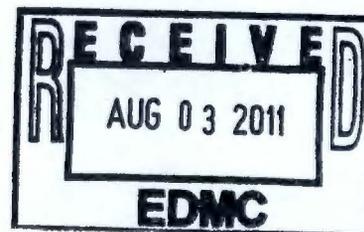


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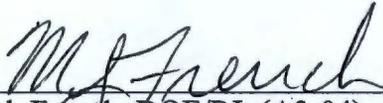
## 100/300 AREA UNIT MANAGER MEETING ATTENDANCE AND DISTRIBUTION

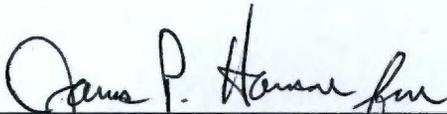
NAME	E-MAIL ADDRESS	MSIN	COMP
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Hadley, Karl A	karl.hadley@wch-rcc.com	H4-21	WCH
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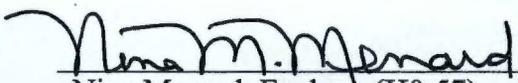


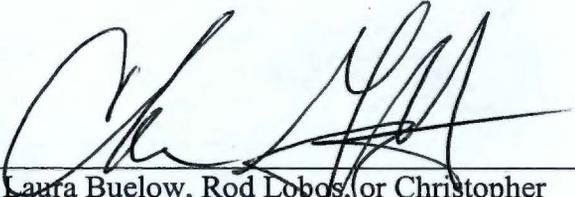
100/300 AREA UNIT MANAGERS MEETING  
APPROVAL OF MEETING MINUTES

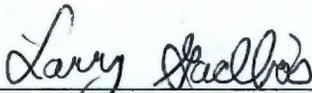
June 9, 2011

APPROVAL:  Date 7/14/11  
Mark French, DOE/RL (A3-04)  
River Corridor Project Manager

APPROVAL:  Date 7/14/11  
Briant Charboneau, DOE/RL (A6-33)  
Groundwater Project Manager

APPROVAL:  Date 7/14/11  
Nina Menard, Ecology (H0-57)  
Environmental Restoration Project  
Manager

APPROVAL:  Date 7/14/11  
Laura Buelow, Rod Lobos, or Christopher  
Guzzetti, EPA (B1-46)  
100 Area Project Manager

APPROVAL:  Date July 14, 2011  
Larry Gadbois, EPA  
(B1-46)  
300 Area Project Manager

**100 & 300 AREA UNIT MANAGER MEETING MINUTES**

**Groundwater and Source Operable Units; Facility Deactivation, Decontamination, Decommission, and Demolition (D4); Interim Safe Storage (ISS); Field Remediation (FR); and Mission Completion**

**June 9, 2011**

**ADMINISTRATIVE**

- **Next Unit Manager Meeting (UMM)** – The next meeting will be held July 14, 2011, at the Washington Closure Hanford (WCH) Office Building, 2620 Fermi Avenue, Room C209.
- **Attendees/Delegations** – Attachment A is the list of attendees. Representatives from each agency were present to conduct the business of the UMM.
- **Approval of Minutes** – The May 12, 2011, meeting minutes were approved by the U.S. Environmental Protection Agency (EPA), Washington State Department of Ecology (Ecology), and U.S. Department of Energy, Richland Operations Office (RL).
- **Action Item Status** – The status of action items was reviewed and updates were provided (see Attachment B).
- **Agenda** – Attachment C is the meeting agenda.

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

**Executive Session:** An Executive Session was held by RL, EPA, and Ecology prior to the June 9, 2011, UMM, to discuss the status of the DOE review of the 100-K RI/FS report. Attachment D is the meeting agenda.

**Action Item:** The action item for the Tri-Parties to review RAOs 6 and 7 for inclusion into the RAO document was closed at the June 9, 2011, UMM and the following action item was opened: “DOE will revise RAO 6 and delete RAO 7 and distribute to the Tri-Parties for review.”

**GENERAL**

The groundwater presentation was provided in advance of the UMM. This allowed the presentation to be discussed “by exception.” The D4 and FR presenters were requested to provide their presentations in advance of future UMMs.

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

Attachment 1 provides status and information for groundwater. No issues were identified and no action items were documented.

**Agreement 1:** Attachment 2 provides an agreement on a modification to the 100-F Air Monitoring Plan to make it consistent with other recently approved plans.

**Agreement 2:** Attachment 3 provides an agreement to revise the sample design for 100-F-47 based on the verification sample results at five verification sample locations.

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

Attachment 1 provides status and information for groundwater. No issues were identified and no agreements were documented.

Action Item: DOE will provide Ecology with a maintenance schedule for any wells impacted by the high water levels.

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

Attachment 1 provides status and information for groundwater. Attachment 4 provides status and information for D4/ISS at 100-N. No issues were identified and no action items were documented.

Agreement 1: Attachment 5 provides an agreement on the "Remediation and Verification Sampling for Eight Waste Sites within the 100-N FR South River Road Boundary."

Agreement 2: Attachment 6 provides TPA Change Notice TPA-CN-465, revising DOE-RL-2002-70, *Removal Action Work Plan for 100-N Area Ancillary Facilities, Rev. 2*, to allow sediment to be removed from the floors of the 181-N, 181-NE, and 1908-NE facilities prior to backfill with clean fill material.

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

Attachment 1 provides status and information for groundwater. No issues were identified and no action items were documented.

Agreement 1: Attachment 7 provides an agreement concerning the encroachment of the Trench N remediation (on the east side) into the footprint of the 126-K-1 gravel pit where inert debris from the gravel pit was encountered.

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

Attachment 1 provides status and information for groundwater. Attachment 8 provides a schedule and photos showing the status of remediation at 100-C-7. No issues were identified and no action items were documented.

Agreement 1: Attachment 9 provides an agreement regarding sampling of the Above Clean-up Level pile.

Agreement 2: Attachment 10 provides an agreement on a modification to the 100-B/C Air Monitoring Plan to include the tritium contaminated soil that might be encountered in the rewetted zone during remediation of 100-C-7:1 due to the known presence of tritium contamination in the groundwater near the excavation.

**300 AREA – 618-10/11 (GROUNDWATER, SOILS, D4/ISS)**

Attachment 1 provides status and information for groundwater. Attachment 11 provides status and a map for the remediation activities at 618-10/11. No issues were identified and no agreements or action items were documented.

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

Attachment 1 provides status and information for groundwater. No issues were identified and no agreements or action items were documented.

**REGULATORY CLOSEOUT DOCUMENTS OVERALL SCHEDULE**

No issues were identified and no agreements or action items were documented.

**MISSION COMPLETION PROJECT**

Attachment 12 provides status and information regarding the Orphan Sites Evaluations, Long-Term Stewardship, River Corridor Baseline Risk Assessment, the Remedial Investigation of Hanford Releases to the Columbia River, and a Document Review Look-Ahead. No issues were identified and no agreements or action items were documented.

**5-YEAR RECORD OF DECISION ACTION ITEM UPDATE**

No changes were reported to the status of the CERCLA Five-Year Review action Items. Attachment 13 provides a status of the last open item as a component of the last CERCLA 5-year review. No issues were identified and no agreements or action items were documented.

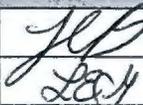
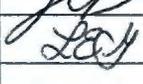
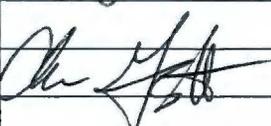
# Attachment A

100/300 AREA UNIT MANAGER MEETING

ATTENDANCE AND DISTRIBUTION

June 9, 2011

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# Attachment B

100/300 Area UMM  
Action List  
May 12, 2011

Open (O)/ Closed (X)	Action No.	Co.	Actionee	Project	Action Description	Status
X	100-180	RL	M. Thompson	100-HR	DOE will provide EPA and Ecology with a CD containing the documents produced using EM-22 funding.	Open: 4/14/11; Action: Closed 5/12/11
O	100-181	RL	J. Hanson	100-HR	DOE will provide Ecology with a briefing on the applicability and status of bioremediation of chromium and the associated feasibility studies.	Open: 4/14/11; Action:
X	100-182	RL	J. Hanson	100-HR	DOE will provide Ecology with data from the recently installed RI/FS borehole at 100-H-33/183-H Solar Evaporation Basin (when it becomes available).	Open: 4/14/11; Action: Closed 5/12/11
X	100-183	RL	M. Thompson	100-N	DOE will meet with Ecology to discuss phytotesting.	Open: 4/14/11; Action: Closed 5/12/11
X	100-184	RL	G. Sinton	All	DOE will revise the RAOs per the UMM discussion and route to management and agencies with the intent of documenting approval at the May 12, 2011, UMM.	Open: 4/14/11; Action: Closed 4/12/11
O	100-185	RL	G. Sinton	All	The Tri-Parties will review RAOs 6 and 7 for inclusion into the RAO document.	Open: 5/12/11; Action:
O	100-186	RL	M. Thompson	All	DOE will set up a substantive briefing to be held before the next UMM with EPA and Ecology to outline their modeling approach for determining cleanup levels to protect groundwater in the river corridor.	Open: 5/12/11; Action:

# Attachment C

100/300 Area Unit Manager Meeting  
June 9, 2011  
Washington Closure Hanford Building  
2620 Fermi Avenue, Richland, WA 99354  
Room C209; 1:30-4:30 p.m.

1:30 - 1:45 p.m.

Administrative:

- Approval and signing of previous meeting minutes (May 2011)
- Update to Action Items List
- Next UMM (7/14/2011, Room C209)

1:45 - 4:00 p.m.

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

- 100-F & 100-IU-2/6 Areas (Greg Sinton/Tom Post/Jamie Zeisloft)
- 100-D & 100-H Areas (Jim Hanson/Tom Post/Joanne Chance)
- 100-N Area (Joanne Chance, Rudy Guercia, Mike Thompson)
- 100-K Area (Jim Hanson, Jamie Zeisloft, Ellen Dagon, Steve Balone)
- 100-B/C Area (Greg Sinton, Tom Post)
- 300 Area - 618-10/11 exclusively (Jamie Zeisloft)
- 300 Area (Mike Thompson/Chris Smith/Rudy Guercia)
- Regulatory Closeout Documents Overall Schedule (John Neath, Mike Thompson)
- Mission Completion Project (John Sands)

4:00 - 4:15 p.m.

Special Topics/Other

- 5-Year Record of Decision Action Item Update (Jim Hanson)

4:15 - 4:30 p.m.

Adjourn

# Attachment 1

**100/300 Areas Unit Managers Meeting  
June 9, 2011**

**100-FR-3 Groundwater Operable Unit – Nathan Bowles / Mary Hartman**

(M-015-64-T01, 12/17/2011, Submit CERCLA RI/FS Report and Proposed Plan for the 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6 Operable Units for groundwater and soil.)

*Schedule Status - On schedule to meet the TPA milestone. Field investigations are complete and the Internal Draft of the RI/FS Report is in internal review (beginning on June 1, 2011).*

Three wells scheduled for sampling in April (new RI wells) are being sampled this week. They are scheduled to be sampled again in July.

Few new data were received since the last meeting. Hexavalent chromium in the April sample from well 199-F5-48 (near F reactor) was in line with previous data (14.6 ug/L).

Reports on slug testing, aquifer testing, and pore water sampling are in preparations. These all support the RI/FS.

**100-HR-3 Groundwater Operable Unit – Fred Biebesheimer / John Smoot**

(M-15-70-T01, 07/30/2011, Submit feasibility study report and proposed plan for the 100-HR-1, 100-HR-2, 100-HR-3, 100-DR-1 and 100-DR-2 operable units for groundwater and soil.)

*Schedule Status - On schedule to meet the TPA milestone. Drilling and sampling continue and are complete with the exception of on replacement RI/FS well at the 100-D-12 waste site. The Decisional Draft is being prepared for review by DOE-RL.*

- HR-3 Treatment System
  - For the period May 1 through 31, 2011:
    - The HR-3 system was removed from service on May 5<sup>th</sup> to facilitate the addition of the wells from the HR-3 system on to the HX system (currently under construction). This work is being performed now to coincide with high river stage.
  
- DR-5 Treatment System
  - For the period May 1 through 31, 2011:
    - The DR-5 shut down is complete with the exception of the final waste shipment, scheduled in mid-June. Wells are being realigned to the DX system. Construction efforts realigning the DR-5 wells to the DX system are expected to be complete in early June.
  
- DX Pump and Treat system
  - For the period May 1 through 31, 2011:
    - The DX pump and treat system is operating.
    - Total average flow through the system is 323 gpm.
    - The average influent hexavalent chromium concentration was 194 µg/L.
    - System throughput is operating at reduced capacity while acid and caustic line repairs were underway.
  
- ISRM Pond Sealing
  - Waiting for ISRM pond liquids to finish drying. Pond is approximately 75% covered in standing water after the May rains.
  - CHPRC is evaluating decommissioning path forward. Upon completion of the evaluation a meeting will be held to present recommendations.
  - Currently recommend adding an ISRM pond decommissioning schedule to the RD/RA WP revision underway.

**100/300 Areas Unit Managers Meeting  
June 9, 2011**

- Planned treatment capacity at the 100-HX facility is 800 gpm. Construction is underway and the system approximately 95% complete. The construction finish date is planned for June 3, 2011. The Transfer Building was completed the week of May 16, 2011. The HX Transfer and Process Buildings were energized on May 25, 2011.
- **RI/FS Activities**
  - All three spatial and temporal uncertainty groundwater sampling events have been conducted and data has been received from the laboratories.
  - RI/FS aquifer tube installation and three sampling rounds are completed.
  - Drilling and installation has been completed at 16 of 15 wells. One replacement well was drilled at Well 9 (C8375). A second replacement well will be installed at the 100-D-12 waste site location (well R5).
  - Installation and sampling of all 10 boreholes is complete. Five of these have been completed as temporary wells.
  - Test pits have been installed at 1607-H4, 116-H2, 100-D-4, 116-D-4, and 100-D-12.
  - The RI/FS report PRC internal review has been conducted, and comments are being incorporated for the decisional draft, scheduled to be reviewed by DOE-RL starting on July 7, 2011.

**100-NR-2 Groundwater Operable Unit – Nathan Bowles / Deb Alexander**

(M-015-60 - Six months after the ROD amendment [03/29/2011], if an amendment to the 100-NR-1/2 Record of Decision for Interim Action is issued, DOE shall submit an RD/RA Work Plan.)

*Schedule Status - TPA milestone met by DOE/RL submittal of Rev. 1 Draft A document to Ecology on March 25, 2011. The submitted document remains under review by Ecology. An additional thirty days were requested by Ecology making the anticipated comment return date be June 14, 2011.*

(M-015-62-T01, 9/17/2012, Submit a Feasibility Study [FS] Report and Proposed Plan [PP] for the 100-NR-1 and 100-NR-2 Operable Units including groundwater and soil. The FS Report and PP will evaluate the permeable reactive barrier technology and other alternatives and will identify a preferred alternative in accordance with CERCLA requirements.)

*Schedule Status – On schedule. The due date for this TPA Target Date changed to September 17, 2012 under TPA CN M-015-11-1, approved on March 12, 2011. Field investigations are underway with only well-drilling/sampling work remaining to be completed.*

- **100-N Integrated Groundwater Sampling and Analysis Plan** – The Draft A document was submitted to Ecology by RL on June 2, 2010, and Ecology review of this document is continuing. Ecology comments are scheduled for return on June 14, 2011.

• **RI/FS Activities**

- **Well drilling:** C8187/#R2 (“RUM well” [although completed in the bottom of the unconfined aquifer] along lower river shore road) – Well drilling/sampling complete and well constructed and developed on April 13 and 14, 2011.
- C8185/#2 (“replacement well” for N-18) – Well drilling/sampling complete and well constructed and developed on May 2 through 5, 2011.
- C8184/#R1 (RUM well downgradient of 1301-N and in the Sr-90 hot spot) – Well drilling continued. No samples have been collected as of May 25, 2011, since the RUM (anticipated to be at ~99 ft bgs) has not yet been encountered (for this well, samples are only being collected from the RUM as required by SAP). Elevated field radiological readings were initially encountered at 63 ft bgs and continued to the current depth of 76.2 ft bgs (reached on May 15,

**100/300 Areas Unit Managers Meeting  
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2011). The borehole remains at this depth to allow for additional radiological controls to be put in place before continuing.

- C8188 #3 (well at the former headworks of the remediated 1301-N Trench) – Well drilling began on May 10, 2011. The following day, elevated field radiological readings at 19 ft bgs caused drilling to be suspended until additional radiological controls are in place to continue. Drilling of this well may remain on hold for a longer period of time, and if so, the drilling resources will be diverted to C8891/#6 (southwest of 100-N for establishing delineation of Cr(VI) plume from 100-K).

- Apatite PRB Performance Monitoring

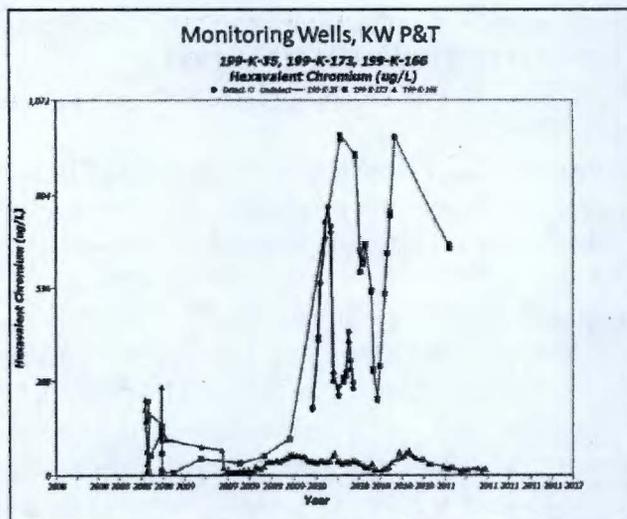
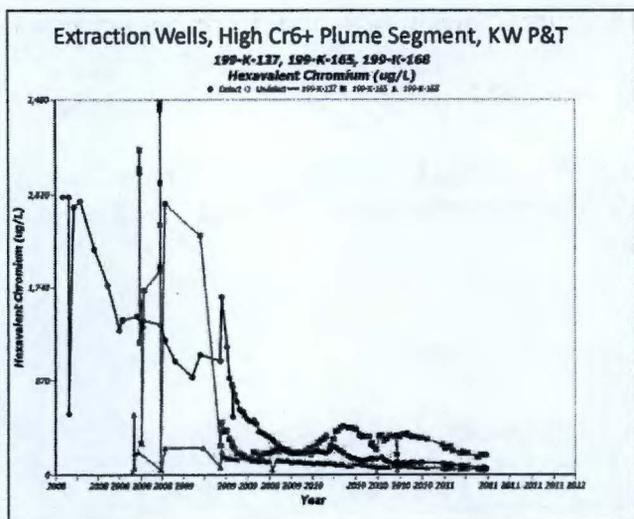
The high-river stage performance monitoring at the existing apatite PRB began in May and should be complete before the end of June. Next event will be in the fall at low-river stage.

**100-KR-4 Groundwater Operable Unit – Art Lee**

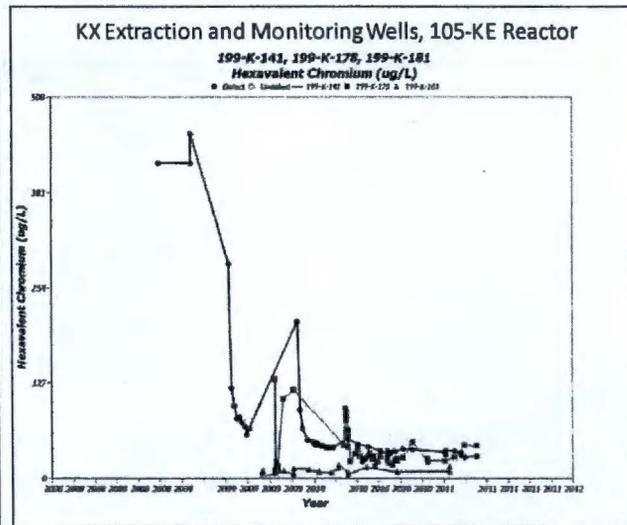
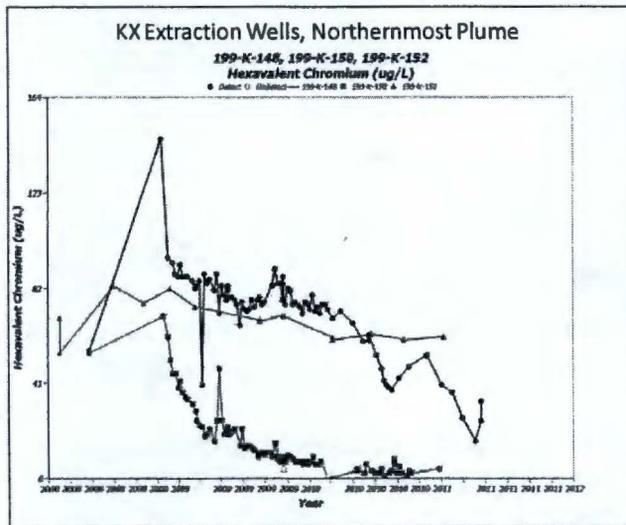
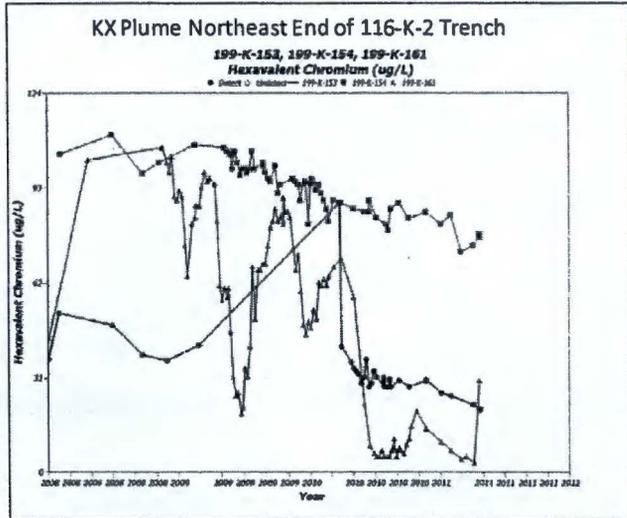
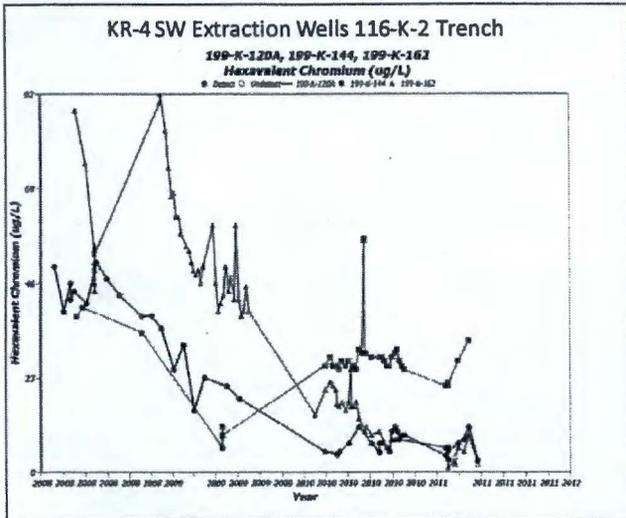
- RI/FS Activities:
  - Decisional Draft of the 100K RI/FS has been prepared and in review with RL.
  
- Pump and Treat Systems Expansions and Modifications:
  - Phase 3 Realignment is in progress to add one new extraction well to KW, two new extraction wells to KR-4, and 6 spare lines to KX P&T systems.
    - Drilling and construction completed for two of the four Phase 3 wells (199-K-198 and 199-K-199). 199-K-199 is constructed to screen the lower portion of the aquifer where up to 38.5 ppb is present in groundwater samples collected during drilling. Groundwater samples collected during drilling of 199-K-198 were all <10 ppb. This well is constructed to screen across the upper aquifer to provide coverage for across the entire aquifer thickness between this well and well 199-K-199.
    - Drilling and sampling has started on the third well, 199-K-197.
  - Process Test Plan for Implementation of ResinTech SIR-700 in the KW Pump and Treat Facility is delayed, pending resolution of NFPA 1, Fire Code, controls for increased sulfuric acid use at the facility. Testing is anticipated to begin in June.
  
- Pump and Treat Operations:
  - KR-4, KX, and KW pump and treat systems are operating normally.
    - Average Flow Rates (5/1/2011 – 5/31/2011):
      - KX - 488 gpm with reduced flow at < 10 ppb wells
      - KW - 187 gpm (90% capacity)
      - KR4 - 130 gpm with reduced flow at <10 ppb wells
    - Cr(VI) Removed(5/1/2011 – 5/31/2011):
      - KX - 6.6 pounds (average influent 37.3 ppb)
      - KW - 4.8 pounds (average influent 76.9 ppb)
      - KR4 - 1.12 pounds (average influent 24.7 ppb)
  
- Monitoring Activities:
  - Monthly Cultural Monitoring: The monitoring was conducted on Friday May 20. No new incidents were observed this month.
  - Routine Monitoring:

**100/300 Areas Unit Managers Meeting  
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- Twenty six wells were sampled with 190 samples collected and 6 aquifer tubes were sampled with 22 sampled collected for May sampling. No significant changes overall from last month except for slight increase in Cr(VI) concentrations observed at extraction wells 199-K-144 and 199-K-148.
- Well 199-K-152 has been connected to the KX P&T system as an extraction well. Hexavalent chromium concentration at this well is around 60 ppb.
- Long-term decreases in overall Cr6+ levels observed at KX extraction wells at Northeast end of the K-2 Trench. New shallow RI/FS well 199-K-201 at 116-K-2 trench is the only well show continuing high values above 100 µg/L.
- Well 199-K-18, which has shown an increasing Cr6+ concentration trend since December 1996, has been showing decreasing Cr6+ concentrations since peaking at 190-200 µg/L in Spring 2010. Concentrations have declined to 97 µg/L in April 2011. Hexavalent chromium concentrations at the downgradient extraction wells 199-K-162 and K-120A remained below 10 µg/L for April. Extraction well 199-K-145 declined from 62 to 46 µg/L between early October 2010 to 46 µg/L in January 2011.
- Hexavalent chromium at KW monitoring well 199-K-173 continues to decrease from its August 2010 high value of 968 µg/L. It is now at 247 µg/L, based on a May 2011 analysis.
- For the 8 new RI wells sampled in April and May 2011, hexavalent chromium concentrations have all been less than the respective maximum values seen while drilling. Well 199-K-195, at the 183.1 KW Headhouse, detected Cr6+ concentrations of 3,310 µg/L vs. the 4,890 µg/L maximum detected during drilling. This well was decommissioned in April when waste site remediation activities around the 183.1 Headhouse restarted. All other RI well values were below 20 µg/L and most were below the 10 µg/L AWQL.



**100/300 Areas Unit Managers Meeting  
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**100-BC-5 Groundwater Operable Unit – Nathan Bowles / Mary Hartman**

(M-015-68-T01, 11/30/2011, Submit CERCLA RI/FS Report and Proposed Plan for the 100-BC-1, 100-BC-2 and 100-BC-5 Operable Units for groundwater and soil.)

*Schedule Status - On Schedule to meet TPA milestone. Field investigations are complete and the Internal Draft of the RI/FS Report was reviewed internally. Updates are being incorporated into a Decisional Draft for DOE/RL review.*

Four wells where sampling was delayed (from January or April) are being sampled this week. These include well 199-B4-14, located downgradient of the 100-C-7 site. Seven wells are scheduled to be sampled again in July.

Hexavalent chromium data from completed RI wells that were sampled in April are consistent with characterization data.

- 199-B2-15 (new RUM well) – undetected
- 199-B2-16 = 15.1 ug/L (screened in lower aquifer, characterization data ranged from 13 to 18 ug/L in this interval)
- 199-B3-51 = undetected (screened at bottom of Ringold E, adjacent to B3-47, which had 53.5 ug/L)

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- 199-B5-8 = 6.4 ug/L (upgradient well; screened top of aquifer, characterization data ranged from <2 to 3.7 ug/L in that interval)

April data from older wells also consistent with previous data

- 199-B3-47 = 53.5 ug/L
- 199-B5-6 = 38.1 ug/L (adjacent, shallow well 199-B4-14 not sampled yet)

Reports on slug testing, aquifer testing, and pore water sampling are in preparations. These all support the RI/FS.

**300-FF-5 Groundwater Operable Unit – Mark Kemner / Bob Peterson**

(M-015-72-T01, 11/30/2011, Submit CERCLA RI/FS Report and Proposed Plan for the FF-5 Operable Units for groundwater and soil.)

*Schedule Status - On Schedule to meet TPA milestone. Field investigations are complete. The 11 monitoring wells and 5 temporary wells in the RI/FS work plan are complete. The four IFRC wells in the South Pond are complete.*

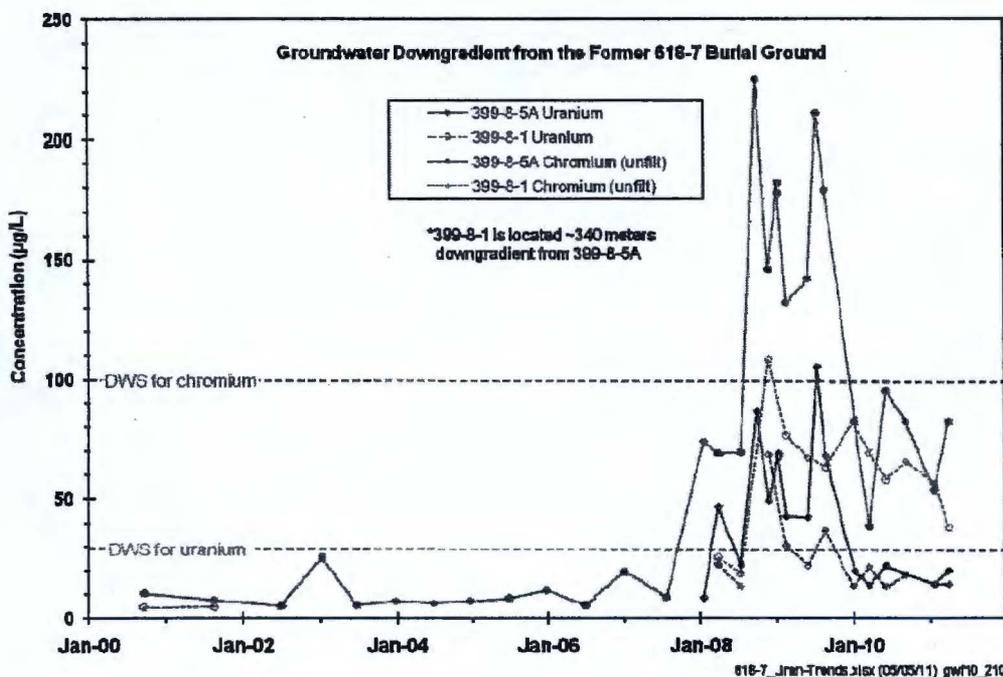
- All three rounds of RI/FS spatial and temporal groundwater sampling for 300-FF-5 have been completed.
- 300 Area RI/FS Activities (DOE/RL-2009-30, Rev. 0, 2010)
  - *300 Area Drilling:* All eleven of the planned characterization boreholes have been drilled, completed as monitoring wells, and accepted for use in February. They are in the scheduling queue for quarterly sampling. The five ‘temporary wells’ have been drilled, completed, and accepted for use in early April, and are also in the scheduling queue. At the IFRC research site in the former South Process Pond, four boundary condition wells have been completed and accepted for use by that project.
  - *300 Area RI/FS Report:* **Chapter 1 (Introduction)** - Review of author draft complete; revisions incorporated; tech pubs formatting and editing complete. **Chapter 2 (Remedial Investigation Activities)** - author review complete; revisions incorporated; new RI data needs to be incorporated prior to internal review. **Chapter 3 (Physical Characteristics)** - Author review complete; some revisions incorporated. PNNL to address comments related to geology and groundwater. Tech pubs began to format/edit the chapter in advance of comments being addressed. **Chapter 4 (Nature and Extent)** - Work continues by WCH on the soils portion of Chapter 4, which is approximately 75% complete. No groundwater text completed as of 4/30/11; four draft tables completed. Additional summaries include tables showing recent groundwater monitoring results for all COPC’s identified in the Work Plan, and maximum values for various waste indicator constituents by well for each year since the remedial investigation began in 1992. The annual report will be used as a starting point for the Chapter 4 text and a number of the figures; 30% complete. **Chapter 5 (Fate and Transport)** - draft of uranium discussion complete; awaiting final list of soil COPCs and modeling write up to complete remaining discussion; 60% complete **Chapters 6 and 7 (Human Health and Risk Assessment)** risk assessment team is proceeding with preliminary tasks. Preliminary list of waste sites for FS evaluation provided on 3/2/11. Awaiting CVP data from remaining interim closed sites to finalize waste site list. Preliminary groundwater COPCs provided on 4/1/11. Approximately 25% complete. **Chapter 8 (Identification and Screening of Technologies)** - text and technology screening tables (Tables 8-5 and 8-6) 95% complete; awaiting final COPCs and PRGs prior to completing draft. **Chapter 9** – preliminary work began based on 100K report. 90% of model runs conducted to evaluate

**100/300 Areas Unit Managers Meeting  
June 9, 2011**

groundwater alternatives. Draft waste binning table submitted in late April; waste sites will need to be binned prior to proceeding with alternative development; 20% complete. **Chapter 10** – Not started.

- 300-FF-5 Operations and Maintenance Plan Activities (DOE/RL-95-73, Rev. 1, 2002)
  - 300 Area Subregion:

- The most recent analytical results are for samples collected in April 2011 from wells scheduled for monthly sampling, and March 2011 for wells scheduled at less frequent intervals. In general, results are on trend and within expectations. Gradually decreasing concentrations for waste indicator constituents is common for results since ~2006. Some results for aquifer tube sampling conducted during March are also available, and are consistent with historical trends and expectations.
- Special sampling downgradient of the 618-7 Burial Ground remediation site: The most recent sampling at wells that monitor the plume occurred in early April (see trend chart below). The concentration trends for chromium reveal essentially complete passage of the groundwater impacted by activities at the burial ground. Because uranium interacts with sediment, concentrations are slower to fall back to pre-burial ground activity levels.



- Special sampling near the 618-1 Burial Ground/Acid Neutralization Pit remediation site: No new information since the April unit manager meeting. The most recent sampling at two wells that monitor conditions downgradient of these remediation sites took place in early April. Monthly sampling continues at wells 399-1-2 and 399-1-21A, although remediation activities are essentially complete at these waste sites. No groundwater impacts attributable to remediation have been observed.
- 324 Building issue: No new information since the April unit manager meeting. The most recent sampling of a well that monitors conditions near the building took place in April. To date, monitoring results do not reveal evidence of groundwater impacts from releases at the building.

**100/300 Areas Unit Managers Meeting  
June 9, 2011**

- *618-11 Burial Ground Subregion:* No new information to report since the March and April 2011 unit manager meetings. The most recent results are for samples collected in January 2011.
- *618-10 Burial Ground/316-4 Cribs Subregion:* The most recent analytical results are from two wells situated adjacent to the burial ground that was sampled in mid-March 2011. Concentrations for waste indicator constituents remain consistent with historical trends and below their respective drinking water standards.

**Annual Reports**

- Groundwater Annual Report - The 2010 site-wide annual groundwater report has finished internal review and comment incorporation/resolution, and is being edited for external review. The site-wide annual goes out for external review in early-to-mid May.
- 100 Area Annual Report - 100 Areas pump-and-treat performance report have finished internal review and comment incorporation/resolution, and is being edited for external review. The 100 areas pump-and-treat report goes out for external review later in May.

**General Discussion**

The Stop work for the use of dedicated submersible pumps has been lifted. The well access list was revised to include the electrical bonding requirements for each well. Additionally, the groundwater sampling procedure was revised to require the use of a temporary grounding strap pending permanent electrical bonding of the wells.

# Attachment 2

**^WCH Document Control**

---

**From:** Saueressig, Daniel G  
**Sent:** Thursday, June 02, 2011 6:41 AM  
**To:** ^WCH Document Control  
**Subject:** FW: MODIFICATION REQUEST FOR 100-F AIR MONITORING PLAN

Please provide a chron number. This email documents a regulatory approval.

Thanks,

Dan Saueressig  
FR Environmental Project Lead  
Washington Closure Hanford  
521-5326

-----Original Message-----

**From:** Post, Thomas [mailto:Thomas.Post@rl.doe.gov]  
**Sent:** Wednesday, June 01, 2011 4:04 PM  
**To:** Guzzetti.Christopher@epamail.epa.gov; Saueressig, Daniel G  
**Subject:** RE: MODIFICATION REQUEST FOR 100-F AIR MONITORING PLAN

Dan,

I've reviewed and concur as well.

Tom

-----Original Message-----

**From:** Guzzetti.Christopher@epamail.epa.gov [mailto:Guzzetti.Christopher@epamail.epa.gov]  
**Sent:** Wednesday, June 01, 2011 9:17 AM  
**To:** Saueressig, Daniel G  
**Cc:** Post, Thomas  
**Subject:** Re: MODIFICATION REQUEST FOR 100-F AIR MONITORING PLAN

I do not have a problem with those changes.

Christopher J. Guzzetti  
U.S. EPA Region 10  
Hanford Project Office  
Phone: (509) 376-9529  
Fax: (509) 376-2396  
Email: guzzetti.christopher@epa.gov

**From:** "Saueressig, Daniel G" <dgsauere@wch-rcc.com>  
**To:** Christopher Guzzetti/R10/USEPA/US@EPA, "Post, Thomas C" <thomas.post@rl.doe.gov>  
**Date:** 06/01/2011 08:30 AM  
**Subject:** MODIFICATION REQUEST FOR 100-F AIR MONITORING PLAN

Chris/Tom, I'd like to request your approval to modify a couple sections of the 100-F Air Monitoring Plan to make it consistent with other recently approved plans. The current, approved plan is attached and the following changes are proposed.

Section 1.1, 4th paragraph, 2nd sentence, modify the existing sentence to read as follows:  
"Characterization sampling (e.g., confirmatory sampling, remedial investigation sampling)

158721

at radiological contaminated sites is included in the scope of this plan since the emissions from these activities (e.g., surface sampling, potholing) will generate negligible emissions.

Section 4.0, 2nd paragraph, 1st sentence, modify the existing sentence to read as follows:  
"Characterization (e.g., test pitting and trenching, or surface soil sampling) may be conducted prior to the start of remediation, or as needed to support confirmatory or risk assessment activities."

Let me know if you concur.

Thanks and give me a call if you have any questions.

Dan Saueressig  
FR Environmental Project Lead  
Washington Closure Hanford  
521-5326

<100-F AMP.pdf>> [attachment "100-F AMP.pdf" deleted by Christopher Guzzetti/R10/USEPA/US]

# Attachment 3

159137

**^WCH Document Control**

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**From:** Saueressig, Daniel G  
**Sent:** Wednesday, June 08, 2011 4:17 PM  
**To:** ^WCH Document Control  
**Subject:** FW: 100-F-47 Plume Chase:

Please provide a chron number, this email documents a regulatory agreement.

Thanks,

Dan Saueressig  
521-5326

-----Original Message-----

**From:** Jakubek, Joshua E  
**Sent:** Wednesday, June 08, 2011 4:13 PM  
**To:** Saueressig, Daniel G  
**Subject:** RE: 100-F-47 Plume Chase:

No problem! Have a good evening!

Thanks,

Josh Jakubek  
Washington Closure Hanford  
Resident Engineer  
509-942-4703

"Safety, Productivity & Quality Achieved by Integrity & Teamwork."

-----Original Message-----

**From:** Saueressig, Daniel G  
**Sent:** Wednesday, June 08, 2011 4:07 PM  
**To:** Jakubek, Joshua E  
**Subject:** FW: 100-F-47 Plume Chase:

Thanks Josh.

-----Original Message-----

**From:** Guzzetti.Christopher@epamail.epa.gov [mailto:Guzzetti.Christopher@epamail.epa.gov]  
**Sent:** Wednesday, June 08, 2011 3:19 PM  
**To:** Post, Thomas C  
**Cc:** Saueressig, Daniel G; Fancher, Jonathan D (Jon); Jakubek, Joshua E  
**Subject:** RE: 100-F-47 Plume Chase:

I concur as well. Go get it!

Christopher J. Guzzetti  
U.S. EPA Region 10  
Hanford Project Office  
Phone: (509) 376-9529  
Fax: (509) 376-2396  
Email: guzzetti.christopher@epa.gov

**From:** "Post, Thomas" <Thomas.Post@rl.doe.gov>  
**To:** "Jakubek, Joshua E" <jejakube@wch-rcc.com>, Christopher Guzzetti/R10/USEPA/US@EPA

Cc: "Saueressig, Daniel G" <dgsauere@wch-rcc.com>, "Fancher,  
Jonathan D (Jon)" <jdfanche@wch-rcc.com>  
Date: 06/08/2011 01:50 PM  
Subject: RE: 100-F-47 Plume Chase:

Josh,

It all sounds good. I concur.

Tom

From: Jakubek, Joshua E  
Sent: Wednesday, June 08, 2011 12:58 PM  
To: Guzzetti, Christopher; Post, Thomas  
Cc: Saueressig, Daniel G; Fancher, Jonathan D (Jon)  
Subject: 100-F-47 Plume Chase:

Gentlemen, we have received the verification sample results back for 100-F-47. It appears that we still have some contamination issues. I have attached a map of the sample design that shows where I propose to excavate another meter (hatched on map). Below is a list of sample numbers that had direct exposure failures. We are currently in the process of modifying the waste profile so that we can ship this additional waste. My proposed plume chase will total approximately 3,050 BCM more excavation. Please give your concurrence and/or input at your earliest convenience. As always please feel free to call with any questions you may have!

"For the 100-F-47 verification data, five samples fail the direct exposure criteria for benzo(a)anthracene, benzo(a)pyrene, benzo (b)fluoranthene, TPH, PCBs, and/or arsenic. The specific sample locations that did not pass direct exposure RAGS are as follows:"

Sample location 1 (sample J1J491) - benzo(a)pyrene = 330 ug/kg (DE limit is 137ug/kg)  
TPH = 1900 mg/kg (DE limit is 200 mg/kg)

Sample location 5 (sample J1J495) - benzo(a)pyrene = 520 ug/kg (DE limit is 137ug/kg)  
Arsenic = 21 mg/kg (DE limit is 20 mg/kg)

Sample location 7 (sample J1J497) - benzo(a)pyrene = 150 ug/kg (DE limit is 137ug/kg)

Sample location 8 (sample J1J498) - benzo(a)pyrene = 1900 ug/kg (DE limit is 137ug/kg)  
benzo(a)anthracene = 2200 ug/kg (DE limit is 1370 ug/kg)  
benzo (b)fluoranthene = 3500 ug/kg  
(DE limit is 1370 ug/kg)

Sample location 11 (sample J1J4C1) - PCB aroclor 1260 = 600 ug/kg (DE limit is 500 ug/kg)  
TPH = 360 mg/kg (DE limit is 200 mg/kg)

<<100-F-47 Plume Chase Area.PDF>>

Thanks,

Josh Jakubek  
Washington Closure Hanford  
Resident Engineer  
509-942-4703

"Safety, Productivity & Quality Achieved by Integrity & Teamwork."

# Attachment 4

# 100 Area D4/ISS Status

June 9, 2011

## D4 (WCH)

**100-N River Structures (181-N, 181-NE, 1908-NE):** No D4 activities conducted on river structures since last UMM with the exception of slight modification to slope of the haul road nearest to the river. Unusually high river water levels triggered the need to temporarily re-grade haul road at this location to eliminate potential for fish entrapment. Plan for removing sediment from floors of river structures recently finalized and accepted by DOE and Ecology. TPA Change Notice (TPA-CN-465) adding sediment removal to 100-N Ancillary Facilities RAWP also prepared and approved, and being submitted to the Administrative Record at this UMM. Bench installation still scheduled for late summer "in water" work window pending completion of agency consultations. Based on current design information, including shallow habitat restoration, NMFS and USFWS are developing Biological Opinions (BOs). NMFS anticipates completion of their internal draft BO this week, and USFWS intends to complete their BO by the end of June. Updates to the design will also be communicated to the NHPA cultural review consulting parties, via a letter from the Federal Archaeologist at RL. DQO/SAP being updated to reflect recent changes to sediment removal plan and will be submitted next week to DOE and Ecology for review and approval.

**182-N High Lift Pumphouse:** Asbestos abatement activities continue.

**105-N Fuel Storage Basin (FSB):** Above grade demolition complete. Upper 16 feet of below grade portion almost complete. Approximately 8' of debris and soil remains on top of 8' layer of grout in bottom of basin to serve as shield and material for mixing. Currently preparing to begin excavating ramp down to bottom of west end so demolition of remaining below grade facility (grout) can begin, expected to be sometime in July.

**117-N Exhaust Air Filter House:** Completed below grade demolition of the facility to the tunnels from reactor building. Demolition and loadout continues. Completion still expected in July with start of 105-NE Fission Product Trap soon after.

**400 Area Buildings:** Hazmat removal, job hazard analyses and work packages almost complete for all buildings targeted for D4. To date, buildings 4791TC, 4843, and 4831, including slabs, have been demolished and removed. Building 4814 now cold and dark. Demolition of building 4760 has begun.

## ISS/SSE (Intermech):

**105-N Reactor Building:** Continuing with anchor bolt installation, steel erection. Beginning roofing and siding installation. Schedule accelerated to complete siding on south side of reactor building so crane can be moved out of way and FR can expand their work south of 109-N.

**109-N Heat Exchanger Building:** Roof is complete. Final inspection nearing completion.

# Attachment 5

158653

**^WCH Document Control**

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**From:** Saueressig, Daniel G  
**Sent:** Thursday, May 26, 2011 7:14 AM  
**To:** ^WCH Document Control  
**Subject:** FW: UPDATED: 100-N FR South River Road Agreement  
**Attachments:** River Road White Paper -final 5-19-11.doc

Please provide a chron number (and include attachment). This email documents a regulatory agreement.

Thanks,

Dan Saueressig  
FR Environmental Project Lead  
Washington Closure Hanford  
521-5326

---

**From:** Varljen, Robin (ECY) [mailto:RVAR461@ecy.wa.gov]  
**Sent:** Thursday, May 19, 2011 3:40 PM  
**To:** Faust, Toni L  
**Cc:** Walker, Jeffrey L; Menard, Nina; Saueressig, Daniel G  
**Subject:** RE: UPDATED: 100-N FR South River Road Agreement

Toni,

I am not sure what removing "during remediation" gains us when it is restated in the next sentence. Regardless, I accept this paragraph (section 4.4) as it is written below.

So, based on the document provided and current information provided to me by the FR project, I accept this agreement on Ecology's behalf. I would like notification when you have sampled, compared the analytical results to the soil RAGs and will backfill. This can be one notification or 3 individual notifications and e-mail is sufficient. Please include this white paper and e-mail in the next UMM for documentation of our agreement.

Please let me know if you have questions or comments.

Robin Varljen

Washington Department of Ecology

Nuclear Waste Program - Cleanup Section

(509) 372-7930

---

**From:** Faust, Toni L [mailto:tifaust@wch-rcc.com]

5/26/2011

158653

**Sent:** Thursday, May 19, 2011 2:27 PM  
**To:** Varljen, Robin (ECY)  
**Cc:** Walker, Jeffrey L  
**Subject:** RE: UPDATED: 100-N FR South River Road Agreement

Robin

Your comment has been incorporated with minor revision. See below.

If visual evidence of contamination (e.g., staining) is observed within the pipeline excavation the stained location and approximate dimensions will be documented within the field logbook. The lead agency will be notified via email if stained areas are identified during remediation and consulted regarding decisions on additional verification focused samples in these locations.

Also since the 100-N-53 waste site RTD memo has been issued this site has been move to the appropriate portion of the white paper and the data summary table removed. Jeff read through this and I used the electronic spelling-grammar checker so I am hoping we are good to go. If you are okay with the attached please send an email and later the document can be placed in the UMM minutes to document Ecology concurrence.

Thanks toni

## Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

### 1.0 PURPOSE

The purpose of this white paper is to describe the remediation, sampling and analytical requirements for portions of waste sites that lay within the 100-N south river road to support the waste site specific remaining sites verification packages (RSVPs). Remediation of the portions of the waste sites within the 100-N south river road is needed to support the demolition of the 100-N River Structures, including the 181-N building between July and September 2011.

Eleven waste sites within the 100-N south river road boundary near the 181-N building, and leading to the west side of the 105-N/109-N Reactor building have been identified as requiring removal/remediation to support Field Remediation and Deactivation, Decommission, Decontamination, and Demolition projects work schedules. Three of the 11 wastes sites (100-N-56, 181-N Building Drywell, 100-N-73, 107-N Building West Area Storm water Runoff Miscellaneous Stream #395, and 100-N-76, 181-N Pump house French Drains) have been reclassified as "Rejected/Not Accepted," and do not require sampling. These sites may be disturbed or removed during the excavation of the eight remaining waste sites.

Sampling of the eight waste sites meet the requirements specified in the *100-N Area Sampling and Analysis Plan for CERCLA Waste Sites* (100-N Area SAP) (DOE-RL 2006a) and will be documented in the site specific RSVPs. The 100-N Area SAP addresses the sampling requirements associated with the cleanup of waste sites under the *Interim Action Record of Decision for the 100-NR-1 and 100-NR-2 Operable Units, Hanford Site, Benton County, Washington* (100-N ROD) (EPA 1999).

If verification focused sample results for a specific waste site are below the remedial action goals (RAGs) for the contaminants of potential concern (COPCs) for that waste site and collocated waste sites then the excavated portion of that waste site will be backfilled.

If verification focused sample results for a specific waste site are above the RAGs, additional remediation of the waste site portion within the 100-N south river road will occur, and follow-up verification focused sampling will be performed. Remediation of each waste site portion within the 100-N south river road will not be considered complete until verification focused sample results are less than the soil RAGs. The location of the follow-up verification focused sampling will be the same as the original verification focused sample.

Interim closure of the waste sites based on verification sampling will be documented in site specific RSVPs. Documentation on these portions of pipelines covered by the above sampling will be included in the site specific RSVPs.

Should any deviation from this white paper be anticipated or undertaken, including performing additional remediation or revisions to the sampling approach, the Field Remediation project will notify the U.S. Department of Energy, Richland Operations Office and the lead regulatory agency for concurrence.

## Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

### 2.0 SITE DESCRIPTION

There are two categories based on waste site status, as listed below.

- Confirmatory waste sites awaiting sampling to determine if remediation will be required: 100-N-84 (subsites: 3, 5 and 7).
- Removal, Treat and Disposal (RTD) waste sites: 100-N-53, 100-N-61, 100-N-64, and 100-N-84 (subsites: 2 and 6).

A description of each of the eight waste sites identified for partial removal is as follows.

#### **Confirmatory Waste Sites:**

The 100-N-84:3 subsite consists of inactive filtered and potable water pipelines including those identified as filter water, demineralized water, potable water, and makeup water. During treatment of the raw water in the 183-N Building, liquid alum (aluminum sulphate), Separan (polyacrylamide coagulant), and liquid chlorine were added. Chlorine was added for the control of slime and algae and may have been used to assist in coagulation, odor, and iron removal problems.

The alum used at 183-N contained trace amounts of naturally occurring radium-226, radium-228, and thorium-228, which may have been Technologically Enhanced Naturally Occurring Radioactive Material (TENORM). To determine if TENORM was present, a number of samples downstream of the 183-N chemical mixing tank were taken and no detectable amounts of radioactive contamination were found.

The 186-N Potable Water Plant replaced the 183-N and 163-N facilities in 2000. Sodium hypochlorite solution was added at the 186-N facility as the chlorinating agent to control slime and algae. After operation of the 186-N Potable Water Plant began, heavy concentrations of particulates in the water were seen. A pre-filtration system located in 1902-N Building was added in 2002 to alleviate the problem.

The 100-N-84:5 subsite consist of the 100-N Area sanitary pipelines including; sanitary water, sanitary sewer, storm drains, and disposal field pipelines.

The 100-N Area was serviced by 10 separate sewer systems consisting of one cesspool, one lagoon, six septic tanks with an associated tile or drain field, and two septic tanks with seepage pits. The septic tanks, pits, cesspool, and lagoon are identified as the 124-N-1 through 124-N-10 waste sites. The 124-N-5, 124-N-6, 124-N-7, and 124-N-8 waste sites have been reclassified as Rejected. The feed and drainage pipelines associated with these waste sites are included in the 100-N-84:5 waste site.

The 100-N-84:7 pipeline subsite includes sections of various diameter pipelines that could not be positively identified based on review of historical documentation. These pipelines include those described as sample, unidentified, or multitube. In addition to the pipelines, the 100-N-84:7 subsite includes a french drain and two areas that measure between 1 and 3 m (3.3 and 10 ft) in diameter with unidentified features.

#### **Remove, Treat and Disposal Waste Sites:**

## Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

The 100-N-53 waste site is the location of a former aboveground waste oil tank that was associated with the 181-N Pump house. The 1.1 m (3.5 ft) diameter by 1.2 m (4.1 ft) high tank has been removed. Only the concrete foundation remains. The pipeline that carried the waste oil from the 181-N Building to the tank is not included as part of this waste site. The 181-N waste oil tank (also known as Waste Oil Tank No. 3), to received used lubricating oil from the engine lubrication system in the 181-N Pump house. Oil was removed from the normal lubrication system and transferred to the waste oil tank via a 3.8-cm (1.5-in)-diameter underground line. The 100-N-53 waste site has been reclassified as RTD (WCH 2011).

The 100-N-61, 100-N Water treatment and Storage Facilities Underground Pipelines waste site consist of all the underground water pipelines used to transport reactor cooling water between the Columbia River, the water treatment facilities (181-N, 182-N, 163-N, 183-N, and 1908-N) and the 105-N Reactor Building. Pipelines with the buildings and all pipelines that are downstream from the 105-N Reactor Building i.e., those lines that carry cooling water from the reactor to effluent disposal facilities such as the dump tank and cribs are excluded. A small portion of the 100-N-84:1 subsite pipeline connects to the 100-N-61 pipeline at the 181-N building. This section of pipeline is not a separate waste site since a portion of it is above grade, but will be removed.

The 100-N-64, 100-N Reactor 105/109-N Cooling Water Effluent Underground Pipelines waste site consist of pipelines use to transport reactor cooling water from the 105-N Reactor facilities to 300-N and the 1304-N, Emergency Dump Basin and Tank respectively, the 107-N Filter Building and the pipelines from these facilities to the 1908-N Outfall Structure.

The 100-N-84:2 subsite consists of diesel oil supply and return, ignition oil, ignition oil supply and return, fuel oil supply and return, waste oil, and foam pipelines. In addition to the pipelines, the 100-N-84:2 subsite includes a fuel oil unloading trench.

Diesel oil unloaded from rail cars at the 166-N unloading station was transferred for storage to one of four aboveground storage tanks within the 1715-N Building. The diesel oil was then transferred through a 10.2-cm (4-in.) underground supply pipeline to the 184-N Building day tank or through 5.1-cm (2-in) and 10.2-cm (4-in.) underground pipelines to the three 56,781-L (15,000-gal) day tanks outside of the 182-N Building. The diesel fuel from the 182-N day tanks was used to support the 182-N and 181-N diesel oil systems.

Number 6 fuel oil (also known as Bunker C fuel oil) was unloaded from rail cars at the 1900-N unloading station and transferred to the 166-N building for storage in a 5,204,941-L (1,375,000-gal) capacity aboveground storage tank. The Number 6 fuel oil was transferred through underground pipelines from 166-N to two 184-N fuel oil day tanks.

The 100-N-84:6 subsite consists of pipelines for disposal of chemical waste, demineralization treatment waste, drain cold, dummy disposal line, miscellaneous chemical drain, radioactive drain, chlorine, flush, and sample pipelines. The 100-N-84:6 subsite also includes a sodium hydroxide trench and a french drain. The 100-N-84:6 pipelines originate from the 109-N Heat Exchanger Building, the 105-N Reactor Building, the 163-N Demineralization Plant, 182-N High-Lift Pump House, 183-N Filter Plant, and 184-N Plant Service Power House. Various chemicals were utilized in these buildings.

## Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

Phosphoric, ascorbic, and citric acids, and potassium permanganate were used in the 109-N and 105-N Buildings decontamination processes.

Ammonium hydroxide, morpholine, and lithium hydroxide were added to control cooling water pH. Hydrazine was added to reduce oxygen concentrations in cooling water.

Sulfuric acid and sodium hydroxide from supply tanks in 163-N building were primarily consumed in the demineralizer plant. A 93% sulfuric acid solution was used to regenerate the cation resin used at the 163-N building, while a 50% sodium hydroxide solution was used to regenerate the anion resin.

Appendix A contains the Waste Information Data System general summary report and the Stewardship Information System site summary reports.

### 2.1 Location

Figure 1 shows the 11 wastes sites located within the 100-N River Road.

## 3.0 REMEDIATION ACTION ACTIVITIES

The waste sites (i.e. pipelines and polygons) shown in Figure 1 will be excavated and removed within the boundary of the 100-N South River Road based on approved remediation design drawings to meet the remedial action objectives (RAOs) of the 100-N Area ROD (EPA 1999). Radiological field monitoring [i. e. handheld instrument surveys, Global Positioning Environmental Radiological Surveyor (GPERS)] and in-process soil samples will be used to guide the waste sites excavations and help determine if the sites excavations are ready for verification sampling.

Pipelines will be excavated to the approved remediation designs for section within the boundary of the 100-N South River Road. Soil removed during excavation above the pipelines may be used as overburden. Soil adjacent to the pipeline and approximately 1 foot under the pipelines will be removed and disposed of at the ERDF along with the piping.

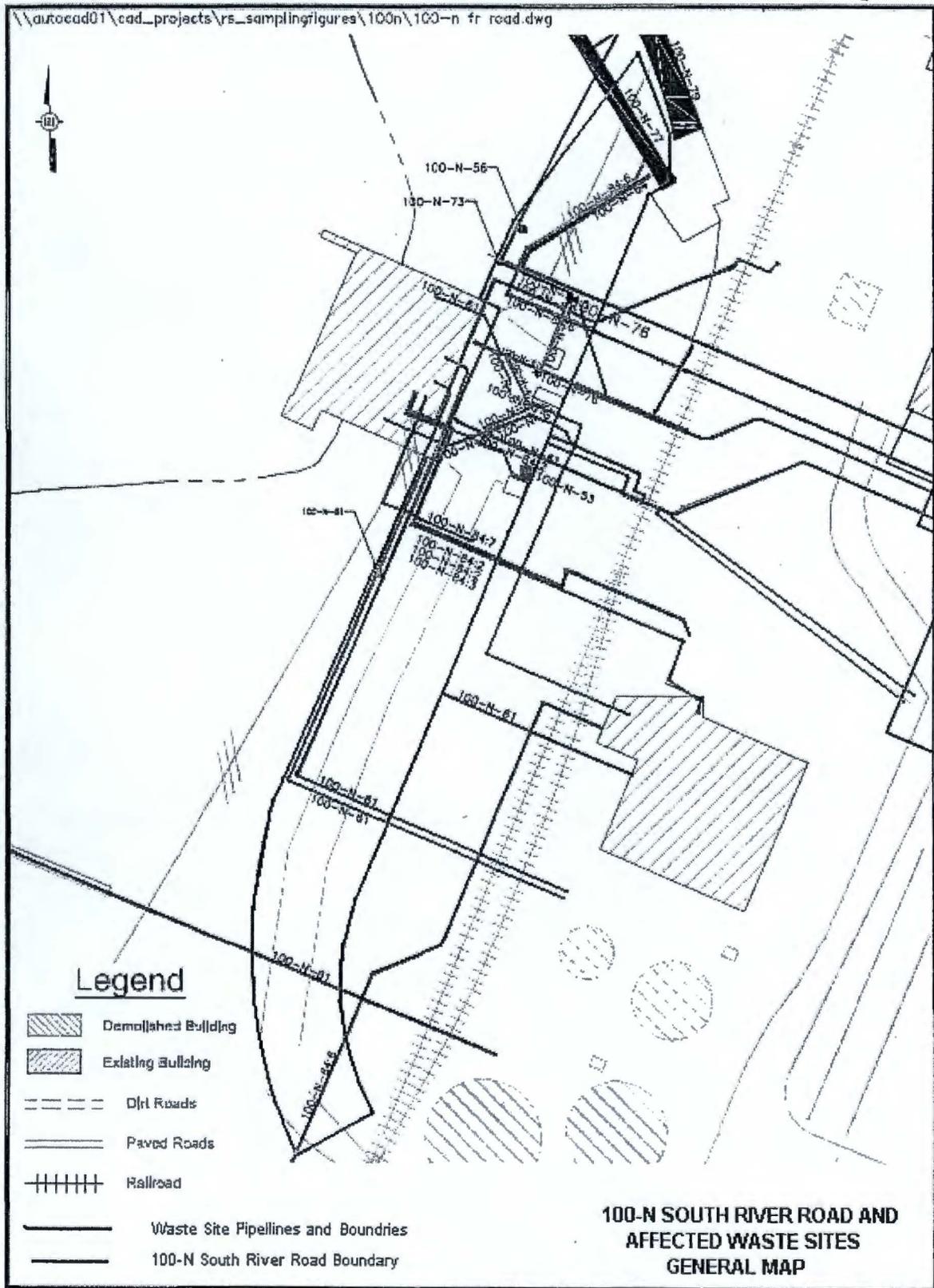
For confirmatory waste sites where no approved remediation design is available, the excavation will remove soil, which will result in an excavation that is a minimum 1 foot below the bottom of the pipe and has a 1.5:1 slope.

Verification focused samples collected from the excavation areas to be backfilled, will be analyzed for waste site specific COPCs using methods listed in Table 1. The results will be compared directly to the remedial action goals (RAGs) listed in the *Remedial Design Report/Remedial Action Work Plan for the 100-N Area* (100-N Area RDR/RAWP) (DOE-RL 2006b).

A summary of the waste sites remediation field activities including in process sampling, anomalies, GPERS surveys, final excavation footprint, and backfills, along with verification focused sample results will be included in the waste site specific RSVPs.

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

Figure 1. 100-N South River Road and Associated Waste Sites General Map.



## Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

### 3.1 Post-Excavation Topographic Survey

A post-excavation global positioning survey will be conducted once the waste site remediation has been completed for the portions of the eight waste sites removed within the 100-N south river road boundary. This information will be included in the waste site specific RSVPs.

## 4.0 VERIFICATION SAMPLING AND ANALYSIS

This section describes the requirements for verification focused sampling and analysis to support cleanup of the eight waste sites. Verification sampling will be performed to support a determination that potential residual contaminant concentrations at this site meet the cleanup criteria specified in the 100-N RDR/RAWP (DOE-RL 2006b).

### 4.1 Contaminants of Potential Concern

The COPCs for the waste sites were developed based on historical data and process knowledge for each waste site within the 100-N- south river road boundary are described below. The 100-N-84 waste site and it's subsites are not listed in the 100-N Area SAP.

The COPCs for the 100-N-53 waste site include copper, lead, zinc, polychlorinated biphenyls (PCBs), total petroleum hydrocarbons (TPH), and polycyclic aromatic hydrocarbons (PAH).

The COPCs for the 100-N-61 waste site include anions, total chromium, hexavalent chromium, lead, gross alpha, beta, gamma emitting radio-nuclides, strontium 90 and asbestos.

The COPCs for the 100-N-64 waste site include cobalt-60, total chromium, hexavalent chromium, and lead.

The COPCs for 100-N-84:2 are based on diesel fuel and Number 6 fuel oil being managed in these pipelines and trench. The COPCs for the 100-N-84:2 subsite are total chromium, lead, TPH, and PAH.

The 100-N-84:3 COPCs are based on historical information, previous sampling, and information from analogous waste sites (i.e. 100-D-63, 100-D/DR Service Water Pipelines and 100-H-35, 100-H Service Water Pipelines). The COPCs for the 100-N-84:3 subsite are total chromium, hexavalent chromium, and mercury.

The 100-N-84:5 COPCs are based on existing historical information for the site and information from analogous waste sites (i.e. 100-D-50:9, 1607-DR3 Sanitary Sewer Pipelines). The COPCs for the 100-N-84:5 site are lead, total chromium, hexavalent chromium, mercury, anions, pesticides, semivolatile organic compounds (SVOC), and PCBs.

The COPCs for the 100-N-84:6 subsite are total chromium, lead, and anions.

Because there is little process knowledge and historical information for the 100-N-84:7 subsite, the COPCs are based on a conservative approach. The 100-N-84:7 COPCs are lead, total chromium, hexavalent chromium, mercury, anions, nitrates/nitrites, pesticides, SVOCs, and PCBs.

## Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

Although not considered COPCs for all waste sites, analysis will be performed for the expanded list of ICP metals including antimony, arsenic, barium, beryllium, boron, cadmium, cobalt, copper, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc.

Although radionuclides are not COPCs for all waste sites within the 100-N South River Road boundary, the possible presence of radiological contaminants will be evaluated by performing strontium-90 and gamma energy analysis (GEA) of all verification focused samples.

Although not considered a COPC for all wastes sites within the 100-N South River Road boundary, historical data indicates that the pipe wrap used in the 100-N area contains asbestos. Therefore, all pipeline waste site verification focused samples will be analyzed for asbestos.

### **4.2 Laboratory Analytical Methods**

Table 1 identifies the COPCs for verification sampling and laboratory analytical methods.

### **4.3 Sample Design Selection and Basis**

This section describes the basis for selection of an appropriate sample design and determination of the number of verification soil samples to collect.

### **4.4 Verification Sample Design**

Verification focused samples and duplicates will be collected as identified in Table 2. The COPCs for each verification focused sample is based on the COPCs listed for each waste site located at that verification focused sample location. Table 2 lists the waste sites at each sample location and the cumulative COPCs based on the listed wastes sites. As a result each waste site will be sample at least once with a duplicate sample.

If visual evidence of contamination (e.g., staining) is observed within the pipeline excavation the stained location and approximate dimensions will be documented within the field logbook. The lead agency will be notified via email if stained areas are identified during remediation and consulted regarding decisions on additional verification focused samples in these locations.

Figures 2 and 3 show the verification focused sample locations for the eight waste sites portions within the 100-N-south river road boundary.

### **4.5 Field Sampling and Analysis**

All sampling will be performed in accordance with ENV-1, *Environmental Monitoring & Management* procedures consistent with the 100-N Area SAP (DOE-RL 2006a) requirements. Any deviations from this sampling design will be documented in the field logbook and the remaining sites verification package (RSVP).

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

**Table 1. Laboratory Analytical Methods.**

Analytical Method	Contaminants of Potential Concern
ICP metals <sup>a</sup> – EPA Method 6010	Metals
Hexavalent chromium – EPA Method 7196	Hexavalent chromium
Mercury – EPA Method 7471	Mercury
IC Anions <sup>b</sup> – EPA Method 300.0	Inorganic anions
Nitrate/nitrite <sup>c</sup> – EPA Method 353.2	Nitrate/nitrite
Pesticides – EPA Method 8081	Pesticides
PCB – EPA Method 8082	Polychlorinated biphenyls
GEA – gamma spectroscopy	Gamma-emitting radionuclides
Strontium-90 – total beta radiostrontium	Strontium-90
SVOA – EPA Method 8270	SVOC
TPH <sup>d</sup> – EPA Method NWTPH-Dx	Petroleum hydrocarbons
PAH <sup>d</sup> – EPA Method 8310	Polycyclic aromatic hydrocarbons
Bulk asbestos – NIOSH Method 7400	Asbestos

a Analysis will be performed for the expanded list of ICP metals to include arsenic, antimony, barium, beryllium, boron, cadmium, chromium (total), cobalt, copper, lead, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc.

b Analysis will be performed for the expanded list of IC anions to include bromide, chloride, fluoride, nitrate, nitrite, phosphate, and sulfate.

c To preclude holding time issues associated with EPA Method 300.0 for nitrites and nitrates, EPA Method 353 will be performed.

d TPH and PAH analysis will be performed if oily or burned soil areas are observed unless specifically identified as a COPC in Table 2.

EPA = U.S. Environmental Protection Agency

GEA = gamma energy analysis

IC = ion exchange chromatography

ICP = inductively coupled plasma

NIOSH = National Institute for Occupational Safety and Health

NWTPH-Dx = Northwest total petroleum hydrocarbons —diesel range organics

PAH = polycyclic aromatic hydrocarbons

PCB = polychlorinated biphenyl

SVOA= semi- volatile organic analysis

SVOC= semi-volatile organic compound

TPH = total petroleum hydrocarbons

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

**Table 2. 100-N South River Road Verification Focused Sample Summary ( 2 Pages)**

Sample Number	HIES Number	Waste Site(s)	Easting	Northing	Contaminants of Potential Concern
100-N-53-1	TBD	100-N-53	571036.3	149444.4	Copper <sup>a</sup> , lead, zinc, PAH, PCBs, TPH, GEA, strontium-90
100-N-53-2	TBD	100-N-53	571035.5	149442.8	
100-N-53-3	TBD	100-N-53	571037.0	149442.2	
100-N-53-Duplicate <sup>c</sup>	TBD	100-N-53	TBD	TBD	
RR-1	TBD	100-N-64, 100-N-84:5, and 100-N-84:6	571035.4	149482.8	Chromium hexavalent, chromium total <sup>a</sup> , lead, mercury, anions <sup>b</sup> , pesticides, PCBs, SVOC, GEA (cobalt-60), strontium-90, asbestos
RR-1-Duplicate <sup>c</sup>	TBD	100-N-64, 100-N-84:5, and 100-N-84:6	571035.4	149482.8	Chromium hexavalent, chromium total <sup>a</sup> , lead, mercury, anions <sup>b</sup> , pesticides, PCBs, SVOC, GEA (cobalt-60), strontium-90, asbestos
RR-2	TBD	100-N-61 and 100-N-84:2	571024.9	149469.1	Chromium hexavalent, chromium total <sup>a</sup> , lead, anions <sup>b</sup> , GEA, strontium-90, asbestos
RR-2-Duplicate <sup>c</sup>	TBD	100-N-61 and 100-N-84:2	571024.9	149469.1	Chromium hexavalent, chromium total <sup>a</sup> , lead, anions <sup>b</sup> , GEA, strontium-90, asbestos
RR-3	TBD	100-N-61, 100-N-76 <sup>d</sup> , 100-N-84:5	571038.9	149463.1	Chromium hexavalent, chromium total <sup>a</sup> , lead, anions <sup>b</sup> , SVOCs, pesticides, PCBs, GEA, strontium-90, asbestos
RR-4	TBD	100-N-61 and 100-N-84:2	571018.3	149453.2	Chromium hexavalent, chromium total <sup>a</sup> , lead, anions <sup>b</sup> , GEA, strontium-90, asbestos
RR-5	TBD	100-N-84:2, 100-N-84:3, and 100-N-84:7	571013.9	149433.5	Chromium hexavalent, chromium total <sup>a</sup> , lead, mercury, anions <sup>b</sup> , nitrate/nitrites <sup>c</sup> , pesticides, SVOCs, PAH, PCBs, TPH, GEA, strontium-90, asbestos
RR-5-Duplicate <sup>c</sup>	TBD	100-N-84:2, 100-N-84:3, and 100-N-84:7	571013.9	149433.5	Chromium hexavalent, chromium total <sup>a</sup> , lead, mercury, anions <sup>b</sup> , nitrate/nitrites, pesticides, SVOCs, PAH, PCBs, TPH, GEA, strontium-90, asbestos
RR-6	TBD	100-N-61	570991.1	149384.2	Chromium hexavalent, chromium total <sup>a</sup> , lead, anions <sup>b</sup> , GEA, strontium-90, asbestos
RR-7	TBD	100-N-61	570987.2	149347.8	Chromium hexavalent, chromium total <sup>a</sup> , lead, anions <sup>b</sup> , GEA, strontium-90, asbestos

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

**Table 2. 100-N South River Road Verification Focused Sample Summary ( 2 Pages)**

Sample Number	HIES Number	Waste Site(s)	Easting	Northing	Contaminants of Potential Concern
RR-8	TBD	100-N-84:6	570993.4	149315.2	Chromium total <sup>a</sup> , lead, anions <sup>b</sup> , GEA, strontium-90, asbestos
RR-8-Duplicate <sup>c</sup>	TBD	100-N-84:6	570993.4	149315.2	Chromium total <sup>a</sup> , lead, anions <sup>b</sup> , GEA, strontium-90, asbestos
Equipment Blank <sup>e</sup>	TBD	NA	NA	NA	ICP metals <sup>a</sup> , mercury

<sup>a</sup> Sample analysis for ICP metals will include antimony, arsenic, barium, beryllium, boron, cadmium, chromium (total), cobalt, copper, lead, manganese, molybdenum, nickel, silver, selenium, vanadium, and zinc.

<sup>b</sup> Analysis will be performed for the expanded list of ion chromatography anions to include bromide, chloride, fluoride, nitrate, nitrite, phosphate, and sulfate. To preclude holding time issues associated with EPA Method 300.0 for nitrites and nitrates, EPA Method 353.2 will be performed.

<sup>c</sup> A field duplicate samples will be collected from at least one sample location for each waste site. The duplicate sample locations will be at the discretion of the project analytical lead unless otherwise identified.

<sup>d</sup> 100-N-76 is classified as a "rejected/Not Accepted" and does not have an COPCs associated with it. 100-N-76 is listed in table for completeness.

<sup>e</sup> Multiple equipment blanks may be collected. An equipment blank will be collected for each day sampling is performed.

EPA = U.S. Environmental Protection Agency

GEA = gamma energy analysis

HEIS = Hanford Environmental Information System

ICP = inductively coupled plasma

NA = not applicable

PCB = polychlorinated biphenyl

PAH = polycyclic aromatic hydrocarbons

SVOC = semivolatile organic compound

TBD = to be determined

TPH = total petroleum hydrocarbons

#### 4.5.1 Sample Collection

Figures 2 and 3 show the location of the verification focused samples. The verification focused sample locations will be surveyed and marked/staked prior to sample collection using the coordinate pairs provided in Table 2. A discrete soil sample will be collected at each designated sample point at 0 to 0.15 m (0 to 6 in.) below the surface of the exposed excavated soil and analyzed using the methods identified in Table 1.

All verification focused samples will be analyzed using the methods identified in Table 1. Full protocol laboratory analysis will be requested for all samples.

#### 4.5.2 Verification Sample Collection – Quality Control/Quality Assurance

One equipment blank sample consisting of clean silica sand poured over the sampling equipment will be collected and analyzed as indicated in Table 2. Field duplicate verification focused samples will be collected at locations identified in Table 2. The duplicate sample will be analyzed for the full suite of analytes using the same methods specified for the corresponding primary sample in Table 2.

Field quality control samples will be collected as required in the 100-N Area SAP (DOE-RL 2006a). Any deviations from the planned quality control sampling shall be documented in the field logbook and discussed in the data quality analysis attached to the RSVP.

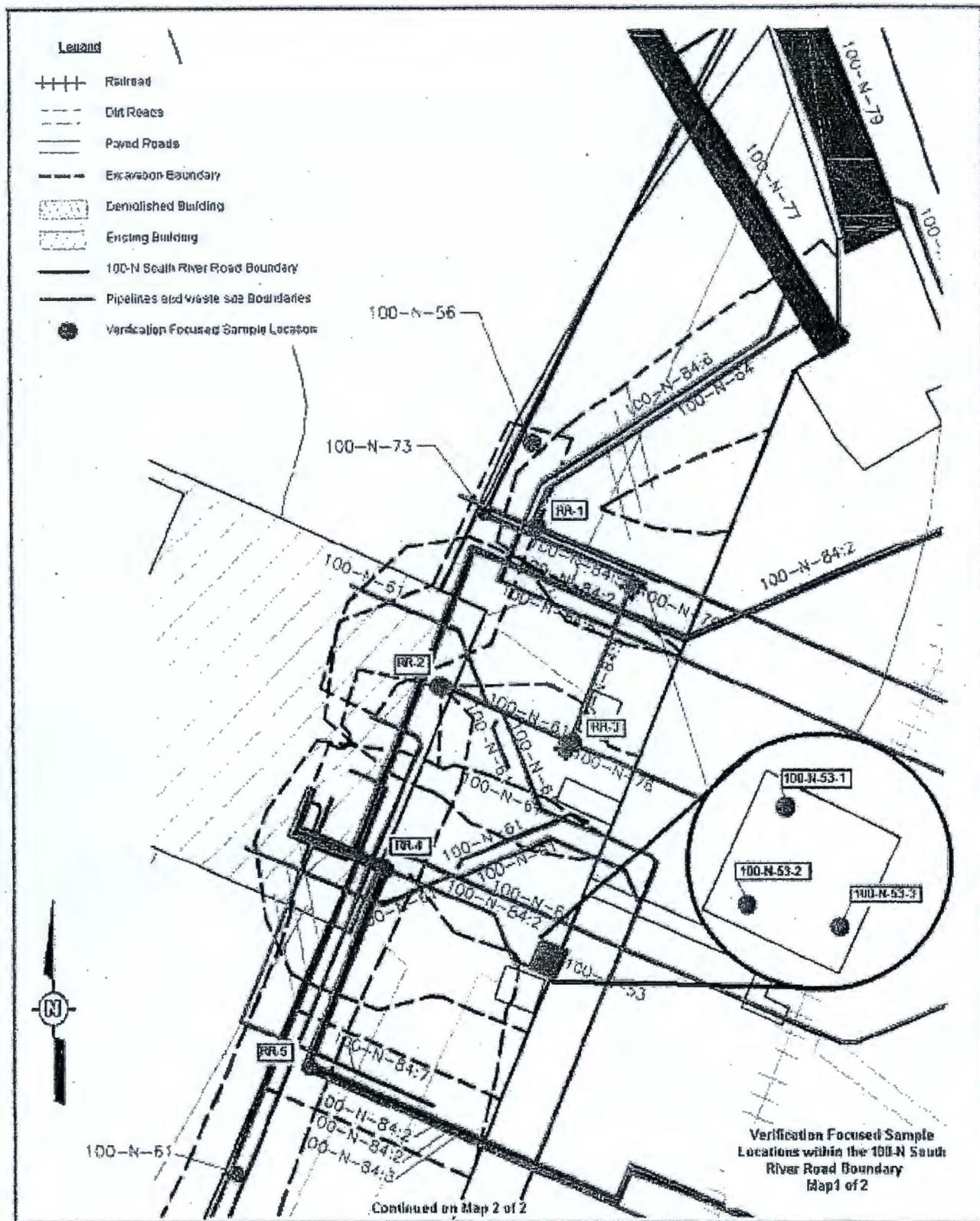
## Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

### 4.6 DATA QUALITY ASSESSMENT

All samples will be requested for a full protocol laboratory analysis. Post-data collection activities will generally follow those outlined in *Statistical Guidance for Ecology Site Managers* (Ecology 1992) and the U.S. Environmental Protection Agency's *Data Quality Assessment: A Reviewer's Guide* (EPA 2006). The data analyst will be familiar with the context of the site remedial action objectives and goals for data collection and assessment. The data will be verified and validated in accordance with site-specific data quality objectives found in the 100-N Area SAP (DOE-RL 2006a). Graphical and analytical tools will be used to verify, to the extent possible, the assumptions of the statistical analyses that were performed, as well as to achieve a general understanding of the verification sampling data. The data will be used to assess whether the sample results are adequate, in both quality and quantity, to support the primary objective of demonstrating that the site meets the cleanup criteria specified in the RDR/RAWP (DOE-RL 2006b) and the 100-N ROD (EPA 1999).

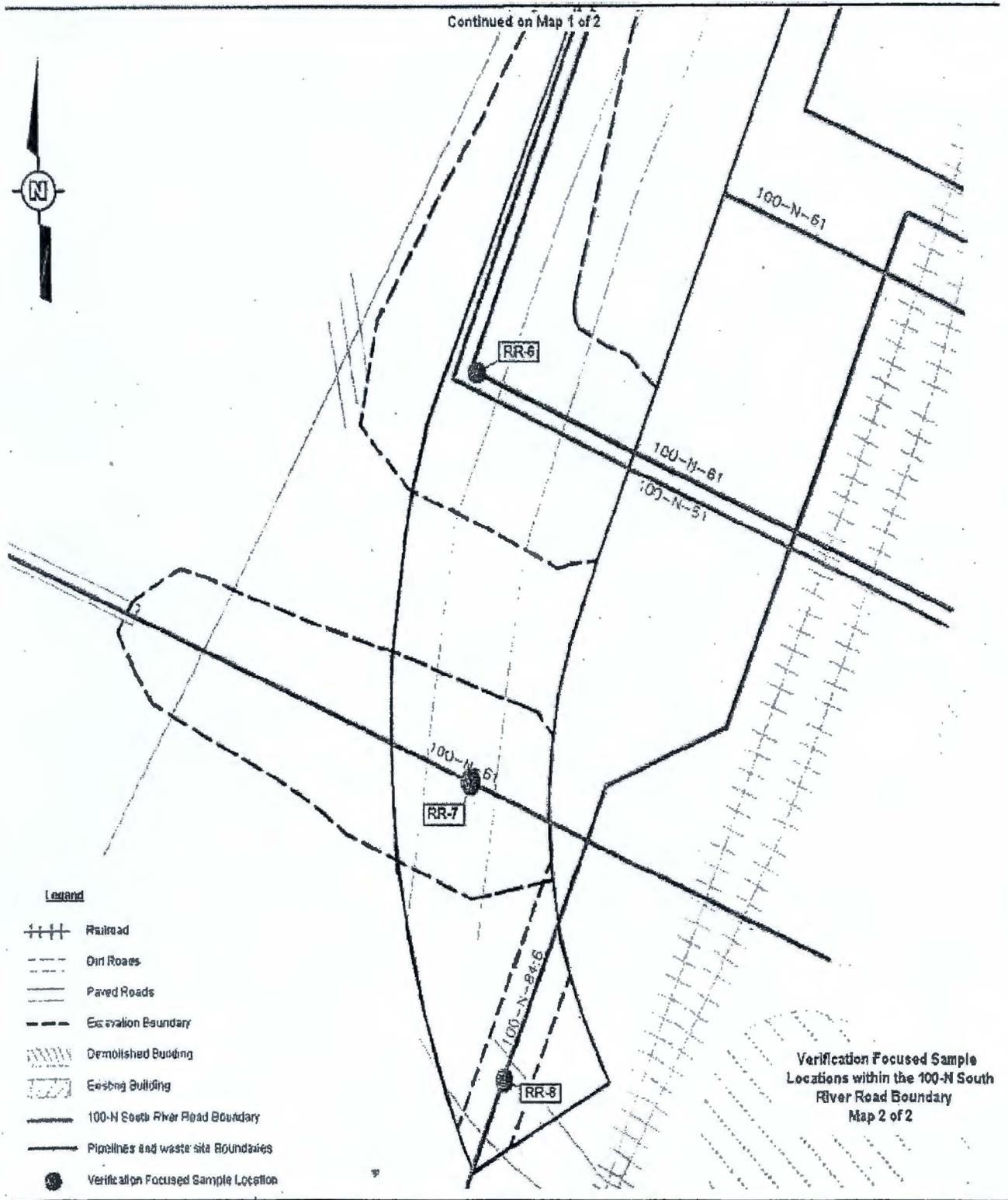
# Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

## Figure 2. Verification Focused Sample Locations within the 100-N South River Road Boundary Map 1 of 2.



Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

Figure 3. Verification Focused Sample Locations within the 100-N South River Road Boundary  
Map 2 of 2.



**Remediation and Verification Sampling for Eight Waste Sites within  
the 100-N South River Road Boundary**

**5.0 REFERENCES**

- DOE-RL, 2006a, *100-N Area Sampling and Analysis Plan for CERCLA Waste Sites*, DOE/RL-2005-92, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE-RL, 2006b, *Remedial Design Report/Remedial Action Work Plan for the 100-N Area*, DOE/RL-2005-93, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Ecology, 1992, *Statistical Guidance for Ecology Site Managers*, Publication No. 92-54, Washington State Department of Ecology, Olympia, Washington.
- ENV-1, *Environmental Monitoring & Management*, Washington Closure Hanford, Richland, Washington.
- EPA, 1999, *Interim Action Record of Decision for the 100-NR-1 and 100-NR-2 Operable Units, Hanford Site, Benton County, Washington*, U. S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2006, *Data Quality Assessment: A Reviewer's Guide*, EPA QA/G-9R, EPA/240/B-06/002, U.S. Environmental Protection Agency, Office of Environmental Information, Washington, D.C.
- WCH, 2011, "100-N-53, 181-N Building Waste Oil Tank for Remedial Action," CCN 157966 to S. W. Callison from M. L. Proctor, Washington Closure Hanford, Richland Washington, April 20.

**Remediation and Verification Sampling for Eight Waste Sites within  
the 100-N South River Road Boundary**

**APPENDIX A  
WASTE INFORMATION DATA SYSTEM  
GENERAL SUMMARY REPORT**

**AND**

**STEWARDSHIP INFORMATION SYSTEM  
SITE SUMMARY REPORT**

# Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

## Waste Information Data System General Summary Report

04/26/2011

Site Code: 100-N-53

Site Reclassification Status: None

Page 1

Site Names: 100-N-53; 181-N Building Waste Oil Tank

Site Type: Storage Tank

Start Date:

Status: Inactive

End Date:

Hanford Area: 100N

Pipe Type: Not Specified

OU/WMA: 100-NR-1

**Site Description:** The site was an empty above-ground waste oil tank. The tank is 1.1 meters (3.5 feet) in diameter and 1.2 meters (4.1 feet) high. A site visit in July 1999 found that the tank has been removed.

**Location Description:** The site is located in the 100-N Area, 18 meters (60 feet) east of the 181-N Pumphouse.

**Process Description:** The site received waste oil from diesel powered emergency pumps in the 181-N Building.

**Associated Structures:** The 181-N Building is associated with this site.

**References:** 1. CR Webb, 01/02/1997 Field Logbook assigned to Christine Webb, EL-1255 and EL-1255-1.

### Waste Information:

Type:	Oil	Amount:	
Category:	Hazardous/Dangerous	Units:	Not Specified
Physical State:	Liquid	Reported Date:	
Waste Obscured:	None		
Description:	The tank has been removed.		

### Dimensions:

Depth/Height:	1.25 Meters	4.10 Feet
Diameter:	1.07 Meters	3.50 Feet
Site Shape:	Circle	
References:	1. TF Johnson, 04/28/1995 Suspect Waste Site Investigation Logbook, EL-1238.	

### Field Work:

Type:	Site Walkdown
Begin Date:	07/07/1999
End Date:	07/07/1999
Purpose:	RARA Walkdown

Type:	Site Walkdown
Begin Date:	03/07/1996
End Date:	03/07/1996
Purpose:	Initial Review
References:	1. TF Johnson, 04/28/1995 Suspect Waste Site Investigation Logbook, EL-1238.

Type:	Site Walkdown
Begin Date:	07/07/1999
End Date:	07/07/1999

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

Site Code: 100-N-53

Site Reclassification Status: None

Page 2

**Purpose:** RARA Walkdown  
**Comment:** The Waste Oil tank has been removed. Only the foundation remains.  
**References:** 1. CR Webb, 01/02/1997 Field Logbook assigned to Christine Webb, EL-1255 and EL-1255-1.

<b>Programmatic Responsibility</b>	
DOE Program:	Confirmed By Program:
DOE Division:	
Responsible Contractor/Subcontractor:	
Reclassifying Contractor/Subcontractor:	
Responsible Project:	
<b>Site Evaluation</b>	
Solid Waste Management Unit:	
TPA Waste Management Unit Type:	
<b>Permitting</b>	
RCRA Part B Permit:	TSD Number:
RCRA Part A Permit:	Closure Plan:
RCRA Permit Status:	
Septic Permit:	216/218 Permit:
Inert LandFill:	NPDES:
	State Waste Discharge Permit:
Air Operating Permit:	
Air Operating Permit Number(s):	
<b>Tri-City Agreement</b>	
Lead Regulatory Agency:	
Unit Category:	
TPA Appendix:	
<b>Remediation and Closure</b>	
Decision Document:	
Decision Document Status:	
Remediation Design Group:	
Closure Document:	
Closure Type:	
WAC 173-340 (2007) Cleanup Comparison by Ecology:	
Post Closure Requirments:	Residual Waste:
	New Site Code:

**Images:**

Pathname: [//mapweb.rl.gov/wide/mq/100n/3773/3773\\_01.jpg](http://mapweb.rl.gov/wide/mq/100n/3773/3773_01.jpg) Date Taken:

Description:

**Remediation and Verification Sampling for Eight Waste Sites within  
the 100-N South River Road Boundary**

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Site Code: 100-N-53

Site Reclassification Status: None

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Pathname: [//macweb.nj.gov/wide/mgmt/100n/3773/3773\\_02.jpg](#)

Date Taken: 07/08/1999

Description: Photo shows the waste oil tank foundation. The tank has been removed.

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# Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

Site Code: 100-N-61

Site Reclassification Status: None

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## Unplanned Release:

Release Name: 100-N-7  
 Reported Date: Occurance Report #:  
 Begin Date:  
 End Date:  
 Description: 100-N-7 was an unplanned release that occurred in underground discharge pipelines associated with this site.  
 References: 1. DH Deford, 10/31/1996 From the Desk of DH DeFord to LA Dietz - Subject: Discovery Site, 100-N Water Treatment Facility Underground Water Pipelines, FDO:10-31-96.

## Programmatic Responsibility

DOE Program: Confirmed By Program:

DOE Division:

Responsible

Contractor/Subcontractor:

Reclassifying

Contractor/Subcontractor:

Responsible Project:

## Site Evaluation

Solid Waste Management Unit:

TPA Waste Management Unit Type:

## Permitting

RCRA Part B Permit:

TSD Number:

RCRA Part A Permit:

Closure Plan:

RCRA Permit Status:

Septic Permit:

216/218 Permit:

Inert LandFill:

NPDES:

Air Operating Permit:

State Waste Discharge Permit:

Air Operating Permit Number(s):

## Tri-City Agreement

Lead Regulatory Agency:

Unit Category:

TPA Appendix:

## Remediation and Closure

Decision Document:

Decision Document Status:

Remediation Design Group:

Closure Document:

Closure Type:

WAC 173-340 (2007) Cleanup Comparison by Ecology:

Post Closure Requirments:

Residual Waste:

New Site Code:

# Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

Site Code: 100-N-64

Site Reclassification Status: None

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Site Names: 100-N-64; 100-N Reactor 105/109-N Cooling Water Effluent Underground Pipelines

Site Type: Radioactive Process Sewer Start Date: January 01, 1963

Status: Inactive End Date: January 01, 1987

Hanford Area: 100N Pipe Type: Not Specified

OU/WMA: 100-NR-1

**Site Description:** This site includes those underground pipelines that transported reactor cooling water from the 105-N Reactor facilities to the 116-N-4 (1300-N), the 1304-N Emergency Dump Basin and Tank respectively, the 107-N Filter Building and the pipelines from these facilities to the 1908-N Outfall Structure. It does not include the underground lines that discharge to the 1301-N (116-N-1) and/or 1325-N (116-N-3) Cribbs that are addressed by a separate Waste Information Data System (WIDS) entry for the 105-N Reactor, 1314-N, 116-N-1, and 116-N-3 underground pipelines (site 100-N-63).

Generally these lines leave the 105-N Reactor Building on the west side and proceed to the west to their respective treatment/disposal facilities. The 107-N Building includes return pipelines as well as other process pipelines contained in a concrete encasement between the 105-N and 107-N Buildings. This encasement houses 0.28-meter (10-inch) and 0.46-meter (18-inch) demineralized water lines, a 0.3-meter (12-inch) filtered water line, 1.3-centimeter (0.5-inch) instrument air, 5.1-centimeter (2-inch) steam, 15-centimeter (6-inch) fire line and telephone, instrument, power, and fire alarm lines. The encasement is about 30 meters (98 feet) long. The remaining underground pipelines associated with the 1300-N and 1304-N include a 0.76-meter (30-inch) flush line, a 0.61-meter (24-inch) vent, a 0.76-meter (30-inch) overflow, a 25.4-centimeter (10-inch) blowdown, and a connection to the 25.4-centimeter (10-inch) radioactive drain line that becomes the 0.3-meter (12-inch) radioactive drain line not included with this waste site. The site does include overflow lines to the 1908-N Outfall Structure, but does not include the 1908-N Outfall Structure itself.

**Location Description:** This site is the location of underground pipelines running between the 105/109-N Buildings to the 116-N-4 (1300-N), the 1304-N Emergency Dump Basin and Tank, the 107-N Filter Building to the 1908-N Outfall Structure.

**Process Description:** The Emergency Dump Basin (116-N-4/1300-N) and the Emergency Dump Tank (1304-N) were designed to receive "single-pass" reactor cooling water in the case of an emergency. Both systems were used to periodically receive steam blowdown. The 1304-N Tank replaced the 1300-N Basin. This steam condensate normally contained low levels of radionuclide contamination and fission products. Overflow and drain lines to the 1908-N Outfall Structure are include in this waste site. However, the outfall structure is a separate waste site.

**Associated Structures:** The associated structures are the 105-N and 109-N Reactor Buildings. The TSD pipelines are in site 100-N-63.

**References:** 1. S. L. Cote', 100-N Area Technical Baseline Report, WHC-SD-EN-TI-251.

### Waste Information:

Type:	Process Effluent	Amount:	
Category:	Radioactive	Units:	Not Specified
Physical State:	Solid and Liquid	Reported Date:	
Start Date:	01/01/1963	End Date:	01/01/1987
Waste Obscured:	Soil Overburden		
Description:	The waste is the contaminated underground pipelines. The following radionuclides were released from the reactor through the underground pipelines to the 116-N-4 (1300-N), 1304-N Emergency Dump Basin and Tank, the 107-N Filter Building and to the 1908-N Outfall Structure. Residual contaminants of some may be expected to remain in the underground pipelines. These include: sodium-24, niobium-95, iodine-131, chromium-51, zirconium-95, tellurium-132, technetium-99, manganese-54, iron-59, ruthenium-103, cerium-144, and cobalt-60. Because of radioactive decay, only manganese-54, cobalt-60, and cerium-144 are expected to remain.		

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

Site Code: 100-N-64

Site Reclassification Status: None

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<b>Programmatic Responsibility</b>	
DOE Program:	Confirmed By Program:
DOE Division:	
Responsible Contractor/Subcontractor:	
Reclassifying Contractor/Subcontractor:	
Responsible Project:	
<b>Site Evaluation</b>	
Solid Waste Management Unit:	
TPA Waste Management Unit Type:	
<b>Permitting</b>	
RCRA Part B Permit:	TSD Number:
RCRA Part A Permit:	Closure Plan:
RCRA Permit Status:	
Septic Permit:	216/218 Permit:
Inert LandFill:	NPDES:
	State Waste Discharge Permit:
Air Operating Permit:	
Air Operating Permit Number(s):	
<b>Tri-City Agreement</b>	
Lead Regulatory Agency:	
Unit Category:	
TPA Appendix:	
<b>Remediation and Closure</b>	
Decision Document:	
Decision Document Status:	
Remediation Design Group:	
Closure Document:	
Closure Type:	
WAC 173-340 (2007) Cleanup Comparison by Ecology:	
Post Closure Requirements:	Residual Waste:
	New Site Code:



# Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

Site Code: 100-N-84

Site Reclassification Status: None

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<p><b>Description:</b></p>	<p>The subsite consists of the 100-N Area raw water pipelines includes: low pressure water, raw water, raw water return, raw water supply, raw water supply high and low pressure, emergency The lines are raw water supply, sprinkler, vent, fire line, irrigation, fog, and fish line pipelines, located throughout the 100-N Area's 100-NR-1 operable unit. The large majority of the pipelines being located in and around the 182-N High-Lift Pump House, 163 Denitneralization Plant, 183-N Water Filter Plant, 184-N Power House, the 185-N Hanford Generating Plant, 109-N Heat Exchanger Building and a scattering of office buildings and trailers located to the south and south east of the 105-N Reactor Building. One additional 12-in raw water line used for temporary construction is located to in the north eastern portion of the 100-N area and connects to the export water pipeline. The 100-N Area raw water system was built in 1963 with additional portions added as new support buildings were constructed. Raw water was pumped from the Columbia River at the 181-N Pump House to the 185-N Hanford Generating Plant, the 109-N Heat Exchanger Building, the 182-N High-Lift Pump House, and the 184-N Power House. These large delivery pipelines are not part of the 100-N-84 waste site. The subsite includes pipelines between the 105-N Reactor Building and it's supporting facilities. The pipelines exiting the 182-N Building transferred raw water to the 105-N, 109-N, 163-N and 183-N Buildings. At the 182-N Building raw water was passed through screens before it was stored in 16.6 m (54 ft) deep independent pump suction wells for future distribution. Raw water supplied to the 109-N Heat Exchange Buildings supported the dump-condensers, graphite cooling heat exchangers turbines surface-condensers. Additionally raw water was supplied to the 182-N Building emergency raw water tank and various heat exchangers, along with the 100-N Area irrigation and fire systems. The fire system pipelines originating at the 182-N supported the 185-N Hanford Generating Plant and substation located to the south of the 105-N reactor Building and outside of the 100-N Fenced area. Raw water from the 109-N and 184-N buildings could also be returned to the Columbia river through the Seatwell. The pipelines located between the 109-N, 182-N, 163-N and the 183-N Buildings lay within the 100-N-61 water treatment pipeline removal excavation footprint (H-1-89933). This area was excavated and backfilled in 2008 through 2009. Raw water lines collocated with 105-N Reactor Treatment Storage and Disposal Underground Pipelines along the east side of the 109-N and 105-N Buildings lay within the 100-N-63 excavation footprint (H-1-89933). This area was excavated and backfilled in 2009 through 2009.</p> <p><b>References:</b></p> <p>1. 03/23/2010 10-N-63 Effluent Pipelines Overall Plot Plan, H-1-89933, Rev 1.</p>
<p><b>SubSite Code:</b></p> <p><b>SubSite Names:</b></p> <p><b>Classification:</b></p> <p><b>ReClassification:</b></p> <p><b>Description:</b></p>	<p>100-N-84:2</p> <p>100-N-84:2: 100-N Area Fuel and Foam Pipelines</p> <p>Accepted</p> <p>None</p> <p>The subsite includes the fuel oil and foam underground pipelines in the 100-N Area, located to the north west and west side of the 105-N Reactor Building. Two fuel oil unloading, storage and transfer systems were used in the 100-N Area. Diesel oil unloaded from rail cars at the 166-N unloading station was transferred for storage to the one of four aboveground storage tanks within the 1715-N Building. The diesel oil was then transferred through a 10.2 cm (4-in) underground supply pipeline to the 184-N Building day tank or through 5.1 cm (2-in) and 10.2 cm (4-in) underground pipelines to the three 56,781 L (15,000 gal) day tanks outside of the 182-N building. The diesel fuel from the 182-N day tanks was used to support the 182-N and 181-N diesel oil systems. Number 6 fuel oil (also known as Bunker C fuel oil) was unloaded from rail cars at the 1900-N unloading station and transferred to the 166-N Building for storage in a 5,204,941 L (1,375,000 gal) capacity aboveground storage tank. The No. 6 fuel oil was transferred through underground pipelines from 166-N to two 184-N fuel oil day tanks. Foam fire suppression lines to support the diesel oil tanks and pipelines are collocated with the diesel oil pipelines near the 166-N Building. The north west portions of the 100-N-84:2 pipelines are located within the 100-N-63 excavation footprint.(H-1-89933).</p> <p><b>References:</b></p> <p>1. 03/23/2010 10-N-63 Effluent Pipelines Overall Plot Plan, H-1-89933, Rev 1.</p>
<p><b>SubSite Code:</b></p> <p><b>SubSite Names:</b></p> <p><b>Classification:</b></p> <p><b>ReClassification:</b></p>	<p>100-N-84:3</p> <p>100-N-84:3: 100-N Area Filter and Potable Water Pipelines</p> <p>Accepted</p> <p>None</p>

# Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

Site Code: 100-N-84

Site Reclassification Status: None

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<p><b>Description:</b></p>	<p>Site Description: The 100-N Area filter and potable water pipelines includes: makeup water, filter water, demineralized water, and potable water pipelines, as supplied to 183-N Filter Plant Building for pretreatment and filtration. The 183-N filter plant supplied sanitary water to the entire 100-N Area. The plant also supplied filtered water to various buildings throughout the 100 N Area for use where treated water was not desirable or required. The term "treated water herein refers to filtered water that had liquid alum (aluminum sulphate), separan (polyacrylamide) and liquid chlorine added during pretreatment. Demineralized water from 163-N Building was used as makeup water feed for the pretreatment system in 183-N building, while raw water was used for chemical mixing in the 182-N and 183-N Buildings prior to being added to the water. The chemical feed systems were maintained using proportional ratios with the water flow. Demineralized water was used to prevent mineral deposits what would foul pipeline systems. Chlorine was added for the control of slime and algae, and may have been used to assist in coagulation, odor and iron removal problems. Alum was used as the principle coagulant during pretreatment. 100-N-84:3 pipelines located between the 109-N, 182-N, 163-N and the 183-N Buildings lay within the 100-N-61 water treatment pipeline removal excavation footprint (H-1-89932). This area was excavated and backfilled in 2008 through 2009. The north west portions of the 100-N-84:3 pipelines are located within the 100-N-63 excavation footprint (H-1-69933). Filtered water lines are located to the north and south of the 105-N reactor Building, while the potable water lines are located mainly to the southwest of the 105 reactor building to the 105-N support facilities.</p>
<p><b>References:</b></p>	
<p><b>SubSite Code:</b></p> <p><b>SubSite Names:</b></p> <p><b>Classification:</b></p> <p><b>ReClassification:</b></p> <p><b>Description:</b></p>	<p>100-N-84:4</p> <p>100-N-84:4; 100-N Area Steam and Condensate Pipelines</p> <p>Accepted</p> <p>None</p> <p>Site Description: The 100-N Area steam and condensate pipelines includes: steam, condensate, and injection and vacuum pump water. Process Description: The N Reactor stream was used to generate electricity from 1966 to January 7, 1987. Condensate from the dump condensers was routed back to steam generators for regeneration. The main steam system was designed to distribute steam generated from generators on the roof of the 109-N Building as high, medium and low pressure steam. High pressures steam was exported through a 71 cm (28-in) pipeline to the 184-N Building to support the turbine generator and miscellaneous services. Medium pressure steam was distributed from 109-N for area heating (105-N, 182-N, 163-N, 183-N, 108-N, 1704-N, 1716-N, and 1734-N) and additional miscellaneous services. Low pressure steam was exported to the 184-N and 153-N Buildings for unit heaters and convectors. Stand-by boilers located 184-N were maintained independent of reactor operation supplying steam to the 184-N day tanks, the 166-N fuel unloading facilities and for the 109-N emergency seal water turbines. Once the steam had been utilized in each building condensate return pipelines exported the 184-N Building condenser receiver where it is recirculated deaerating heater for reuse. 109-N Building was equipped with a condensate diversion station controlling the levels in the deaerated water storage tank. A 10" condensate emergency drain could be used to release condensate from 109N to the 0.17 m (66-in) raw water pipelines downstream of the Sealwell. 100-N-84:3 pipelines located between the 109-N, 182-N, 163-N and the 183-N Buildings lay within the 100-N-61 water treatment pipeline removal excavation footprint (H-1-89932). This area was excavated and backfilled in 2008 through 2009. Location Description: The steam and condensate pipelines are concentrated around the 105-N Reactor building to support facilities and the 185-N Hanford Generating Plant. Site Comment: The following three dry wells and their associated pipelines for the 100-N-103 waste site fall within the planned excavation footprint for the 100-N-84:4 waste site: A 1.2-m (48-in.) dry well with a 10-cm (4-in.) floor drain from an equipment access pit, and a 10-cm (4-in.) cast iron floor drain line from a clean office area at the 105-N Building. A dry well with a 10-cm (4-in.) steam condensate pipeline from the 105-N Building and another 10-cm (4-in.) steam condensate pipeline from clean operations in 1712-N. A dry well with a 7.6-cm (3-in.) low-pressure steam condensate pipeline from the 1734-N Gas Bottle Storage Building. As a consequence these features will be dispositioned during remediation of the 100-N-84:4 waste site.</p>
<p><b>References:</b></p>	<p>1. Habel, Len, 01/11/2011 WCH request adding text to site 100-N-84:4 reflecting that 3 dry wells and pipelines are associated with 100-N-103 for excavation purposes, 100-N-84.</p>
<p><b>SubSite Code:</b></p> <p><b>SubSite Names:</b></p> <p><b>Classification:</b></p> <p><b>ReClassification:</b></p>	<p>100-N-84:5</p> <p>100-N-84:5; 100-N Area Sanitary</p> <p>Accepted</p> <p>None</p>

# Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

Site Code: 100-N-84

Site Reclassification Status: None

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<p><b>Description:</b></p>	<p>Site Description: The 100-N Area sanitary pipelines includes: sanitary water and sewer, storm drains, and disposal field pipelines. ProcessDescription: The 100-N Area was serviced by ten separate sewer systems consisting of one cesspool, one lagoon, one septic tank with an associated tile field, two septic tanks with seepage pits, and five septic tanks associated with drain fields. The septic tanks, pits, cesspools and lagoon are identified as the 124-N-1 through 124-N-10 waste sites. Waste sites 124-N-5, 124-N-6, 124-N-7, 124-N-8 have been reclassified as "rejected". The feed and drainage pipelines associated with these waste sites are included in 100-N-84:5. LocationDescription: The 100-N-84:5 pipelines are located throughout the 100-N Area's 100-NR-1 operable unit.</p>
<p><b>References:</b></p>	
<p><b>SubSite Code:</b></p> <p><b>SubSite Names:</b></p> <p><b>Classification:</b></p> <p><b>ReClassification:</b></p> <p><b>Description:</b></p>	<p>100-N-84:6</p> <p>100-N-84:6; 100-N Area Chemical and Process Sewer Pipelines</p> <p>Accepted</p> <p>None</p> <p>Site Description: 100-N Area Chemical and Process Sewer Pipelines include: Chemical waste, DMV waste, drain cold, dummy disposal line, Miscellaneous chemical drain, radioactive drain, chlorine, flush, and sample pipelines. ProcessDescription: The 100-N-84:6 pipelines originate from the 109-N Heat Exchanger Building, the 105-N Reactor Building, the 163-N Demineralization Plant, 162-N High-Lift Pump House, 183-N Filter Plant, and 184-N Power House. Various chemicals were utilized in these buildings. Phosphoric, ascorbic and citric acids, and potassium permanganate were used in the 109-N and 105-N Buildings decontamination processes (WHC-SP-0460). Ammonium hydroxide, morpholine and lithium hydroxide were added to control cooling water pH. Hydrazine was added to reduce oxygen concentrations in cooling water (WHC-SP-0460). The addition of these chemicals and the core's cooling water system design allowed the water to be recycled instead of using raw water as a once through coolant (DOE/RL-90-22). Sulfuric acid and sodium hydroxide from supply tanks in 163-N Building were primarily consumed in the demineralizer plant. A 93% sulfuric acid solution was used to regenerate the cation resin used at the 163-N Building while a 50% sodium hydroxide solution was used to regenerate the anion resin. The 8-in acid drain from 163-N connected into the 100N river channel discharge line to the Columbia River. Sodium sulfite was used as a deoxygenizing chemical for low pressure filter water (162-N). Sodium dichromate was added to filtered water supply and raw water supply for cooling coils in the 105-N Reactor Building. Radioactive drains at 109-N collect from the coolant systems, hot water quality laboratory, service bay hot shop. The 105-N and 109-N drains run to the 1301-N Liquid Waste Disposal Crib. 100-N-84:6 pipelines located between the 109-N, 182-N, 163-N and the 183-N Buildings lay within the 100-N-61 water treatment pipeline removal excavation footprint (H-1-89932). This area was excavated and backfilled in 2008 through 2009. A small portion of the 100-N-84:6 pipelines also lay within the adjacent 100-N-64 planned excavation (H-1-89934). LocationDescription: The 100-N-84:6 waste site pipelines are centrally located between the 100-N Area process buildings (105-N, 109-N, 182-N, 183-N, 184-N, and 163-N).</p>
<p><b>References:</b></p>	
<p><b>SubSite Code:</b></p> <p><b>SubSite Names:</b></p> <p><b>Classification:</b></p> <p><b>ReClassification:</b></p> <p><b>Description:</b></p>	<p>100-N-84:7</p> <p>100-N-84:7; 100-N Area Unidentified and Other Miscellaneous Pipelines</p> <p>Accepted</p> <p>None</p> <p>The 100-N-84:7 waste site pipelines include sections of various diameter pipelines located within the 100-NR-1 operable unit in and around the 105-N Reactor Building. These sections described as unidentified or multitube could not be positively identified based on review of historical documentation. An above ground feature, labeled N-213, was observed during the 100-N Orphan Site Evaluation (OSR-2009-0001). Being co-located with the 100-N-84 pipelines it was decided to incorporate this feature into this subsite.</p>
<p><b>References:</b></p>	
<p><b>SubSite Code:</b></p> <p><b>SubSite Names:</b></p> <p><b>Classification:</b></p> <p><b>ReClassification:</b></p>	<p>100-N-84:8</p> <p>100-N-84:8; 100-N Area Unidentified Pipelines within Planned Excavations</p> <p>Accepted</p> <p>None</p>

# Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

Site Code: 100-N-84

Site Reclassification Status: None

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<p><b>Description:</b></p> <p>The 100-N-84:8 waste site pipelines include sections of various diameter pipelines located within the 100-NR-1 operable unit in and around the 105-N Reactor Building. These sections described as unidentified or multitube could not be positively identified based on review of historical documentation. Most are believed to be less than 4m (13 ft) long or are within the planned remedial action excavation area which will result in removal of the pipeline section. Two of the pipeline sections included in the 100-N-84:8 waste site are longer than 4m (13 ft). However these pipeline sections lay completely with the planned remediation excavation of the UPR-100-N-21 and UPR-100-N-23 waste sites (H-1-89916), and 100-N-22 waste site (H-1-89924). An above ground feature, labeled N-218, was observed during the 100-N Orphan Site Evaluation (OSR-2009-0001) to be co-located with the 100-N-84 pipelines. As a consequence this feature was dispositioned as part of 100-N-84.</p> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>06/01/2009 100-N Area Orphan Sites Evaluation Report, Rev. A, WCH OSR-2009-0001.</li> <li>03/23/2010 100 N Area - 100 N Waste Site Remediation Design - 100-N-22 Sanitary Sewer System Civil Plot Plan Washington Closure H, H-1-89924, Rev 1.</li> <li>03/23/2010 100 N Area - 100 N Waste Site Remediation Design - UPR-100-N-42, 19, 21, 22 and 23 Civil Plot Plan Washington Closure Hanford, LLC, H-1-89916, Rev 1.</li> </ol>
<p><b>SubSite Code:</b> 100-N-84:9</p> <p><b>SubSite Names:</b> 100-N-84:9; 100-N Area Active Raw Water Pipelines</p> <p><b>Classification:</b> Accepted</p> <p><b>ReClassification:</b> None</p> <p><b>Description:</b></p> <p>The 100-N Area active raw water pipelines range in size from 6 to 12 inches in diameter and are used for fire protection. The 100-N, 12 inch export water line is fed from the main 42 inch raw water export line between 100-B and 100-D Areas. Smaller pipeline segments connect this line to various fire hydrants located in the 100-N industrial area. Process Description: Raw water was pumped from the Columbia River and supplied to the fire protection pipelines. Location Description: The 100-N-84:9 pipelines are located east of the 105-N Building.</p> <p><b>References:</b></p>

<b>Programmatic Responsibility</b>	
DOE Program:	Confirmed By Program:
DOE Division:	
Responsible Contractor/Subcontractor:	
Reclassifying Contractor/Subcontractor:	
Responsible Project:	
<b>Site Evaluation</b>	
Solid Waste Management Unit:	
TPA Waste Management Unit Type:	
<b>Permitting</b>	
RCRA Part B Permit:	TSD Number:
RCRA Part A Permit:	Closure Plan:
RCRA Permit Status:	
Septic Permit:	216/218 Permit:
Inert LandFill:	NPDES:
	State Waste Discharge Permit:
Air Operating Permit:	
Air Operating Permit Number(s):	
<b>Tri-City Agreement</b>	
Lead Regulatory Agency:	
Unit Category:	

# Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

Site Code: 100-N-84

Site Reclassification Status: None

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**TPA Appendix:**

**Remediation and Closure**

Decision Document:

Decision Document Status:

Remediation Design Group:

Closure Document:

Closure Type:

WAC 173-340 (2007) Cleanup Comparison by Ecology:

Post Closure Requirments:

Residual Waste:

New Site Code:

**The Following Site(s) Where Consolidated With This Site:**

Site Names:	100-N-84:2; 100-N Area Fuel and Foam Pipelines
Reason:	
Site Names:	100-N-84:3; 100-N Area Filter and Potable Water Pipelines
Reason:	
Site Names:	100-N-84:4; 100-N Area Steam and Condensate Pipelines
Reason:	
Site Names:	100-N-84:1; 100-N Area Raw Water Pipelines
Reason:	
Site Names:	100-N-84:5; 100-N Area Sanitary
Reason:	
Site Names:	100-N-84:9; 100-N Area Active Raw Water Pipelines
Reason:	
Site Names:	100-N-84:6; 100-N Area Chemical and Process Sewer Pipelines
Reason:	
Site Names:	100-N-84:7; 100-N Area Unidentified and Other Miscellaneous Pipelines
Reason:	
Site Names:	100-N-84:8; 100-N Area Unidentified Pipelines within Planned Excavations
Reason:	

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

RCC Stewardship Information System  
Site Summary Report

04/27/2011

Site Code: 100-N-53

Site Classification Status: Accepted

Page 2

Dimensions:

Length:	Width:	Depth/ Height:	Overburden Depth:	Diameter (Large):	Diameter (Small):	Wall Thickness:	Sq. Area:	Est. Volume:	Capacity:
		1.25 m (4.10 ft)		1.07 m (3.50 ft)					

Site Shape: Circle

References: 1. EL-1238, 04/28/1995, Suspect Waste Site Investigation Logbook, Bechtel Hanford Inc.

Regulatory Info:

**RCRA Permitting:**

TSD Number:

RCRA Part A Permit: No

RCRA Part B Permit: No

Closure Plan:

RCRA Closure Type:

Residual Waste: No

**Other Permitting:**

2126/218 Permit: No

NPDES: No

Air Operating Permit  
Numbers():

**Remediation and Closure:**

Closure Contractor: WCH. Washington Closure Hanford, LLC

ESD Document:

Decision Document

Closure Document:

Site References:

- 0100N-WI-G0002, 04/14/2008, Work Instruction for Confirmatory Sampling of the 100-N-53, 181-N Building Waste Oil Tank, Washington Closure Hanford, LLC
- EL-1238, 04/28/1995, Suspect Waste Site Investigation Logbook, Bechtel Hanford Inc.
- EL-1255, 01/02/1997, Field Logbook assigned to Christine Webb, Bechtel Hanford Inc.
- EL-1255-1, 06/07/1999, ER Site Investigations - Field Logbook assigned to Christine Webb, Bechtel Hanford Inc.
- H-1-45007, Sheet 23, 07/06/1989, COMPOSITE UNDERGROUND LINES, Rev. 4, United Nuclear Industries

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

RCC Stewardship Information System  
Site Summary Report

04/27/2011

Site Code: 100-N-53

Site Classification Status: Accepted

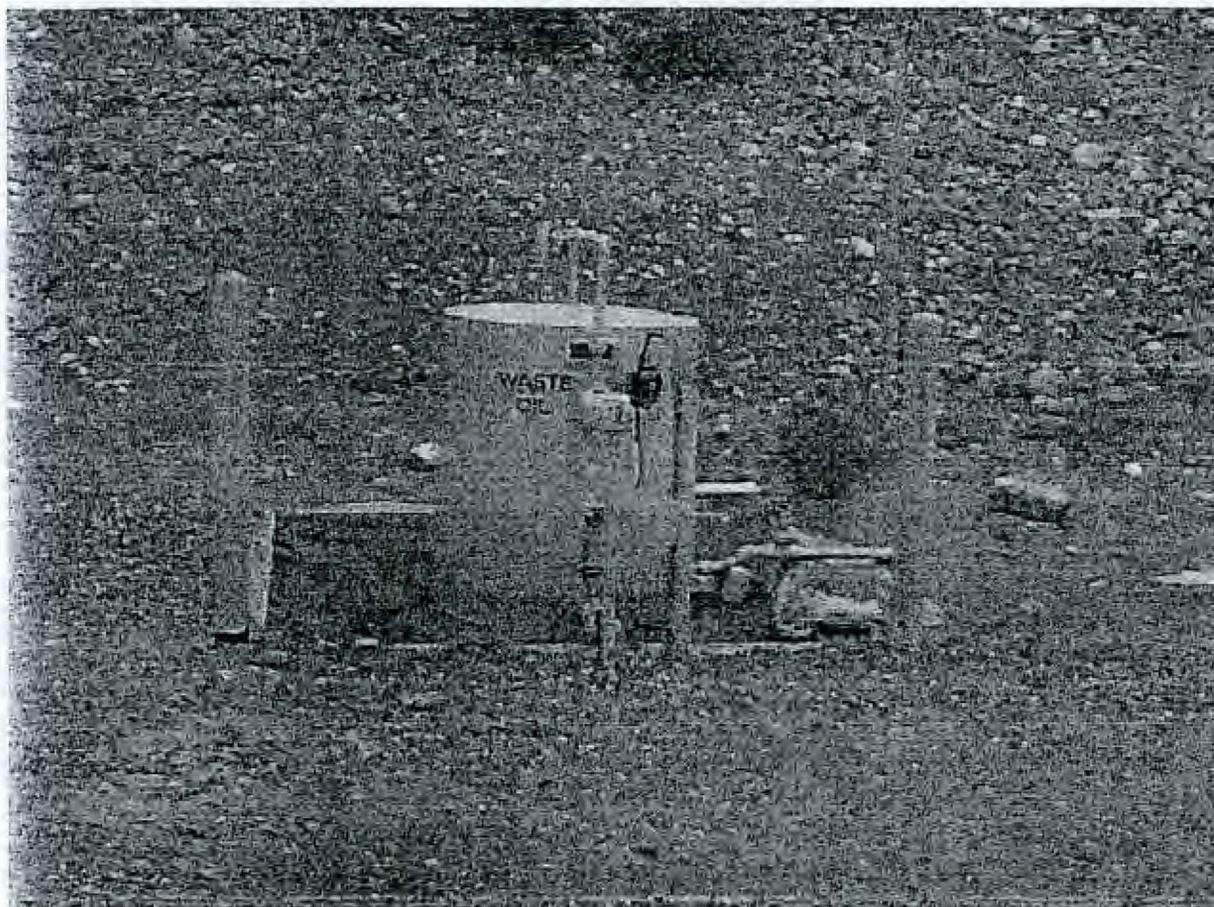
Page 3

Image:

Date Taken:

Historical Photo Number:

Description:



Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

RCC Stewardship Information System  
Site Summary Report

04/27/2011

Site Code: 100-N-53

Site Classification Status: Accepted

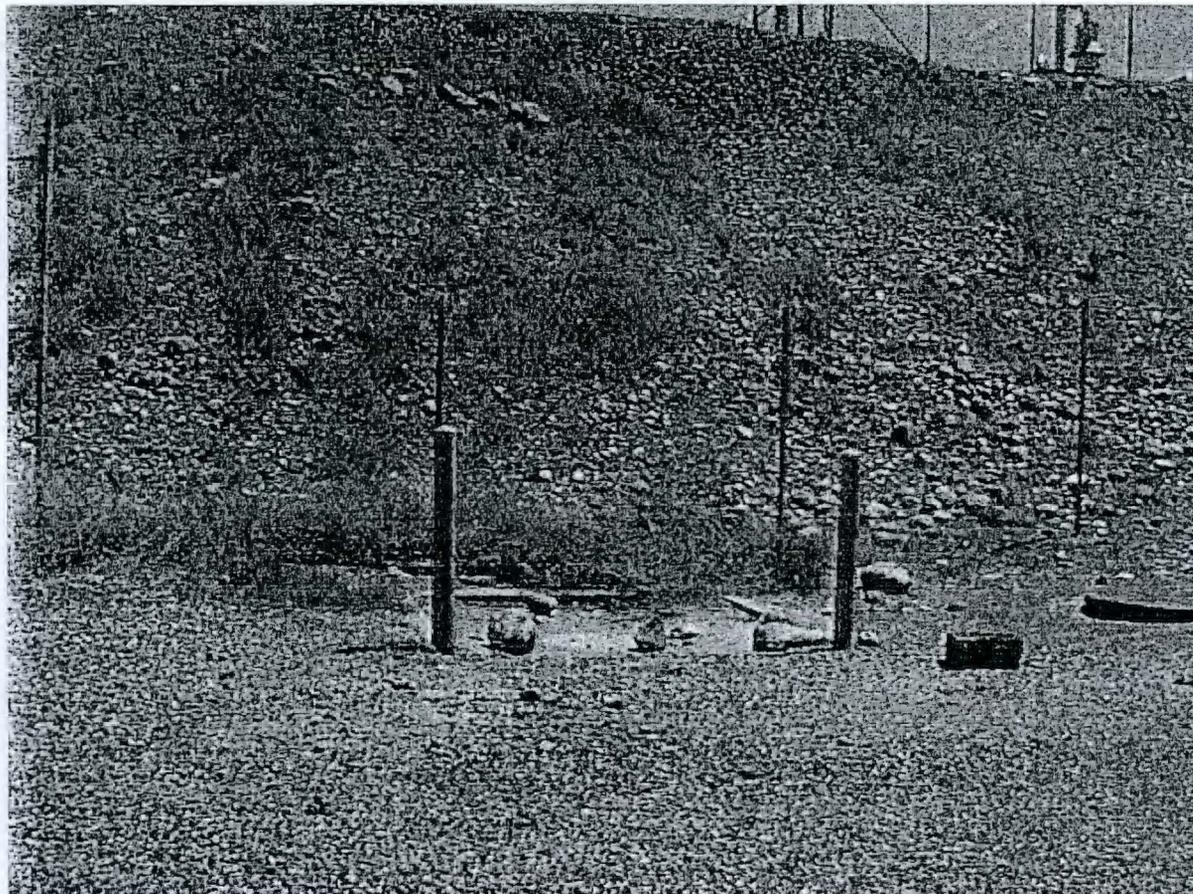
Page 4

Image:

Date Taken: 7/8/1999

Historical Photo Number:

Description: Photo shows the waste oil tank foundation. The tank has been removed.



Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

RCC Stewardship Information System  
Site Summary Report

04/27/2011

Site Code: 100-N-61

Site Classification Status: Accepted

Page 1

Site Names: 100-N-61, 100-N Water Treatment and Storage Facilities Underground Pipelines

Site Type:	Process Sewer	Start Date:	1963
Status:	Inactive	End Date:	1987
Decision Unit:	100-N	<u>Coordinates:</u>	
Operable Unit:	100-NR-1	(E)	0.0
Hanford Area:	100N	(N)	0.0
QC Code:	QC Date:	Washington State Plane	

**Cleanup Activities:**

**Cleanup Summary:** The 100-N-61 waste site pipelines are located through out the 100-N Area and are collocated with a number of other pipeline waste sites including but not limited to the 100-N-84, 100-N Miscellaneous Pipelines waste site. During remediation of the 100-N-61 waste site collocated waste sites may be partially or fully remediated.

Contaminants of Concern:

Excavation Depth (m):	Depth to GW below excavation (m):
Excavation Area (sq. m):	Material disposed at ERDF (metric tons):
Site Revegetated (Yes/No):	
Site Downposted (Yes/No):	
Institutional Controls Required (Yes/No):	
Institutional Controls:	

**Historical Summary:**

**Site Description:** The site encompasses all underground water pipelines used to transport reactor cooling water between water treatment facilities and the 105-N Reactor Building. These include all underground lines running between buildings and those that run to drainage facilities. Pipelines within buildings and all pipelines that are downstream from the reactor building, i.e., those lines that carry cooling water from the reactor to effluent disposal facilities such as the dump tank and cribs, are excluded.

**Process Description:** Reactor cooling water was pumped from the Columbia River, settled and treated to remove minerals, then injected into the reactor primary coolant loop at a rate of about 760 liters/minute (200 gallons/minute).

**Location Description:** The site is located where the underground pipelines run from the 181-N River Pump House to the 163-N Water Treatment Plant, the 182-N Pump House and Storage Tanks, and to the 105-N Reactor Building. Also, any underground drainage pipelines running from the water treatment and storage facilities to the riverside outfall structures. Other underground pipelines running to the outfall structures are included in other waste sites and are therefore excluded from this site.

**Associated Structures:** Associated structures include the 181-N River Pump House, the 182-N Pump House, the 163-N Water Treatment Plant, and the 105-N Reactor Building.

**Site Comment:** Two above ground features (N-215 and N-217) were observed during the 100-N Orphan Site Evaluation that fell within the planned excavation footprint for 100-N-61 (QSR-2009-0001). As a consequence these features will be dispositioned during remediation of 100-N-61 and were not further evaluated.

A 7.6-cm (3-in.) french drain located 2.8 m (9.2 ft) to the east of the 1902-H building wall, and the location of a french drain with a 1.9-cm (0.75-in.) clean medium-pressure steam return line from the 108-N building (removed during the demolition of the 108-N building), both part of the 100-N-103 waste site, fall within the planned excavation footprint for 100-N-61. As a consequence these features will be dispositioned during remediation of the 100-N-61 waste site.

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

RCC Stewardship Information System  
Site Summary Report

04/27/2011

Site Code: 100-N-61

Site Classification Status: Accepted

Page 2

Waste Information:

Type: Water Amount:  
Category: Nondangerous/nonradioactive Units:  
Physical State: Solid and liquid  
Waste Obscured: Soil Overburden

COPCs

Description: The waste is steel piping, concrete, and soil (if contaminants are present). Chemical additives to the reactor cooling water included sulfuric acid, sodium hydroxide, aluminum sulfate (alum) with excess hydrated calcium oxide, separan, chlorine, and sodium dichromate. Water pH was maintained at about 7.5, and the free chlorine residual was approximately 0.2 milligrams/liter.

References: 1. WHC-SD-EN-TI-251, 06/01/1994, 100-N Area Technical Baseline Report, Rev. 0, Westinghouse Hanford Company

Unplanned Release:

Release Name: 100-N-7

Reported Date: Occurrence Rpt#:

Begin Date: Ref. Site Code:

End Date:

Description: 100-N-7 was an unplanned release that occurred in underground discharge pipelines associated with this site.

References: 1. Other10311996-2, 10/31/1996, Discovery Site, 100-N Water Treatment Facility Underground Water Pipelines, Bechtel Hanford Inc.

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

**RCC Stewardship Information System  
Site Summary Report**

04/27/2011

Site Code: 100-N-61

Site Classification Status: Accepted

Page 3

**Regulatory Info:**

**RCRA Permitting:**

TSD Number:

RCRA Part A Permit: No

RCRA Part B Permit: No

Closure Plan:

RCRA Closure Type:

Residual Waste: No

**Other Permitting:**

2126/218 Permit: No

NPDES: No

Air Operating Permit  
Numbers():

**Remediation and Closure:**

Closure Contractor: WCH. Washington Closure Hanford, LLC

ESD Document:

Decision Document: Interim Remedial Action Record of Decision, 100-NR-1 and 100-NR-2 (1999)

Closure Document:

**Site References:**

1. OSR-2009-0001, 06/01/2009, 100-N Area Orphan Sites Evaluation Report, Rev. A, Washington Closure Hanford, LLC
2. Other10311996-2, 10/31/1996, Discovery Site, 100-N Water Treatment Facility Underground Water Pipelines, Bechtel Hanford Inc.

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

RCC Stewardship Information System  
Site Summary Report

04/27/2011

Site Code: 100-N-64

Site Classification Status: Accepted

Page 1

Site Names: 100-N-64, 100-N Reactor 105/109-N Cooling Water Effluent Underground Pipelines  
 Site Type: Radioactive Process Sewer Start Date: 1963  
 Status: Inactive End Date: 1987  
 Decision Unit: 100-N Coordinates:  
 Operable Unit: 100-NR-1 (E) 0.0  
 Hanford Area: 100N (N) 0.0  
 QC Code: QC Date: Washington State Plane

**Cleanup Activities:**

**Cleanup Summary:**

**Contaminants of Concern:**

Excavation Depth (m): Depth to GW below excavation (m):  
 Excavation Area (sq. m): Material disposed at ERDF (metric tons):  
 Site Revegetated (Yes/No):  
 Site Downposted (Yes/No):  
 Institutional Controls Required (Yes/No):  
 Institutional Controls:

**Historical Summary:**

**Site Description:** This site includes those underground pipelines that transported reactor cooling water from the 105-N Reactor facilities to the 116-N-4 (1300-N), the 1304-N Emergency Dump Basin and Tank respectively, the 107-N Filter Building and the pipelines from these facilities to the 1908-N Outfall Structure. It does not include the underground lines that discharge to the 1301-N (116-N-1) and/or 1325-N (116-N-3) Cribs that are addressed by a separate Waste Information Data System (WIDS) entry for the 105-N Reactor, 1314-N, 116-N-1, and 116-N-3 underground pipelines (site 100-N-63).

Generally these lines leave the 105-N Reactor Building on the west side and proceed to the west to their respective treatment/disposal facilities. The 107-N Building includes return pipelines as well as other process pipelines contained in a concrete encasement between the 105-N and 107-N Buildings. This encasement houses 0.26-meter (10-inch) and 0.46-meter (18-inch) demineralized water lines, a 0.3-meter (12-inch) filtered water line, 1.3-centimeter (0.5-inch) instrument air, 5.1-centimeter (2-inch) steam, 15-centimeter (6-inch) fire, line and telephone, instrument, power, and fire alarm lines. The encasement is about 30 meters (98 feet) long. The remaining underground pipelines associated with the 1300-N and 1304-N include a 0.76-meter (30-inch) flush line, a 0.61-meter (24-inch) vent, a 0.76-meter (30-inch) overflow, a 25.4-centimeter (10-inch) blowdown, and a connection to the 25.4-centimeter (10-inch) radioactive drain line that becomes the 0.3-meter (12-inch) radioactive drain line not included with this waste site. The site does include overflow lines to the 1908-N Outfall Structure, but does not include the 1908-N Outfall Structure itself.

**Process Description:** The Emergency Dump Basin (116-N-4/1300-N) and the Emergency Dump Tank (1304-N) were designed to receive "single-pass" reactor cooling water in the case of an emergency. Both systems were used to periodically receive steam blowdown. The 1304-N Tank replaced the 1300-N Basin. This steam condensate normally contained low levels of radionuclide contamination and fission products. Overflow and drain lines to the 1908-N Outfall Structure are include in this waste site. However, the outfall structure is a separate waste site.

**Location Description:** This site is the location of underground pipelines running between the 105/109-N Buildings to the 116-N-4 (1300-N), the 1304-N Emergency Dump Basin and Tank, the 107-N Filter Building to the 1908-N Outfall Structure.

**Associated Structures:** The associated structures are the 105-N and 109-N Reactor Buildings. The TSD pipelines are in site 100-N-63.

**Site Comment:**

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

RCC Stewardship Information System  
Site Summary Report

04/27/2011

Site Code: 100-N-64

Site Classification Status: Accepted

Page 2

Waste Information:

Type: Process Effluent Amount:  
Category: Radioactive Units:  
Physical State: Solid and liquid  
Waste Obscured: Soil Overburden

COPCs

Description: The waste is the contaminated underground pipelines. The following radionuclides were released from the reactor through the underground pipelines to the 116-N-4 (1300-N), 1304-N Emergency Dump Basin and Tank, the 107-N Filter Building and to the 1906-N Outfall Structure. Residual contaminants of some may be expected to remain in the underground pipelines. These include: sodium-24, niobium-95, iodine-131, chromium-51, zirconium-95, tellurium-132, technetium-99, manganese-54, iron-59, ruthenium-103, cerium-144, and cobalt-60. Because of radioactive decay, only manganese-54, cobalt-60, and cerium-144 are expected to remain.

References:

Regulatory Info:

RCRA Permitting:

TSD Number:  
RCRA Part A Permit: No  
RCRA Part B Permit: No

Other Permitting:

2126/218 Permit: No  
NPDES: No  
Air Operating Permit Numbers():

Closure Plan:

RCRA Closure Type:

Residual Waste: No

Remediation and Closure:

Closure Contractor: WCH. Washington Closure Hanford, LLC

ESD Document:

Decision Document Interim Remedial Action Record of Decision, 100-NR-1 and 100-NR-2 (1999)

Closure Document:

Site References:

1. H-1-45007, Sheet 2, 01/21/1985, COMPOSITE UNDERGROUND LINES, Rev. 4, United Nuclear Industries
2. H-1-45007, Sheet 30, 01/14/1985, COMPOSITE UNDERGROUND LINES, Rev. 4, United Nuclear Industries
3. H-1-45007, Sheet 31, 06/21/1985, COMPOSITE UNDERGROUND LINES, Rev. 4, United Nuclear Industries
4. H-1-45007, Sheet 37, 06/26/1985, COMPOSITE UNDERGROUND LINES, Rev. 4, United Nuclear Industries
5. H-1-45007, Sheet 38, 06/21/1985, COMPOSITE UNDERGROUND LINES, Rev. 3, United Nuclear Industries
6. Other11061996-1, 11/06/1996, Discovery Site, 100-N Reactor 105/109-N Cooling Water Effluent Underground Lines, Bechtel Hanford Inc.
7. WHC-SD-EN-TI-251, 06/01/1994, 100-N Area Technical Baseline Report, Rev. 0, Westinghouse Hanford Company

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

RCC Stewardship Information System  
Site Summary Report

04/27/2011

Site Code: 100-N-84

Site Classification Status: Accepted

Page 1

Site Names: 100-N-84, 100-N Miscellaneous Pipelines  
Site Type: Product Piping Start Date:  
Status: Inactive End Date:  
Decision Unit: 100-N Coordinates:  
Operable Unit: 100-NR-1 (E)  
Hanford Area: 100N (N)  
QC Code: QC Date: Washington State Plane

Cleanup Activities:

Cleanup Summary:

Contaminants of Concern:

Excavation Depth (m): Depth to GW below excavation (m):  
Excavation Area (sq. m): Material disposed at ERDF (metric tons):  
Site Revegetated (Yes/No):  
Site Downposted (Yes/No):  
Institutional Controls Required (Yes/No):  
Institutional Controls:

Historical Summary:

Site Description: This site consists of all miscellaneous pipelines in the 100-N Area that were identified during the Orphan Site Evaluation (OSE) process and not previously tied to an existing waste site. The site includes product pipelines, service water pipelines, sewers and associated features (manholes, storm drains, valve boxes, etc.). Helium lines, electrical conduit, telephone lines, electrical grounding lines (ground), control air supply, fire alarm systems were excluded from the site.

The site includes the following subsites:

- 100-N-84:1, 100-N Area Raw Water Pipelines
- 100-N-84:2, 100-N Area Fuel and Foam Pipelines
- 100-N-84:3, 100-N Area Filtered and Potable Water Pipelines
- 100-N-84:4, 100-N Area Steam and Condensate Pipelines
- 100-N-84:5, 100-N Area Sanitary Pipelines
- 100-N-84:6, 100-N Area Chemical and Process Sewer Pipelines
- 100-N-84:7, 100-N Area Unidentified and Other Miscellaneous Pipelines
- 100-N-84:8, 100-N Area Unidentified Pipelines within Planned Excavations
- 100-N-84:9, 100-N Area Active Raw Water Pipelines

Process Description: The miscellaneous pipelines supported the reactor operation and related support facilities throughout the N-Area. The process description is provided for each of the subsites in their respective writeups.

Location Description: The pipeline segments within the 100-N Area were mapped in the WCH Geographic Information System (GIS) database.

Associated Structures:

Site Comment: The pipelines are generally encased in horizontal pipe trays in many cases the utility lines are co-located within the concrete encasements. No evaluation has been conducted to determine if the co-located utility lines (electrical, telephone, instrumentation, etc) are active.

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

**RCC Stewardship Information System  
Site Summary Report**

04/27/2011

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Site Code: 100-N-84

Site Classification Status: Accepted

Page 2

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**Regulatory Info:**

**RCRA Permitting:**

TSD Number:

RCRA Part A Permit:

RCRA Part B Permit:

Closure Plan:

RCRA Closure Type:

Residual Waste:

**Other Permitting:**

2126/218 Permit:

NPDES:

Air Operating Permit  
Numbers():

**Remediation and Closure:**

Closure Contractor: WCH. Washington Closure Hanford, LLC

ESD Document:

Decision Document

Closure Document:

**Site References:**

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

RCC Stewardship Information System  
Site Summary Report

04/27/2011

Site Code: 100-N-84:2 Site Classification Status: Accepted Page 1

Site Names: 100-N-84:2, 100-N Area Fuel and Foam Pipelines  
 Site Type: Product Piping Start Date: 1963  
 Status: Inactive End Date: 1987  
 Decision Unit: 100-N Coordinates:  
 Operable Unit: 100-NR-1 (E)  
 Hanford Area: 100N (N)  
 QC Code: QC Date: Washington State Plane

Cleanup Activities:

Cleanup Summary:

Contaminants of Concern:

Excavation Depth (m): Depth to GW below excavation (m):  
 Excavation Area (sq. m): Material disposed at ERDF (metric tons):  
 Site Revegetated (Yes/No):  
 Site Downposted (Yes/No):  
 Institutional Controls Required (Yes/No):  
 Institutional Controls:

Historical Summary:

Site Description: The 100-N-84:2 subsite includes the fuel oil and foam underground pipelines in the 100-N Area.

Process Description: Two fuel oil unloading, storage and transfer systems were used in the 100-N Area.

Diesel oil unloaded from rail cars at the 166-N unloading station was transferred for storage to the one of four aboveground storage tanks within the 1715-N Building. The diesel oil was then transferred through a 10.2 cm (4-in) underground supply pipeline to the 184-N Building day tank or through 5.1 cm (2-in) and 10.2 cm (4-in) underground pipelines to the three 56,791 L (15,000 gal) day tanks outside of the 182-N building. The diesel fuel from the 182-N day tanks was used to support the 182-N and 181-N diesel oil systems.

Number 6 fuel oil (also known as Bunker C fuel oil) was unloaded from rail cars at the 1900-N unloading station and transferred to the 166-N Building for storage in a 5,204,941 L (1,375,000 gal) capacity aboveground storage tank. The No. 6 fuel oil was transferred through underground pipelines from 166-N to two 184-N fuel oil day tanks.

Foam fire suppression lines to support the diesel oil tanks and pipelines are collocated with the diesel oil pipelines near the 166-N Building.

The north west portions of the 100-N-84:2 pipelines are located within the 100-N-83 excavation footprint (H-1-89933).

The site includes eight drywells that were located along the west side of the fuel oil unloading trench. The drywells were composed of buried 30-inch open ended, concrete pipe designed to hold a 30-gallon drum. The drums collected drainage from hoses for railroad tank cars or truck unloading. When filled, the drum could be removed and emptied (121453).

Location Description: Fuel and foam pipelines are located to the north west and west side of the 105-N Reactor Building.

Associated Structures: 166-N Fuel Oil Pump House, 166-N Fuel Oil Unloading Station, and 1715-N Fuel Oil Storage Tanks 1-5.

Site Comment: 100-N-84:2 was recommended for cleanup by remove, treat, and dispose in August 2010 (152843).

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

**RCC Stewardship Information System  
Site Summary Report**

04/27/2011

Site Code: 100-N-84:2

Site Classification Status: Accepted

Page 2

**Regulatory Info:**

**RCRA Permitting:**

TSD Number:

RCRA Part A Permit:

RCRA Part B Permit:

Closure Plan:

RCRA Closure Type:

Residual Waste:

**Other Permitting:**

2126/218 Permit:

NPDES:

Air Operating Permit  
Numbers():

**Remediation and Closure:**

Closure Contractor: WCH. Washington Closure Hanford, LLC

ESD Document:

Decision Document

Closure Document:

**Site References:**

1. 121453, 06/06/2005, Facility Inspection Summary for the 166-N Fuel Oil Pump House, Unloading Station and Storage Tank, Washington Closure Hanford, LLC
2. 152843, 08/12/2010, 100-N-84:2, 100-N Fuel and Foam Pipelines Remove, Treat, and Dispose Report, Washington Closure Hanford, LLC
3. D4-100N-004, 08/15/2006, D4 Project Soils or Below Grade Structures Deferral Form (166-N & 1715-N), Washington Closure Hanford, LLC
4. H-1-89933, 03/23/2010, 100-N AREA - 100 N WASTE SITE REMEDIATION DESIGN - 100-N-63 EFFLUENT PIPELINES OVERALL PLOT PLAN, Rev. 1, Washington Closure Hanford, LLC

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

RCC Stewardship Information System  
Site Summary Report

04/27/2011

Site Code: 100-N-84:2

Site Classification Status: Accepted

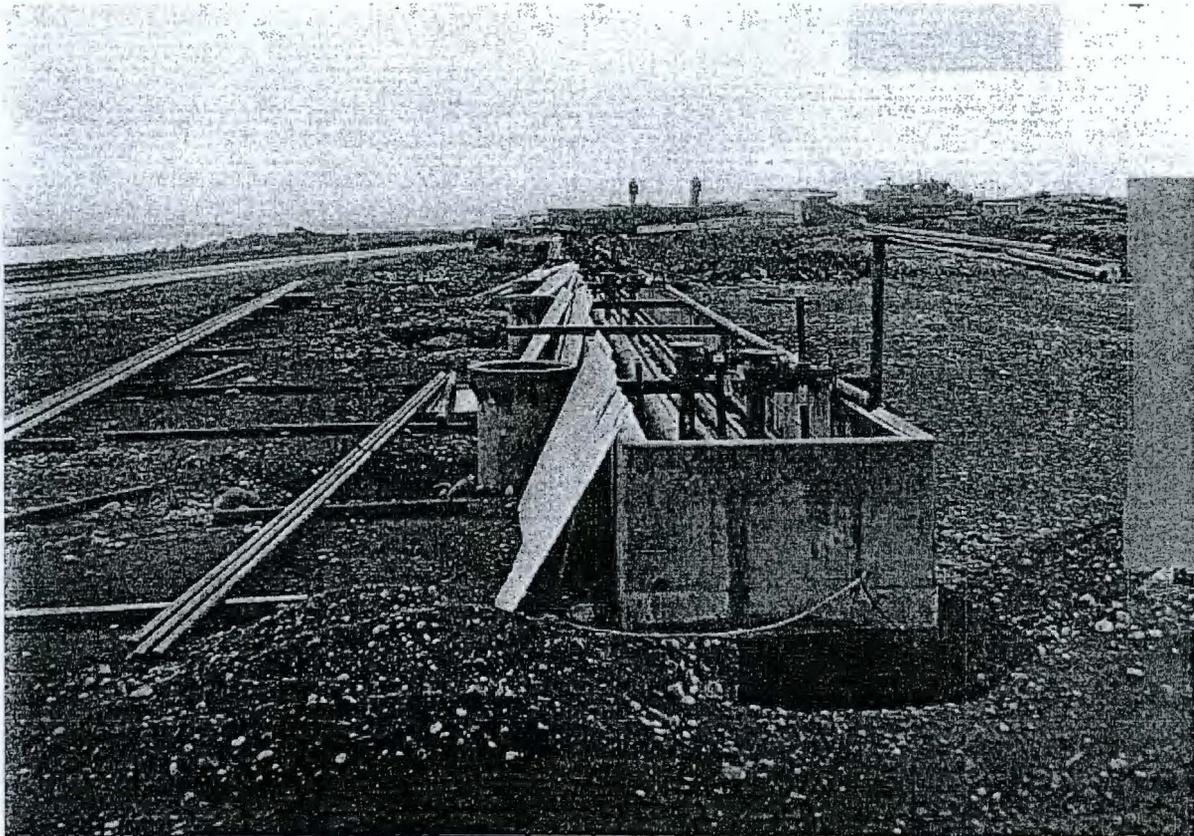
Page 3

Image:

Date Taken: 11/27/1961

Historical Photo Number: 7915-PHOTO

Description: 1908-N Fuel Oil and Diesel Oil Unloading Facility with french drains visible.



Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

RCC Stewardship Information System  
Site Summary Report

04/27/2011

Site Code: 100-N-84:3

Site Classification Status: Accepted

Page 1

Site Names: 100-N-84:3, 100-N Area Filtered and Potable Water Pipelines  
 Site Type: Product Piping Start Date: 1963  
 Status: Inactive End Date: 1987  
 Decision Unit: 100-N Coordinates:  
 Operable Unit: 100-NR-1 (E)  
 Hanford Area: 100N (N)  
 QC Code: QC Date: Washington State Plane

Cleanup Activities:

Cleanup Summary:

Contaminants of Concern:

Excavation Depth (m): Depth to GW below excavation (m):  
 Excavation Area (sq. m): Material disposed at ERDF (metric tons):  
 Site Revegetated (Yes/No):  
 Site Downposted (Yes/No):  
 Institutional Controls Required (Yes/No):  
 Institutional Controls:

Historical Summary:

Site Description: The 100-N Area filter and potable water pipelines includes: makeup water, filter water, demineralized water, and potable water pipelines.

Process Description: Raw water was supplied to 183-N Filter Plant Building for pretreatment and filtration. The 183-N filter plant supplied sanitary water to the entire 100-N Area. The plant also supplied filtered water to various buildings throughout the 100 N Area for use where treated water was not desirable or required. The term "treated water" herein refers to filtered water that had liquid alum (aluminum sulphate), separan (polyacrylamide) and liquid chlorine added during pretreatment. Demineralized water from 163-N Building was used as makeup water feed for the pretreatment system in 183-N building, while raw water was used for chemical mixing in the 182-N and 183-N Buildings prior to being added to the water. The chemical feed systems were maintained using proportional ratios with the water flow. Demineralized water was used to prevent mineral deposits what would foul pipeline systems.

Chlorine was added for the control of slime and algae, and may have been used to assist in coagulation, odor and iron removal problems. Alum was used as the principle coagulant during pretreatment.

100-N-84:3 pipelines located between the 109-N, 182-N, 163-N and the 183-N Buildings lay within the 100-N-61 water treatment pipeline removal excavation footprint (H-1-89932). This area was excavated and backfilled in 2008 through 2009. The north west portions of the 100-N-84:3 pipelines are located within the 100-N-63 excavation footprint (H-1-89933).

Location Description: Filtered water lines are located to the north and south of the 105-N reactor Building, while the potable water lines are located mainly to the southwest of the 105 reactor building to the 105-N support facilities.

Associated Structures:  
 Site Comment:

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

RCC Stewardship Information System  
Site Summary Report

04/27/2011

Site Code: 100-N-84:3

Site Classification Status: Accepted

Page 2

**Regulatory Info:**

**RCRA Permitting:**

TSD Number:

RCRA Part A Permit:

RCRA Part B Permit:

Closure Plan:

RCRA Closure Type:

Residual Waste:

**Other Permitting:**

2126/218 Permit:

NPDES:

Air Operating Permit  
Numbers():

**Remediation and Closure:**

Closure Contractor: WCH. Washington Closure Hanford, LLC

ESD Document:

Decision Document

Closure Document:

**Site References:**

1. H-1-89932, 03/23/2010, 100-N AREA - 100 N WASTE SITE REMEDIATION DESIGN - 100-N-61 WTR TREATMENT PIPELINES OVERALL PLOT PLAN, Rev. 1, Washington Closure Hanford, LLC
2. H-1-89933, 03/23/2010, 100-N AREA - 100 N WASTE SITE REMEDIATION DESIGN - 100-N-63 EFFLUENT PIPELINES OVERALL PLOT PLAN, Rev. 1, Washington Closure Hanford, LLC

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

RCC Stewardship Information System  
Site Summary Report

04/27/2011

Site Code: 100-N-84:5

Site Classification Status: Accepted

Page 1

Site Names: 100-N-84:5, 100-N Area Sanitary Pipelines  
Site Type: Product Piping Start Date: 1963  
Status: Inactive End Date: 1987  
Decision Unit: 100-N Coordinates:  
Operable Unit: 100-NR-1 (E)  
Hanford Area: 100N (N)  
QC Code: QC Date: Washington State Plane

Cleanup Activities:

Cleanup Summary:

Contaminants of Concern:

Excavation Depth (m): Depth to GW below excavation (m):  
Excavation Area (sq. m): Material disposed at ERDF (metric tons):  
Site Revegetated (Yes/No):  
Site Downposted (Yes/No):  
Institutional Controls Required (Yes/No):  
Institutional Controls:

Historical Summary:

Site Description: The 100-N Area sanitary pipelines includes: sanitary water and sewer, storm drains, and disposal field pipelines.

Process Description: The 100-N Area was serviced by ten separate sewer systems consisting of one cesspool, one lagoon, one septic tank with an associated tile field, two septic tanks with seepage pits, and five septic tanks associated with drain fields. The septic tanks, pits, cesspools and lagoon are identified as the 124-N-1 through 124-N-10 waste sites. Waste sites 124-N-5, 124-N-6, 124-N-7, 124-N-8 have been reclassified as "rejected". The feed and drainage pipelines associated with these waste sites are included in 100-N-84:5.

Location Description: The 100-N-84:5 pipelines are located throughout the 100-N Area's 100-NR-1 operable unit.

Associated Structures:

Site Comment:

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

**RCC Stewardship Information System  
Site Summary Report**

04/27/2011

Site Code: 100-N-84:5

Site Classification Status: Accepted

Page 2

**Regulatory Info:**

**RCRA Permitting:**

TSD Number:

RCRA Part A Permit:

RCRA Part B Permit:

Closure Plan:

RCRA Closure Type:

Residual Waste:

**Other Permitting:**

2126/218 Permit:

NPDES:

Air Operating Permit  
Numbers():

**Remediation and Closure:**

Closure Contractor: WCH. Washington Closure Hanford, LLC

ESD Document:

Decision Document

Closure Document:

**Site References:**

1. 0100N-WI-G0011, 08/26/2010, Work Instruction for Confirmatory Sampling of the 100-N-84:5, 100-N Area Sanitary Pipelines, Rev. 0, Washington Closure Hanford, LLC

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

**RCC Stewardship Information System  
Site Summary Report**

04/27/2011

Site Code: 100-N-84:6

Site Classification Status: Accepted

Page 1

Site Names:	100-N-84:6, 100-N Area Chemical and Process Sewer Pipelines		
Site Type:	Product Piping	Start Date:	1963
Status:	Inactive	End Date:	1987
Decision Unit:	100-N	Coordinates:	
Operable Unit:	100-NR-1		(E)
Hanford Area:	100N		(N)
QC Code:	QC Date:	Washington State Plane	

Cleanup Activities:

Cleanup Summary:

Contaminants of Concern:

Excavation Depth (m):	Depth to GW below excavation (m):
Excavation Area (sq. m):	Material disposed at ERDF (metric tons):
Site Revegetated (Yes/No):	
Site Downposted (Yes/No):	
Institutional Controls Required (Yes/No):	
Institutional Controls:	

Historical Summary:

**Site Description:** 100-N Area Chemical and Process Sewer Pipelines include: Chemical waste, DMV waste, drain cold, dummy disposal line, Miscellaneous chemical drain, radioactive drain, chlorine, flush, and sample pipelines.

**Process Description:** The 100-N-84:6 pipelines originate from the 109-N Heat Exchanger Building, the 105-N Reactor Building, the 163-N Demineralization Plant, 182-N High-Lift Pump House, 183-N Filter Plant, and 184-N Power House. Various chemicals were utilized in these buildings.

Phosphoric, ascorbic and citric acids, and potassium permanganate were used in the 109-N and 105-N Buildings decontamination processes (WHC-SP-0460).

Ammonium hydroxide, morpholine and lithium hydroxide were added to control cooling water pH. Hydrazine was added to reduce oxygen concentrations in cooling water (WHC-SP-0460). The addition of these chemicals and the core's cooling water system design allowed the water to be recycled instead of using raw water as a once through coolant (DOE/RL-90-22)

Sulfuric acid and sodium hydroxide from supply tanks in 163-N Building were primarily consumed in the demineralizer plant. A 93% sulfuric acid solution was used to regenerate the cation resin used at the 163-N Building while a 50% sodium hydroxide solution was used to regenerate the anion resin. The 8-in acid drain from 163-N connected into the 100N river channel discharge line to the Columbia River.

Sodium sulfite was used as a deoxygenizing chemical for low pressure filter water (182-N). Sodium dichromate was added to filtered water supply and raw water supply for cooling coils in the 105-N Reactor Building.

Radioactive drains at 109-N collect from the coolant systems, hot water quality laboratory, service bay hot shop. The 105-N and 109-N drains run to the 1301-N Liquid Waste Disposal Crb.

100-N-84:6 pipelines located between the 109-N, 182-N, 163-N and the 183-N Buildings lay within the 100-N-61 water treatment pipeline removal excavation footprint (H-1-89932). This area was excavated and backfilled in 2008 through 2009. A small portion of the 100-N-84:6 pipelines also lay within the adjacent 100-N-64 planned excavation (H-1-89934).

**Location Description:** The 100-N-84:6 waste site pipelines are centrally located between the 100-N Area process buildings (105-N, 109-N, 182-N, 183-N, 184-N, and 163-N).

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

RCC Stewardship Information System  
Site Summary Report

04/27/2011

Site Code: 100-N-84:6

Site Classification Status: Accepted

Page 2

Associated Structures:

Site Comment: 100-N-84:6 was recommended for cleanup by remove, treat, and dispose in August 2010 (152863).

Regulatory Info:

RCRA Permitting:

TSD Number:

RCRA Part A Permit:

RCRA Part B Permit:

Closure Plan:

RCRA Closure Type:

Residual Waste:

Other Permitting:

2126/218 Permit:

NPDES:

Air Operating Permit Numbers():

Remediation and Closure:

Closure Contractor: WCH. Washington Closure Hanford, LLC

ESD Document:

Decision Document

Closure Document:

Site References:

1. 152863, 08/16/2010, 100-N-84:6, 100-N Area Chemical and Process Sewer Pipelines Remove, Treat, and Dispose Report, Washington Closure Hanford, LLC
2. DOE/RL-90-22, 03/01/1996, RCRA Facility Investigation Corrective Measures Study Work for the 100-NR-1 Operable Unit, Hanford Site, Richland, Washington, Rev. 0, U.S. Department of Energy - Richland Operations Office
3. H-1-89932, 03/23/2010, 100-N AREA - 100 N WASTE SITE REMEDIATION DESIGN - 100-N-61 WTR TREATMENT PIPELINES OVERALL PLOT PLAN, Rev. 1, Washington Closure Hanford, LLC
4. H-1-89934, 03/23/2010, 100-N AREA - 100 N WASTE SITE REMEDIATION DESIGN - 100-N-64 COOLING WTR PIPELINES OVERALL PLOT PLAN, Rev. 1, Washington Closure Hanford, LLC
5. WHC-SP-0460, 06/01/1989, Chemical Spill Prevention Control and Countermeasures Plan 100 Areas, Westinghouse Hanford Company

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

RCC Stewardship Information System  
Site Summary Report

04/27/2011

Site Code: 100-N-84:7

Site Classification Status: Accepted

Page 1

Site Names: 100-N-84:7, 100-N Area Unidentified and Other Miscellaneous Pipelines  
Site Type: Product Piping Start Date: 1963  
Status: Inactive End Date: 1987  
Decision Unit: 100-N Coordinates:  
Operable Unit: 100-NR-1 (E)  
Hanford Area: 100N (N)  
QC Code: QC Date: Washington State Plane

Cleanup Activities:

Cleanup Summary:

Contaminants of Concern:

Excavation Depth (m): Depth to GW below excavation (m):  
Excavation Area (sq. m): Material disposed at ERDF (metric tons):  
Site Revegetated (Yes/No):  
Site Downposted (Yes/No):  
Institutional Controls Required (Yes/No):  
Institutional Controls:

Historical Summary:

Site Description: The 100-N-84:7 waste site pipelines include sections of various diameter pipelines located within the 100-NR-1 operable unit which could not be positively identified based on review of historical documentation. These pipelines include those described as unidentified or multitube.

Process Description:

Location Description: The 100-N-84:7 pipelines are located throughout the 100-N Area's 100-NR-1 operable in and around the 105-N Reactor Building.

Associated Structures:

Site Comment: An above ground features (N-213) was observed during the 100-N Orphan Site Evaluation to be co-located with the 100-N-84 pipelines (OSR-2009-0001). As a consequence this feature was dispositioned as part of 100-N-84.

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

**RCC Stewardship Information System  
Site Summary Report**

04/27/2011

Site Code: 100-N-84:7

Site Classification Status: Accepted

Page 2

**Regulatory Info:**

**RCRA Permitting:**

TSD Number:

RCRA Part A Permit:

RCRA Part B Permit:

Closure Plan:

RCRA Closure Type:

Residual Waste:

**Other Permitting:**

2126/218 Permit:

NPDES:

Air Operating Permit  
Numbers():

**Remediation and Closure:**

Closure Contractor: WCH. Washington Closure Hanford, LLC

ESD Document:

Decision Document

Closure Document:

**Site References:**

1. 0100N-WI-G0012, 02/01/2011, Work Instruction for Confirmatory Sampling of the 100-N-84:7, 100-N Unidentified and Other Miscellaneous Pipelines, Rev. 0, Washington Closure Hanford, LLC
2. OSR-2009-0001, 06/01/2009, 100-N Area Orphan Sites Evaluation Report, Rev. A, Washington Closure Hanford, LLC

Remediation and Verification Sampling for Eight Waste Sites within the 100-N South River Road Boundary

RCC Stewardship Information System  
Site Summary Report

04/27/2011

Site Code: 100-N-84:7

Site Classification Status: Accepted

Page 3

Image:

Date Taken: 5/27/2008

Historical Photo Number:

Description: OSE feature N-213 (looking north). The access lid was labeled as a confined space. Photograph is named 05272008-206-1240.



# Attachment 6

## TRI-PARTY AGREEMENT

Change Notice Number TPA-CN-465	TPA CHANGE NOTICE FORM	Date: May 31, 2011
Document Number, Title, and Revision: DOE/RL-2002-70, Rev. 2, Removal Action Work Plan for 100-N Area Ancillary Facilities		Date Document Last Issued: March 2006
Originator: Clay McCurley		Phone: 942-8928

**Description of Change:**

Add text to allow sediment to be removed from the floors of the 181-N, 181-NE and 1908-NE facilities prior to backfill with clean fill material.

Rudolph Guercia and Nina Menard agree that the proposed change  
**DOE** **Lead Regulatory Agency**  
 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*.

Add the following paragraph to the end of Section 4.6 on page 4-16:

Regarding removal of the sediment within the structures, divers will perform two vacuuming sweeps to remove sediment from the interior floor of each of the 181-N, 181-NE, and 1908-NE structures. The removed sediment from each structure will be pumped to a filtering system. Loose objects too large for vacuuming will be hand removed. A minimum of 12 hours will elapse between vacuuming sweeps to allow particulates to settle. The water will be returned to the inside of the structure. When the vacuuming process is complete, the sediment and filter media will be disposed at the ERDF.

**Note:** Include affected page number(s)

**Justification and Impacts of Change:**

Inclusion of this change will ensure completeness of removal actions at N Area.

**Approvals:**

DOE Project Manager N/A	6/7/11 Date	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved
EPA Project Manager	Date	<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved
Ecology Project Manager	6/5/11 Date	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved

# Attachment 7

**^WCH Document Control**

---

**From:** Saueressig, Daniel G  
**Sent:** Thursday, June 02, 2011 7:27 AM  
**To:** ^WCH Document Control  
**Subject:** FW: Trench N overlap with 126-K-1

Please provide a chron number. This email documents a regulatory agreement.

Thanks,

Dan Saueressig  
 FR Environmental Project Lead  
 Washington Closure Hanford  
 521-5326

-----Original Message-----

**From:** Guzzetti.Christopher@epamail.epa.gov [mailto:Guzzetti.Christopher@epamail.epa.gov]  
**Sent:** Wednesday, June 01, 2011 9:32 AM  
**To:** Zeisloft, Jamie  
**Cc:** Stubbs, Brian E; Teachout, Douglas B; Saueressig, Daniel G; Zeisloft, Jamie; Proctor, Megan L; Thompson, Wendy S  
**Subject:** RE: Trench N overlap with 126-K-1

I agree, sounds like you've captured everything we talked about.

Christopher J. Guzzetti  
 U.S. EPA Region 10  
 Hanford Project Office  
 Phone: (509) 376-9529  
 Fax: (509) 376-2396  
 Email: guzzetti.christopher@epa.gov

**From:** "Zeisloft, Jamie" <Jamie.Zeisloft@rl.doe.gov>  
**To:** "Thompson, Wendy S" <wsthoms@wch-rcc.com>, "Zeisloft, Jamie" <Jamie\_Zeisloft@rl.gov>, Christopher Guzzetti/R10/USEPA/US@EPA  
**Cc:** "Stubbs, Brian E" <bestubbs@wch-rcc.com>, "Saueressig, Daniel G" <dgsauere@wch-rcc.com>, "Teachout, Douglas B" <dbteacho@wch-rcc.com>, "Proctor, Megan L" <mlprocto@wch-rcc.com>  
**Date:** 06/01/2011 09:12 AM  
**Subject:** RE: Trench N overlap with 126-K-1

Sounds good to me.

**From:** Thompson, Wendy S  
**Sent:** Wednesday, June 01, 2011 9:04 AM  
**To:** Zeisloft, Jamie; Guzzetti, Christopher  
**Cc:** Stubbs, Brian E; Saueressig, Daniel G; Teachout, Douglas B; Proctor, Megan L  
**Subject:** Trench N overlap with 126-K-1

Jamie, Chris,

This email provides a summary of our discussion with you on May 25, 2011 concerning the

encroachment of the Trench N remediation (on the east side) into the footprint of the 126-K-1 gravel pit where inert debris from the gravel pit was encountered.

The 126-K-1 waste site was rejected in April 2009 since it was determined that inert debris disposed at the site was not a CERCLA hazardous substance and did not require remediation.

Removal of debris from the 126-K-1 site that was encountered during the Trench N remediation, and located outside of the 118-K-1 burial ground boundary is not required since the debris is inert and not associated with the burial ground.

The Trench N remediation will not go any further into the footprint of the 126-K-1 gravel pit; however, the footprint ("real estate") that was excavated within the 126-K-1 site will be included in the closeout sampling design for Trench N.

Please let me know if you have any questions concerning this information.

Thanks,  
Wendy

# Attachment 8

# Field Remediation 100-C-7



Activity ID	Activity Name	% Comp.	Rem Dur	Start	Finish	Resp	2011						
							3	30	06	13	20	27	04
<b>Field Remediation - Rob Cantwell</b>													
<b>100-BC Base - Dean Strom</b>													
<b>100-C-7 and 100-C-7:1</b>													
FR3700	Scrap Metal Loadout (3,255 TONS)	60%	16	27-Dec-10 A	07-Jul-11	Strom							
FR1010	100-C-7 Concrete Loadout (190,000 TONS)	90%	13	01-Feb-11 A	30-Jun-11	Strom							
FR3710	Potential Asbestos Contaminated Material (7,000 TONS)	50%	11	06-May-11 A	26-Jul-11	Strom							
FR3720	100-C-7 and 100-C-7:1 LDR Loadout (50,000 TONS)	0%	8	06-Jul-11*	19-Jul-11	Strom							
FR3730	100-C-7 and 100-C-7:1 ACL Loadout (360,000 TONS T&P)	0%	159	07-Jul-11	23-Apr-12	Strom							
FR3740	ERDF Can Loadout (80 ppm <ERDF CAN<LDR) 162,000 T...	0%	159	27-Jul-11*	10-May-12	Strom							
<b>100-C-7</b>													
FR1000	Excavate 100-C-7 (0-35 ft - 75,000 BCMs)	95%	5	27-Jan-11 A	16-Jun-11	Strom							
FR3650	Excavate 100-C-7 (36-50 ft - 7,700 BCMs) (optional)	0%	50	20-Jun-11	15-Sep-11	Strom							
FR1020	Prepare Verification Work Instruction 100-C-7	0%	64	31-Oct-11	28-Feb-12	Strom							
FR1030	Closure Sampling and Analysis 100-C-7	0%	26	29-Feb-12	12-Apr-12	Strom							
FR1040	Prepare Closure Docuemnt 100-C-7	0%	89	16-Apr-12	20-Sep-12	Strom							
FR1080	Backfill 100-C-7	0%	50	24-Sep-12	20-Dec-12	Strom							
FR1090	Revege 100-C-7	0%	8	26-Dec-12*	09-Jan-13	Strom							
<b>100-C-7:1</b>													
FR3550	Excavate 100-C-7:1 (0-85 ft - 445,000 BCMs)	54%	63	27-Jan-11 A	29-Sep-11	Strom							
FR3570	Prepare Verification Work Instruction 100-C-7:1	0%	64	03-Oct-11	30-Jan-12	Strom							
FR3580	Closure Sampling and Analysis 100-C-7:1	0%	26	31-Jan-12	15-Mar-12	Strom							
FR3590	Prepare Closure Docuemnt 100-C-7:1	0%	89	19-Mar-12	22-Aug-12	Strom							
FR3600	Backfill 100-C-7:1	0%	95	14-Jun-12	04-Dec-12	Strom							
FR3610	Revege 100-C-7:1	0%	8	05-Dec-12	18-Dec-12	Strom							
<b>600-253 - Pit 24</b>													
FR3620	Recontour 600-253 (Pit 24)	0%	10	26-Dec-12	14-Jan-13	Strom							
FR3630	Reveg 600-253 (Pit 24)	0%	6	10-Jan-13	21-Jan-13	Strom							

# Field Remediation 100-C-7



Activity ID	Activity Name	% Comp.	Rem Dur	Start	Finish	Resp	June 2011						2011
							3	30	06	13	20	27	
<b>Final FR Punch List</b>			48	22-Jan-13	16-Apr-13								
FR3690	Final FR Punch List (Remove Trailers, CTA, Lay-down Yard, Miscellaneous Items)	0%	48	22-Jan-13	16-Apr-13	Strom							
<b>Miscellaneous Restoration - Jon Fancher</b>			75	25-Jul-11	06-Dec-11								
<b>Miscellaneous Restoration</b>			75	25-Jul-11	06-Dec-11								
A1020	100-BC Rail Removal (Sage Tec)	0%	4	25-Jul-11*	28-Jul-11	Fancher							
A1470	Miscellaneous Restoration Fencing Removal (Sage Tec)	0%	20	17-Oct-11	17-Nov-11	Fancher							
A1540	Miscellaneous Restoration B/C Piles Removal (Sage Tec)	0%	8	21-Nov-11	06-Dec-11	Fancher							
<b>Mission Completion - Wayne Johnson</b>			442	28-Apr-11 A	22-Aug-13								
<b>Cultural Review - Jill Thomson</b>			71	28-Apr-11 A	13-Oct-11								
<b>100-B/C Miscellaneous Restoration</b>			71	10-May-11 A	13-Oct-11								
A1490	Cultural Review for 100-B/C Miscellaneous Restoration	19%	71	10-May-11 A	13-Oct-11	Mendez							
<b>Borrow Pit 24 HCRC #2011-100-057</b>			36	28-Apr-11 A	11-Aug-11								
A1500	Cultural Review for Pit 24	39%	36	28-Apr-11 A	11-Aug-11	Sharpe							
<b>100-C-7:1 Staging Area</b>			9	09-Jun-11	23-Jun-11								
A1510	Cultural Review for Staging Area for 100-C-7:1	0%	9	09-Jun-11*	23-Jun-11								
<b>End States/Final Closure - Jeff Lerch</b>			150	26-Nov-12	22-Aug-13								
<b>Turnover Package</b>			150	26-Nov-12	22-Aug-13								
A1450	Turnover Package Process	0%	150	26-Nov-12*	22-Aug-13	Cearlock							
<b>Remedial Action Report</b>			131	17-Dec-12	12-Aug-13								
A1460	Remedial Action Report Process	0%	131	17-Dec-12*	12-Aug-13	Cearlock							
<b>Contract Closure - Carol Johnson</b>			0	23-Sep-13	23-Sep-13								
<b>Contract Closure - Ella Feist</b>			0	23-Sep-13	23-Sep-13								
<b>Contract Scope Complete</b>			0	23-Sep-13	23-Sep-13								
A1480	100-BC Complete	0%	0		23-Sep-13								

**ACTIVITIES / ACTIONS SUPPORTING SCHEDULE**

- Continue to transport 100-C-7 and 100-C-7:1 concrete demo material to U-Canyon.
- Discovered Chromium contamination within the lay-back of 100-C-7:1.

**ISSUE / CONCERNS**

Milestones	Due Date	Status
PM - 31	6/30/2013	6/30/2013 F

MAY fly-over



~ 35++



# Attachment 9

**^WCH Document Control**

---

From: Saueressig, Daniel G  
 Sent: Thursday, May 26, 2011 6:02 AM  
 To: ^WCH Document Control  
 Subject: FW: Sampling ACL pile

Please provide a chron number, this email documents a regulatory agreement.

Thanks,

Dan Saueressig  
 FR Environmental Project Lead  
 Washington Closure Hanford  
 521-5326

-----Original Message-----

From: Buelow.Laura@epamail.epa.gov [mailto:Buelow.Laura@epamail.epa.gov]  
 Sent: Wednesday, May 25, 2011 3:54 PM  
 To: Strom, Dean N  
 Cc: Martinez, Charlene R; Saueressig, Daniel G; Lipinski, Richard S; Post, Thomas C; Post, Thomas C  
 Subject: RE: Sampling ACL pile

This looks like it accurately reflects our discussion from yesterday.

Laura Buelow, Environmental Scientist  
 U.S. Environmental Protection Agency  
 Hanford Project Office  
 309 Bradley Blvd, Suite 115  
 Richland, WA 99352  
 Phone: 509 376-5466  
 Fax: 509 376-2396  
 E-mail: buelow.laura@epa.gov

From: "Strom, Dean N" <dnstrom@wch-rcc.com>  
 To: "Post, Thomas C" <thomas.post@rl.doe.gov>, Laura Buelow/R10/USEPA/US@EPA, "Post, Thomas C" <Thomas\_C\_Post@rl.gov>, "Saueressig, Daniel G" <dgsauere@wch-rcc.com>, "Lipinski, Richard S" <RSLIPINS@wch-rcc.com>, "Martinez, Charlene R" <crmartin@wch-rcc.com>  
 Date: 05/25/2011 03:27 PM  
 Subject: RE: Sampling ACL pile

All,

Just to ensure we are all talking about the same concept, we will:

LDR  
 - pre-identify LDR material in the waste site  
 - remove the LDR material, stock pile it (single lift), and sample the highest concentrations to support waste profile & shipping

Non-LDR, ERDF Container

- pre-identify material as above 80 ppm and below LDR, in the waste site  
 - remove and staged in lifts

- soil from the lift will be collected, the material from each lift will be used to create a representative sample for the pile
- the target size of the pile is approximately 500 containers

**Truck & Pup**

- pre-identify material as below 80 ppm, in the waste site
- soil from the lift will be collected, the material from each lift will be used to create a representative sample for the pile
- the target size of the pile is approximately 500 containers

Did I miss anything? please offer suggestions.

Thanks

-----Original Message-----

From: Post, Thomas [mailto:Thomas.Post@rl.doe.gov]  
Sent: Wednesday, May 25, 2011 11:07 AM  
To: Buelow.Laura@epamail.epa.gov; Post, Thomas C; Strom, Dean N; Saueressig, Daniel G  
Subject: RE: Sampling ACL pile

I'm fine with the approach as well.

Thanks.

Tom

-----Original Message-----

From: Buelow.Laura@epamail.epa.gov [mailto:Buelow.Laura@epamail.epa.gov]  
Sent: Wednesday, May 25, 2011 10:16 AM  
To: Post, Thomas C; Strom, Dean N; Saueressig, Daniel G  
Subject: Sampling ACL pile

I ran our discussion about the ACL pile past Dave Einan this morning to make sure he didn't have any concerns from the ERDF side, and he thought our agreed to sampling approach for this ACL pile was fine.

Laura Buelow, Environmental Scientist  
U.S. Environmental Protection Agency  
Hanford Project Office  
309 Bradley Blvd, Suite 115  
Richland, WA 99352  
Phone: 509 376-5466  
Fax: 509 376-2396  
E-mail: buelow.laura@epa.gov

# Attachment 10

**^WCH Document Control**

**From:** Saueressig, Daniel G  
**Sent:** Thursday, June 09, 2011 10:47 AM  
**To:** ^WCH Document Control  
**Subject:** FW: MODIFICATION TO THE 100-B AIR MONITORING PLAN

Please provide a chron number, this email documents a regulatory agreement.

Thanks,

Dan Saueressig  
FR Environmental Project Lead  
Washington Closure Hanford  
521-5326

-----Original Message-----

**From:** Buelow.Laura@epamail.epa.gov [mailto:Buelow.Laura@epamail.epa.gov]  
**Sent:** Thursday, June 09, 2011 10:35 AM  
**To:** Post, Thomas C  
**Cc:** Saueressig, Daniel G  
**Subject:** RE: MODIFICATION TO THE 100-B AIR MONITORING PLAN

I concur also.

Laura Buelow, Environmental Scientist  
U.S. Environmental Protection Agency  
Hanford Project Office  
309 Bradley Blvd, Suite 115  
Richland, WA 99352  
Phone: 509 376-5466  
Fax: 509 376-2396  
E-mail: buelow.laura@epa.gov

**From:** "Post, Thomas" <Thomas.Post@rl.doe.gov>  
**To:** "Saueressig, Daniel G" <dgsauere@wch-rcc.com>, Laura Buelow/R10/USEPA/US@EPA  
**Date:** 06/09/2011 10:29 AM  
**Subject:** RE: MODIFICATION TO THE 100-B AIR MONITORING PLAN

Dan,

I've reviewed and concur.

Tom

---

**From:** Saueressig, Daniel G  
**Sent:** Thursday, June 09, 2011 10:07 AM  
**To:** Buelow.Laura@epamail.epa.gov; Post, Thomas  
**Subject:** MODIFICATION TO THE 100-B AIR MONITORING PLAN

Hi Laura/Tom, we're anticipating that we may encounter tritium contaminated soil in the rewetted zone during remediation of 100-C-7:1 due to the known presence of tritium contamination in the groundwater near our excavation. A TEDE calculation (attached) was prepared and was based on analogous soil data from 118-B-1 (BC tritium source) and

documents a low TEDE to the MEI (9.89E-03).

I'd like to request your approval to add this source to the existing air monitoring plan for 100-B/C.

Thanks and give me a call if you have any question.

Dan Saueressig  
FR Environmental Project Lead  
Washington Closure Hanford  
521-5326

<< File: 0100C-CA-V0041.pdf >>

# Attachment 11

618-10 Trench Remediation  
618-11 Non-intrusive Characterization

6/9/11 Status

**Current Activities**

618-11 Non-intrusive Characterization

- Continued VPU radiological characterization activities:
  - characterized 34 VPUs to date
  - the highest "hot spots" encountered to date are 2.4 R/hr, 2.2 R/hr, 2 R/hr, 1.9 R/hr, 1.3 R/hr, 1.1 R/hr, and 1 R/hr (gross gamma) with all others in the mR/hr range

618-10 Trench Remediation

- Site infrastructure: Continued testing of water system.
- Continued excavation of the burial ground on the north and south excavation fronts. Excavated a large steel tank from the north excavation.
- As of June 1 we have excavated 24,400 BCMs.
- Continued setup of 2nd Drum Penetration Facility.

**Monthly Look Ahead**

618-11 Non-intrusive Characterization

- Complete VPU radiological characterization activities

618-10 Trench Remediation

- Continue excavation of waste trenches
- Complete setup of 2nd Drum Penetration Facility.

Stainless Steel Drum

Misc debris  
• wire mesh, fencing  
• wood posts

Large Steel Tank



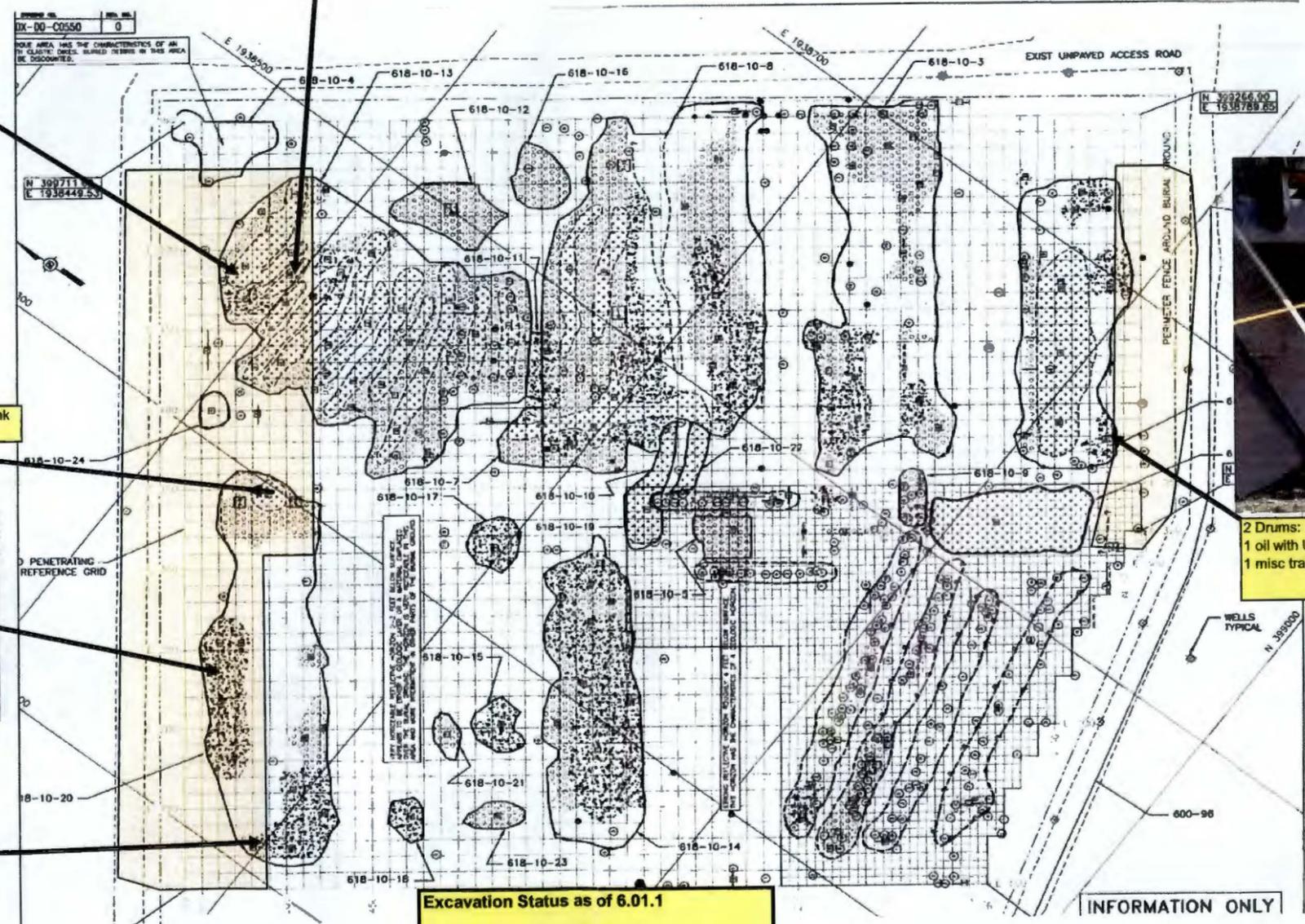
Numerous bottles encountered  
• Container of ion exchange resin wrapped in lead



Drums:  
1 powder  
2 concrete



2 Drums:  
1 oil with Uranium  
1 misc trash



Excavation Status as of 6.01.1  
Total volume excavated = 24,400 BCM  
Key Performance Parameter (32,000 BCM) = 76%

INFORMATION ONLY

# Attachment 12

## Environmental Protection Mission Completion Project

June 9, 2011

### Orphan Sites Evaluations

- Continue drafting of the 100-F/IU-2/IU-6 Area – Segment 4 orphan sites evaluation summary report. Field visits were conducted with Ecology and EPA on May 16, and 25, 2011, respectively, to review several features.
- Meetings to review the findings of the 100-F/IU-2/IU-6 Area – Segment 5 orphan sites process will be scheduled for July.

### Long-Term Stewardship

- The consolidated (CHPRC, MSA, and WCH) 100-F/IU-2/IU-6 - Segment 1 turnover and transition package to support transition of interim surveillance and maintenance responsibilities between contractors is currently under RL review.
- The 100-F/IU-2/IU-6 Segment 1 Interim Remedial Action Report was submitted to RL on 5/24/11.
- Continue with the development of the remedial action report for the 100-BC-1 OU.

### River Corridor Baseline Risk Assessment

- The Draft C Ecological Risk Assessment report (Volume I) is being finalized to reflect RL pre-concurrence review comments.
- The Rev 0 Human Health Risk Assessment report (Volume II) is being finalized to reflect EPA and Ecology review comments.

### Remedial Investigation of Hanford Releases to Columbia River

- The Draft A screening level ecological risk assessment is being developed to reflect RL comments.
- RL review of the Decisional Draft Human Health risk assessment was initiated on May 19. Comments have been requested by June 23.

### Document Review Look-Ahead

Document	Regulator Review Start	Duration
100-F/IU-2/IU-6 Area – Segment 1 Interim Remedial Action Report	May 25, 2011	30 days
100-BC-1 Operable Unit Interim Remedial Action Report	July 2011	30 days
100-F/IU-2/IU-6 - Segment 4 Orphan Sites Evaluation Report	July 2011	30 days
River Corridor Baseline Risk Assessment – Ecological Report (DOE/RL-2007-21, Volume I)	September 2011	45 days
Columbia River Component Risk Assessment – Screening Level Ecological Risk Assessment Report (DOE/RL-2010-117, Volume I)	September 2011	45 days
Columbia River Component Risk Assessment – Baseline Human Health Risk Assessment Report (DOE/RL-2010-117, Volume II)	September 2011	45 days

# Attachment 13

CERCLA Five-Year Review Action Items

6/9/2011

Point of Contact	Action No.	Deliverables	Due Date	Status
<b>100 Area</b>				
WCH/RL	1-3	Reassess and resubmit to EPA the protectiveness determinations for operable units 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-HR-3, 100-IU-2, 100-IU-6, 100-KR-1, 100-KR-2, 100-KR-4, 100-NR-1, 300-FF-1 and 300-FR-2 using new information from the River Corridor Baseline Risk Assessment and submit to EPA an addendum with, as appropriated, updated Protectiveness Determinations, Issues, and Follow-Up Actions.	2/15/2008	This action was to be coordinated with the finalization of the Risk Assessment. A Draft B Risk Assessment is now projected to be submitted early 2010.