

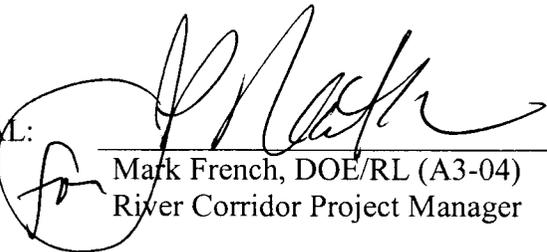
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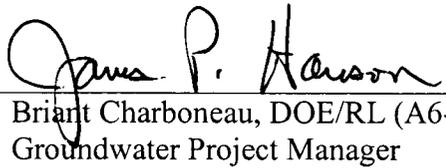
## 100/300 AREA UNIT MANAGER MEETING ATTENDANCE AND DISTRIBUTION

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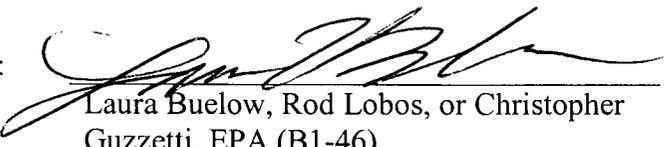
100/300 AREA UNIT MANAGERS MEETING  
APPROVAL OF MEETING MINUTES

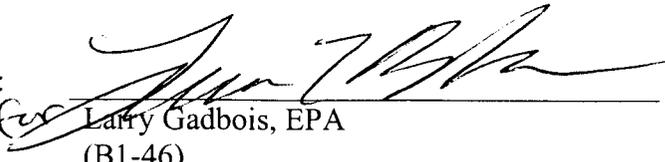
June 14, 2012

APPROVAL:  Date 6/14/12  
Mark French, DOE/RL (A3-04)  
River Corridor Project Manager

APPROVAL:  Date 6/14/12  
Briant Charboneau, DOE/RL (A6-33)  
Groundwater Project Manager

APPROVAL:  FOR Date 6/14/12  
Nina Menard, Ecology (H0-57)  
Environmental Restoration Project  
Manager

APPROVAL:  Date 6-14-12  
Laura Buelow, Rod Lobos, or Christopher  
Guzzetti, EPA (B1-46)  
100 Area Project Manager

APPROVAL:  Date 6.14.12  
Laura Buelow for 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****May 10, 2012****ADMINISTRATIVE**

- Next Unit Manager Meeting (UMM) – The next meeting will be held June 14, 2012, 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 April 12, 2012, 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)**

An Executive Session was not held by RL, EPA, and Ecology prior to the May 10, 2012, UMM.

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

Attachment 1 provides status and information for groundwater. Attachment 2 provides status and information for Field Remediation activities. No issues were identified and no agreements or action items were documented.

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

Attachment 1 provides status and information for groundwater. Attachment 2 provides status and information for Field Remediation activities. No issues were identified and no agreements or action items were documented.

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

Attachment 1 provides status and information for groundwater. Attachment 2 provides status and information for Field Remediation activities. Attachment 3 provides status and information for D4/ISS activities at 100-N. No issues were identified and no action items were documented.

Agreement 1: Attachment 4 provides a 100-N Ancillary Facilities Removal Action Sampling Determination Form for Building 116-N.

Agreement 2: Attachment 5 provides a 100-N Ancillary Facilities Removal Action Sampling Determination Form for Buildings 117-N and 117-NVH.

Agreement 3: Attachment 6 provides a 100-N Ancillary Facilities Removal Action Sampling Determination Form for Buildings 163-N, 183-N, 183-NA, 183-NB, and 183-NC.

Agreement 4: Attachment 7 provides a 100-N Ancillary Facilities Removal Action Sampling Determination Form for Building 1926-N.

Agreement 5: Attachment 8 provides a 100-N Ancillary Facilities Removal Action Sampling Determination Form for Building 1903-N (aka WIDS 124-N-4).

Agreement 6: Attachment 9 provides a 100-N Ancillary Facilities Removal Action Sampling Determination Form for Buildings 184-N, 184-NA, 184-NB, 184-NC, 184-NE, 184-NF.

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

Attachment 1 provides status and information for groundwater. Attachment 2 provides status and information for Field Remediation activities. No issues were identified and no agreements or action items were documented.

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

Attachment 1 provides status and information for groundwater. Attachment 2 provides status and information for Field Remediation activities. No issues were identified and no agreements or action items were documented.

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

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

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

Attachment 1 provides status and information for groundwater. Attachment 10 provides status of the 300 Area Closure Project activities. 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 11 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. No issues were identified and no agreements or action items were documented.

# Attachment A

100/300 AREA UNIT MANAGER MEETING  
ATTENDANCE AND DISTRIBUTION  
May 10, 2012

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# Attachment B

100/300 Area UMM  
Action List  
May 10, 2012

Open (O)/ Closed (X)	Action No.	Co.	Actionee	Project	Action Description	Status
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:
O	100-192	RL	J. Hanson	100-D	DOE will provide Ecology with a briefing on the wells damaged by the flooding at 100-D.	Open: 12/8/11; Action:
O	100-193	RL	M. Thompson	100-N	At the next UMM, DOE will discuss the potential sources of total organic carbon detected at well 199-N-165 down-gradient from the 1324-N/NA treatment, storage, and/or disposal units.	Open: 1/12/12; Action:
O	100-194	RL	M. Thompson	100-K	DOE will provide EPA and Ecology with the references to support the assumptions regarding the number of years required for habitat reestablishment.	Open: 4/12/12; Action:

100/300 Area Unit Manager Meeting  
May 10, 2012  
Washington Closure Hanford Building  
2620 Fermi Avenue, Richland, WA 99354  
Room C209; 2:00p.m.

**Administrative:**

- Approval and signing of previous meeting minutes (April 12, 2012)
- Update to Action Items List
- Next UMM (6/14/2012, Room C209)

**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/Elwood Glossbrenner)
- 100-N Area (Joanne Chance, Rudy Guercia, Mike Thompson)
- 100-K Area (Jim Hanson, Jamie Zeisloft, Tom Teynor)
- 100-B/C Area (Greg Sinton, Tom Post)
- 300 Area - 618-10/11 exclusively (Jamie Zeisloft)
- 300 Area (Mike Thompson/Rudy Guercia)
- Regulatory Closeout Documents Overall Schedule (John Neath, Mike Thompson)
- Mission Completion Project (John Sands)

**Special Topics/Other**

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

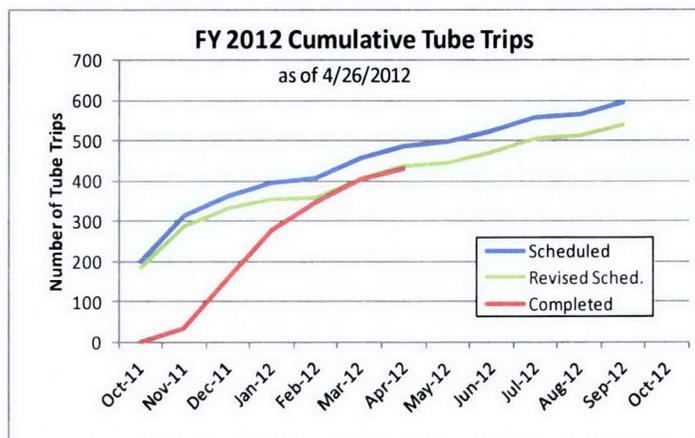
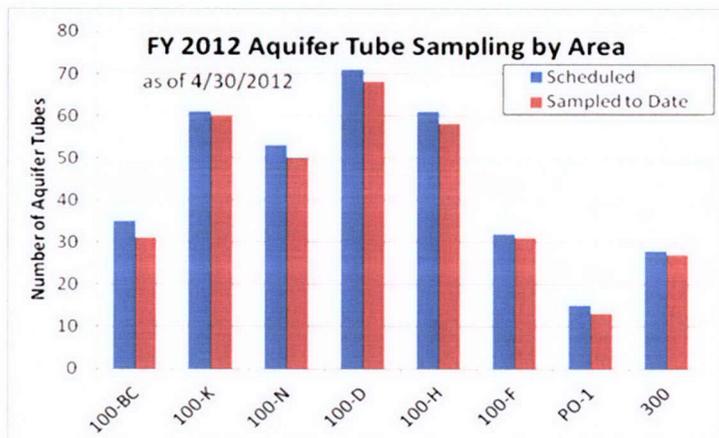
**Adjourn**

# Attachment 1

## 100/300 Areas Unit Managers Meeting May 10, 2012

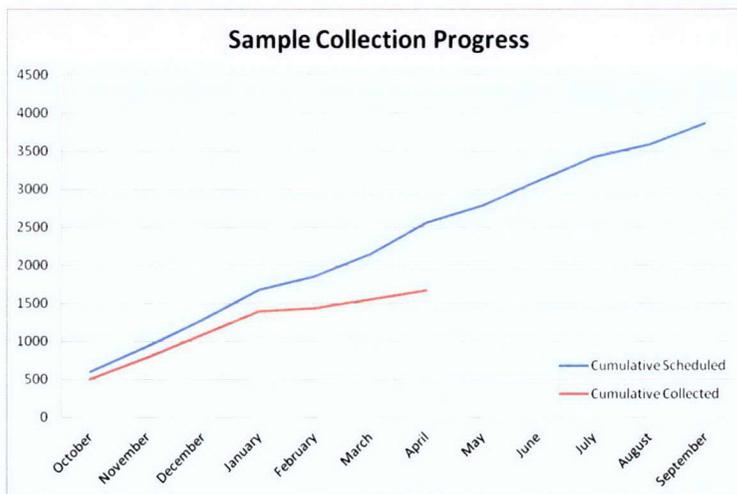
### General information on Aquifer Tube Sampling

Aquifer tube sampling progressed in April (29 tubes scheduled and 25 collected). The remainder of the year includes quarterly sampling of some 100-D tubes near ISRM, quarterly and monthly sampling in 100-N, and a few quarterly tubes in 100-K. The graph on the left shows numbers of individual aquifer tubes scheduled and sampled in each shore segment. The graph on the right shows the total number of aquifer tube sampling *trips* (some tubes are sampled multiple times in a year). Some tube sampling trips have been cancelled (e.g., missed monthly samples; plugged tubes needing maintenance before attempting next quarter). The green line on the graph on the right shows the revised schedule.



### General information on Groundwater Sampling

The wells completed successfully are reported in a table on the last page of this handout. April sample progress was lower than expected due to a stop work placed by samplers during the last two weeks of March. This stop work was related to well access (configuration management/ industrial hygiene concerns). The stop work was resolved the first week in April. The table below presents the overall completeness of scheduled vs. collected samples for each groundwater sampling program. Recovery actions include the samplers working overtime, and canceling/postponing “extra” sampling. Additional sampling teams are being moved from aquifer tube samples not that the aquifer tube schedule has recovered.



Sampling Program	Cumulative % Complete
AEA	79%
CERCLA	84%
DOH	65%
RCRA	94%
WAC Required	87%
Other	38%

**100/300 Areas Unit Managers Meeting  
May 10, 2012**

**Hexavalent Chromium Groundwater Plumes in 100 Area – David Dooley / Lorna Dittmer**

(M-016-110-T01, DOE shall take actions necessary to contain or remediate hexavalent chromium groundwater plumes in each of the 100 Area NPL operable units such that ambient water quality standards for hexavalent chromium are achieved in the hyporheic zone and river water column.)

*Schedule Status* – On schedule.

- See attached.

**100-FR-3 Groundwater Operable Unit – Bert Day / 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* – *Behind schedule. The new planned delivery date for the 100-F/IU Draft A RI/FS Report to the regulators is currently being re-evaluated based on 100-K comments and inclusion of Coal Ash areas.*

- CERCLA Process Implementation:
  - RI/FS report development continues. The team held the monthly status workshop with EPA on May 3, 2012. The workshop focused on draft groundwater model results, exposure point concentration approach and application across the remediation process, and technology/alternatives discussions. The next meeting is tentatively scheduled for June 19, 2012.
  - Known coal ash sites are being evaluated through the RI/FS.

**100-HR-3 Groundwater Operable Unit – Bert Day / John Smoot**

(M-15-70-T01, 11/24/2011, 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* – *Behind schedule. The new planned delivery date for the 100-D/H Draft A RI/FS Report to the regulators is currently being re-evaluated based on 100-K comments and inclusion of Coal Ash areas.*

- Conducted status meeting with Ecology on 4/10 to review modeling history and well realignments with monthly scheduled meetings planned for the 4<sup>th</sup> Thursday of every month starting in May.
- Well Realignments: Fifteen wells within 100-HR-3 will potentially be impacted due to continued remediation at select waste sites. The schedule for these activities is in flux and potentially will not occur until FY 2013.
  - 100-D-100 Area: Received approval from Ecology for the decommissioning of 8 wells at 100-D in the vicinity of the 100-D-100 waste site.
  - 100-H-28 Area: The decommissioning of 7 wells at 100-H in the vicinity of the 100-H-28 waste site is being coordinated between PRC and WCH. The 199-H4-14 injection well and 199-H4-4 extraction well form an important line of protection for the Columbia River in the zone east and south of the 183-H Solar Evaporation Basin.

**100/300 Areas Unit Managers Meeting  
May 10, 2012**

- **CERCLA Process Implementation:**
  - RI/FS: The team completed incorporation of RL comments on the RI/FS report as well as the responses to applicable EPA 100-K comments. Internal review is scheduled in May.
  - Proposed Plan: Team is drafting Proposed Plan based on current 300 Area / 100K format.
  - Known coal ash sites are being evaluated through the RI/FS.
- **Remedial Actions:**
  - Both DX and HX pump and treat system are operating normally. April 1 through April 30, 2012 performance:
    - The systems treated 54 million gallons.
    - The system removed 52 kg of hexavalent chromium

**100-NR-2 Groundwater Operable Unit – Marty Doornbos / Deb Alexander**

(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 (petroleum remediation) and will identify a preferred alternative in accordance with CERCLA requirements.

*Schedule Status – Behind schedule. The new planned delivery date for the 100-NR-2 OU Draft A RI/FS Report to the regulators is currently scheduled for mid-December to accommodate comments from the 100-K documents.*

- **RI/FS Activities**
  - Work continues on preparation of the RI/FS report. A preliminary groundwater flow model of the 100-N area has been completed and is based on the 100 Area integrated model. Contaminant transport modeling of the primary contaminants (Sr-90, nitrate, and diesel) is underway. The conceptual site model is being updated to incorporate the new data from the RI. The FS is underway with the preliminary screening of technologies and early identification of remedial alternatives.
  - A meeting was held with Ecology on April 11, 2012 to discuss the analytical results from the RI/FS data collection. The next Ecology meeting will discuss the preliminary technology screening and early identification of remedial alternatives.
  - The 100 Areas integrated model was used to prepare a 100-N specific model. The site-specific model is based on the current 100 Area groundwater model and incorporates the hydrologic and geologic conditions, geochemical conditions, and contaminant distribution from 100-N. The new model incorporates hydrologic and geologic conditions, and geochemical conditions, and new and historic data from previous models and the new RI/FS data. The model will also take into consideration the apatite permeable reactive barrier as installed. Preliminary contaminant transport runs (e.g. nitrate) of the model have begun.
  - GW sampling of the new RI/FS wells was completed on April 26, 2012.
- **Performance Monitoring - Apatite Permeable Reactive Barrier (PRB)**
  - Next monitoring event is scheduled to begin May 6, 2012 to coincide with the high river stage and will include the entire 300 m [984 ft] treated portion of the apatite PRB. The sampling will include the following 12 monitoring wells and 10 aquifer tubes:
    - 199-N-96A, 199-N-347, 199-N-348, 199-N-349, 199-N-123, 199-N-146, 199-N-122, 199-N-147, 199-N-350, 199-N-351, 199-N-352, and 199-N-353.
    - 116mArray-1A, 116mArray-2A, APT-1, 116mArray-3A, 116mArray-4A, NVP2-116.0m, 116mArray-6A, APT-5, C7881 (replacement for 116mArray-7A), and 116mArray-8A.
  - When data from this sampling event are available, the results will be presented in the UMM.

**100/300 Areas Unit Managers Meeting  
May 10, 2012**

- RCRA Monitoring – 1324-N
  - (No change from previous month). Possible sources for the TOC exceedance at 1324-N/NA were discussed with Ecology on March 28, 2012. Sampling of the five RCRA wells (199-N-165, 199-N-71, 199-N-72, 199-N-73, and 199-N-74) for the unit was completed on March 14, 2012. One well (199-K-152) remains to be sampled. This well is part of the active KX P&T system and sampling was delayed due to sample access. An expanded analyte list is included for the groundwater collected from these wells, which includes: Field parameters (pH, specific conductance, temperature, dissolved oxygen, and oxidation-reduction potential), Metals (filtered and unfiltered), Anions, VOCs, SVOAs, PAHs, Total coliform, TPH-Diesel and Gasoline, and Alkalinity. A meeting will be scheduled with Ecology to discuss these results once they are available.

**100-KR-4 Groundwater Operable Unit – Bert Day / Chuck Miller**

- CERCLA Process Implementation:
  - Continue updates on the RI/FS report and Proposed Plan, currently in review with RL updates. Coordinated remaining project delivery schedule with EPA indicating delivery to EPA mid/late May.
- Remedial Actions:
  - Cultural Resource Monitoring: The April monthly monitoring of the KR4 Pump and Treat system was conducted on April 27, 2012. This month's participants included Leah Joseph Selatsee (Wanapum) and Keith Mendez (CH2M HILL). No evidence of off road driving was identified.
  - KR-4, KX, and KW pump and treat systems are operating normally. The KW system continues operating on the SIR-700 resin. Based on approval of TPA-CN-505, the remaining 100-KR-4 systems are being transitioned to the SIR-700 resin. Currently, KX is operating with SIR-700. The acid tank was installed at KR-4 and is ready to load SIR-700 at the next required resin change. April 1 through 30, 2012 performance:
    - The systems treated 33 million gallons.
    - The system removed 4.2 kg of hexavalent chromium
- Modifications & Expansions
  - ResinTech SIR-700 Test:
    - KW P&T continues to operate well with SIR-700 resin; the test has been successful and all activities are complete and the report (SGW-51721) will be issued in early May. The system currently is injecting into the aquifer ranging from pH 6 to 6.1. The natural pH of the aquifer is around 7.5.
    - The Test Report documents the test, responds to the objectives, and recommends use of SIR-700 resin at KX and KR4 without pH adjustments prior to injection.
- Issues and Conditions Observed
  - None to report in April.

**100-BC-5 Groundwater Operable Unit – Bert Day/ 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.)

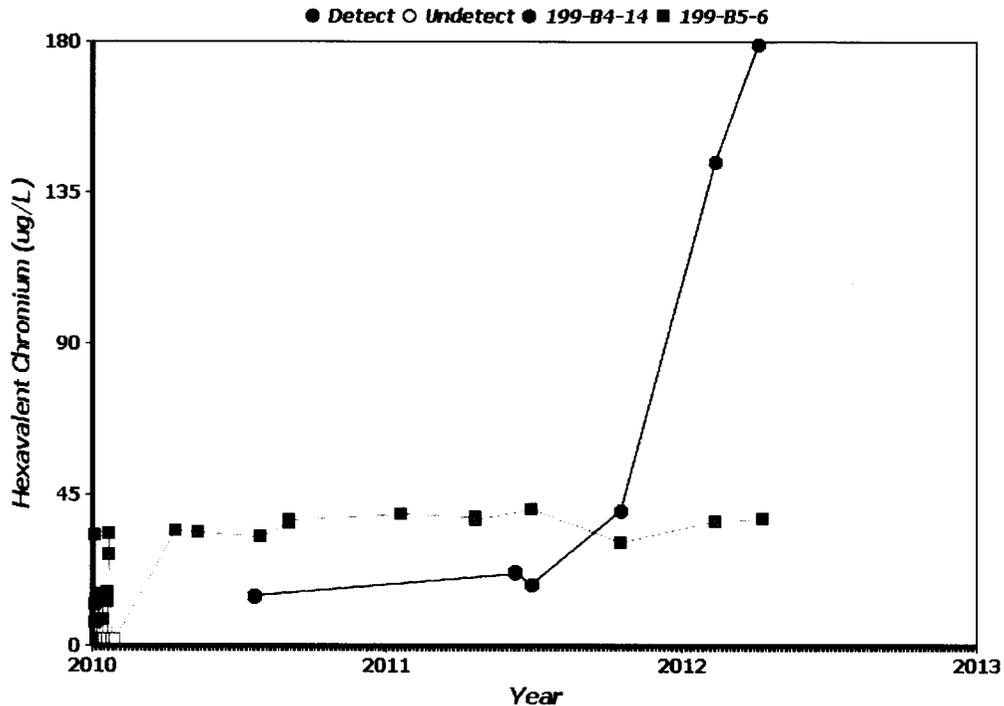
*Schedule Status – Behind schedule. The new planned delivery date for the 100-BC Draft A RI/FS Report to the regulators is currently being re-evaluated based on 100-K comments and inclusion of Coal Ash areas.*

**100/300 Areas Unit Managers Meeting  
May 10, 2012**

- CERCLA Process Implementation:
  - RI/FS report development continues. The team held the monthly status workshop with EPA on May 3, 2012. The workshop focused on draft groundwater model results, exposure point concentration approach and application across the remediation process, and technology/alternatives discussions. The next meeting is tentatively scheduled for June 19, 2012.
  - Known coal ash sites are being evaluated through the RI/FS.
- RL and PNNL are working with EPA, CHPRC, and WCH to perform groundwater studies in the 100-C-7:1 excavation. A kickoff meeting was held on April 25 to discuss the work, which involves (1) installing aquifer tubes into the top 1 to 2 meters of the aquifer through the base of the excavation and sampling them periodically through the summer; (2) installing direct push points and perform limited hydraulic testing and a tracer test; (3) collecting hydraulic head data from existing automated water-level recorders; and possibly (4) direct-push vertical profiling of Cr(VI) in the upper aquifer. The tentative schedule is to install the aquifer tubes in May, followed by installation of the tracer network in June.
- Monitoring and Reporting
  - CHPRC, RL, and EPA have been discussing a revision to the routine groundwater monitoring sampling and analysis plan (SAP). The revision will add the new RI wells to the routine SAP, and adjust sampling frequency to what is appropriate for current conditions.
  - Eight wells were sampled as scheduled in April. Hexavalent chromium data from the sampling event have been loaded into HEIS. Data were on trend except as noted below.
  - The Cr(VI) concentration in well 199-B4-14, the shallow well downgradient of 100-C-7, increased from 144 µg/L in February to 179 µg/L in a sample collected April 5, 2012. The concentration in adjacent, deeper well 199-B5-6 remained on a lower trend (37.6 µg/L in April). The wells are scheduled for monthly sampling for hexavalent chromium and tritium. Tritium concentrations did not change significantly in February; April tritium data were not yet received.

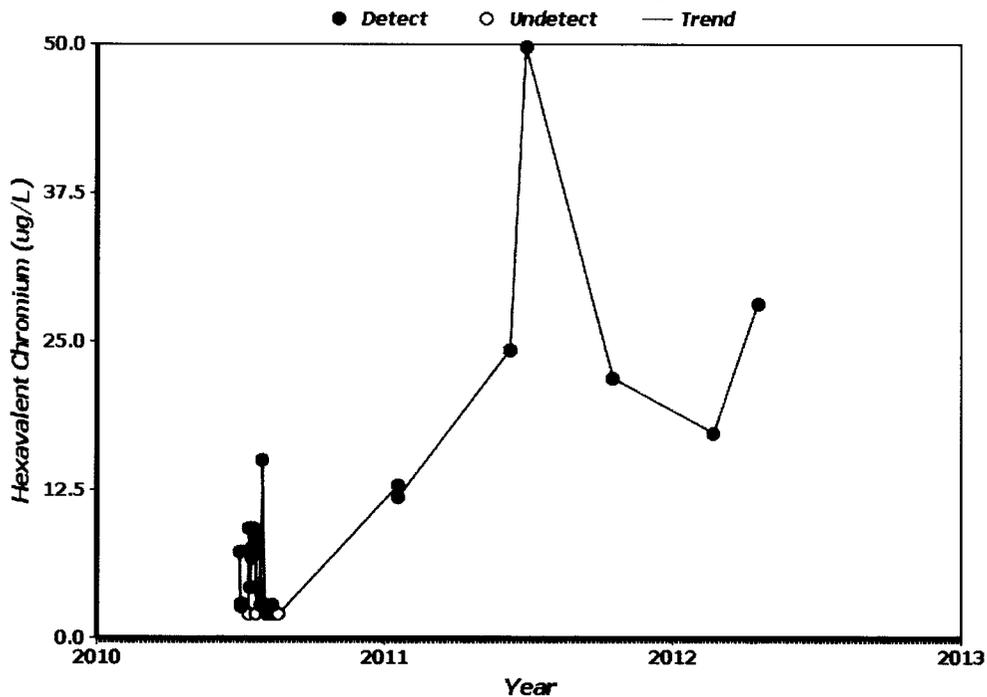
**100/300 Areas Unit Managers Meeting  
May 10, 2012**

**199-B4-14, 199-B5-6  
Hexavalent Chromium (ug/L)**



Hexavalent chromium increased in well 199-B8-9 (near C Reactor) from 17.3 µg/L in February to 28.1 µg/L in April. The maximum in this well was 49.7 µg/L in June 2011. The well is sampled quarterly.

**199-B8-9  
Hexavalent Chromium (ug/L)**



**100/300 Areas Unit Managers Meeting  
May 10, 2012**

**300-FF-5 Groundwater Operable Unit – Marty Doornbos/Virginia Rohay**

M-015-72-T01 (due December 31, 2011) “Submit CERCLA RI/FS Report and Proposed Plan for the 300-FF-2 and 300-FF-5 Operable Units for groundwater and soil.”

- M-015-72-T01 milestone was completed on December 27, 2011.
- RI/FS report (DOE/RL-2011-99) Draft A delivered to EPA and Ecology on December 27, 2011.
- Proposed Plan (DOE/RL-2011-47) Draft A delivered to EPA and Ecology on December 27, 2011.
  - EPA comments on these documents were received on February 13, 2012. Progress continues on incorporation of the comments into the Draft Rev. 0 RI/FS & PP.
  
- The 300-FF-5 Groundwater OU includes the groundwater impacted by releases from waste sites associated with three geographic subregions: 300 Area Industrial Complex, 618-11 Burial Ground, and 618-10 Burial Ground/316-4 Cribs. Principal controlling documents are:
  - 300-FF-5 OU operations and maintenance plan (DOE-RL-95-73, Rev. 1, 2002)
  - 300-FF-5 OU sampling and analysis plan (DOE/RL-2002-11, Rev. 2, 2008)
  - 300 Area RI/FS work plan (DOE/RL-2009-30, Rev. 0, 2010)
  - 300 Area RI/FS sampling and analysis plan (DOE/RL-2009-45, Rev. 0, 2010).
  
- 300 Area Industrial Complex — During the March UMM, information was provided regarding the unusually high uranium concentrations that were noted at numerous 300 Area wells in samples collected in June 2011 during the period of seasonal high water table conditions (Figure 300FF5-1 below, updated through April). Of particular note was the concentration detected in the sample from well 399-1-17A, which is approximately 30 m south of the 300 Area Process Trenches and 20 m southwest of the 300-15 process sewer spur that conveyed effluents to the process trenches. The positive correlation between water-table elevation and uranium concentration suggests that, at or near these locations, uranium remains in the lower portion of the vadose zone and is available to be remobilized during periods of high water-table conditions. Since June 2011, these anomalously high concentrations have declined to their more typical seasonal values.
  
- 618-11 Burial Ground — Nothing new to report.
  
- 618-10 Burial Ground/316-4 Cribs — Groundwater data from March 2012 at well 699-S6-E4L near the 618-10 burial ground show increased concentrations of uranium and of magnesium, a soil fixative (Figure 300FF5-2 below). These data may indicate impacts from excavation activities that began in March 2011 at some of the trenches in the burial ground. The monitoring frequency for uranium was increased to monthly at well 699-S6-E4L, and the monitoring frequency for metals (calcium and magnesium, which also are soil fixatives) was increased to quarterly at two additional 618-10 wells, to accommodate excavation and dust control activities as they occur at the burial ground. The increased sampling frequency will be performed for a period of six months.

**100/300 Areas Unit Managers Meeting  
May 10, 2012**

Figure 300FF5-1. Uranium Trend Plots for Well Near the 300 Area Process Trenches and North Process Pond.

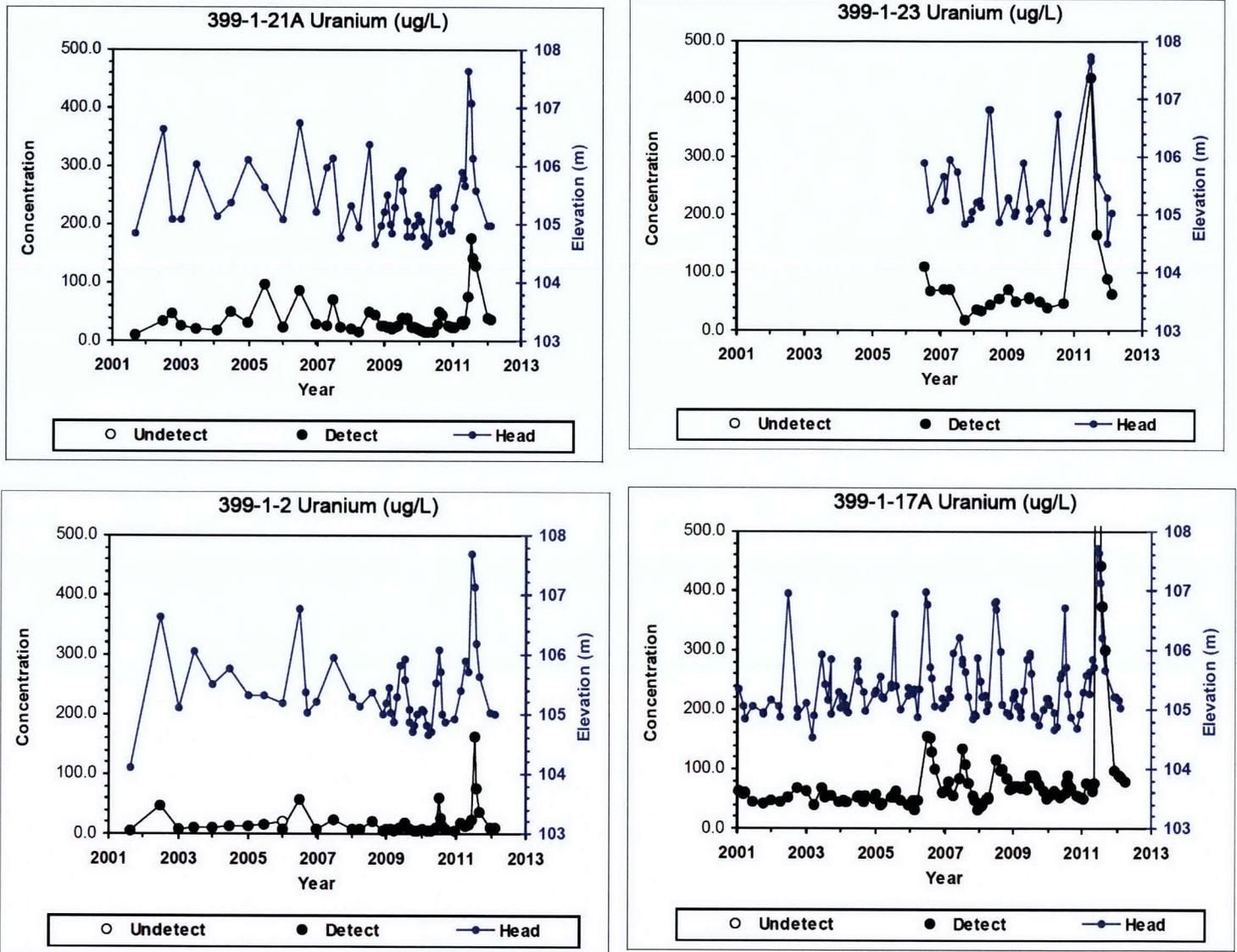
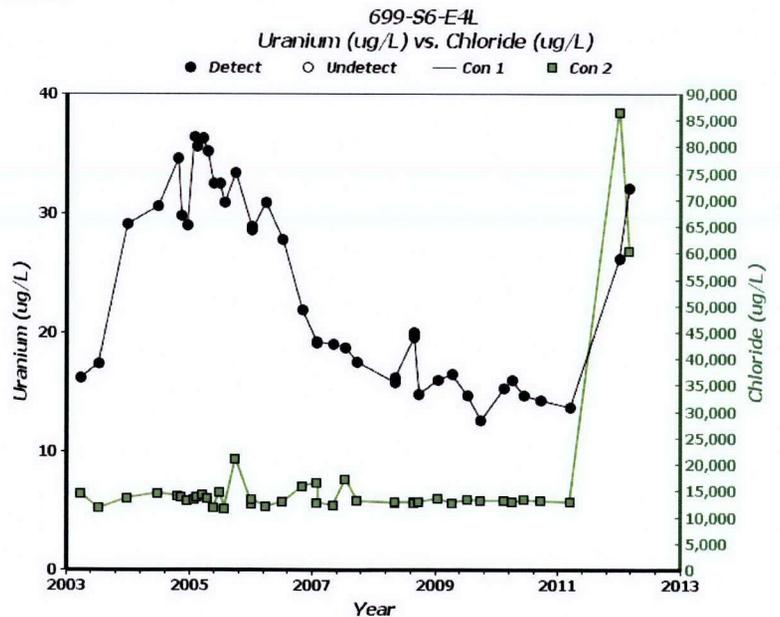


Figure 300FF5-2. Uranium and Chloride Trends at Well 699-S6-E4L at the 618-10 Burial Ground.



**100/300 Areas Unit Managers Meeting  
May 10, 2012**

**Wells sampled in April 2012**

<b>Summary of Wells &amp; Aquifer Tubes Sampled in the River Corridor Areas During April 2012</b>						
<b>Week</b>	<b>100-BC</b>	<b>100-K</b>	<b>100-N</b>	<b>100-D/H</b>	<b>100-F</b>	<b>300 Area</b>
<b>2-5 Apr 12</b>	199-B4-14	199-K-18 199-K-185 199-K-192 199-K-183 199-K-190	199-N-182 199-N-184 199-N-189 199-N-165			399-1-10A 399-1-10B 399-1-16A 399-1-16B 399-1-17A 399-1-17B 399-1-18A 399-1-18B 399-3-18 399-4-11
<b>9-13 Apr 12</b>	199-B5-6	199-K-106A 199-K-194 199-K-197 199-K-199 199K-32A 199-K-34 199-K-184 199-K-187 199-K-193 199-K-198 199-K-20 199-K-186 199-K-191	199-N-183			
<b>15-20 Apr 12</b>	199-B2-15 199-B2-16 199-B3-51 199-B5-8 199-B8-9 199-B3-47	199-K-200 199-K-201 199-K-157 199-K-196		199-D5-102 199-D5-119 199-D5-122 199-D5-103 199-D5-144 199-D5-99 199-D4-1 699-99-41	199-F5-48 199-F5-55 199-F5-56	699-13-2D 699-9-E2

**100/300 Areas Unit Managers Meeting  
May 10, 2012**

<b>Summary of Wells &amp; Aquifer Tubes Sampled in the River Corridor Areas During April 2012</b>						
<b>Week</b>	<b>100-BC</b>	<b>100-K</b>	<b>100-N</b>	<b>100-D/H</b>	<b>100-F</b>	<b>300 Area</b>
23-27 Apr 12		199-K-11 199-K-13 199-K-189	N116mArray-3A N116mArray-4A N116mArray-6A NVP2-116.0 199-N-185	699-94-43 699-95-45 699-95-48 699-97-41 699-98-49A 699-99-41 699-99-41 699-99-44 C6266 C6267 DD-39-1 DD-39-2 699-95-51 699-96-52B 699-97-51A 699-98-51 C6269 C6270 C6271 DD-42-2 DD-42-3 DD-42-4 DD-43-2 DD-43-3 DD-44-3 DD-44-4 699-98-46 199-H6-3		699-S20-E10 699-S6-E4A 699-S6-E4B 699-S6-E4E 699-S6-E4K
30 Apr 12				199-D5-43 699-101-45 699-100-43B Redox-2-6.0		

# Attachment 2

May 10, 2012 Unit Manager's Meeting  
Field Remediation Status

**100-B/C**

- Continued load-out activities
  - Truck and pup, 404,000 tons
  - ERDF cans, 142,100 tons
  - LDR material, 65,000 tons, LDR complete
- MSA continued power line relocation activities. New poles have been installed, preparing to run lines. Tie-in outage scheduled for June due to maintenance requirements at ENW

**100-D**

- Completed load-out at 100-D-14 and 100-D-100
- Completed load-out of LDR from all Tier 2 excavations at the high-priority chrome sites (100-D-30, 100-D-100 and 100-D-104)
- Commenced load-out at 100-D-50:6 and 100-D-50:8
- Completed excavation and stockpiling of 100-D-78
- Continued tier 2 load-out at 100-D-30
- Completed additional excavation at 100-D-66 to remove additional soils where in-process sampling indicated contaminants remained above RAGs; resampled and are awaiting results
- Completed a plume excavation and loadout of material from 118-D-2:2 in the vicinity of a failed verification sample, resampled and awaiting data
- Completed verification sampling in potholes at 116-DR-3 and 100-D-50:9 awaiting data
- Sampled tar anomaly in 100-D-50:6, awaiting profile for loadout

**100-F**

- Demobilization of support trailers ongoing

**100-H**

- No activities being conducted at 100-H at this time
- DOE and Ecology continued discussions to resolve disputes with closure documents for 116-H-5, 128-H-1, and 126-H-2

**100-K**

- Continued anomaly characterization/processing at 118-K-1
- Excavated minor plumes at 128-K-2

- Completed closeout sampling at 600-29

#### **100-N**

- Completed excavation and load-out at UPR-100-N-4, -5, -8, -25, -31 and 116-N-2
- Subcontractor demobilization ongoing

#### **618-10 Trench Remediation**

- Continued loadout of soil waste to ERDF
- Continued excavation of trench soils, and processing of drums and anomalies
- Completed another parcel of in-trench bottle processing

#### **100-IU-2/6**

- Began remediation at 600-300 #1 and 600-316 #3
- Completed remediation of 600-324 and 600-299 #2
- Began and completed remediation of 600-298 #1 and 2; 600-314 #3, 4 and 5; 600-316 #2, 3, and 5; 600-318 #3, 600-319 #2; 600-320 #3, 5 and 6,
- Collected pre-verification samples from various waste sites

# Attachment 3

# 100 Area D4/ISS Status

May 10, 2012

## 100-N

**181-N River Pumphouse:** Above grade demolition approximately 98% complete. Below grade demolition approximately 50% complete.

**181-NE HGP River Pumphouse:** Above grade demolition 100% complete. Below grade demolition approximately 50% complete.

**1908-NE HGP Outfall:** Above grade demolition approximately 90% complete.

**1908-N Reactor Outfall:** Above 100% and below grade 95% demolition complete. Monolith of lean concrete, on which the facility was originally constructed, has, at Ecology's request, been sampled and analyzed. Report characterizing lean concrete is currently being developed for submittal to Ecology.

**182-N High Lift Pumphouse:** Below grade demolition and load out approximately 95% complete. All that remains is small amount of debris on facility floor which is currently being cleaned out to facilitate visual and radiological evaluation.

**105-N Fuel Storage Basin (FSB):** Demolition complete. Load out approximately 98% complete. Sample from floor of lift station's valve pit has been collected and a layer of fixative has been applied. Entire area of former FSB has been layered with straw and plated with fill to provide safe access for subcontractor to complete ISS activities. In process samples to characterize soil underneath the former FSB to be collected after subcontractor has completed remaining ISS activities.

**105-N/109-N Reactor/Heat Exchanger Buildings (ISS):** Subcontractor activities began last month with the removal of cantilevered scaffolding and cleaning of corridor 22. Subcontractor has also mobilized inside former FSB and is currently making measurements for closing penetrations and openings with steel plates and/or concrete pour backs, constructing scaffolding to access corridor 7, and preparing corridor 22 for siding.

**107-N Basin Recirculating/Cooling Facility:** Demolition began last month and is now 40% complete.

**1303-N Spacer Silos:** Lids from silos have been removed and demolished. Excavation around and between silos began last month and is now approximately 50% complete. Continuing with excavation around silos to facilitate additional characterization (i.e., at base of silos) prior to beginning demolition.

## Other Areas

**400 Area:** All demolition activities complete.

# Attachment 4

# 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-010

## A. INSTRUCTIONS

*This form must be completed to: 1) document existing data in order to determine if current data is suitable to prove completion of 100-N Ancillary Facilities, or 2) document that site-specific sampling and analyses are needed to provide completion for 100-N Ancillary Facilities.*

## B. GENERAL INFORMATION

Building Name: Reactor Stack Building Number: 116-N

WIDS Sites Associated or Adjacent:

- Associated: (All WIDS sites listed below are classified as Accepted)  
UPR-100-N-14 (CCN 163277 pg. 2), 100-N-84:3, 100-N-87, and 100-N-102:1.

Other:

The above grade of the 116-N Reactor Stack was explosively demolished in 2008 and the below grade was removed in January of 2011.

## C. INFORMATION SOURCES

Available information (list document number for each if applicable):

Historical Site Assessment: N/A

Site Walkdown: N/A

IH Characterization Report: N/A

Radiological Survey: Global Positioning Environmental  
Radiological Surveys (GPERS):  
ESR-FRM-11-0118

IHC/FHC Document: N/A

RCC Stewardship Information System (SIS)  
WIDS/SIS: Facility Summary Report: 116-N, 100-N-84:3,  
100-N-87, 100-N-102:1, and UPR-100-N-14

PDSR: Post-Demolition Summary Report for the 116-N  
Reactor Stack: CCN 163277

Facility Inspection: N/A

Waste Characterization Checklist: N/A

Summary Report: N/A

Other:

- Radiological Survey Record: RSR-100N-08-0814
- Post-Demolition Summary Report for the 119-N Air Sampling Monitor and the 119-NA Air Sampling and Monitoring Facilities: CCN 128270
- 100 Area D4 Project Building Completion Report May 2006-June 2007: WCH-185, Rev. 0
- Project Soils or Below Grade Structures Deferral Form (119-N, 119-NA): ISS-100N-001
- GIS Site Tool Figure 1: (Attached to this Form)
- Draft Verification Work Instruction No. 0100N-WI-G0028 Rev. 0
- FR Excavation Design Drawing 0100N-DD-C0257 (UPR-100-N-14)
- Photograph of 116-N Facility Pre-Demolition, With Time Stamp: WCH-185 pg. 6 (6/11/2002)
- Photographs of 116-N Facility Pre-Demolition, No Time Stamp: CCN 163277 pgs. 6 & 7
- Photographs of 116-N Facility Post-Demolition, No Time Stamp: CCN 163277 pgs. 8 & 9

## D. HAZARDOUS SUBSTANCES

Check all that apply:

None     Asbestos containing material     Lead     PCBs/PCB Articles     Oils/Greases

Chemicals List: \_\_\_\_\_

Radiological Contamination     Mercury/Mercury Devices

Other: \_\_\_\_\_

References/Comments:

- Radiological Contamination: RSR-100N-08-0814

During a radiological characterization survey performed prior to demolition of the facility, 1 out of 40 technical smears yielded detectable removable radiological contamination (RSR-100N-08-0814), slightly greater than the limit of detection specified in the survey.

Chemical contamination was identified in sludge from a sump in the bottom of the stack (CCN163277).

Due to overlap of co-located WIDS sites, the Field Remediation organization, by default, will perform closeout of the soils

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-010

within the 116-N facility footprint. Due to this fact, only some of the documents, such as the Post Demolition Report and Building Completion Report, related to hazardous substances at the facility were reviewed for use with this form. The 116-N facility footprint will be closed out with co-located waste sites.

Liquids:  Yes  No

If yes, describe source and nature of liquids:

The facility was an exhaust stack for the 105-N ventilation system (SIS Facility Summary Report for 116-N & CCN 163277 pg. 1). As such, it contained condensate, which accumulated in the stack and was then discharged to a french drain (SIS Facility Summary Report for 100-N-87). Each of the waste sites associated with this facility contained liquids (SIS Facility Summary Reports for 100-N-84:3, 100-N-87, 100-N-102:1, and UPR-100-N-14).

Were the hazardous substances removed from the facility prior to demolition?  Yes  No

As verified by what documentation:

Review of documentation identified the potential for chemically contaminated sludge, and very low levels of radiological contamination to be present in the facility for demolition.

Was there potential for hazardous substances to be introduced into the soils during facility operations or demolition?  Yes  No  N/A

References/Comments:

Removable radiological contamination was detected during a radiological characterization survey prior to demolition of the facility. However, the GPERS survey performed at this location following removal of the facility did not yield any radiological value greater than twice the background radiological level (ESR-FRM-11-0118).

Chemical contamination was identified in sludge from a sump in the bottom of the stack. The sump and its' contents were removed during demolition.

Accordingly, there appears to have been only a small potential for hazardous substance introduction into the soils during facility operation and demolition.

List any hazardous materials left in the building for demolition:

Review of documentation identified the potential for chemically contaminated sludge, and very low levels of radiological contamination to be present in the facility for demolition.

Does review of historical records and process knowledge indicate a potential for radiological or chemical contamination to be present in the facility?  
Yes. See above.

Comments:

The above grade portion of the stack was removed in September of 2008 (CCN 163277 pgs. 1 & 4). The below grade portion of the stack and foundation were removed in January of 2011 (CCN 163277 pgs. 1 & 4).

A verification sampling work instruction document has been drafted for waste sites that are co-located with the stack removal excavation (CCN 163277 pg. 2). The Field Remediation organization will be responsible for performing the verification sampling outlined in this work instruction (Draft Verification Work Instruction No. 0100N-WI-G0028 Rev. 0) which includes the waste sites co-located with the 116-N facility (CCN 163277 pg. 2). As evidenced by the GIS Site Tool, the Field Remediation excavation boundary includes the footprint of the facility (GIS Site Tool Figure 1-attached to this form). Accordingly, due to overlap of co-located WIDS sites, the Field Remediation organization will perform closeout of the soils within the 116-N facility footprint. This will be the same case for the soils associated with the nearby 119-N and 119-NA facilities (ISS-100N-001).

### E. FIELD OBSERVATIONS

#### Visual Inspection

Were any stained soils/anomalies discovered during or after demolition of the facility?  Yes  No

References/Comments:

No anomaly or stained soils were discovered during either deactivation or demolition of the facility (CCN 163277 pg. 2). No indication of stained soils was encountered during review of documentation pertaining to this facility.

Were samples taken of the stained soils/anomalies?  Yes  No  N/A

References/Comments:

No anomaly was discovered and no stained soil was indicated, so this question is not applicable.

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-010

Do results of the samples indicate that chemical contamination exists?  Yes  No  N/A

**References/Comments:**

No anomaly was discovered and no stained soil was indicated, so this question is not applicable.

Is the area potentially a discovery site?  Yes  No

**References/Comments:**

No anomaly was discovered and no stained soil was indicated.

### Radiological Surveys

Did radiological surveys (GPERS or equivalent) identify contamination?  Yes  No

**References/Comments:**

Radiological contamination was not identified in the GPERS surveys following removal of the facility (ESR-FRM-11-0118).

Were samples taken of the radiologically contaminated soils?  Yes  No  N/A

**References/Comments:**

No documentation was found that would suggest that the facility contaminated the adjacent soils, so this question is not applicable.

Is the area potentially a discovery site?  Yes  No

**References/Comments:**

No documentation was found that would suggest that the facility contaminated the adjacent soils, so this question is not applicable.

Were the contaminated materials removed?  Yes  No  N/A

**References/Comments:**

No documentation was found that would suggest that the facility contaminated the adjacent soils, so this question is not applicable.

### F. WIDS SITES

Were there any WIDS sites affected by D4 activities?  Yes  No

**If yes, list the WIDS sites:**

100-N-84:3, 100-N-87, 100-N-102:1, and UPR-100-N-14 (CCN 163277 pg. 2)

Were the WIDS site(s) completely removed?  Yes  No

**References/Comments:**

WIDS sites 100-N-84:3, 100-N-87, and UPR-100-N-14 were completely removed during D4 activities at the 116-N facility (CCN 163277 pg. 2).

WIDS site 100-N-102:1 was partially removed during D4 activities at the 116-N facility (CCN 163277 pg. 2), and will be removed by FR at a later date.

Will the Ancillary Facility Footprint be deferred to FR to be closed out with a co-located Waste Site?  Yes  No

**References/Comments:**

The 116-N facility footprint will be closed out with co-located waste sites (CCN 163277 pg. 2 & GIS Site Tool Figure 1- attached to this form). Also see Draft Verification Work Instruction No. 0100N-WI-G0028 Rev. 0.

### G. COPCS FOR SOILS AND STRUCTURES REMAINING AFTER DEMOLITION

What are the potential contaminants of concern for the remaining below-grade soil?

None  SVOC  VOC  Metals  TPH  Rad  PCBs

Other (Specify): \_\_\_\_\_

**Comments:**

The only hazardous substance that appears to have been associated with this facility was radiological contamination (RSR-100N-08-0814). The stack was removed and the subsequent GPERS survey did not yield any radiological value greater than twice the background radiological level (CCN 163277 pgs. 1 & 4, ESR-FRM-11-0118).

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-010

Summary of in-process soil sampling requirements:  
N/A

Constituents detected / concentrations / rationale  
Consult results from the samples identified below.

### Sample Collection Summary

- Drain debris at 116-N: Sample (HEIS) Number J16VJ5 (CCN 163277 Attachment 1)
- Composite at 116-N: Sample (HEIS) Number J16VJ6 (CCN 163277 Attachment 1)
- Scabbled concrete at 116-N: Sample (HEIS) Numbers J180F8, J180F9, J181C1, and J181C2 (CCN 163277 Attachment 1)
- Liquid at 116-N: Sample (HEIS) Numbers J180H3 & J181C6 (CCN 163277 Attachment 1)
- Sediment at 116-N: Sample (HEIS) Number J181C0 (CCN 163277 Attachment 1)
- Insulated piping on 116-N stack: Sample (HEIS) Numbers J10F44 & J10F46 (CCN 128270 Attachment 1)

### H. NOTES / ADDITIONAL INFORMATION

Check here if additional information / data / maps / sketches are attached to this form.

If checked, list the attachment(s):

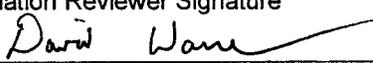
- GIS Site Tool Figure 1: (Attached to this Form)
- Figure 8. Verification Sample Locations Overlay for 100-N-87, UPR-100-N-14, and 100-N-102:1 Waste Sites WIDS Boundaries. Excerpt from Draft Verification Work Instruction No. 0100N-WI-G0028 Rev. 0.
- FR Excavation Design Drawing 0100N-DD-C0257 (UPR-100-N-14)

### I. SAMPLING

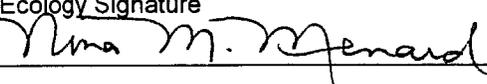
Are soil samples required to demonstrate that remaining structure or below-grade soils meet cleanup standards?  Yes  No

Based on the above information it was determined that sampling:  will  will not be required in order to demonstrate that cleanup criteria have been met.

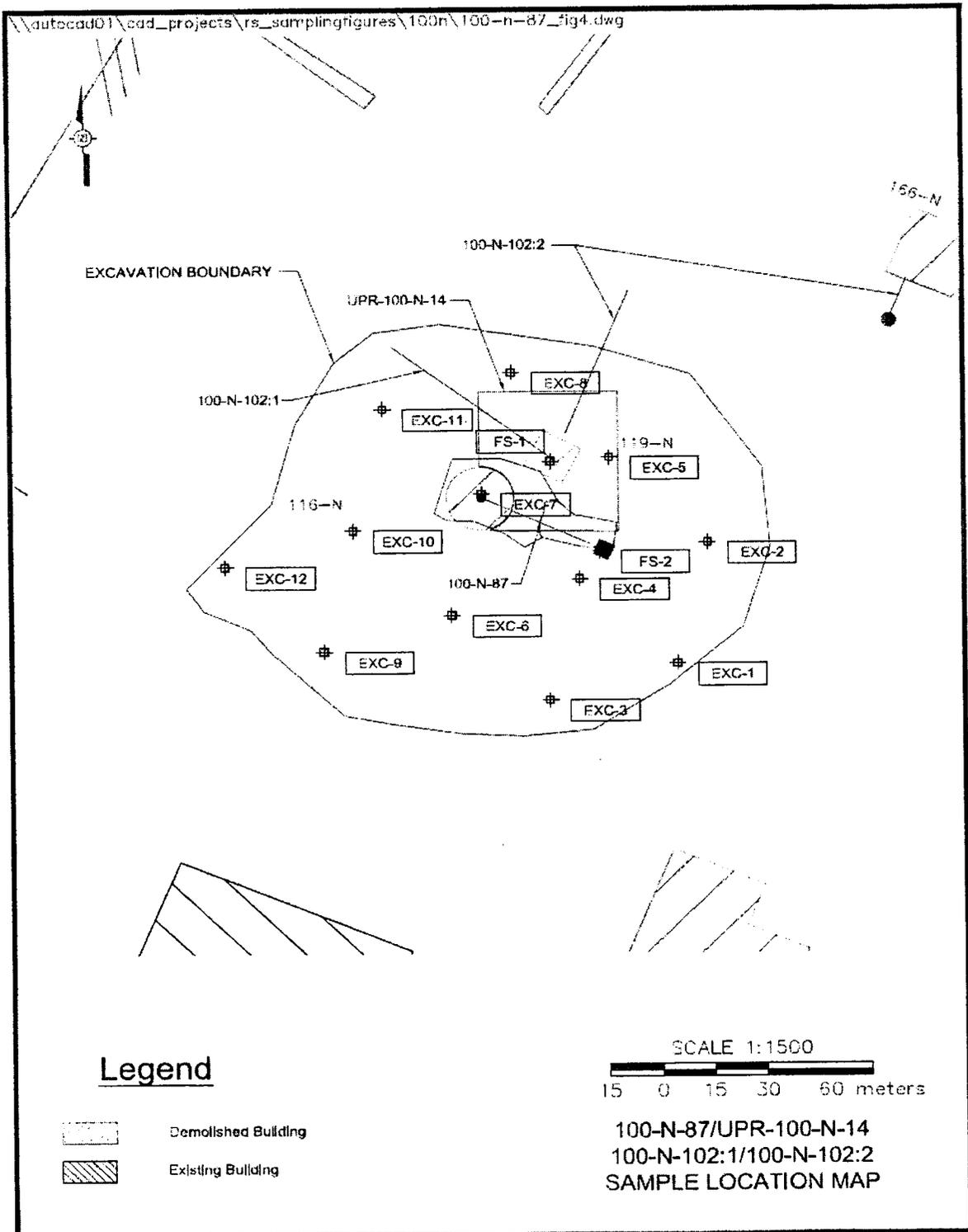
The individual below acknowledges that the review of this facility has been completed. He or she also commits to provide to the Department of Energy (DOE) and the Washington State Department of Ecology (Ecology) any available information that could alter the sampling decision established in this form.

Information Reviewer Signature 	Printed Name David Warren	Date 4/30/12
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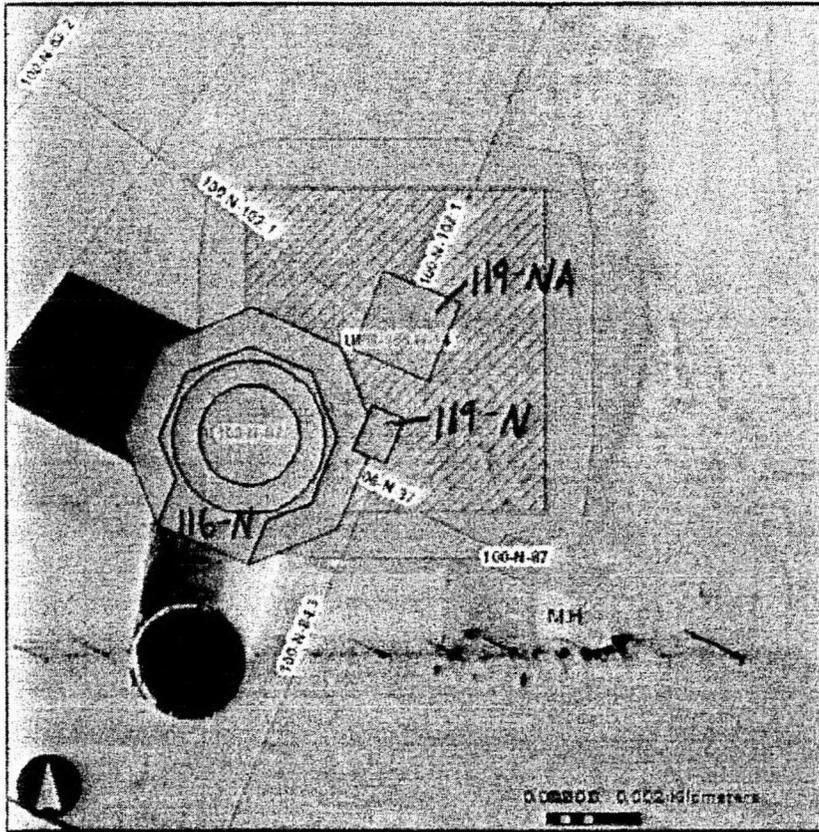
The regulatory representative below agrees with the decision outlined in section I of this form for the indicated facility and supports implementation of that decision based on the information currently available.

DOE Signature 	Printed Name R.F. Guerra	Date 4/30/2012
Ecology Signature 	Printed Name NINA M. Menard	Date 5/1/2012

**Figure 8. Verification Sample Locations Overlay with 100-N-87, UPR-100-N-14, and 100-N-102:1 Waste Sites WIDS Boundaries.**



# Map



**Buildings**



**Buildings**



**WasteSitePoints**

- Sitecode Missing in SIS
- Accepted,
- + Accepted, Closed Out
- ▲ Accepted, Consolidated
- + Accepted, Interim Closed Out
- + Accepted, No Action
- + Accepted, Rejected
- Discovery
- Not Accepted,

**WasteSitesLine**

- Sitecode Missing in SIS
- Accepted,
- Accepted, Closed Out

**WasteSitesLine (continued)**

- Accepted, Interim Closed Out
- Accepted, No Action
- Accepted, Rejected
- Discovery,
- Not Accepted,

**WasteSitePolys**

- Sitecode Missing in SIS
- Accepted,
- Accepted, Closed Out
- Accepted, Consolidated
- Accepted, Deleted From NPL
- Accepted, Interim Closed Out
- Accepted, No Action
- Accepted, Rejected

**WasteSitePolys (continued)**

- Discovery,
- Not Accepted (Proposed),
- Not Accepted,

**Waste Polygon Labels**

**Waste Line Labels**

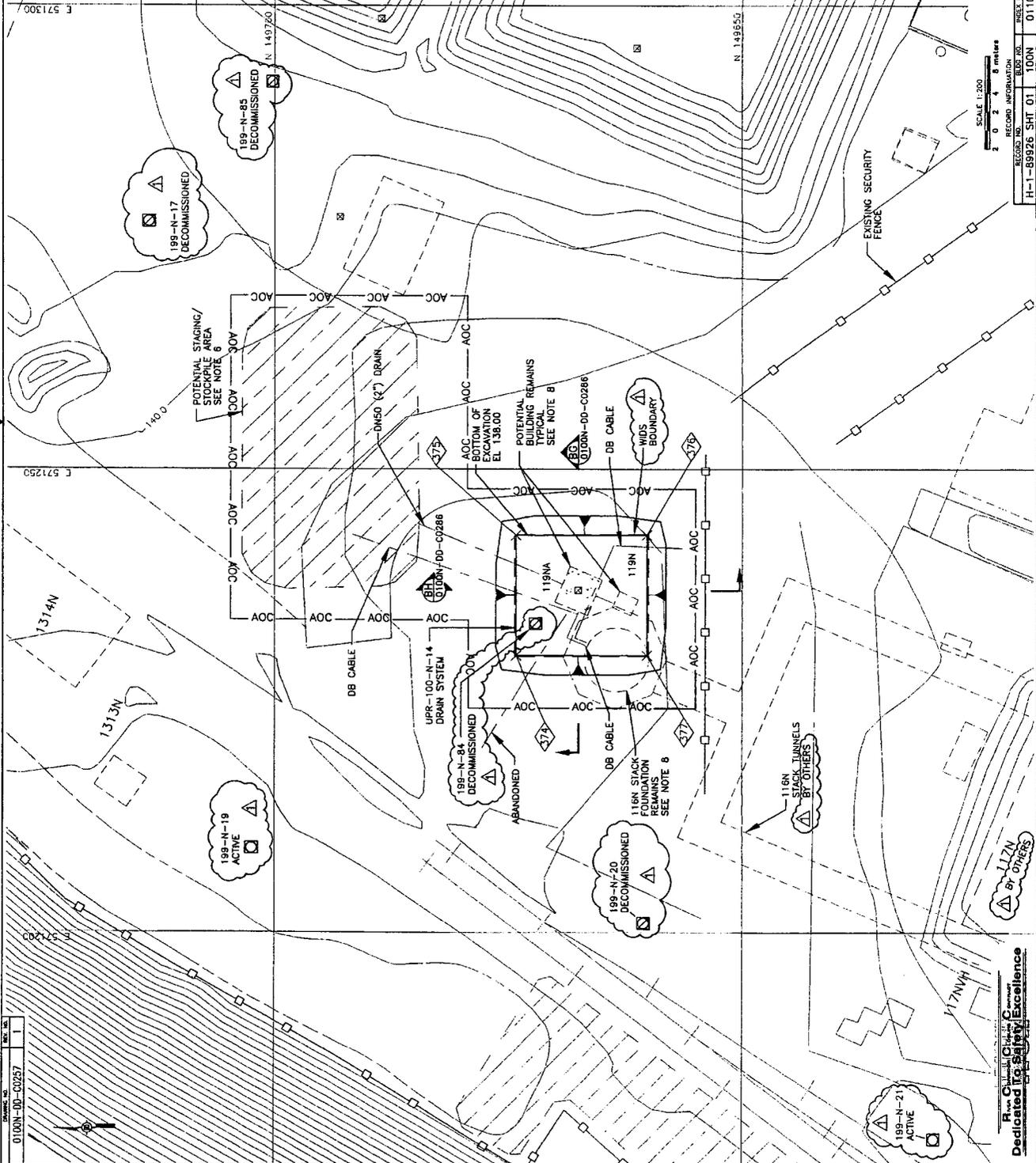
**Waste Point Labels**

**N\_EXC\_Daylight**



**Building Labels**

0100N-DD-C0257



- NOTES**
- SEE DRAWING 0100N-DD-C0023 FOR GENERAL ABBREVIATIONS AND SYMBOLS LIST.
  - LOCATION, GROUND SURFACE AND DIMENSIONS PROVIDED WERE TAKEN FROM HANFORD SITE RECORDS AND DRAWINGS, N-1-45007, SHEET 1 THROUGH 83, COMPOSITE UNDERGROUND LINES, ESSENTIAL DRAWING, GEOPHYSICAL SITE INVESTIGATIONS, G#0579926, G#0580017, G#0580019, AND G#0580016, WHICH WERE VERIFIED BY THE SUBCONTRACTOR. AS-BUILT CONSTRUCTION MAY VARY FROM NEAT-LINES SHOWN ON DRAWINGS.
  - ALL ELEVATIONS AND DIMENSIONS ARE IN METERS EXCEPT AS SPECIFICALLY SHOWN.
  - LIMITS OF EXCAVATION ARE SHOWN ASSUMING A 1.5 H:1.0 V CUT SLOPE. ACTUAL EXCAVATION LIMITS SHALL BE THE RESPONSIBILITY OF THE SUBCONTRACTOR. EXCAVATIONS SHALL COMPLY WITH ALL REQUIREMENTS OF 0100N-SF-C0043 CIVIL SPECIFICATION.
  - CONTOUR INTERVAL IS 0.5 METERS.
  - STAGING OF MATERIAL SHALL OCCUR WITHIN THE AOC/ WASTE SITE BOUNDARY. THE DIRECTION OF THE CONTRACTOR STAGING OF MATERIAL OUTSIDE OF THE AOC/WASTE SITE BOUNDARY SHALL HAVE PRIOR APPROVAL IN WRITING BY THE CONTRACTOR.
  - SEE DRAWINGS NO. 0100N-DD-C0305, 0100N-DD-C0306, OR 0100N-DD-C0307 FOR WASTE SITE SURVEY CONTROL DESIGN COORDINATE TABLE.
  - BUILDINGS 119N, 119NA AND 116N STACK HAVE BEEN DEMOLISHED IN PLACE. RUBBLE AND DEBRIS MAY REMAIN WITHIN THE EXCAVATION AREA. MISCELLANEOUS CONDUIT AND MISC DEBRIS TO EXTENT OF EXCAVATION.

POTENTIAL STAGING/  
STORAGE AREA  
SEE NOTE 6

POTENTIAL BUILDING REMAINS  
TYPICAL  
SEE NOTE B

199-N-17  
DECOMMISSIONED

199-N-19  
ACTIVE

199-N-20  
DECOMMISSIONED

199-N-85  
DECOMMISSIONED

116N STACK  
FOUNDATION  
REMAINS  
SEE NOTE B

116N STACK  
TUNNELS  
BY OTHERS

117NVA  
BY OTHERS

119N-14  
DRAIN SYSTEM

119N-14  
DRAIN

DB CABLE

EXISTING SECURITY  
FENCE

WIDS  
BOUNDARY

116N  
STACK TUNNELS  
BY OTHERS

117NVA  
BY OTHERS

119N-14  
DRAIN SYSTEM

119N-14  
DRAIN

DB CABLE

DB CABLE

DB CABLE

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119N-14  
DRAIN SYSTEM

119N-14  
DRAIN

DB CABLE

EXISTING SECURITY  
FENCE

WIDS  
BOUNDARY

116N  
STACK TUNNELS  
BY OTHERS

117NVA  
BY OTHERS

119N-14  
DRAIN SYSTEM

119N-14  
DRAIN

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EXISTING SECURITY  
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STACK TUNNELS  
BY OTHERS

117NVA  
BY OTHERS

119N-14  
DRAIN SYSTEM

119N-14  
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EXISTING SECURITY  
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STACK TUNNELS  
BY OTHERS

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EXISTING SECURITY  
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BOUNDARY

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DRAIN SYSTEM

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DRAIN SYSTEM

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EXISTING SECURITY  
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DRAIN SYSTEM

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BY OTHERS

117NVA  
BY OTHERS

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STACK TUNNELS  
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117NVA  
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DRAIN SYSTEM

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BY OTHERS

119N-14  
DRAIN SYSTEM

119N-14  
DRAIN

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EXISTING SECURITY  
FENCE

WIDS  
BOUNDARY

116N  
STACK TUNNELS  
BY OTHERS

# Attachment 5

# 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-012

### A. INSTRUCTIONS

*This form must be completed to: 1) document existing data in order to determine if current data is suitable to prove completion of 100-N Ancillary Facilities, or 2) document that site-specific sampling and analyses are needed to provide completion for 100-N Ancillary Facilities.*

### B. GENERAL INFORMATION

Building Name: 117-N Exhaust Air Filter House / 117-N Valve Control House Building Number: 117-N & 117-NVH

WIDS Sites Associated or Adjacent:  
100-N-63:2, 100-N-84 (colon sites 1, 3, 5, and 8), 100-N-89, 100-N-90, UPR-100-N-14, and 100-N-66

All of these WIDS sites are classified as accepted.

Other:

### C. INFORMATION SOURCES

Available information (list document number for each if applicable):

Historical Site Assessment: • Historical Site Assessment for 117-N: CCN 136822 Site Walkdown: N/A  
• Historical Site Assessment for 117-NVH: CCN 127193

IH Characterization Report: N/A Radiological Survey: Global Positioning Environmental Radiological Surveys (GPERS): ESR-FRM-11-0205

IHC/FHC Document: N/A WIDS/SIS: RCC Stewardship Information System (SIS) Facility Summary Reports: 117-N & 117-NVH

PDSR: • Post-Demolition Summary Report for 117-N: CCN 164006 Facility Inspection: N/A  
• Post-Demolition Summary Report for 117-NVH: CCN 163278

Waste Characterization Checklist: N/A Summary Report: N/A

Other:

- Asbestos Inspection & Sampling Report for the 117 N Filter Building: CCN 128416
- Asbestos Inspection and Sampling Report for the 117-N Filter House Roof: CCN 147734
- 117-N, 117-NVH, & Valve Pit Hazardous Material and Demolition Preparations Work Package: 100 08 10 06 001 (Rev. 1)
- 117-N, 117-NVH and Valve Pit Hazardous Material Removal Work Package: 100 07 10 01 002 (Rev. 0)
- Photographs of 117-N and 117-NVH Facilities Pre-Demolition, With Time Stamp: SIS Facility Summary Report for 117-N pg. 4 (4/17/2007), pg. 5 (6/11/2002), and pg. 6 (3/8/2006); CCN 127293 pg. 2 (4/26/2006)
- Photographs of 117-N and 117-NVH Facilities Pre-Demolition, No Time Stamp: SIS Facility Summary Report for 117-N pgs. 3 & 7, CCN 136822 pgs. 3 & 4, and CCN 164006 pg. 6
- Photograph of 117-N and 117-NVH Facilities Post-Demolition, With Time Stamp: CCN 164006 pg. 8 (1/26/2012)
- Photographs of 117-N and 117-NVH Facilities Post-Demolition, No Time Stamp: SIS Facility Summary Report for 117-N pg. 8, CCN 164006 pg. 9, and CCN 163278 pgs. 7 and 8

### D. HAZARDOUS SUBSTANCES

Check all that apply:

- None     
  Asbestos containing material     
  Lead     
  PCBs/PCB Articles     
  Oils/Greases  
 Chemicals List: \_\_\_\_\_  
 Radiological Contamination   
  Mercury/Mercury Devices  
 Other: \_\_\_\_\_

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-012

**References/Comments:**

Lead: CCN 136822 pg. 5, CCN 127193 pg. 6, and Work Package 100 07 10 01 002 pg. 7  
 PCBs/PCB Articles: CCN 127193 pg. 6 & Work Package 100 07 10 01 002 pg. 7  
 Oils/Greases: Work Package 100 07 10 01 002 pg. 7  
 Radiological Contamination: CCN 136822 pg. 5 & Work Package 100 07 10 01 002 pg. 7  
 Mercury/Mercury Devices: Work Package 100 07 10 01 002 pg. 7

Liquids:  Yes  No

If yes, describe source and nature of liquids:

The 117-N facility contained a water spray system in addition to drainage sumps for collecting water from the exhaust air filter cells (CCN 136822 pgs. 1 & 2).

Were the hazardous substances removed from the facility prior to demolition?  Yes  No

As verified by what documentation:

The Hazardous Material Removal work package pertaining to the 117-N and 117-NVH facilities identified that radiological contamination was encountered but not removed/stabilized (100 07 10 01 002 pgs. 7 & 25). All other hazardous substances with sampling determination relevance appear to have been removed prior to demolition (100 08 10 06 001 pgs. 4 & 12, 100 07 01 002 pgs. 7 & 25).

Was there potential for hazardous substances to be introduced into the soils during facility operations or demolition?  Yes  No  N/A

**References/Comments:**

The 117-N and 117-NVH facilities received Type II designations (CCN 136822 pg. 1 & CCN 127193 pg. 1). This indicates that they had been potentially contaminated by site operations and processes (CCN 136822 pg. 1 & CCN 127193 pg. 1). Accordingly, there was potential for hazardous substance introduction into the underlying and adjacent soils.

List any hazardous materials left in the building for demolition:

• Radiological Contamination (100 07 10 01 002 pgs. 7 & 25)

Does review of historical records and process knowledge indicate a potential for radiological or chemical contamination to be present in the facility?

The potential exists for radiological contamination to be present within the footprints of these facilities since the pertinent Hazardous Material Removal work package indicates that radiological contamination was not removed prior to demolition. Furthermore, the GPERS survey for this location yielded multiple points of elevated radiological contamination (ESR-FRM-11-0205 / CCN 164006 Attachment 2).

**Comments:**

Demolition of the 117-N facility was completed in 2011 (CCN 164006 pg. 4). Demolition of the 117-NVH facility was completed on April 27, 2011 (CCN 163278 pg. 3).

A list of pertinent applicable design drawings is included in the Historical Site Assessment for the 117-N facility (CCN 136822 Attachment 1). An additional pertinent design drawing is H-1-45007 Sheet 44.

### E. FIELD OBSERVATIONS

#### Visual Inspection

Were any stained soils/anomalies discovered during or after demolition of the facility?  Yes  No

**References/Comments:**

No anomalies were discovered for 117-N and 117-NVH (CCN 164006 pg. 2 & CCN 163278 pg. 2). Documentation was not yet reviewed for soil staining since D4 will conduct verification sampling at these locations at a later date.

Were samples taken of the stained soils/anomalies?  Yes  No  N/A

**References/Comments:**

No anomaly was discovered for 117-N and 117-NVH (CCN 164006 pg. 2 & CCN 163278 pg. 2). Documentation was not yet reviewed for soil staining since D4 will conduct verification sampling at these locations at a later date.

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-012

Do results of the samples indicate that chemical contamination exists?  Yes  No  N/A

**References/Comments:**

No anomaly was discovered for 117-N and 117-NVH (CCN 164006 pg. 2 & CCN 163278 pg. 2). Documentation was not yet reviewed for soil staining since D4 will conduct verification sampling at these locations at a later date.

Is the area potentially a discovery site?  Yes  No

**References/Comments:**

Both the 117-N and 117-NVH facilities possessed contamination or the potential to be contaminated. There is still the potential for sampling or further excavation to identify contamination that might be attributable to a source not associated with these facilities. If that were the case then it would warrant evaluation as a discovery site. Accordingly, a determination that any portion of the footprints of these facilities would not be a discovery site could therefore not be substantiated by only the currently reviewed documentation.

### Radiological Surveys

Did radiological surveys (GPERS or equivalent) identify contamination?  Yes  No

**References/Comments:**

ESR-FRM-11-0205 / CCN 164006 Attachment 2

Were samples taken of the radiologically contaminated soils?  Yes  No  N/A

**References/Comments:**

The answer to this question was not determined during research of the 117-N and 117-NVH. The D4 organization will conduct verification sampling at this location at a later date. It should be noted that the area encompassing the 117-N and 117-NVH will be GPERS surveyed again following removal of the 105-NE Fission Products Trap and 1303-N Spacer Silos.

Is the area potentially a discovery site?  Yes  No

**References/Comments:**

Both the 117-N and 117-NVH facilities possessed contamination or the potential to be contaminated. Therefore the discovery of elevated readings during the GPERS survey can not fully distinguish that the contamination wasn't merely associated with the facilities. There is still the potential for sampling or further excavation to identify contamination that might be attributable to a source not associated with these facilities. If that were the case then it would warrant evaluation as a discovery site. Accordingly, a determination that any portion of the footprints of these facilities would not be a discovery site could therefore not be substantiated by only the currently reviewed documentation.

Were the contaminated materials removed?  Yes  No  N/A

**References/Comments:**

The answer to this question was not determined during research of the 117-N and 117-NVH. The D4 organization will conduct verification sampling at this location at a later date.

### F. WIDS SITES

Were there any WIDS sites affected by D4 activities?  Yes  No

If yes, list the WIDS sites:

- 100-N-89 (French Drain)
- 100-N-90 (Rod Caves)
- 100-N-63:2

Were the WIDS site(s) completely removed?  Yes  No

**References/Comments:**

Only the portion of 100-N-63:2 that existed within the 117-N / 117-NVH excavation footprint was removed during D4 activities at these facilities (CCN 164006 pg. 2 & CCN 163278 pg. 2).  
100-N-89 was completely removed during demolition of the 117-NVH facility.  
100-N-90 was completely removed during demolition of the 117-N facility.

Will the Ancillary Facility Footprint be deferred to FR to be closed out with a co-located Waste Site?  Yes  No

**References/Comments:**

The footprint of these facilities will not be deferred to the FR organization. Accordingly, the verification sampling

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-012

necessary for 117-N and 117-NVH will be conducted by the D4 organization at a later date. The verification sampling for the 117-N and 117-NVH facilities will likely include co-located WIDS sites 100-N-89 and 100-N-90, and the staging pile area used for demolition debris for all of these sites.

### G. COPCS FOR SOILS AND STRUCTURES REMAINING AFTER DEMOLITION

What are the potential contaminants of concern for the remaining below-grade soil?

- None     SVOC     VOC     Metals     TPH     Rad     PCBs  
 Other (Specify): \_\_\_\_\_

Comments:

• Rad: Radiological contamination was not removed from the 117-N and 117-NVH facilities prior to demolition (100 07 10 01 002 pg. 25).

Also, the GPERs survey for this location yielded multiple points of elevated radiological contamination (ESR-FRM-11-0205 / CCN 164006 Attachment 2).

Summary of in-process soil sampling requirements:

N/A

Constituents detected / concentrations / rationale  
Consult Sample Collection Summary below.

#### Sample Collection Summary

- Sample (HEIS) Numbers J11VD7 and J11VD9 (SIS Summary Report for 117-N pg. 2)
- Roof Interior at 117-N: Sample (HEIS) Numbers J15VY0, J15VY1, and J15VY2 (CCN 147734 Attachment 2)
- Wall Insulation at 117-NVH: Sample (HEIS) Numbers J12766, J12767, and J12768 (CCN 163278 Attachment 1)
- Ceiling Insulation at 117-NVH: Sample (HEIS) Numbers J12769, J12770, and J12776 (CCN 163278 Attachment 1)
- Caulking at 117-NVH: Sample (HEIS) Number J12777 (CCN 163278 Attachment 1)
- Pit Line at 117-NVH: Sample (HEIS) Number J12PT4 (CCN 163278 Attachment 1)
- Pit Valves at 117-NVH: Sample (HEIS) Numbers J12PT5 & J12PT6 (CCN 163278 Attachment 1)
- Pit Joint at 117-NVH: Sample (HEIS) Number J12PT7 (CCN 163278 Attachment 1)
- GIS Field Remediation Overlay Map: Attached to this form

### H. NOTES / ADDITIONAL INFORMATION

Check here if additional information / data / maps / sketches are attached to this form.

If checked, list the attachment(s):  
Field Remediation Overlay Map

### I. SAMPLING

Are soil samples required to demonstrate that remaining structure or below-grade soils meet cleanup standards?     Yes     No

Based on the above information it was determined that sampling:  will     will not be required in order to demonstrate that cleanup criteria have been met.

The individual below acknowledges that the review of this facility has been completed. He or she also commits to provide to the Department of Energy (DOE) and the Washington State Department of Ecology (Ecology) any available information that could alter the sampling decision established in this form.

Information Reviewer Signature

*David Warren*

Printed Name

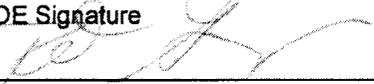
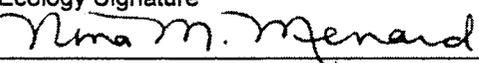
David Warren

Date

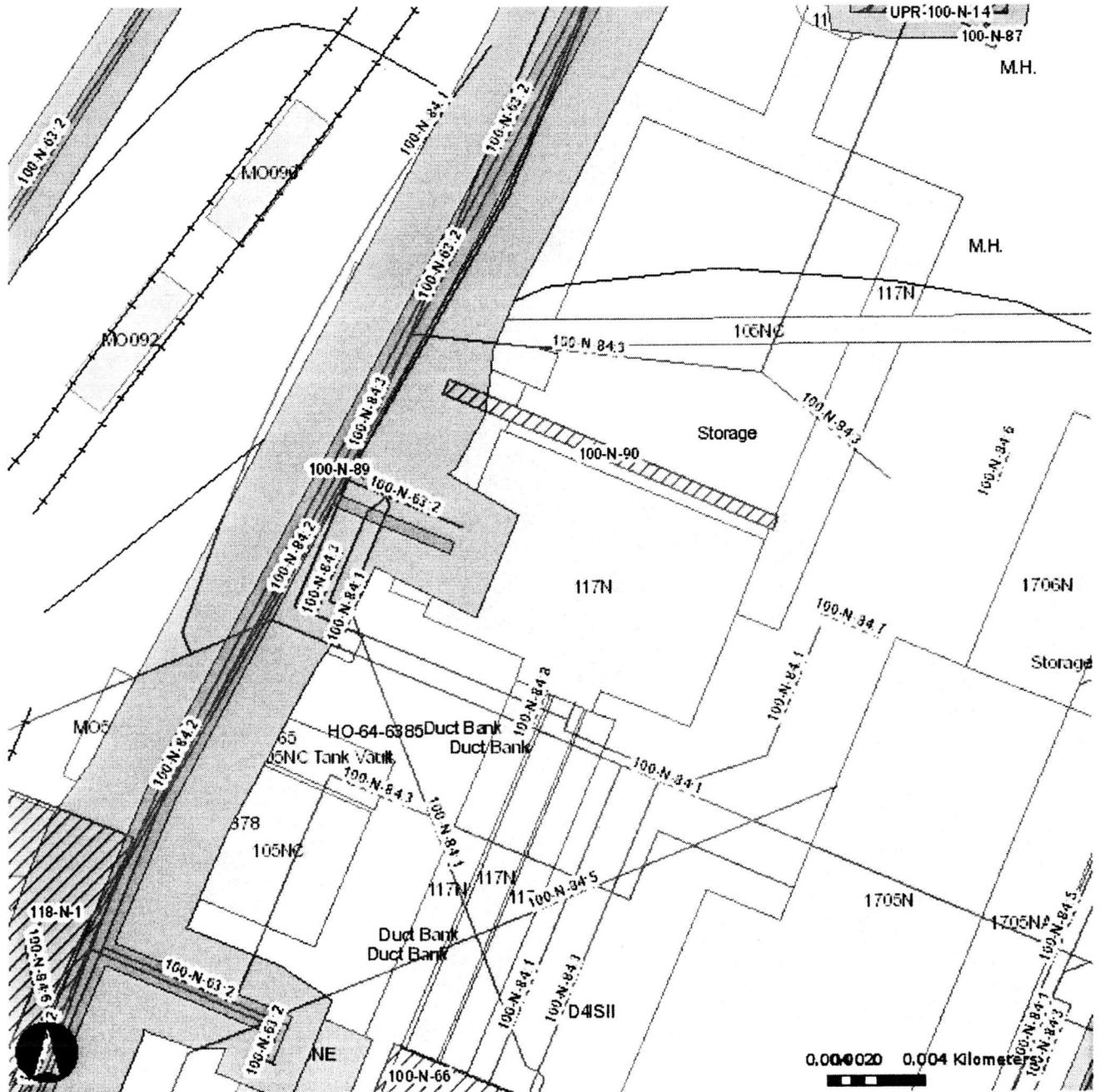
4/30/12

**100-N ANCILLARY FACILITIES REMOVAL ACTION  
SAMPLING DETERMINATION FORM**Determination Number  
SDF-100N-012

The regulatory representative below agrees with the decision outlined in section I of this form for the indicated facility and supports implementation of that decision based on the information currently available.

DOE Signature 	Printed Name R. F. Guerin	Date 4/30/2012
Ecology Signature 	Printed Name NINA M. MENARD	Date 5/1/2012

# Map



Hydrant Names

Fire Hydrants



WasteSitePoints

- Sitecode Missing in SIS

WasteSitesLine (continued)

- Accepted, Rejected
- Discovery,
- Not Accepted,

WasteSitePolys

- ☑ Sitecode Missing in SIS

Waste Point Labels

N\_EXC\_Toe



N\_EXC\_Daylight



- Accepted,
  - + Accepted, Closed Out
  - ▲ Accepted, Consolidated
  - + Accepted, Interim Closed Out
  - + Accepted, No Action
  - + Accepted, Rejected
  - Discovery
  - Not Accepted,
- WasteSitesLine
- Sitecode Missing in SIS
  - Accepted,
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  - Accepted, Interim Closed Out
  - Accepted, No Action

- Accepted,
  - Accepted, Closed Out
  - Accepted, Consolidated
  - Accepted, Deleted From NPL
  - Accepted, Interim Closed Out
  - Accepted, No Action
  - Accepted, Rejected
  - Discovery,
  - Not Accepted (Proposed),
  - Not Accepted,
- Waste Polygon Labels

Waste Line Labels

Main Roads

—

Railroads

—

Roads

—

Buildings

Unknown

Active

Demolished

Inactive

Removed

Building Labels

# Attachment 6

# 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-002

## A. INSTRUCTIONS

*This form must be completed to: 1) document existing data in order to determine if current data is suitable to prove completion of 100-N Ancillary Facilities, or 2) document that site-specific sampling and analyses are needed to provide completion for 100-N Ancillary Facilities.*

## B. GENERAL INFORMATION

Deminerlized Water Plant / Water treatment  
 Building Name: Plant / Pump House / Clearwell / Filter Backwash Sump  
 Building Number: 163N / 183N / 183NA / 183NB / 183NC

WIDS Sites Associated or Adjacent:  
 100-N-10 (rejected), 100-N-11 (rejected), 100-N-84 (colon sites: 1, 3, 4, 5, 6, 7), 120-N-2, 120-N-8, within 100-N-61 planned excavation boundary edge, within 120-N-3 planned excavation boundary edge

Other:  
 N/A

## C. INFORMATION SOURCES

Available information (list document number for each if applicable):

Historical Site Assessment: <u>N/A</u>	Site Walkdown: <u>N/A</u>
IH Characterization Report: <u>N/A</u>	Global Positioning Environmental Radiological Survey: Radiological Surveys (GPERS) ESR-FRM-07-0259, 272, 273, 277, 278
IHC/FHC Document: <u>100-N Ancillary Facilities Preliminary Hazard Categorization CCN 095435</u>	WIDS/SIS: <u>WIDS Data sheets for 163N, 183N, 183NA, 183NB, 183NC, 100-N-84:3</u>
Post Demolition Summary Report for the 163-N Water Demineralization Plant, 183-N PDSR: Water Treatment Plant, 183-NA Pump House, 183-NB Clearwell, and 183-NC Filter Backwash Sump CCN 140560	163-N and 183-N Soils Inspection-Facility Inspection: Excavation Ready for Backfill CCN 138172
Waste Characterization Checklist: <u>Waste Profile WP 2005 09 20 005 rev 0</u>	Summary Report: <u>Characterization Summary Reports CCN 122913 (183N), CCN 122914 (163N)</u>

Other:  
 183-N/163-N Demo and Disposition Meeting Minutes CCN 130293 (Included in PDSR)  
 Ecology backfill approval 183-N Oil Spill CCN 135456  
 100N deactivation drawings CCN 096469 (cold & dark 163-N, 183-N, sump #1)  
 Work Instruction for Confirmatory Sampling of the 100-N-84:3, 100-N Area Filter and Potable Water Pipelines 0100N-WI-G0009, Rev. 0  
 Work Package 100 07 08 16 001b samples of soil and water in 2008 includes data (pH, TCLP metals, Hg, GEA, gross alpha/beta).  
 Work Package 100 06 11 21 002 for demo of 163N/183N

## D. HAZARDOUS SUBSTANCES

Check all that apply:

- None   
  Asbestos containing material   
  Lead   
  PCBs/PCB Articles   
  Oils/Greases  
 Chemicals   
 List: COPCs for the 100-N-84:3 subsite are total chromium, hexavalent chromium, mercury, PCBs, PAH and sulfate (0100N-WI-G0009 pg. 6).  
 Radiological Contamination   
 Mercury/Mercury Devices  
 During treatment, 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 (CCN 140560 Appendix 1 pgs. 1-2).

Other: The alum used at 183-N contained trace amounts of naturally occurring radium-226, radium-228, and thorium-228, which are considered to be Naturally Occurring Radioactive Materials (NORM). To determine if

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-002

NORM 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 (CCN 140560 pgs. 6-7).

References/Comments:

See in-text citations above.

Liquids:  Yes  No

If yes, describe source and nature of liquids:  
water, liquid alum

Were the hazardous substances removed from the facility prior to demolition?  Yes  No

As verified by what documentation:

Work package 100 06 11 21 002. Hazardous substances were removed from the facility prior to demolition with the exception any potential hold-up of materials in Sump #1 (associated with the 163-N Building) sludge/water. Sump #1 was pumped, had the sludge removed and characterized for disposal, and was visually inspected to verify structural integrity prior to removal. Results of the inspection supported the conclusion that the sump did not leak water to the surrounding soil. The excavation was inspected for staining following sump removal. Sump #2 (also associated with the 163N Building) was left to be removed at a later date due to its' close proximity to the 100-N Export Water Line.

Was there potential for hazardous substances to be introduced into the soils during facility operations or demolition?  Yes  No  N/A

References/Comments:

List any hazardous materials left in the building for demolition:

None in the building. There was potential for materials in Sump #2, which was removed by FR in 2011.

Does review of historical records and process knowledge indicate a potential for radiological or chemical contamination to be present in the facility?

No, materials were removed prior to demolition with exception of the Sump #2, which has been removed by FR.

Comments:

Sump #2 was left intact and removed by FR in 2011 because it fell within the 100-N-61:1 planned excavation boundary.

### E. FIELD OBSERVATIONS

#### Visual Inspection

Were any stained soils/anomalies discovered during or after demolition of the facility?  Yes  No

References/Comments:

No stains were identified during an inspection of the facilities' excavation (CCN 138172). Several anomalies were discovered during the demolition process (CCN 140560 pgs. 6-7). However, the materials were either not in direct contact with the soil and did not pose a threat of release to the environment during demolition, were sampled and determined to be of benign nature, or were removed upon contact with the soil.

Were samples taken of the stained soils/anomalies?  Yes  No  N/A

References/Comments:

Do results of the samples indicate that chemical contamination exists?  Yes  No  N/A

References/Comments:

Is the area potentially a discovery site?  Yes  No

References/Comments:

No chemical contamination was identified.

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

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SDF-100N-002

### Radiological Surveys

Did radiological surveys (GPERS or equivalent) identify contamination?  Yes  No

**References/Comments:**

GPERS surveys did not identify radiological contamination (ESR-FRM-07-0277 and ESR-FRM-07-0278). However, radiological contamination was discovered at the facility during the characterization process (CCN 140560 pgs. 4), the contamination was determined to be associated with NORM materials utilized in the water treatment process.

Were samples taken of the radiologically contaminated soils?  Yes  No  N/A

**References/Comments:**

Multiple samples were taken of anomalies that contained radiological contamination and low levels of radiological contamination were detected in sampling results (CCN 140560 pgs. 6-7). However, the materials were determined to be NORM, were not in direct contact with the soil, and did not pose a threat of release to the environment during demolition.

Is the area potentially a discovery site?  Yes  No

**References/Comments:**

Were the contaminated materials removed?  Yes  No  N/A

**References/Comments:**

Sump #2, and the materials within, (163N) was left to be removed by FR at a later date (CCN 140560 pg. 9).

### F. WIDS SITES

Were there any WIDS sites affected by D4 activities?  Yes  No

**If yes, list the WIDS sites:**

124-N-1 (CCN 140560 pg. 6). The lid of the 124-N-1 septic tank was dislodged by a grader. The tank was later removed by D4 and will subsequently be closed out by FR.

Were the WIDS site(s) completely removed?  Yes  No

**References/Comments:**

Will the Ancillary Facility Footprint be deferred to FR to be closed out with a co-located Waste Site?  Yes  No

**References/Comments:**

Only the 163N Sump #2 footprint will be closed out by FR (CCN 140560 pg. 6).

### G. COPCs FOR SOILS AND STRUCTURES REMAINING AFTER DEMOLITION

What are the potential contaminants of concern for the remaining below-grade soil?

None  SVOC  VOC  Metals  TPH  Rad  PCBs

Other (Specify): \_\_\_\_\_

**Comments:**

Summary of in-process soil sampling requirements:

**Constituents detected / concentrations / rationale**

Metals, mercury, and anions to be covered in FR verification sampling of 100-N-61. A focused sample will be collected by FR in Sump # 2 area. Sampling of 163N/183N and/or 183NA may be performed if the 100-N-61:1 excavation crosses the boundary of any of the buildings to chase contaminants. There is potential for sampling of 163N/183N if the 120-N-3 excavation boundary moves eastward in order to chase contaminants.

**Sample Collection Summary**

Consult pages 6-7 and 10-11 of CCN 140560 for a list of sample numbers taken at these facilities.

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-002

### H. NOTES / ADDITIONAL INFORMATION

Check here if additional information / data / maps / sketches are attached to this form.

If checked, list the attachment(s):  
183N/163N Demo and Disposition Meeting Minutes (CCN 130293)

### I. SAMPLING

Are soil samples required to demonstrate that remaining structure or below-grade soils meet cleanup standards?  Yes  No

Based on the above information it was determined that sampling:  will  will not be required in order to demonstrate that cleanup criteria have been met.

The individual below acknowledges that the review of this facility has been completed. He or she also commits to provide to the Department of Energy (DOE) and the Washington State Department of Ecology (Ecology) any available information that could alter the sampling decision established in this form.

Information Reviewer Signature <i>David Warren</i>	Printed Name David Warren	Date 5/1/12
---	------------------------------	----------------

The regulatory representative below agrees with the decision outlined in section I of this form for the indicated facility and supports implementation of that decision based on the information currently available.

DOE Signature <i>[Signature]</i>	Printed Name RF Guercia	Date 5/1/2012
Ecology Signature <i>Nina M. Menard</i>	Printed Name NINA M. Menard	Date 5/2/2012

**WCH** Washington  
Closure  
Hanford  
**Meeting Minutes**

130293

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**SUBJECT** 183N, 163N Demo and Disposition Meeting

**TO** Distribution

**FROM** S. E. Killoy *SE Killoy*

**DATE** October 2, 2006

**ATTENDEES**

J. M. Ayres H0-57  
F. W. Bond H0-57  
S. E. Killoy X5-50  
S. L. Lachmann X5-50  
K. R. Westover A3-04

**DISTRIBUTION**

Attendees  
J. W. Golden L1-04  
R. R. Nielson X5-50  
Records and Document Control H0-30

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A meeting on the above subject was held on October 2, 2006, at the Washington State Department of Ecology Building in Richland, Washington. The intent of this meeting was to review WCH plans for demolishing and closing out the below grade portions of 183N, 163N and related ancillary structures including Sump #1, 183NB Clear Well and related flume, and the 183NC Backwash sump. This meeting was also intended to provide an overview of the process knowledge of the structures and to discuss WCH's plans to verify process knowledge through field screening (i.e., radiological surveys and visual inspection). A detailed list of structures discussed is included in the attached white paper.

Steve Killoy began the meeting by summarizing the intent of the meeting and that although the meeting was not intended to request approval of the strategy by RL or Ecology; it was intended to allow RL and/or Ecology to express any concerns based on discussions regarding the plan and to gain agreement on the approach.

Steve Killoy discussed the history of the structures, which structures were intended to be removed to three feet below grade, which structures were intended to be left in place, as well as structures intended for complete removal, as presented in the attached white paper. He also discussed in the case of each structure, based on process knowledge and available sample results, WCH's intent to perform radiological surveys and visual inspection to confirm process knowledge that soils underlying the structures is "clean" and/or that concrete being left in place is "clean." Two primary concerns were discussed, the potential for Technologically Enhanced Naturally Occurring Radioactive Materials (TENORM) in 183N and the 183NC Backwash sump, as well as Sump #1 and related water and sludge currently in the sump.

Steve Killoy indicated that sampling was performed to evaluate TENORM constituents in the coagulator sediment and sand filter media. TENORM constituents in the samples were non-detectable. The 183NC Backwash sump is down stream of this area in the process and would have had lower probability for these contaminants. As such, non TENORM issues are expected in the 183NC Backwash sump or other downstream areas.

Because of the history of Sump #1, the water in the sump will be removed and characterized for disposal to

the 200 Area Effluent Treatment Facility, the solids in the sump will be removed and characterized for disposal to the Environmental Restoration Disposal Facility, and prior to removal, the sump will be visually inspected for cracking that might indicate a potential for the sump to have leaked. Additionally, upon removal of the sump, the newly exposed surface of the concrete will be visually inspected for staining, as will the soil surface. If visual anomalies are detected, or significant cracking of the concrete is observed, the site will be identified as a potential new waste site and deferred. If no issues are identified the soil will be assumed to be free of chemical contamination and a radiological survey will be completed to support soil closure.

During discussion regarding Sump #1, both Rick Bond and Jeff Ayres noted a sentence in the white paper that read "Soils below the sump may be sampled if the area appears clean, but additional confidence is needed," and asked for clarification. Sarah Lachmann and Steve Killoy indicated that based on observation of the sump for cracking and of the concrete and soils for staining, a sample may be desired to support a conclusion that no leaks occurred. However, if it is evident from the visual exams that the concrete appears to be structurally sound, no sampling will be conducted. The sentence in question was revised to read as follows; "Soils below the sump may be sampled if visual examinations do not provide the necessary confidence of the sumps integrity."

Steve Killoy also pointed out that WCH intends to remove a chemical transfer trench that extends from what used to be 108N (previously removed) and 163N. This site was evaluated as a potential WIDS site and was rejected. However, as the trench is removed, the soils will be visually inspected for chemical staining.

Following discussions, Kent Westover, Rick Bond, and Jeff Ayres indicated agreement with the approach presented.

Additionally, Kent Westover recommended that in the future, when producing close out documentation for structure removals (i.e., Project Summary Report, etc) that the reports should include photos to document the visual inspection of the site.

At the end of the meeting, two side bar discussions were held:

1. Attendees discussed revision of the Map in DOE/RL-2002-70, *Removal Action Work Plan for 100-N Area Ancillary Facilities*, Revision 2 to expand the area identified as the Area of Contamination to include mobile offices and other structures approved by RL and Ecology to be included (added) in the removal action. RL and Ecology agreed that in lieu of a revision to the RAWP, which will be completed at a later time, a communication will be prepared requesting approval of a revised map that will be documented in the Unit Managers Meeting.

Distribution

Page 3

2. Attendees discussed applicability of the DOE/RL-2003-33, *100-N Ancillary Facilities and 190-DR Building Waste Characterization Sampling and Analysis Plan* to structures, including mobile offices and other structures, approved by RL and Ecology to be added to the removal action that have not yet been included to a revision of DOE/RL-2002-70. RL and Ecology agreed that these structures, having been approved to be within the scope of the removal action, are inherently approved within the scope of the SAP. Revision of the RAWP table 1-2, which is reference in the SAP, can occur in an annual review and update of the document.

If there are questions regarding these meeting minutes, please contact Steve Killoy at 373-5473.

Attachments(2)

Attachment 1

Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils

# Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils

## 1.0 Introduction

This document summarizes the proposed WCH D4 approach for demolition and verification of process knowledge for the 183N Water Treatment Plant and 163N Demineralization Plant at 100N. Process history and existing sample data for these facilities are provided to support the intended activities. The intent is to provide a graded and tailored approach for various parts of the facilities based on whether they are known to be clean or contaminated.

When approved, *100-N Area Sampling and Analysis Plan for CERCLA Waste Sites*, (DOE, 2006), will provide direction for close-out activities for soils underlying D4 facilities that are removed as well as below-grade concrete that will be left in place. This SAP is intended to provide direction for sampling required to demonstrate that below-grade concrete that will be left in place and/or soils beneath the facility footprint, believed to be contaminated or that have reasonable probability to be contaminated, meet cleanup standards. Soils and/or below-grade structures, believed to be "clean" because the facility was believed to be clean as a result of process history, sample data, and possibly other similar information, and did not have a history of spills or releases of contaminants to the environment do not fall within the scope of this SAP.

Based on historical information/process knowledge, as well as analytical data available for areas of the facility, there is currently no reason to believe that soils beneath the 183N, 163N, and related structures identified below have been contaminated with hazardous constituents above cleanup levels. Therefore, when demolition activities to remove the structures has been completed, radiological screening and visual examination of the underlying soils and the exposed surface of remaining below-grade concrete structures will be performed to verify the exposed soil surface is free of contamination. If radiological screening or visual examination identifies anomalies, the site will be characterized to determine the extent of contamination and the site may be identified as a potentially new waste site and will be investigated under the orphan waste site process.

## 2.0 Facility Process History

Collectively the 183N and 163N water treatment facilities and associated structures provided water of low suspended and dissolved solids for use as reactor coolant, boiler feed water, other process water, and domestic water. The 183N/163N complex included co-joined facilities, a pump house (183-NA), a clearwell (183-NB), chemical unloading facilities (108-N), and both named and unnamed sumps. Descriptions of a number of these facilities follow. See page 3 for facility plan view.

The 183-N Water Treatment Plant provided filtered water for N Reactor use, potable water, and for other services. The water treatment process consisted of the addition of liquid alum and aqueous chlorine to raw Columbia River water in a chemical mixing

## Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils

tank. Following the chemical addition step, the water solution flowed into settling basins where the added alum with suspended and dissolved solids in the raw water formed larger particles that settled by gravity. After passing through the coagulation basins, the water flowed into filters where a filter aid was added (Seperan). This filtered water was then transferred via the filter flume to the 200,000 gallon clearwell (183-NB). The clean potable water was stored in the clearwell, and then was distributed to various systems and facilities.

The 183-N Water Treatment Plant is a 20,700 ft<sup>2</sup>, one-story, concrete masonry and steel sided building on a reinforced-concrete foundation. This square footage estimate covers the 183-N building up to its union with the 163-N building. The 183-N building consists of the Service Bay, the Chemical Treatment and Pipe Gallery Bay, the Coagulation Basin and Filters, and the Coagulator Drive Bay. The Coagulation Basin is also referred to as the Settling Basin.

The 163-N facility was used to demineralize and de-gas filtered water prior to storage in a 3.8 Mliter (1 Mgal) storage tank (the 1900-N "Demin Tank"). The building also housed auxiliary equipment to regenerate ion-exchange resins for the demineralization process and stored the needed chemicals.

The 163N facility is a single-story, high bay, steel frame building with corrugated metal siding supported on a reinforced concrete foundation. The facility measures approximately 92 ft by 100 ft and is physically adjacent to the 183N facility.

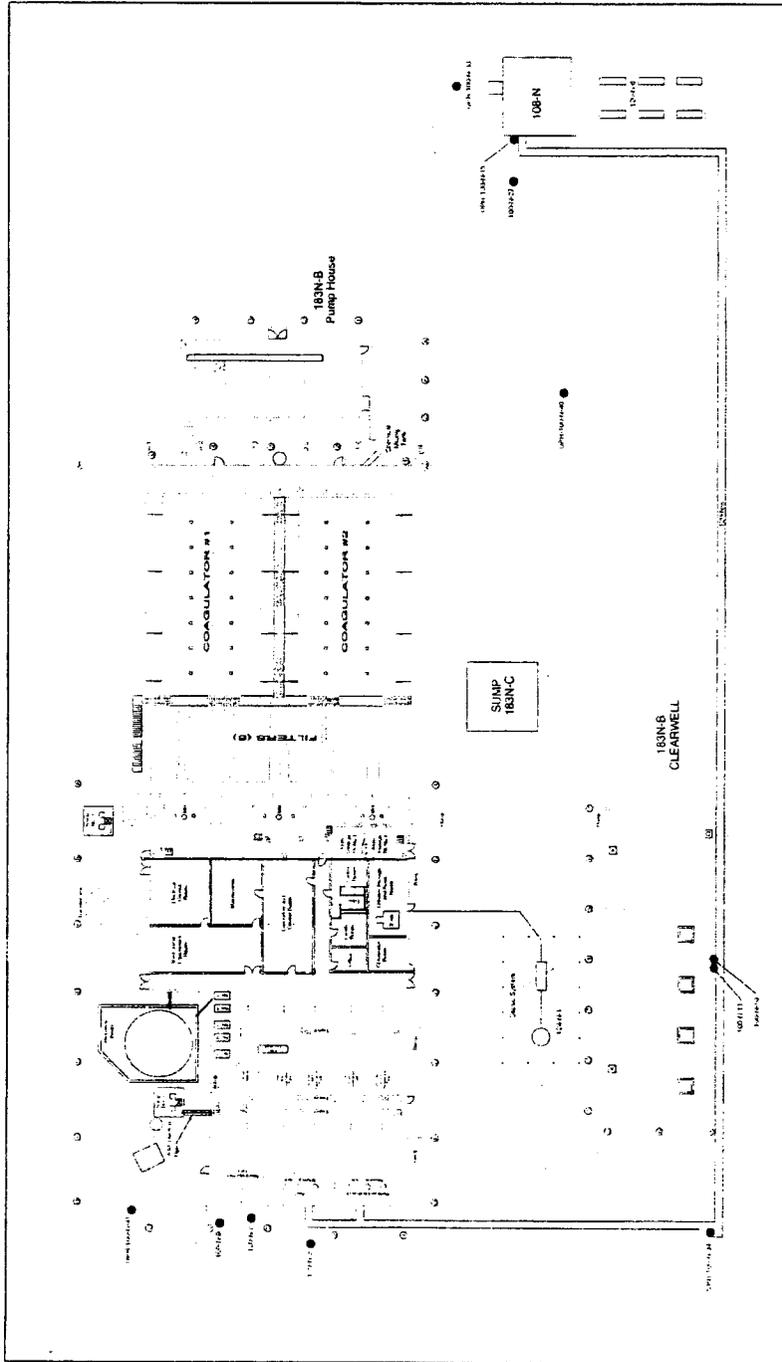
Both the 163N and 183N facilities were built in 1964. The 183-N is located approximately 500 feet south of the 109-N Building. The 163N facility is to the west of the 183N and is physically attached to it.

The 183-NA Pump House is a 2,100 ft<sup>2</sup>, single-story, concrete masonry building with a reinforced-concrete panel roof. The facility housed the pumps for the 100-N process water and is located SE of the 183N.

The 183-NB Clear Well is a buried, rectangular-shaped, reinforced concrete water basin approximately 4787 ft<sup>2</sup> in area (120 ft long by 40 ft wide by 12 ft deep), with the top surface protruding approximately 1 ft above grade. Several pumps and associated control equipment are mounted on the top concrete surface. The 183-NB Clear Well is located to the SW of 183N/163N.

The 183-NC Filter Backwash Sump is a 770 ft<sup>2</sup> (27.7 ft by 27.7 ft), box shaped, reinforced-concrete sump with the top surface protruding approximately 3 ft above grade. The top surface is diamond plate steel. The facility was used to collect backwash water from the 183-N filter beds. The 183-NC sump is located SW of the 183N settling basins. The bottom of the Filter Backwash Sump extends to a depth of 13 feet below grade.

# Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils



## Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils

UNI-M-94, *N-Reactor Plant Manual*, Provides a detailed description on the operation of the 183-N and 163-N facilities.

### 3.0 Demolition Activities and Facility Disposition

The current demolition plan is to demolish the primary 183N and 163N structure to three feet below grade, including the removal of the concrete slab. A number of structures are planned to be left in place as indicated below.

The concrete stem wall that is part of the foundation of 163N and the 183N service bay and piping gallery areas of 183N extends to depths of six to nine feet depending on location. The stem walls that extend lower than three feet below grade will be left in place.

Sump #1 is located just north of the 163N building. It served as drainage receipt for the network of drainage trenches in 163N. These areas in 163N contained ion exchange columns, a sulfuric acid tank, a sodium hydroxide tank, other process equipment and miscellaneous support instrumentation. During characterization sampling the fluids in Sump #1 were determined to contain chemical contaminants including sodium and a small amount of mercury. Therefore, the fluids in this sump will be removed; the sludge will be filtered and further characterized and managed appropriately. The walls of the sump will be visually inspected for signs of cracking or other damage that may have allowed leaking. Leaking in this sump is not expected; because the sump held liquid over periods of time long enough to indicate no significant leaks exist. The sump will then be removed completely. The soils will be visually inspected for staining and other signs of chemical deposits. Soils below the sump may be sampled if visual examinations do not provide the necessary confidence of the sumps integrity. Soil sampling will be determined on a case-by-case basis. If the sump is determined to have possibly leaked, the soils in the vicinity will be deferred to Field Remediation for further disposition. If no signs of leakage are evident, the excavation will be back filled with clean soil.

Sump #2 is located north of 183N, in close proximity to the newer and currently operational 186N water treatment facility. Removal of Sump #2 at this time would cause structural problems to the foundation of the 186N building. Due to the close proximity of Sump #2 to 186N, Sump #2 will be left in place and be removed as part of the demolition for 186N.

A chemical transfer trench runs from the 108N building to the west side of the 163N building. This trench served as the transfer trench for chemicals such as sulfuric acid and sodium hydroxide that were unloaded at the 108N building by rail car. In the past, chemical spilling occurred inside this trench, producing chemical staining on the inside of the concrete trench. The spill was chemically buffered and the trench flushed out. This

## Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils

site has been evaluated for contamination concerns as a potential WIDS site, and was rejected because it is not considered to be a hazardous waste site. See DOE/RL-95-111 for further detailed information. The trench will be completely removed and the soil inspected for staining.

The filter flume resides below the 183N Chemical Mixing and Piping Gallery. The filter flume received water from the sand filters after the completion of water treatment to produce potable water. The clean potable water moved from the sand filters and the end of the settling basins into the filter flume, then over a weir and directly into the 183NB Clearwell. Attempts were made to sample the water in the filter flume but were unsuccessful due to accessibility problems. However, the water in the filter flume is believed to be clean and free from contamination based on the following logic. The water in the settling basins upstream of the flume was tested and approved for use as dust suppression. The sludge in the settling basins was tested for radiological and inorganic constituents, and found not to be contaminated. The sand filter media immediately above the filter flume was tested for metals, radiological constituents, inorganics, and other COCs, and found not to be contaminated. The 183NC Clearwell water downstream of the filter flume was tested and found to be free of COC's and was approved for use as dust suppression. A limited portion of the interior of the Clearwell was visually inspected and determined not to contain sludge. The walls and floor of the Clearwell only showed signs of rust stains as expected and appeared to be in structurally good condition with no observations of cracking or other damage. Therefore, the floor of the Piping Gallery and Chemical Mixing Bay will be removed, and radiologically surveyed to ensure the area is clean from radiological contamination. The roof of the filter flume will be caved in and filled, leaving the below grade concrete in the filter flume in place.

The 183NB Filter Backwash Sump will be left in place. The water in the sump was tested and accepted for use as dust suppression. The water in the sump was pumped, and the interior of the sump walls and floor were visually inspected to look for staining and signs of cracking or sludge on the floor. No cracking, chemical staining, or sludge was observed. Minor amounts of iron (rust) staining were observed, and areas where the walls of the sump were in contact with rapidly flowing water during filter back washing showed typical signs of slightly exposed aggregate, as seen in many similar situations, including at the 181N River Water Low-Lift Pump House. In addition LARADS or GPERS will be conducted in the sump to verify no TENORM is present. The implications for the evident cleanliness of the 183NC Filter Back Wash Sump are two-fold. The demolition plan is to leave the concrete structure in place. Additionally, because the 183NC Filter Back Wash Sump is expected to provide the worst potential case for contamination at the 183N facility, and the evidence indicates it is clean, this supports the plans to leave the filter flume and 183NB Clearwell in place as well.

### 4.0 WIDS Sites

The following WIDS Sites are associated with or located near the 183-N and 163-N facilities:

## Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils

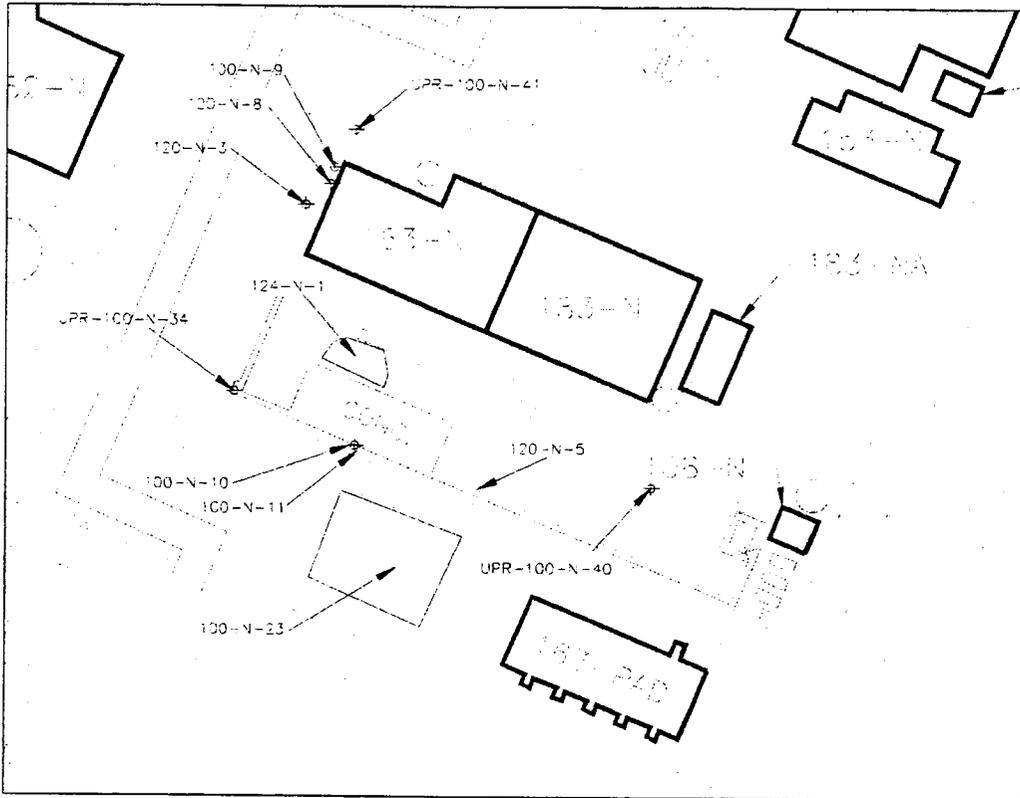
<b>Table 1.1 Adjacent WIDS Sites</b>	
<b>WIDS Site</b>	<b>Description</b>
100-N-62	Underground Pipelines
100-N-74	183N Fire System Drain
100-N-75	183N Fire System Relief Valve
100-N-9	120-N-5 Facility Liquid Unplanned Release
100-N-10	120-N-5 Facility Liquid Unplanned Release 2 (a.k.a., 120-N-5)
100-N-11	120-N-5 Transfer Trench Liquid Unplanned Release 3) (a.k.a., 120-N-5)
100-N-23	163N Resin Disposal Pit, Clearwell Overflow Sump
100-N-58	120-N South Settling Pond, site has been remediated and closed out
120-N-1	1324-NA Percolation Pond, site has been remediated
120-N-2	1324-N Surface Impoundment, site has been remediated
120-N-3	163N Neutralization Pit and French Drain
120-N-5	(a.k.a 100-N-9, -10 & -11, 108-N/163N Transfer Line and Neutralization Pit
120-N-8	163N Sulfuric Acid Tank Vent French Drain
124-N-1	100-N Sanitary Sewer System No. 1
130-N-1	183N Backwash Pond
UPR-100-N-34	108-N Tank Transfer, sulfuric acid line break
UPR-100-N-40	163N Cation/Anion Regeneration Waste Spill
UPR-100-N-41	163N Regeneration Transport System Liquid UPR 2, 163-N Regeneration, Waste Spill).

Of these sites, 100-N-23, 100-N-58, 120-N-1, 120-N-2, 130-N-1 are sufficiently removed from the 183N/163N facilities that disturbance during D4 activities is not intended to occur.

WIDS sites UPR-100-N-34, -40, and -41, 124-N-1, 100-N-74, and 100-N-75 are not likely to be disturbed by D4 activities (not within the potential excavation layback), but are located in the work zone.

WIDS site 120-N-3 will be protected for demolition by Field Remediation. The remaining WIDS sites (100-N-9, 100-N-10, 100-N-11, 120-N-5, and 120-N-8) have been rejected as described above and in DOE/RL-95-111.

## Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils



**Figure 1.1, Adjacent WIDS Sites (163N Pad called 1330N)**

### 5.0 Summary of D4 Activities

The planned demolition of the 183N/163N facilities is summarized in the following table, Table 5.1.

<b>Table 5.1 Planned Scope of D4 Activities at 183N/163N</b>		
<b>Structure</b>	<b>Planned demolition</b>	<b>Method Used to Verify Process/ Historical Knowledge</b>
183N, 183NA (includes flocculator drive bay, settling basins, pump house, chemical transfer bay, and service bay including office area and lab area)	Complete removal of structure, slab, and underlying soil up to 3 ft BG. Stem walls and footing greater than 3 ft BG will remain.	LARADS or GPERS
183N filtered water flume	Cave in flume top, leave in place	NA
183N Sump #2	Complete removal of	Not applicable to this scope

Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils

<b>Table 5.1 Planned Scope of D4 Activities at 183N/163N</b>		
<b>Structure</b>	<b>Planned demolition</b>	<b>Method Used to Verify Process/ Historical Knowledge</b>
	structure. Disposition to ERDF. Demolition will occur with deactivation of near-by facilities.	
183N Chemical Mix Tank	Complete removal of structure and underlying soil up to 3 ft BG. Disposition to ERDF.	LARADS or GPERS Visual for soil staining
183-NB Clearwell	Demolition to 3 ft BG, leave in place.	NA
183-NC Filter Backwash Sump	Demolition to 3ft BG. Verify attainment of clean closure criteria, leave in place.	Visual clean-closure evaluation. LARADS or GPERS
163N	Complete removal of structure and underlying soil up to 3 ft BG. Stem walls and footings greater than 3 ft BG will remain.	LARADS or GPERS Visual for soil staining
163N Sump #1	Complete removal of structure. Disposition to ERDF.	Visual examination of soils, sampling may be required Radiological screening NA

Attachment 2

Email Concurrence from Rick Bond (Ecology PM), Jeff Ayres (Ecology),  
and Kent Westover (DOE-RL PM)

**Killoy, Steve E**

---

**From:** Bond, Rick (ECY) [FBON461@ECY.WA.GOV]  
**Sent:** Monday, October 09, 2006 10:57 AM  
**To:** Killoy, Steve E  
**Cc:** Westover, Kent R; Ayres, Jeff  
**Subject:** FW: 183N and 163N Demo and Disposition Meeting  
**Attachments:** 183N 163N Demo and Disposition Paper 100906.doc; 183N and 163N Demo and Disposition Meeting.doc

Looks good to me with a few minor suggestions.

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

**From:** Killoy, Steve E [mailto:steve.killoy@wch-rcc.com]  
**Sent:** Monday, October 09, 2006 9:10 AM  
**To:** Westover, Kent R; Bond, Rick (ECY); Ayres, Jeff  
**Cc:** Lachmann, Sarah L; Yasek, Donna M; Nielson, Robert R  
**Subject:** 183N and 163N Demo and Disposition Meeting

Kent, Rick, and Jeff;

I have attached draft meeting minutes of our meeting regarding 183N/163N as well as the paper that supported our discussions with a minor change to discussion regarding sump #1 as discussed in the meeting minutes. I would like to request your review of the meeting minutes to ensure I captured the meeting accurately and an email from you concurring with the meeting minutes or to provide comments/necessary clarifications or changes that you feel need to be made.

If you have any questions, please contact me.

Thanks.

Steve

# Verification of Process Knowledge for the 183N and 163N Facilities and Underlying Soils

## 1.0 Introduction

This document summarizes the proposed WCH D4 approach for demolition and verification of process knowledge for the 183N Water Treatment Plant and 163N Demineralization Plant at 100N. Process history and existing sample data for these facilities are provided to support the intended activities. The intent is to provide a graded and tailored approach for various parts of the facilities based on whether they are known to be clean or contaminated.

When approved, *100-N Area Sampling and Analysis Plan for CERCLA Waste Sites*, (DOE, 2006), will provide direction for close-out activities for soils underlying D4 facilities that are removed as well as below-grade concrete that will be left in place. This SAP is intended to provide direction for sampling required to demonstrate that below-grade concrete that will be left in place and/or soils beneath the facility footprint, believed to be contaminated or that have reasonable probability to be contaminated, meet cleanup standards. Soils and/or below-grade structures, believed to be "clean" because the facility was believed to be clean as a result of process history, sample data, and possibly other similar information, and did not have a history of spills or releases of contaminants to the environment do not fall within the scope of this SAP.

Based on historical information/process knowledge, as well as analytical data available for areas of the facility, there is currently no reason to believe that soils beneath the 183N, 163N, and related structures identified below have been contaminated with hazardous constituents above cleanup levels. Therefore, when demolition activities to remove the structures has been completed, radiological screening and visual examination of the underlying soils and the exposed surface of remaining below-grade concrete structures will be performed to verify the exposed soil surface is free of contamination. If radiological screening or visual examination identifies anomalies, the site will be characterized to determine the extent of contamination and the site may be identified as a potentially new waste site and will be investigated under the orphan waste site process.

## 2.0 Facility Process History

Collectively the 183N and 163N water treatment facilities and associated structures provided water of low suspended and dissolved solids for use as reactor coolant, boiler feed water, other process water, and domestic water. The 183N/163N complex included co-joined facilities, a pump house (183-NA), a clearwell (183-NB), chemical unloading facilities (108-N), and both named and unnamed sumps. Descriptions of a number of these facilities follow. See page 3 for facility plan view.

The 183-N Water Treatment Plant provided filtered water for N Reactor use, potable water, and for other services. The water treatment process consisted of the addition of liquid alum and aqueous chlorine to raw Columbia River water in a chemical mixing

# **WCH** Washington Closure Hanford **Meeting Minutes**

**SUBJECT** 183N, 163N Demo and Disposition Meeting

**TO:** Distribution

**FROM** S. E. Killoy

**DATE** October 2, 2006

**ATTENDEES**

J. M. Ayres H0-57  
F. W. Bond H0-57  
S. E. Killoy X5-50  
S. L. Lachmann X5-50  
K. R. Westover A3-04

**DISTRIBUTION**

Attendees  
J. W. Golden L1-04  
R. R. Nielson X5-50  
Records and Document Control H0-30

A meeting on the above subject was held on October 2, 2006, at the Washington State Department of Ecology Building in Richland, Washington. The intent of this meeting was to review WCH plans for demolishing and closing out the below grade portions of 183N, 163N and related ancillary structures including Sump #1, 183NB Clear Well and related flume, and the 183NC Backwash sump. This meeting was also intended to provide an overview of the process knowledge of the structures and to discuss WCH's plans to verify process knowledge through field screening (i.e., radiological surveys and visual inspection). A detailed list of structures discussed is included in the attached white paper.

Steve Killoy began the meeting by summarizing the intent of the meeting and that although the meeting was not intended to request approval of the strategy by RL or Ecology; it was intended to allow RL and/or Ecology to express any concerns based on discussions regarding the plan and to gain agreement on the approach.

Steve Killoy discussed the history of the structures, which structures were intended to be removed to three feet below grade, which structures were intended to be left in place, as well as structures intended for complete removal, as presented in the attached white paper. He also discussed in the case of each structure, based on process knowledge and available sample results, WCH's intent to perform radiological surveys and visual inspection to confirm process knowledge that soils underlying the structures is "clean" and/or that concrete being left in place is "clean." Two primary concerns were discussed, the potential for Technologically Enhanced Naturally Occurring Radioactive Materials (TENORM) in 183N and the 183NC Backwash sump, as well as Sump #1 and related water and sludge currently in the sump.

Deleted:

Steve Killoy indicated that sampling was performed to evaluate TENORM constituents in the coagulator sediment and sand filter media. TENORM constituents in the samples were non-detectable. The 183NC Backwash sump is down stream of this area in the process and would have had lower probability for these contaminants. As such, non TENORM issues are expected in the 183NC Backwash sump or other downstream areas.

Because of the history of Sump #1, the water in the sump will be removed and characterized for disposal to

the 200 Area Effluent Treatment Facility, the solids in the sump will be removed and characterized for disposal to the Environmental Restoration Disposal Facility, and prior to removal, the sump will be visually inspected for cracking that might indicate a potential for the sump to have leaked. Additionally, upon removal of the sump, the newly exposed surface of the concrete will be visually inspected for staining, as will the soil surface. If visual anomalies are detected, or significant cracking of the concrete is observed, the site will be identified as a potential new waste site and deferred. If no issues are identified the soil will be assumed to be free of chemical contamination and a radiological survey will be completed to support soil closure.

During discussion regarding Sump #1, both Rick Bond and Jeff Ayres noted a sentence in the white paper that read "Soils below the sump may be sampled if the area appears clean, but additional confidence is needed." and asked for clarification. Sarah Lachmann and Steve Killoy indicated that based on observation of the sump for cracking and of the concrete and soils for staining, a sample may be desired to support a conclusion that no leaks occurred. However, if it is evident from the visual exams that the concrete appears to be structurally sound, no sampling will be conducted. The sentence in question was revised to read as follows: "Soils below the sump may be sampled if visual examinations do not provide the necessary confidence of the sumps integrity."

Steve Killoy also pointed out that WCH intends to remove a chemical transfer trench that extends from what used to be 108N (previously removed) and 163N. This site was evaluated as a potential WIDS site and was rejected. However, as the trench is removed, the soils will be visually inspected for chemical staining.

Following discussions, Kent Westover, Rick Bond, and Jeff Ayres indicated agreement with the approach presented.

Additionally, Kent Westover recommended that in the future, when producing close out documentation for structure removals (i.e., Project Summary Report, etc) that the reports should include photos to document the visual inspection of the site.

At the end of the meeting, two side bar discussions were held:

1. Attendees discussed revision of the Map in DOE/RL-2002-70, *Removal Action Work Plan for 100-N Area Ancillary Facilities*. Revision 2 to expand the area identified as the Area of Contamination to include mobile offices and other structures approved by RL and Ecology to be included (added) in the removal action. RL and Ecology agreed that in lieu of a revision to the RAWP, which will be completed at a later time, a communication will be prepared requesting approval of a revised map that will be documented in the Unit Managers Meeting.

2. Attendees discussed applicability of the DOE/RL-2003-33, *100-N Ancillary Facilities and 190-DR Building Waste Characterization Sampling and Analysis Plan* to structures, including mobile offices and other structures, approved by RL and Ecology to be added to the removal action that have not yet been included to a revision of DOE/RL-2002-70. RL and Ecology agreed that these structures, having been approved to be within the scope of the removal action, are inherently approved within the scope of the SAP. Revision of the RAWP table 1-2, which is reference in the SAP, can occur in an annual review and update of the document.

If there are questions regarding these meeting minutes, please contact Steve Killoy at 373-5473.

Attachment

**Killoy, Steve E**

---

**From:** Ayres, Jeff [JAYR461@ECY.WA.GOV]  
**Sent:** Monday, October 09, 2006 11:02 AM  
**To:** Killoy, Steve E; Westover, Kent R; Bond, Rick (ECY)  
**Cc:** Lachmann, Sarah L; Yasek, Donna M; Nielson, Robert R  
**Subject:** RE: 183N and 163N Demo and Disposition Meeting

These look OK to me.

Thanks

Jeff Ayres

---

**From:** Killoy, Steve E [mailto:steve.killoy@wch-rcc.com]  
**Sent:** Monday, October 09, 2006 9:10 AM  
**To:** Westover, Kent R; Bond, Rick (ECY); Ayres, Jeff  
**Cc:** Lachmann, Sarah L; Yasek, Donna M; Nielson, Robert R  
**Subject:** 183N and 163N Demo and Disposition Meeting

Kent, Rick, and Jeff;

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If you have any questions, please contact me.

Thanks.

Steve

10/10/2006

**Killoy, Steve E**

---

**From:** Westover, Kent R [Kent\_R\_Westover@RL.gov]  
**Sent:** Thursday, October 12, 2006 7:17 AM  
**To:** Killoy, Steve E  
**Subject:** RE: 183N and 163N Demo and Disposition Meeting

I'm okay with this.

Thanks, Kent Westover

---

**From:** Killoy, Steve E [mailto:steve.killoy@wch-rcc.com]  
**Sent:** Tuesday, October 10, 2006 6:39 AM  
**To:** Westover, Kent R  
**Subject:** FW: 183N and 163N Demo and Disposition Meeting

Kent,

Have you had a chance to review the documents I sent?

Steve Killoy  
100N D4 Environmental Lead

509.373.5473 (Hanford)  
509.727.7804 (Cell)  
509.946.8279 (Office)

---

**From:** Ayres, Jeff [mailto:JAYR461@ECY.WA.GOV]  
**Sent:** Monday, October 09, 2006 11:02 AM  
**To:** Killoy, Steve E; Westover, Kent R; Bond, Rick (ECY)  
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Thanks

Jeff Ayres

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10/16/2006

If you have any questions, please contact me.

Thanks.

Steve

10/16/2006



# Attachment 7

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-013

### A. INSTRUCTIONS

*This form must be completed to: 1) document existing data in order to determine if current data is suitable to prove completion of 100-N Ancillary Facilities, or 2) document that site-specific sampling and analyses are needed to provide completion for 100-N Ancillary Facilities.*

### B. GENERAL INFORMATION

Building Name: Valve Pit

Building Number: 1926-N

WIDS Sites Associated or Adjacent:  
100-N-63:2

**Other:**

The 1926-N Facility was removed/demolished by the Field Remediation organization in 2011 as part of removal of a section of the 100-N-63:2 pipeline (RCRA piping). One of the sample locations (J1MXD7) for closure of the 100-N-63:2 (Verification Sampling Work Instruction 0100N-WI-G0022) is located within the footprint of the 1926-N and will be used for verification purpose of the 1926-N soils. See attached table for comparison of the sample data versus the Remedial Action Goals (RAGs).

### C. INFORMATION SOURCES

Available information (list document number for each if applicable):

Historical Site Assessment: N/A

Site Walkdown: N/A

IH Characterization Report: N/A

Radiological Survey: 100-N-63:2 Trench East (ESRFRM110219G and ESRFRM110219B). Both included in PDSR.

IHC/FHC Document: N/A

WIDS/SIS: RCC Stewardship Information System (SIS) Facility Summary Reports: 1926-N

PDSR: Post Demolition Summary Report for the 1926-N Valve Pit (CCN# not assigned as of yet)

Facility Inspection: N/A

Waste Characterization Checklist: N/A

Summary Report: N/A

**Other:**

- FR Daily Report #288
- Verification Sampling of the 100-N Treatment Storage and Disposal Unit Pipelines: 100-N-63:2, Pipelines Between 109-N, 105-N, 107-N, 1310N, 1322N, 1926N, and 36" Process Drain to Outfall: 0100N-WI-G0022. Results for Sample (HEIS) Number J1MXD7.
- Photograph of 1926-N Facility Pre-Demolition, No Time Stamp: SIS Facility Summary Report for 1926-N pg. 2
- Photographs of 1926-N Facility before, during, and following Demolition, Date and Time stamped: 11/3/2011 1141, 1240, and 1322

### D. HAZARDOUS SUBSTANCES

Check all that apply:

None       Asbestos containing material       Lead       PCBs/PCB Articles       Oils/Greases

Chemicals List: \_\_\_\_\_

Radiological Contamination       Mercury/Mercury Devices

Other: \_\_\_\_\_

**References/Comments:**

The 1926-N was a concrete valve pit that was constructed to direct waste to the planned but never built gable mountain crib. There were no hazardous substances associated with the construction except for asbestos mastic coating on the 100-N-63:2 pipelines that fed it.

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-013

Liquids:  Yes  No

If yes, describe source and nature of liquids:

The 1926-N facility was a valve pit for the chemical waste line which originated from the 1310-N facility (SIS Summary Report for 1926-N pg. 1, See attached GIS Map for location). The valve pit was built to direct waste to the planned but never constructed gable mountain crib. The line was never used thus there was little potential for liquids to be present.

Were the hazardous substances removed from the facility prior to demolition?  Yes  No

As verified by what documentation:

There were no hazardous substances associated with this structure as it was never used.

Was there potential for hazardous substances to be introduced into the soils during facility operations or demolition?  Yes  No  N/A

References/Comments:

There was no potential to introduce hazardous substances as there were none associated with construction of the structure and the waste lines were never used. Verification sampling for the 100-N-63:2 WIDS site included the 1926-N facility via sampling location S-17 (0100N-WI-G0022 Figure 2-attached to this form). The sample number for this location is J1MXD7. See attached table for comparison of the sample data versus the Remedial Action Goals (RAGs)

List any hazardous materials left in the building for demolition:

N/A

Does review of historical records and process knowledge indicate a potential for radiological or chemical contamination to be present in the facility?

N/A

Comments:

Verification sampling for the 100-N-63:2 WIDS site included the 1926-N facility via sampling location S-17 (0100N-WI-G0022 Figure 2-attached to this form). The sample number for this location is J1MXD7. See attached table for comparison of the sample data versus the Remedial Action Goals (RAGs). The sample locations were pre-determined as part of the RCRA TSD sampling agreement with Ecology.

Pertinent design drawings for this facility are H-1-32232 & H-1-45007 Sheet 56.

### E. FIELD OBSERVATIONS:

#### Visual Inspection

Were any stained soils/anomalies discovered during or after demolition of the facility?  Yes  No

References/Comments:

FR Daily Report #288. Date and time stamped photographs of excavation following removal.

Were samples taken of the stained soils/anomalies?  Yes  No  N/A

References/Comments:

No samples were taken of stained soils/anomalies as none were observed.

Do results of the samples indicate that chemical contamination exists?  Yes  No  N/A

References/Comments:

Is the area potentially a discovery site?  Yes  No

References/Comments:

#### Radiological Surveys

Did radiological surveys (GPERS or equivalent) identify contamination?  Yes  No

References/Comments:

GPERS Surveys ESRFRM110219G and ESRFRM110219B

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-013

Were samples taken of the radiologically contaminated soils?  Yes  No  N/A

References/Comments:

Is the area potentially a discovery site?  Yes  No

References/Comments:

Were the contaminated materials removed?  Yes  No  N/A

References/Comments:

This question is not applicable as no contaminated materials were discovered.

### F. WIDS SITES

Were there any WIDS sites affected by D4 activities?  Yes  No

If yes, list the WIDS sites:

This facility was removed by the FR organization in conjunction with removal of the 100-N-63:2 pipelines.

Were the WIDS site(s) completely removed?  Yes  No

References/Comments:

D4 did not completely remove any WIDS sites, however, FR has completely removed the section of 100-N-63:2 pipeline between the 1310-N and 1926-N, including removal of the 1926-N.

Will the Ancillary Facility Footprint be deferred to FR to be closed out with a co-located Waste Site?  Yes  No

References/Comments:

One of the sample locations (J1MXD7) for closure of the 100-N-63:2 (Verification Sampling Work Instruction 0100N-WI-G0022) is located within the footprint of the 1926-N and will be used for verification purpose of the 1926-N soils. See attached table for comparison of the sample data versus the Remedial Action Goals (RAGs).

### G. COPCs FOR SOILS AND STRUCTURES REMAINING AFTER DEMOLITION

What are the potential contaminants of concern for the remaining below-grade soil?

None  SVOC  VOC  Metals  TPH  Rad  PCBs

Other (Specify): \_\_\_\_\_

Comments:

N/A

Summary of in-process soil sampling requirements:

N/A

Constituents detected / concentrations / rationale

N/A

Sample Collection Summary

See attached table for comparison of the sample data versus the RAGS for samples taken by FR as part of closure of the 100-N-63:2 WIDS site.

### H. NOTES / ADDITIONAL INFORMATION

Check here if additional information / data / maps / sketches are attached to this form.

If checked, list the attachment(s):

- Table Comparing results for Sample (HEIS) Number J1MXD7 against RAGs
- Verification Sampling Work Instruction Figure: 0100N-WI-G0022 Figure 2

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-013

• GIS Map

### I. SAMPLING

Are soil samples required to demonstrate that remaining structure or below-grade soils meet cleanup standards?  Yes  No

Based on the above information it was determined that sampling:  will  will not be required in order to demonstrate that cleanup criteria have been met.

The individual below acknowledges that the review of this facility has been completed. He or she also commits to provide to the Department of Energy (DOE) and the Washington State Department of Ecology (Ecology) any available information that could alter the sampling decision established in this form.

Information Reviewer Signature

*David Warren*

Printed Name

David Warren

Date

4/30/12

The regulatory representative below agrees with the decision outlined in section I of this form for the indicated facility and supports implementation of that decision based on the information currently available.

DOE Signature

*J. F. Green*

Printed Name

J. F. Green

Date

4/30/2012

Ecology Signature

*Nina M. Menard*

Printed Name

NINA M. MENARD

Date

5/1/2012

**Sample J1MXD7 results compared to non radiological RAGS**

Contaminant	Sample Result (mg/kg)	Kd Value (mL/g)	Soil Cleanup Levels, (mg/kg) <sup>a</sup>		
			Direct Exposure	Protective of Groundwater	Protective of the River
<b>Metals</b>					
Antimony	0.34 U	1.4	32 <sup>b</sup>	5 <sup>c</sup>	5 <sup>c</sup>
Arsenic	1.5	3	20 <sup>c</sup>	20 <sup>c</sup>	20 <sup>c</sup>
Barium	45 X	25	5,600 <sup>b</sup>	200	400
Beryllium	0.03 U	790	10.4 <sup>e</sup>	1.51 <sup>c</sup>	1.51 <sup>c</sup>
Boron	0.88 U	3	7,200 <sup>b</sup>	320	NA
Cadmium	0.12 B	30	13.9 <sup>e</sup>	0.81 <sup>c</sup>	0.81 <sup>c</sup>
Chromium, Total	6.6 X	200	80,000	18.5 <sup>c</sup>	18.5 <sup>c</sup>
Chromium VI		0	2.1 <sup>e</sup>	4.8	2
Cobalt	8.6 X	50	24 <sup>b</sup>	15.7	NA
Copper	12.9	22	2,960 <sup>b</sup>	59.2	22.0 <sup>c</sup>
Lead	3	30	353 <sup>f</sup>	10.2 <sup>c</sup>	10.2 <sup>c</sup>
Lithium	--	50	160 <sup>b</sup>	33.5 <sup>c</sup>	NA
Manganese	277 X	50	3,760 <sup>b</sup>	512 <sup>c</sup>	NA
Mercury		30	24 <sup>b</sup>	0.33 <sup>c</sup>	0.33 <sup>c</sup>
Molybdenum	0.23 U	20	400 <sup>b</sup>	8	NA
Nickel	8.6 X	65	1,600 <sup>b</sup>	19.1 <sup>c</sup>	27.4
Selenium (trace)	0.77 U	150	400 <sup>b</sup>	5	1
Silver (trace)	0.14 U	90	400 <sup>b</sup>	8	0.73 <sup>c</sup>
Strontium	--	15	48,000	960	NA
Thallium	--	71	5.6	0.5 <sup>c</sup>	0.5 <sup>c</sup>
Tin	--	130	48,000	960	NA
Uranium	--	2	240	3.21 <sup>c</sup>	3.21 <sup>c</sup>
Vanadium	53.3 X	1,000	560 <sup>b</sup>	85.1 <sup>c</sup>	NA
Zinc	40.7 X	30	24,000 <sup>b</sup>	480	67.8 <sup>c</sup>
<b>Inorganics and TPH</b>					
Chloride	2 U	0	NA	25,000	NA
Cyanide	--	0	1,600 <sup>b</sup>	20	1.04
Fluoride	1 B	150	4,800	96	400
Nitrate (as Nitrogen)	0.98 B	0	128,000	1,000	2,000
Nitrite (as Nitrogen)	0.34 U	0	8,000	100	200
Sulfate	4.3 BC	2	NA	25,000	NA
Sulfide	--	0	NA	NA	NA
TPH C10-C36	5.9	50	200	200	200
TPH C10-C28	3.40 J	50	200	200	200
<b>Semivolatiles</b>					
Acenaphthene	0.010 U	4.9	4,800 <sup>b</sup>	96	129
Acenaphthylene <sup>h</sup>	0.0093 U	6.12	4,800 <sup>b</sup>	96	129
Anthracene	0.053	23.5	24,000 <sup>b</sup>	240	1,920
Benzo(a)anthracene	0.120	360	1.37 <sup>d</sup>	0.015 <sup>c</sup>	0.015 <sup>c</sup>
Benzo(a)pyrene	0.058	969	0.137	0.015 <sup>c</sup>	0.015 <sup>c</sup>
Benzo(b)fluoranthene	0.057 X	880	1.37 <sup>d</sup>	0.015 <sup>c</sup>	0.015 <sup>c</sup>
Benzo(k)fluoranthene	0.033	2,020	1.37	0.015 <sup>c</sup>	0.015 <sup>c</sup>
Benzo(g,h,i)perylene <sup>h</sup>	0.018 J	2,680	2,400 <sup>b</sup>	48	192
Bis(2-chloro-1-methylethyl) ether	--	0.0392	14.3 <sup>d</sup>	0.92 <sup>c</sup>	7.50
Bis(2-chloroethoxy)methane <sup>h</sup>	0.023 U	0.00277	0.909 <sup>d</sup>	0.33 <sup>c</sup>	0.33 <sup>c</sup>

Sample J1MXD7 results compared to non radiological RAGS

Contaminant	Sample Result (mg/kg)	Kd Value (mL/g)	Soil Cleanup Levels, (mg/kg) <sup>a</sup>		
			Direct Exposure	Protective of Groundwater	Protective of the River
Bis(2-chloroethyl) ether	0.016 U	0.0760	0.909 <sup>d</sup>	0.33 <sup>c</sup>	0.33 <sup>c</sup>
Bis(2-ethylhexyl)phthalate	0.045 U	110	71.4 <sup>d</sup>	0.6	0.36
Bromophenylphenyl ether; 4-	0.019 U	4.16	NA	NA	NA
Butylbenzylphthalate	0.043 U	13.8	16,000 <sup>b</sup>	320	250
Carbazole	0.036 U	200	50 <sup>d</sup>	0.437	NA
Chloro-3-methylphenol; 4- <sup>h</sup>	--	NA	4,000 <sup>b</sup>	80	NA
Chloroaniline; 4-	0.081 U	0.0725	320 <sup>b</sup>	6.4	NA
Chloronaphthalene; 2-	0.0099 U	2.98	6,400 <sup>b</sup>	6.4	2.06
Chlorophenol; 2-	0.021 U	0.388	400 <sup>b</sup>	8.00	19.34
Chlorophenylphenyl ether; 4-	0.021 U	NA	NA	NA	NA
Chrysene	0.084	200	13.7	0.12	0.1 <sup>c</sup>
Dibenzo(a,h)anthracene	0.011 U	1,790	1.37	0.03 <sup>c</sup>	0.03 <sup>c</sup>
Dibenzofuran	0.020 U	11.3	160 <sup>b</sup>	3.20	NA
Dichlorobenzene; 1,2-	0.022 U	0.379	7,200 <sup>b</sup>	60.0	540
Dichlorobenzene; 1,3-	0.012 U	0.434	2,400 <sup>b</sup>	24.0	80
Dichlorobenzene; 1,4-	0.013 U	0.616	41.7 <sup>d</sup>	0.33 <sup>c</sup>	0.972
Dichlorobenzidine; 3,3'-	0.089 U	0.724	2.22 <sup>d</sup>	0.33 <sup>c</sup>	0.33 <sup>c</sup>
Dichlorophenol; 2,4-	0.099 U	0.147	240 <sup>b</sup>	4.80	18.6
Diethylphthalate	0.026 U	0.0820	64,000 <sup>b</sup>	1,280	4,600
Dimethylphthalate	0.079 JB	0.0371	80,000 <sup>b</sup>	1,600	14,400
Dimethylphenol; 2,4-	0.065 U	0.209	1,600 <sup>b</sup>	32.0	110.6
Di-n-butylphthalate	0.029 U	1.57	8,000 <sup>b</sup>	160	540
Di-n-octylphthalate	0.014 U	83,200	1,600 <sup>b</sup>	32	NA
Dinitro-2-methylphenol; 4,6-	0.330 U	0.6015	8.00 <sup>b</sup>	0.33 <sup>c</sup>	NA
Dinitrophenol; 2,4-	0.330 U	0.00001	160 <sup>b</sup>	3.20	14
Dinitrotoluene; 2,4-	0.065 U	0.0955	160 <sup>b</sup>	3.20	0.33 <sup>c</sup>
Dinitrotoluene; 2,6-	0.028 U	0.0692	80.0 <sup>b</sup>	1.60	136
Ethylene glycol	--	0.001	160,000	320	NA
Fluoranthene	0.280	49.1	3,200 <sup>b</sup>	64	18.0
Fluorene	0.021 J	7.71	3,200 <sup>b</sup>	64	260
Hexachlorobenzene	0.029 U	80	0.625 <sup>d</sup>	0.33 <sup>c</sup>	0.33 <sup>c</sup>
Hexachlorobutadiene	0.0099 U	53.7	12.8 <sup>d</sup>	0.33 <sup>c</sup>	0.33 <sup>c</sup>
Hexachlorocyclopentadiene	0.049 U	200	480 <sup>b</sup>	5	48
Hexachloroethane	0.021 U	1.78	71.4 <sup>d</sup>	0.313	0.38
Hydrazine	--	0.0143	0.333 <sup>d</sup>	0.33 <sup>c</sup>	NA
Indeno(1,2,3-cd) pyrene	0.026 J	3,470	1.37 <sup>d</sup>	0.33 <sup>c</sup>	0.33 <sup>c</sup>
Isophorone	0.017 U	0.0468	1,050 <sup>d</sup>	9.21	1.68
Methylnaphthalene; 2-	0.019 U	2.98	320 <sup>b</sup>	3.2	NA
Methylphenol; 2- (cresol;o-)	0.13 U	0.434	4,000 <sup>b</sup>	80.0	NA
Methylphenol; 4- (cresol;p-)	0.033 U	0.434	400 <sup>b</sup>	8.00	NA
Naphthalene	0.012 U	1.19	1,600 <sup>b</sup>	16.0	988
Nitroaniline; 2-	0.049 U	0.0527	240 <sup>b</sup>	2.4	NA
Nitroaniline; 3-	0.072 U	0.0516	24 <sup>b</sup>	0.33 <sup>c</sup>	NA
Nitroaniline; 4-	0.072 U	0.0516	47.6 <sup>d</sup>	0.33 <sup>c</sup>	NA
Nitrobenzene	0.022 U	0.119	160	1.6	3.40
Nitrophenol; 2-	0.0099 U	NA	NA	NA	NA
Nitrophenol; 4-	0.096 U	0.309	640	12.8	1,254
Nitroso-di-n-propylamine;N-	0.031 U	0.0240	0.33 <sup>c</sup>	0.33 <sup>c</sup>	0.33 <sup>c</sup>

Sample JIMXD7 results compared to non radiological RAGS

Contaminant	Sample Result (mg/kg)	Kd Value (mL/g)	Soil Cleanup Levels, (mg/kg) <sup>a</sup>		
			Direct Exposure	Protective of Groundwater	Protective of the River
Nitrosodiphenylamine;N-	0.021 U	1.29	204 <sup>d</sup>	1.79	1.946
Pentachlorophenol	0.330 U	0.592	8.33 <sup>d</sup>	0.33 <sup>c</sup>	0.33 <sup>c</sup>
Phenanthrene <sup>h</sup>	0.220	23.5	24,000 <sup>b</sup>	240	1,920
Phenol	0.018 U	0.0288	24,000 <sup>b</sup>	960	4,200
Pyrene	0.260	68	2,400 <sup>b</sup>	48	192
Tributyl Phosphate	--	18.9	185 <sup>d</sup>	3.3 <sup>c</sup>	NA
Trichlorobenzene; 1,2,4-	0.028 U	1.66	800 <sup>b</sup>	7	45.4
Trichlorophenol; 2,4,5-	0.0099 U	1.60	8,000 <sup>b</sup>	160	NA
Trichlorophenol; 2,4,6-	0.0099 U	0.381	90.9 <sup>d</sup>	0.795	0.42

CAS = Chemical Abstract System.

Kd = Distribution Coefficient discussed in DOE-RL 2009, the 100 Area RDR/RAWP, Appendix E. Except for the N-Area specific Sr-90 Kd of 15 mL/g (DOE-RL 2001, pg B-10), Kd values are obtained from the 100 Area RDR/RAWP, Table 2-5, Table D-2, and Appendix E as available. When unavailable from the 100 Area RDR/RAWP, Kd values are taken from the Ecology CLARC Database on the Internet at < <https://fortress.wa.gov/ecy/clarc> > or from the Risk Assessment Information System database maintained by the Oak Ridge National Laboratory on the Internet at < <http://risk.lsd.ornl.gov> >.

NA = Not available.

<sup>a</sup> Values from the last column of Tables B-1, B-2, or B-3, as appropriate. Calculated using the appropriate formulas from Ecology 1996, WAC 173-340-740, with toxicity values updated through 2/25/2009, from the EPA Integrated Risk Information System (IRIS) at <http://www.epa.gov/iris> or from the Risk Assessment Information System (RAIS) database of the Oak Ridge National Laboratory (ORNL) on the Internet at <http://risk.lsd.ornl.gov>.

<sup>b</sup> Noncarcinogenic cleanup level calculated from WAC 173-340-740(3), Method B, Ecology 1996.

<sup>c</sup> Where cleanup levels are less than background or RDLs, cleanup levels default to background or RDLs per Ecology 1996, WAC 173-340-700(4)(d) and WAC 173-340-707(2), respectively. The Washington State Department of Ecology has established a cleanup level of 20 ppm for arsenic in soil at most hazardous waste sites. The arsenic cleanup level of 20 mg/kg has been agreed to by the Tri-Party Agreement Project Managers.

<sup>d</sup> Carcinogenic cleanup level calculated per WAC 173-340-740(3), Method B, 1996.

<sup>e</sup> Carcinogenic cleanup level calculated based on the inhalation exposure pathway; WAC 173-340-750(3), 1996.

<sup>f</sup> Use EPA, 1994, *Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for Lead in Children*, EPA/540/R-93/081, Publication No. 9285.7. U.S. Environmental Protection Agency, Washington, D.C.

<sup>g</sup> Common laboratory contaminant unlikely to be found in soil. If detected in soil, all analyses of blanks, duplicates, and splits should be checked and the original soil sample reanalyzed.

<sup>h</sup> Toxicity data for this chemical are not available. Cleanup levels are based on surrogate chemicals:

Contaminant: acenaphthylene; surrogate: acenaphthene

Contaminant: benzo(g,h,i)perylene; surrogate: pyrene

Contaminant: bis(2-chloroethoxy)methane; surrogate: bis(2-chloroethyl)ether

Contaminant: chloro-3-methylphenol; 4-; surrogate: methylphenol; 3-

Contaminant: dichloroprop (pesticide); surrogate: Dichlorophenoxyacetic acid; 2,4-; (2,4-D)

Contaminant: phenanthrene; surrogate: anthracene

Radionuclides	Hanford-Specific Background Activity (pCi/g) <sup>a</sup>	Sample Result in pCi/g	Soil Activity for 15 mrem/yr Dose (pCi/g)	Soil Concentration Protective of Groundwater (pCi/g)	Cleanup Levels Summary (pCi/g)	
					Shallow Zone Cleanup Level	Deep Zone Cleanup Level
Ag (silver)-108m	NA	--	2.38	NV	2.38	NV
Americium-241	NA	-0.00048 U	31.1	NV	31.1	NV
Carbon-14	NA	--	8.69	NV	8.69	NV
Cesium-137	1.1	0.0736	6.2	1.465	6.2	1,465
Cobalt-60	0.008	0.00827 U	1.4	13,900	1.4	13,900
Curium-243	NA	--	22.1	NV	22.1	NV
Europium-152	NA	0.00817 U	3.3	NV	3.3	NV
Europium-154	0.033	0.00817 U	3.0	NV	3.05	NV
Europium-155	0.054	0.0429 U	125	NV	125	NV
Iodine-129	NA	--	0.228	0.0046	2 <sup>f</sup>	2 <sup>f</sup>
Neptunium-237	NA	--	2.44	0.90	1 <sup>f</sup>	1 <sup>f</sup>
Nickel-63	NA	6.91 U	4,013	83	83	83
Niobium-94	NA		2.43	NV	2.43	NV
Plutonium-238	0.004	-0.0016 U	38.8	NV	38.8	NV
Plutonium-239/240	0.025	0.015 U	33.9	NV	33.9	NV
Potassium-40 <sup>e</sup>	16.6		8.15	0.032	16.6 <sup>g</sup>	16.6 <sup>g</sup>
Radium-226	0.815	0.487	1.04	NV	1.04	NV
Radium-228	NA		1.69	NV	1.69	NV
Strontium-90	0.18	0.0379 U	4.5	27.6	4.5	27.6
Technetium-99	NA	--	8.5	0.46	15 <sup>f</sup>	15 <sup>f</sup>
Thorium-228	NA	0.389	2.26	NV	2.26	NV
Thorium-230	NA	0.28	2.95	NV	2.95	NV
Thorium-232	1.3	0.456	1.0	NV	1.3 <sup>g</sup>	NV
Tritium (H-3)	NA	0.0288 U	459	12.6	12.6	12.6
Uranium-233/234	1.1	0.205	0.57	0.185	1.1 <sup>g</sup>	1.1 <sup>g</sup>
Uranium-235	0.11	-0.0012 U	0.61	0.185	0.61	0.5 <sup>f</sup>
Uranium-238	1.1	0.132 U	0.61	0.185	1.1 <sup>g</sup>	1.1 <sup>g</sup>

NA = Not available; contaminant was not evaluated during the Hanford Site background study.

NV = No value; modeling using RESRAD version 6.3 predicts the contaminant will not reach groundwater within 1,000 years.

<sup>a</sup> Background concentrations are 90th percentile values of the log normal distribution of Hanford Site soil background data from DOE-RL 1996, *Hanford Site Background: Part 2, Soil Background for Radionuclides*. However, when comparing maximum activities at a site to background it is appropriate to use the 95<sup>th</sup> percentile UCL values from Table 5-1 of DOE-RL 1996.

<sup>b</sup> No RDL has been established for these isotopes. Values shown represent expected performance relative to defined RDLs for cesium-137 and cobalt-60.

<sup>c</sup> Curium-243 is not resolvable from curium-244. The laboratory reports the total of curium-243 and curium-244.

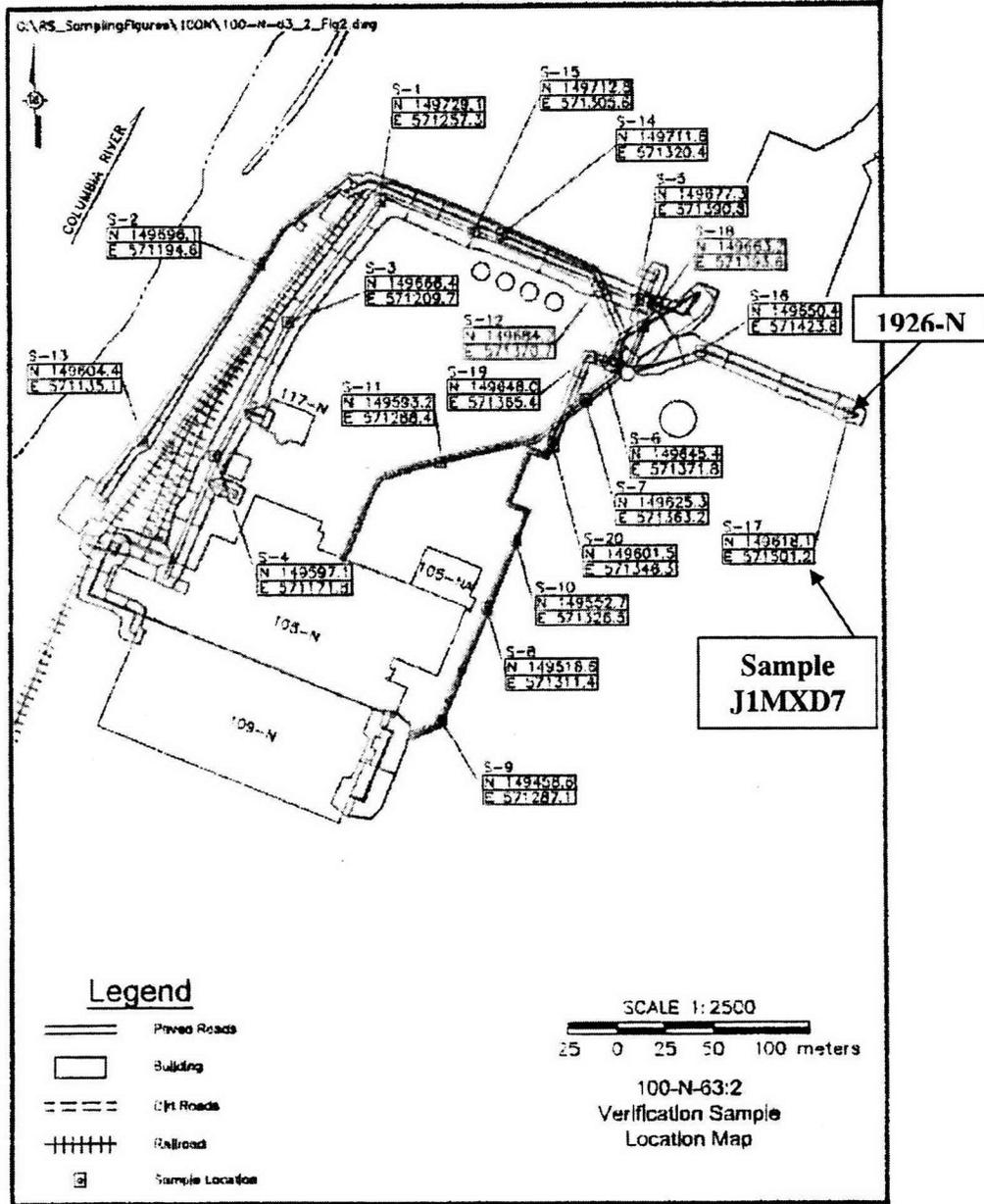
<sup>d</sup> This RDL is not available via rapid turnaround; it is only available via a method requiring a longer turnaround time.

<sup>e</sup> Naturally occurring radionuclide material. Should not be reported as a COC.

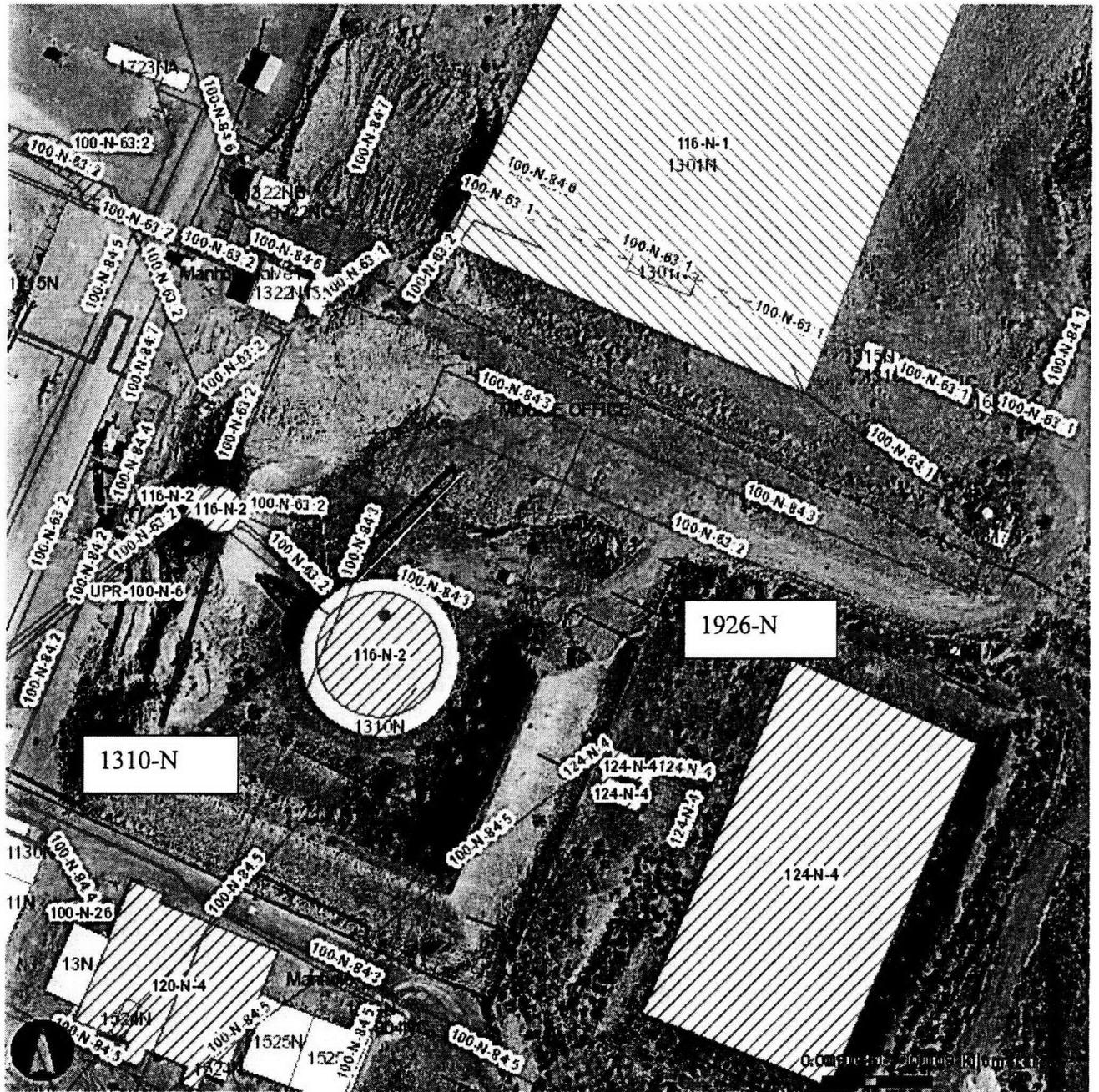
<sup>f</sup> The remedial action goal is below the RDL. The value presented is the RDL.

<sup>g</sup> The remedial action goal is below the Hanford-specific soil background concentration in column 2. The value presented is the Hanford-specific soil background concentration.

Figure 2. 100-N-63:2 Focused Sample Location Map.



# Map



Hydrant Names

Fire Hydrants



WasteSitePoints

- Sitecode Missing in SIS

WasteSitesLine (continued)

- Accepted, Interim Closed Out
- Accepted, No Action
- Accepted, Rejected
- Discovery,
- Not Accepted,

Waste Polygon Labels

Waste Line Labels

Main Roads



- Accepted,
  - + Accepted, Closed Out
  - ▲ Accepted, Consolidated
  - + Accepted, Interim Closed Out
  - + Accepted, No Action
  - + Accepted, Rejected
  - Discovery
  - Not Accepted,
- WasteSitesLine
- Sitecode Missing in SIS
  - Accepted,
  - Accepted, Closed Out

- WasteSitePolys
- Sitecode Missing in SIS
  - Accepted,
  - Accepted, Closed Out
  - Accepted, Consolidated
  - Accepted, Deleted From NPL
  - Accepted, Interim Closed Out
  - Accepted, No Action
  - Accepted, Rejected
  - Discovery,
  - Not Accepted (Proposed),
  - Not Accepted,

- Railroads
- 
- Roads
- 
- Buildings
- Unknown
  - Active
  - Demolished
  - Inactive
  - Removed
- Building Labels

# Attachment 8

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-015

### A. INSTRUCTIONS

*This form must be completed to: 1) document existing data in order to determine if current data is suitable to prove completion of 100-N Ancillary Facilities, or 2) document that site-specific sampling and analyses are needed to provide completion for 100-N Ancillary Facilities.*

### B. GENERAL INFORMATION

Building Name: Septic System Building Number: 1903-N (aka WIDS 124-N-4)

WIDS Sites Associated or Adjacent:  
124-N-4 & 100-N-84:5

Other:  
WIDS site 124-N-4 incorporates the footprint of the 1903-N facility in entirety. Accordingly, closeout documentation of 124-N-4 will be used for the 1903-N facility footprint.

### C. INFORMATION SOURCES

Available information (list document number for each if applicable):

Historical Site Assessment: N/A

Site Walkdown: N/A

IH Characterization Report: N/A

Radiological Survey: Global Positioning Environmental  
Radiological Surveys (GPERS):  
ESR-FRM-11-0148 / 0149 / 0150 /  
0177

IHC/FHC Document: N/A

RCC Stewardship Information System (SIS)  
WIDS/SIS: Facility Summary Reports: 1903-N & 124-N-4  
WIDS report for 124-N-4

PDSR: N/A

Facility Inspection: N/A

Waste Characterization Checklist: N/A

Summary Report: N/A

Other:  
• Work Instruction for Verification Sampling of the 124-N-4, 100-N Sanitary Sewer System No. 4 Waste Site:  
0100N-WI-G0027

### D. HAZARDOUS SUBSTANCES

Check all that apply:

None     Asbestos containing material     Lead     PCBs/PCB Articles     Oils/Greases

Chemicals List: \_\_\_\_\_

Radiological Contamination     Mercury/Mercury Devices

Other: Consult section 6.1 of the Work Instruction for verification sampling for 124-N-4 (0100N-WI-G0027 pg. 13).

References/Comments:

• Radiological Contamination: ESR-FRM-11-0150B (Beta Track Map)

Liquids:  Yes     No

If yes, describe source and nature of liquids:

This 1903-N facility consisted of two septic tanks and a drainage field (SIS Facility Summary Report for 124-N-4 pg. 1). Each septic tank had a capacity of 14,000 gallons (SIS Facility Summary Report for 124-N-4 pg. 1). The facility received 30,000 gallons of sanitary sewage daily (SIS Facility Summary Report for 124-N-4 pg. 2).

Were the hazardous substances removed from the facility prior to demolition?     Yes     No

As verified by what documentation:

This question is not applicable because Verification sampling of the facility's footprint was conducted. See the Comments section of part D of this form for details.

Was there potential for hazardous substances to be introduced into the soils during facility operations or demolition?     Yes     No     N/A

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-015

**References/Comments:**

This question is not applicable. Verification sampling was previously completed for 1903-N, See the Comments section of part D of this form for additional details.

**List any hazardous materials left in the building for demolition:**

This question is not applicable. Verification sampling was previously completed for 1903-N, See the Comments section of part D of this form for additional details.

**Does review of historical records and process knowledge indicate a potential for radiological or chemical contamination to be present in the facility?**

This question is not applicable. Verification sampling was previously completed for 1903-N, See the Comments section of part D of this form for additional details.

**Comments:**

The footprint of this facility has undergone verification sampling (0100N-WI-G0027). The verification sampling covered the 1903-N excavation (WIDS Site 124-N-4) and the staging pile area (0100N-WI-G0027 pg. 16). In addition, three focused samples were taken from the historical location of the septic tanks (0100N-WI-G0027 pg. 16). A map and summary table of these sample locations are attached to this form for reference. The pertinent sample numbers are J1CXP6, J1CXP7, J1CXP8, J1CYB0, J1D4W6, and J1D4W8. The sample results are attached to this form for reference.

Parts E and F of this form are not applicable to the 1903-N facility (124-N-4 WIDS site) as it was removed entirely by Field Remediation and has undergone verification sampling.

### E. FIELD OBSERVATIONS

#### Visual Inspection

Were any stained soils/anomalies discovered during or after demolition of the facility?  Yes  No

**References/Comments:**

Part E of this form is not applicable to this facility.

Were samples taken of the stained soils/anomalies?  Yes  No  N/A

**References/Comments:**

N/A

Do results of the samples indicate that chemical contamination exists?  Yes  No  N/A

**References/Comments:**

N/A

Is the area potentially a discovery site?  Yes  No

**References/Comments:**

N/A

#### Radiological Surveys

Did radiological surveys (GPERS or equivalent) identify contamination?  Yes  No

**References/Comments:**

Part E of this form is not applicable to this facility.

Were samples taken of the radiologically contaminated soils?  Yes  No  N/A

**References/Comments:**

N/A

Is the area potentially a discovery site?  Yes  No

**References/Comments:**

N/A

Were the contaminated materials removed?  Yes  No  N/A

**References/Comments:**

N/A

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-015

### F. WIDS SITES

Were there any WIDS sites affected by D4 activities?  Yes  No

If yes, list the WIDS sites:

1903-N is a WIDS site (124-N-4) and was removed entirely by Field Remediation.

Were the WIDS site(s) completely removed?  Yes  No

References/Comments:  
N/A.

Will the Ancillary Facility Footprint be deferred to FR to be closed out with a co-located Waste Site?  Yes  No

References/Comments:  
N/A.

### G. COPCs FOR SOILS AND STRUCTURES REMAINING AFTER DEMOLITION

What are the potential contaminants of concern for the remaining below-grade soil?

None  SVOC  VOC  Metals  TPH  Rad  PCBs

Other (Specify): \_\_\_\_\_

Comments:

Section 6.1 of the Work Instruction for Verification Sampling for 124-N-4 (1903-N) this location's COPCs (0100-N-WI-G0027 pg. 13).

Summary of in-process soil sampling requirements:

N/A

Constituents detected / concentrations / rationale

Consult Sample Collection Summary (below) and the corresponding results attached to this form. Analysis of the results will be addressed in the CVP for the 124-N-4 WIDS site.

Sample Collection Summary

• Verification samples at 1903-N (124-N-4): Sample (HEIS) Numbers J1CXP6, J1CXP7, J1CXP8, J1CYB0, J1D4W6, and J1D4W8. Analysis of the results will be addressed in the CVP for the 124-N-4 WIDS site.

### H. NOTES / ADDITIONAL INFORMATION

Check here if additional information / data / maps / sketches are attached to this form.

If checked, list the attachment(s):

• Verification Sample Map and Summary Table: 0100-N-WI-G0027 pgs. 16 & 17  
• Sample Results for Sample Numbers J1CXP6, J1CXP7, J1CXP8, J1CYB0, J1D4W6, and J1D4W8. For complete analysis of results see 124-N-4 Waste Site Reclassification Form #2012-011.

### I. SAMPLING

Are soil samples required to demonstrate that remaining structure or below-grade soils meet cleanup standards?  Yes  No

Based on the above information it was determined that sampling:  will  will not be required in order to demonstrate that cleanup criteria have been met.

The individual below acknowledges that the review of this facility has been completed. He or she also commits to provide to the Department of Energy (DOE) and the Washington State Department of Ecology (Ecology) any available information that could alter the sampling decision established in this form.

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-015

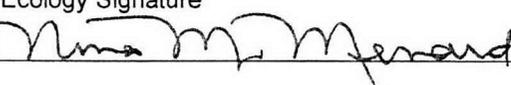
Information Reviewer Signature 	Printed Name David Warren	Date 4/30/12
The regulatory representative below agrees with the decision outlined in section I of this form for the indicated facility and supports implementation of that decision based on the information currently available.		
DOE Signature 	Printed Name R. F. Guerra	Date 4/30/2012
Ecology Signature 	Printed Name NINA M. Menard	Date 5/1/2012

Figure 8. Verification Sample Locations for the 124-N-4 Waste Site.

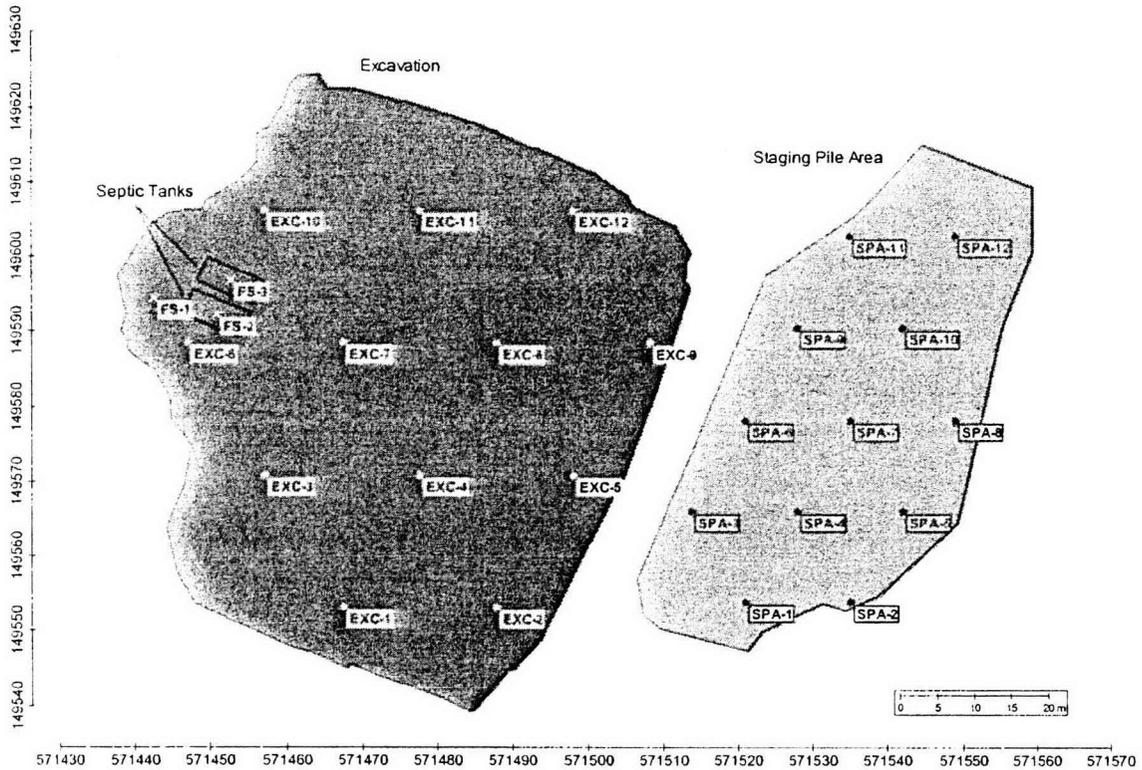


Table 3. Verification Sampling Summary Table for the 124-N-4 Waste Site.

Sample Location	HEIS Sample Number	WSP Coordinates		Sample Analysis
		Northing	Easting	
EXC-1	TBD	149553.2	571467.4	ICP metals <sup>a</sup> , mercury, hexavalent chromium, PCBs, SVOA, nitrates <sup>b</sup> , pesticides, GEA, carbon-14, nickel-63, tritium, strontium-90, isotopic uranium, isotopic plutonium
EXC-2	TBD	149553.2	571487.8	
EXC-3	TBD	149570.9	571457.2	
EXC-4	TBD	149570.9	571477.6	
EXC-5	TBD	149570.9	571498.0	
EXC-6	TBD	149588.6	571447.0	
EXC-7	TBD	149588.6	571467.4	
EXC-8	TBD	149588.6	571487.8	
EXC-9	TBD	149588.6	571508.2	
EXC-10	TBD	149606.3	571457.2	
EXC-11	TBD	149606.3	571477.6	
EXC-12	TBD	149606.3	571498.0	
Duplicate <sup>c</sup>	TBD	TBD	TBD	
SPA-1	TBD	149554.0	571520.8	ICP metals <sup>a</sup> , mercury, hexavalent chromium, PCBs, SVOA, nitrates <sup>b</sup> , pesticides, GEA, carbon-14, nickel-63, tritium, strontium-90, isotopic uranium, isotopic plutonium
SPA-2	TBD	149554.0	571534.9	
SPA-3	TBD	149566.2	571513.8	
SPA-4	TBD	149566.2	571527.9	
SPA-5	TBD	149566.2	571542.0	
SPA-6	TBD	149578.4	571520.8	
SPA-7	TBD	149578.4	571534.9	
SPA-8	TBD	149578.4	571549.0	
SPA-9	TBD	149590.6	571527.9	
SPA-10	TBD	149590.6	571542.0	
SPA-11	TBD	149602.8	571534.9	
SPA-12	TBD	149602.8	571549.0	
Duplicate <sup>c</sup>	TBD	TBD	TBD	
FS-1	TBD	149594.4	571442.6	ICP metals <sup>a</sup> , mercury, hexavalent chromium, PCBs, SVOA, nitrates <sup>b</sup> , pesticides, GEA, carbon-14, nickel-63, tritium, strontium-90, isotopic uranium, isotopic plutonium
FS-2	TBD	149592.4	571450.8	
FS-3	TBD	149596.8	571452.7	
Equipment Blank	TBD	NA	NA	ICP metals <sup>a</sup> , mercury, SVOA

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

<sup>b</sup> To preclude holding time issues associated with EPA Method 300.0 for nitrates, EPA Method 353 will be performed.

<sup>c</sup> One duplicate soil sample will be collected from each decision unit at a location selected at the project analytical lead's discretion.

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  
 SVOA = semivolatile organic analysis  
 TBD = to be determined  
 WSP = Washington State Plane

SAMP_N UM	DECISION _UNIT	MEDIA	COLLECTION _PURPOSE	PRIM_SAMP_N UM	LAB_QC_ TYPE	QC_ TYPE	FIELD CON_LONG_NAME	VALUE_		LAB_QUA
								RPTD	UNITS_	
J1CXP6		SO	VER	J1CXP8	TB	TB	1,1,1-Trichloroethane	4.55	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	1,1,1,2,2-Tetrachloroethane	4.55	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	1,1,2-Trichloroethane	4.55	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	1,1-Dichloroethane	4.55	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	1,1-Dichloroethene	4.55	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	1,2-Dichloroethane	5.46	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	1,2-Dichloroethene(Total)	4.55	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	1,2-Dichloropropane	4.55	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	2-Butanone	5.71	ug/kg	J
J1CXP6		SO	VER	J1CXP8	TB	TB	2-Hexanone	10.9	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	4-Methyl-2-Pentanone	10.9	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	Acetone	15.5	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	Benzene	4.55	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	Bromodichloromethane	5.46	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	Bromoform	4.55	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	Bromomethane	9.09	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	Carbon disulfide	4.55	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	Carbon tetrachloride	4.55	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	Chlorobenzene	4.55	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	Chloroethane	9.09	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	Chloroform	4.55	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	Chloromethane	9.09	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	Dibromochloromethane	4.55	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	Ethylbenzene	4.55	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	Methylenechloride	4.73	ug/kg	J
J1CXP6		SO	VER	J1CXP8	TB	TB	Percent Solids	100	%	U
J1CXP6		SO	VER	J1CXP8	TB	TB	Styrene	4.55	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	Tetrachloroethene	4.55	ug/kg	U
J1CXP6		SO	VER	J1CXP8	TB	TB	Toluene	4.55	ug/kg	U

For complete analysis of results see 124-N-4 Waste Site Reclassification  
Form #2012-011.

# Attachment 9

# 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
SDF-100N-005

## A. INSTRUCTIONS

*This form must be completed to: 1) document existing data in order to determine if current data is suitable to prove completion of 100-N Ancillary Facilities, or 2) document that site-specific sampling and analyses are needed to provide completion for 100-N Ancillary Facilities.*

## B. GENERAL INFORMATION

Plant Service Power House / Auxiliary Power  
Annex Building / Air Handler Main Building / Air  
Handler Annex Building / Compressed Gas  
Sheds / Chemical Injection Pump Shed

Building Name: \_\_\_\_\_

Building Number: 184-N, 184-NA, 184-NB, 184-NC, 184-NE, and 184-NF

WIDS Sites Associated or Adjacent:  
100-N-12 (Rejected), 100-N-24, 100-N-28, 100-N-55, UPR-100-N-19, UPR-100-N-21, UPR-100-N-22, UPR-100-N-23, UPR-100-N-36, and UPR-100-N-42.

Other:

All of the 184-N facilities have been demolished. The 184-ND Diesel Day Tanks were removed by the Environmental Restoration Contractor in 1996. The footprint of the 184-ND is WIDS UPR-100-N-42 which will be closed out by FR.

## C. INFORMATION SOURCES

Available information (list document number for each if applicable):

Historical Site Assessment:	Historical Site Assessment for the 184-N Powerhouse and Associated Structures CCN 125285	Site Walkdown: N/A
IH Characterization Report:	N/A	Radiological Survey: Global Positioning Environmental Radiological Surveyor (GPERS) / Laser-Assisted Ranging and Data System (LARADS) surveys ESR-FRM-06-0146 / 0147 / 0148 / 0149 and ESR-FRM-08-0145
IHC/FHC Document:	100-N Ancillary Facilities Preliminary Hazard Categorization CCN 095435	WIDS/SIS: SIS data sheets for 184-N, 184-NA, 184-NB, 184-NC, 184-ND, 184-NE1 and NE2, and 184-NF
PDSR:	184-NA, 184-NB, 184-NC, 184-ND, 184-NE, and 184-NF Power House CCN 142336	Facility Inspection Summary for the 184-N Power House / 184-NA Power House Annex CCN 116924
Waste Characterization Checklist:	N/A	Summary Report: N/A

Other:

Radiological Survey Record: RSR-100N-07-0194 (Downposting)  
 Radiological Survey Records: RSR-100N-08-1106 / 1416 / 1570 (Downposting)  
 Radiological Survey Records : RSR-IFSM2-07-0393 / 0485 (for Anomaly)  
 Discussion of IHC for Building 184-N: CCN 141871  
 Work Package 100-07-10-01-001: 184-N / 184-NA / 184-ND / 184-NE / 184-NF / Hazardous Material Removal  
 Work Package 100-08-01-29-002: Above Grade Demolition 184-NA [review only-information contained within has no perceived relevant value]  
 Work Package 100-08-04-15-001: 184-N Demolition and Removal  
 Asbestos Summary Report for 184N and Associated Facilities: CCN 128253  
 Pre-Existing Conditions Survey of Hanford Site Facilities to be Managed by BHI, Phase II: Doc Num BHI-00221  
 100N Facility Endpoint Criteria and Turnover Documentation 184-N Power House: CCN 521128 (Relevant Portion Attached to this Form)  
 100-N Area Technical Baseline Report: WHC-SD-EN-TI-251  
 Hazardous Material Removal from 100N Buildings: CCN 137407  
 GIS Field Remediation Excavation Boundary Overlay: Attached to this Form  
 Photographs of 184-N Fuel Oil Leak and TSI Piping, Partial Time Stamp: CCN 116924 pgs. 6-7  
 Photograph of 184-N, Time-Stamped 6/11/2002: SIS Data Sheet for 184-N pg. 7

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

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Photographs of 184-N, No Time Stamps: CCN 142336 Figures 1-6  
 Photograph of 184-NA, Time-Stamped 11/2/2005: SIS Data Sheet for 184-NA pg. 5  
 Photographs of 184-NB (Building and Post-Demolition), Time-Stamped 6/11/2002 and 6/12/2006: SIS Data Sheet for 184-NB pgs. 5-6  
 Photographs of 184-NC (Building and Post-Demolition), Time-Stamped 11/2/2005 and 6/7/2006: SIS Data Sheet for 184-NC pgs. 4-5  
 Photograph of 184-ND, Time-Stamped 3/25/2003: SIS Data Sheet for 184-ND pg. 5  
 Photograph of 184-NE1, Time-Stamped 6/11/2002: SIS Data Sheet for 184-NE1 pg. 5  
 Photograph of 184-NE2, Time-Stamped 6/11/2002: SIS Data Sheet for 184-NE2 pg. 5  
 Photograph of 184-NF, Time-Stamped 11/2/2005: SIS Data Sheet for 184-NF pg. 4  
 \*Additional Photographs Without Time Stamps Exist Within SIS Data Sheets for 184-N and its Associated Facilities\*

### D. HAZARDOUS SUBSTANCES

Check all that apply:

- None   
  Asbestos containing material   
  Lead   
  PCBs/PCB Articles   
  Oils/Greases  
 Chemicals   
 List: Ammonium Hydroxide, Hydrazine, Morpholine, and Xylene (CCN 125285 pgs. 3 & 9, CCN 141871)  
 Radiological Contamination   
 Mercury/Mercury Devices  
 Other: N/A

References/Comments:

Asbestos: CCN 128253, CCN 125285 pg. 7, CCN 142336 pg. 3, BHI-00221 pgs. 3-72 & 3-73, and Work Package 100 07 10 01 001 WCH Task Instruction pg. 5  
 Lead: CCN 125285 pg. 8, BHI-00221 pg. 3-72, and Work Package 100 07 10 01 001 WCH Task Instruction pg. 5  
 PCBs/PCB Articles: CCN 125285 pg. 9 and Work Package 100 07 10 01 001 WCH Task Instruction pg. 5  
 Oils/Greases: CCN 116924 pg. 4, CCN 125285 pg. 3, CCN 142336 pg. 2, BHI-00221 pgs. 3-73 & 3-76, and Work Package 100 07 10 01 001 WCH Task Instruction pg. 5  
 Radiological Contamination: CCN 116924 pg. 3, CCN 125285 pg. 7, and Work Package 100 07 10 01 001 WCH Task Instruction pg. 5  
 Mercury/Mercury Devices: CCN 125285 pg. 8, CCN 141871, BHI-00221 pg. 3-72, and Work Package 100 07 10 01 001 WCH Task Instruction pg. 5

Liquids:  Yes     No

If yes, describe source and nature of liquids:

Two oil storage tanks were located in 184-ND (See CCN 142336 pg. 2) and were removed in the 1990s. These tanks likely contained diesel fuel and Number 6 fuel oil (CCN 125285 pg. 3). Ammonium hydroxide and hydrazine transfer pumps were located in 184-NF (CCN 125285 pg. 3, WHC-SD-EN-TI-251 Figure 2-12). Hydrazine mix tanks, a hydrazine transfer pump, and a morpholine transfer pump were located in 184-N (WHC-SD-EN-TI-251 Figure 2-12). Hydrazine and morpholine were also located within piping within 184-N and 184-NA (CCN 141871). Xylene was contained in heaters located in 184-N and 184-NA (CCN 141871).

Were the hazardous substances removed from the facility prior to demolition?     Yes     No

As verified by what documentation:

Most of the asbestos insulation was abated prior to demolition (CCN 125285 pg. 7). The complete removal of many materials containing hazardous substances was documented in Work Package 100-07-10-01-001 (WCH Task Instruction pg. 29). See the list of hazardous materials left in the building for demolition, contained below, for items not ruled out by these citations.

Was there potential for hazardous substances to be introduced into the soils during facility operations or demolition?     Yes     No     N/A

References/Comments:

Some of the facilities associated with the 184-N facility were potentially contaminated, or the potential existed for releases to the environment during facility operations.

List any hazardous materials left in the building for demolition:

Class II asbestos was not entirely removed from the building (Work Package 100-08-04-15-001 WCH Task Instruction pg. 1). Additional items left in the building for demolition were: 1,000 pounds of silica gel (product), four lead pipes, two

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

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capillary tubes, two light bulbs-one fluorescent and one mercury vapor (Work Package 100-07-10-01-001 Work Package Status Log pgs. 10-11). The capillary tubes contained xylene (Work Package 100-07-10-01-001 WCH Task Instruction pg. 20). It is unclear from the Hazardous Material Removal Completion log if oil-containing door actuators and non-ERDF compatible wastes were removed from the facilities, or just inspected and/or properly identified for segregation during demolition (Work Package 100-07-10-01-001 WCH Task Instruction pg. 29). Additionally, radiological contamination was not removed but was instead stabilized (Work Package 100-07-10-01-001 WCH Task Instruction pg. 29). Materials not removed prior to demolition containing hazardous substances were included in the waste profile and disposed of at the ERDF.

Does review of historical records and process knowledge indicate a potential for radiological or chemical contamination to be present in the facility?

While some hazardous materials were left in the facilities for demolition, there was potential that each posed only a minor threat of contaminating the underlying soil. The decision to leave some items was specifically approved prior to demolition by EPA and the Department of Ecology (CCN 137407). The only radiological contamination identified was fixed in steam lines and equipment, which would not have posed a contamination threat to the adjacent environment due to its contained nature (CCN 116924 pg. 3). The GPERS/LARADS surveys substantiate this claim as all but one data point indicate that radiological levels in the area did not exceed twice the background level (ESR-FRM-06-0146 / 0147 / 0148 / 0149 & ESR-FRM-08-0145). The exceptional data point indicated a localized elevated radiological level that exceeded twice the background beta level (ESR-FRM-06-0148). The point was not reproducible in subsequent surveys and ruled as instrument error. None of the other GPERS/LARADS data points taken and documented in this form indicate the presence of elevated radiological levels for these facilities.

There are multiple documents that indicate that releases of hazardous substances occurred during actions at the facilities. The sample summary indicates that stained concrete was found at 184-N and 184-NF, and that oiled sand was found at 184-ND (CCN 142336 Attachment 2), the location of WIDS sites UPR-100-N-19, 21, 22, 23, and 42. Additionally, oily residues were found in 184-NA and oil leaks were identified on the ground at 184-ND (BHI-00221 pgs. 3-73 & 3-76), also in the vicinity of those waste sites. The Facility Inspection Summary indicates that fuel oil stains were found in building 184-N (CCN 116924 pg. 4). The stained concrete was removed during demolition of the facilities and the underlying soils exhibited no signs of staining during visual inspection of the excavation.

**Comments:**

Because some hazardous substances were not removed from the facilities prior to demolition, there was a potential for the underlying soil to become contaminated during demolition. However, the act of leaving many of these hazardous substances in the building for demolition was approved by the regulatory agencies due to the low perceived risk of doing so. The presence of staining within the facilities is of more concern for sampling determination purposes. Some of these stains have been or will be addressed by the remediation of waste sites UPR-100-N-19, UPR-100-N-21, UPR-100-N-22, UPR-100-N-23, and UPR-100-N-43. The remainder of the stains were removed with the concrete during demolition of the facilities and the underlying soils exhibited no signs of staining during visual inspection of the excavation. Additionally, a large portion of the footprint of the facilities is covered by planned field remediation boundaries, indicating that much of the soil underlying the facilities will be removed and the remaining soils sampled for verification purposes of the co-located and adjacent waste sites (GIS Field Remediation Excavation Boundary Overlay-attached to this form).

The stack foundation at 184-NA and the below ground pipes at 184-ND were not removed by D4 activities (CCN 142336 pgs. 2 & 7). Removal of the stack foundation was performed by D4 later in April of 2012. Remediation of any waste sites and removal of the remaining pipes at 184-ND will be performed by Field Remediation.

**E. FIELD OBSERVATIONS:**

**Visual Inspection:**

Were any stained soils/anomalies discovered during or after demolition of the facility?  Yes  No

**References/Comments:**

A radiologically contaminated swallows nest was discovered during demolition, the nest was removed. See part D "comments" of this form for a discussion of stained soils.

Were samples taken of the stained soils/anomalies?  Yes  No  N/A

**References/Comments:**

CCN 142336 Attachment 2

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

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Do results of the samples indicate that chemical contamination exists?  Yes  No  N/A

**References/Comments:**

Results of the samples indicate that petroleum contamination was present in the concrete at certain locations. The stained concrete was removed during demolition of the facilities and the underlying soils exhibited no signs of staining during visual inspection of the excavation. The oiled sands present at the 184-ND (diesel day tanks) will be removed during remediation of waste sites UPR-100-N-19, UPR-100-N-21, UPR-100-N-22, UPR-100-N-23, and UPR-100-N-43.

Is the area potentially a discovery site?  Yes  No

**References/Comments:**

N/A

### Radiological Surveys

Did radiological surveys (GPERS or equivalent) identify contamination?  Yes  No

**References/Comments:**

Multiple radiological surveys were conducted for these facilities (RSR-100N-07-0194, RSR-100N-08-1106 / 1416 / 1570, ESR-FRM-06-0146 / 0147 / 0148 / 0149 and ESR-FRM-08-0145). Only one data point from these surveys identified radiological contamination (ESR-FRM-06-0148). This data point indicated a beta reading of 1,020 counts per minute, as opposed to a background beta reading of 441 counts per minute (ESR-FRM-06-0148 & CCN 142336 pg. 3). The beta radiological survey consisted of 1,320 data points, of which only one identified the presence of radiological contamination (ESR-FRM-06-0148 & CCN 142336 pg. 3). It is also worth noting that, as part of the beta radiological survey, multiple data points were collected of the areas adjacent to the area of the elevated reading (ESR-FRM-06-0148). None of these data points indicated the presence of radiological contamination (ESR-FRM-06-0148). The point was not reproducible in subsequent surveys and ruled as instrument error.

Were samples taken of the radiologically contaminated soils?  Yes  No  N/A

**References/Comments:**

N/A

Is the area potentially a discovery site?  Yes  No

**References/Comments:**

N/A

Were the contaminated materials removed?  Yes  No  N/A

**References/Comments:**

Aside the first survey with the single point with the elevated reading, there was no indication that radiological contamination existed in the area. Several attempts were made at reproducing the reading. All were unsuccessful and the reading was ruled as instrument error.

### F. WIDS SITES

Were there any WIDS sites affected by D4 activities?  Yes  No

If yes, list the WIDS sites:

N/A

Were the WIDS site(s) completely removed?  Yes  No

**References/Comments:**

This question is not applicable because no WIDS sites were affected by D4 activities.

Will the Ancillary Facility Footprint be deferred to FR to be closed out with a co-located Waste Site?  Yes  No

**References/Comments:**

This question is not applicable because no WIDS sites were affected by D4 activities.

### G. COPCs FOR SOILS AND STRUCTURES REMAINING AFTER DEMOLITION

What are the potential contaminants of concern for the remaining below-grade soil?

None  SVOC  VOC  Metals  TPH  Rad  PCBs

## 100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number  
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Other (Specify): \_\_\_\_\_

Comments:  
N/A

Summary of in-process soil sampling requirements:  
This question is not applicable, no in-process soil samples were taken by D4 for this facility.

Constituents detected / concentrations / rationale  
See references listed below.

Sample Collection Summary  
SEE PDSR (CCN 142336) ATTACHMENT 2 and ASBESTOS SUMMARY REPORT (CCN 128253) for sample collection summary for these facilities. Also consult sampling for waste sites UPR-100-N-19, UPR-100-N-21, UPR-100-N-22, UPR-100-N-23, and UPR-100-N-43 due to the overlap between the facilities and these waste sites.

### H. NOTES / ADDITIONAL INFORMATION

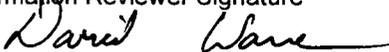
Check here if additional information / data / maps / sketches are attached to this form.  
If checked, list the attachment(s):  
GIS Field Remediation Excavation Boundary Overlay

### I. SAMPLING

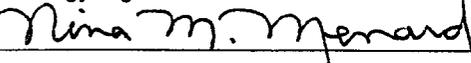
Are soil samples required to demonstrate that remaining structure or below-grade soils meet cleanup standards?  Yes  No

Based on the above information it was determined that sampling:  will  will not be required in order to demonstrate that cleanup criteria have been met.

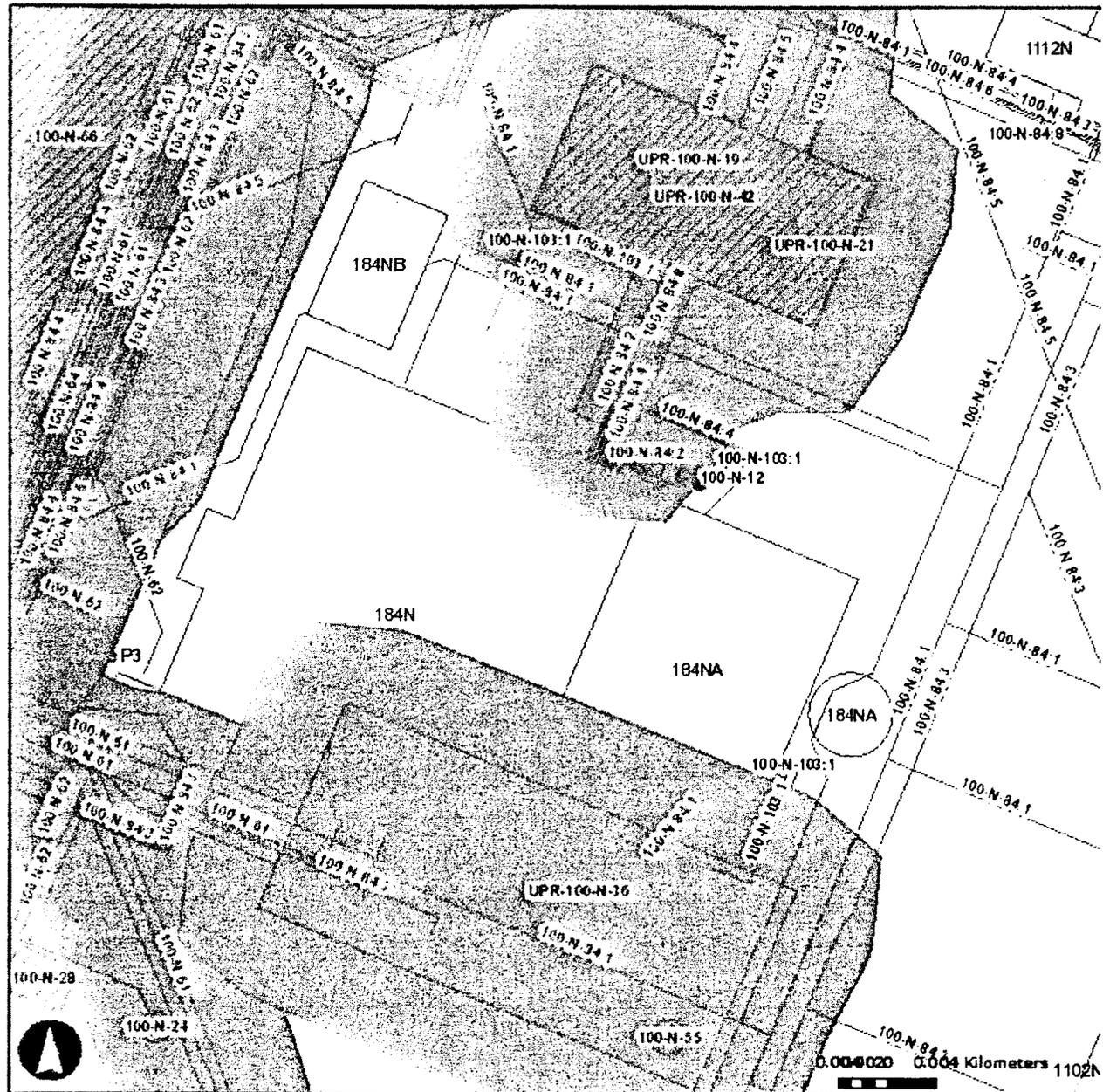
The individual below acknowledges that the review of this facility has been completed. He or she also commits to provide to the Department of Energy (DOE) and the Washington State Department of Ecology (Ecology) any available information that could alter the sampling decision established in this form.

Information Reviewer Signature 	Printed Name David Warren	Date 4/30/12
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The regulatory representative below agrees with the decision outlined in section I of this form for the indicated facility and supports implementation of that decision based on the information currently available.

DOE Signature 	Printed Name R.F. Guerra	Date 4/30/2012
Ecology Signature 	Printed Name NINA M. Menard	Date 5/1/2012

# Map



Hydrant Names

Fire Hydrants



WasteSitePoints

- Sitecode Missing in SIS
- Accepted,

WasteSitesLine (continued)

- Accepted, Interim Closed Out
- Accepted, No Action
- Accepted, Rejected
- Discovery,
- Not Accepted,

WasteSitePolys

Waste Polygon Labels

Waste Line Labels

Waste Point Labels

N\_EXC\_Toe



# Attachment 10

300 Area Closure Project Status  
May 10, 2012  
100/300 Area Combined Unit Manager Meeting

**Ongoing Activities**

- 309 – Reactor core drilling and other associated removal preparations ongoing.
- 340 Complex – Completing demolition of the 307 Basins and removal of RRLWS and RLWS piping. Preparations for vault removal ongoing.
- 3730 – Completed initial grouting of source array and continue hot cell strip-off and grout preparations.
- 308 – Above-grade demolition completed, below-grade demolition in progress.
- 308A – Engineering design for TRIGA reactor removal ongoing.
- 326 – Tritium decontamination ongoing.
- 320 – Completed removal actions and backfill.
- 327 – Below-grade demolition nearly complete, initiating surveys.
- 321 & 3706 – Completing remediation.
- 323 – Preparing to pump water from four below-grade tanks and ship to ETF for treatment.
- Preparing for asbestos abatement in 337B caisson.
- Slab removal west of Alaska continues, close-out of initial group initiated.

**Demolition & Remediation Preparation Activities**

- Preparing for process sewer north of Apple, waste site close-out ongoing in same area.
- Finalize preparations for 310 TEDF demolition.
- Completing demolition preparations for 3766 Building.

**60-Day Project Look Ahead**

- Continue authorization reviews for asbestos abatement activities.
- Continue 340 Complex waste site remediation and finalize engineering for vault removal.
- Complete 308 below-grade demolition. Finalize engineering for TRIGA reactor removal.
- Complete 327 below-grade demolition, close-out surveys and backfill.
- Grout 3730 hot cells.
- Complete work at the 337 Complex, backfill and close area.
- Initiate north of Apple (Zone 7) process sewer remediation.
- Complete remediation 321 and 3706 areas.
- Continue 309 reactor removal activities.
- Grout sources and hot cells in 3730 Gamma Irradiation Building.
- Initiate 310 TEDF demolition.
- Continue slab removal campaign.

# Attachment 11

## **Environmental Protection Mission Completion Project**

May 10, 2012

### **Long-Term Stewardship**

- The consolidated draft 100-F/IU-2/IU-6 – Segment 3 turnover and transition package was submitted to RL for review on April 6, 2012.
- The 100-F/IU-2/IU-6 Area – Segment 3 Interim Remedial Action Report was transmitted to RL on April 19, 2012.

### **Remedial Investigation of Hanford Site Releases to the Columbia River**

- Disposition of regulator comments on the Draft A screening level ecological risk assessment was completed on May 1. Seven meetings were held with the Tri-Parties to review redline sections of the updated document. Preparation and finalization of Rev. 0 is now underway.
- EPA comments on the Draft A human health risk assessment were received on March 1, 2012. Ecology comments were received on March 16. Four comment resolution meetings were held during April with a final meeting scheduled for May 9. Review of redline sections of the updated document are scheduled to begin in May and run through June.

### **Document Review Look-Ahead**

- None