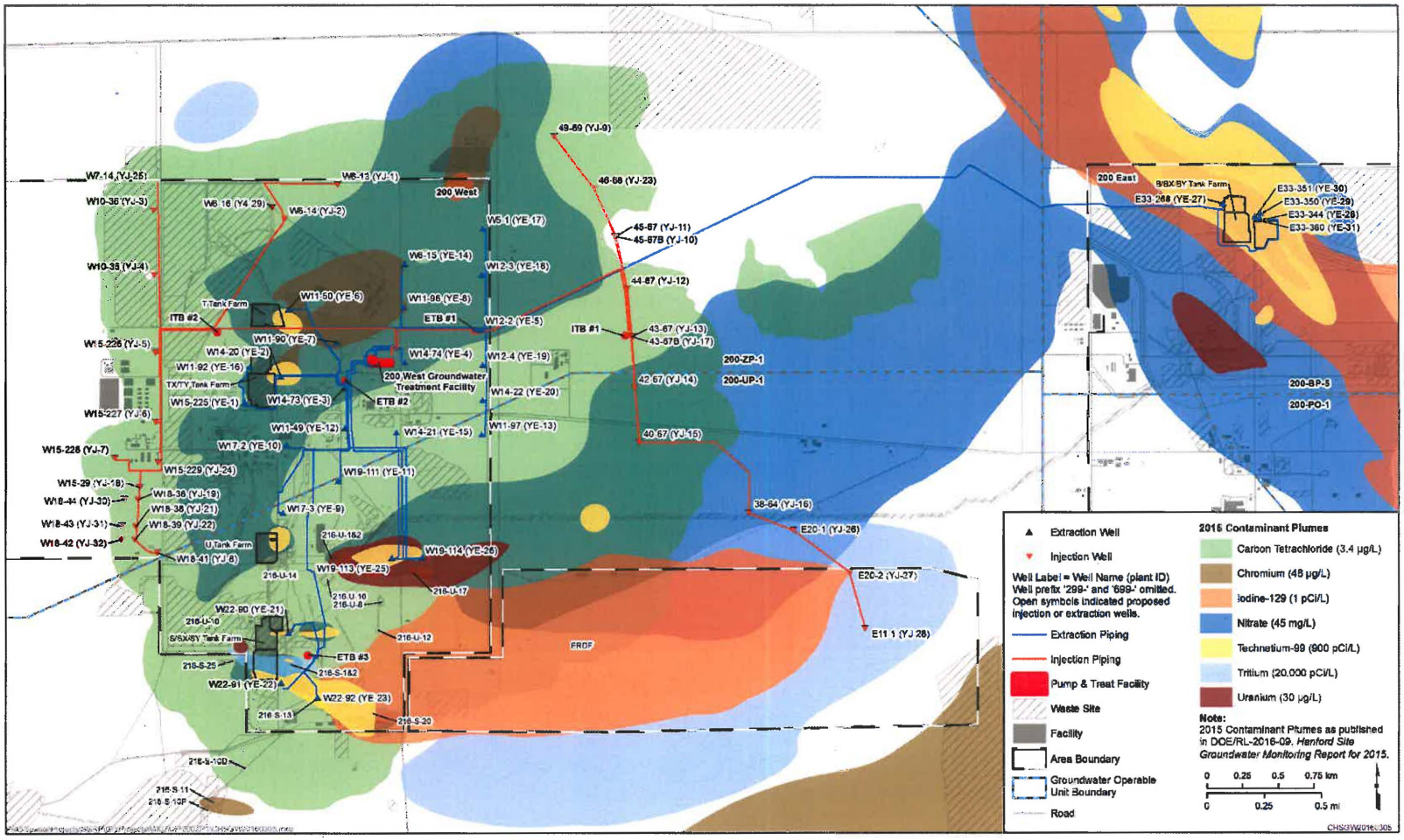


Figure B-4 200 West P&T Well Locations and Contaminant Plumes

Documents for the Administrative Record

The following documents were entered into the Administrative Record.

OPEN ACTION ITEM TRACKING

Action #	Action/Subject	Assigned To	Owed To	Assigned Date	Original Due Date	Adjusted Due Date	Status
174	Ecology will respond with a path forward for BP-5 PO-1 SAP	Ecology/Nina Menard	RL	5/19/2016	6/10/2016	8/5/2016	Closed
178	Discuss with Ecology the status of the Action Memo Work Plan associated with Milestone M-016-250	Al Farabee	Ecology	7/21/2016	9/15/2016		Closed
179	Respond to Ecology justification to add 207A SRB to Appendix C	Ben Vannah/Mostafa Kamal	Ecology	7/21/2016	8/31/2016	10/31/2017	Closed
180	DOE to status PW-1/3/6 progress in 6 months	Al Farabee	EPA	9/15/2016	Mar-17	3/16/2017	Closed