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ATTACHMENT 1

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**FY 2018 SITEWIDE INSTITUTIONAL CONTROL ASSESSMENT
MISSION SUPPORT ALLIANCE
HNF-62829, Rev. 0**

Consisting of 165 pages,
including this cover page

EXECUTIVE SUMMARY

This institutional controls (IC) assessment was conducted by the Mission Support Alliance, LLC (MSA) Long-Term Stewardship (LTS) Program in fiscal year (FY) 2018 as required by DE-AC06-09RL14728, *Mission Support Contract*^[1], and as described in HNF-54166, *Long-Term Stewardship Surveillance and Maintenance Plan*, and DOE/RL 2001-41, *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions*. The MSA LTS Program is responsible for assessing the ICs assigned to MSA within the River Corridor. ICs are designed to be protective of human health and the environment, and are used to protect the integrity of a response action and minimize the potential for exposure to residual contamination.

Each annual IC assessment conducted by the MSA LTS Program is predicated on the previous year’s assessment, with improvements made and documented as appropriate. This year, the MSA LTS Program assessed 226 waste sites with ICs, warning notices required at each Geographical Decision Area, Sitewide fencing and signage, and other ICs defined in CERCLA decision documents. Figure 1 illustrates the types and numbers of site-specific ICs that the MSA LTS Program assessed in FY 2018.

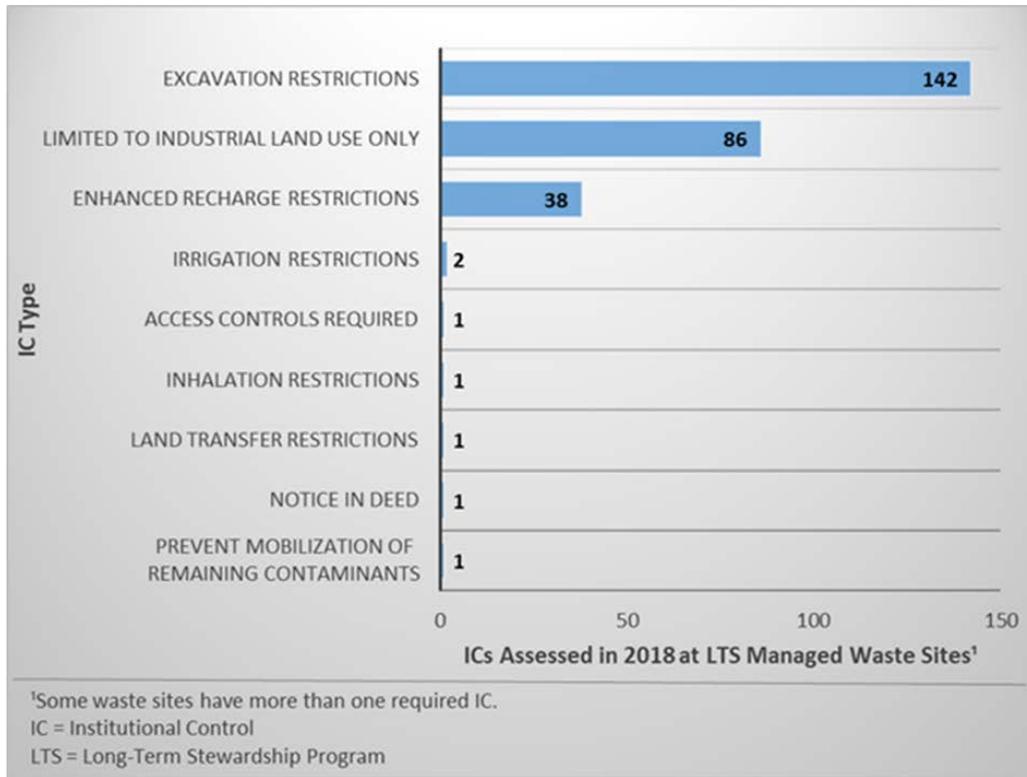


Figure 1. Site-Specific ICs Assessed by Long-Term Stewardship Program in FY 2018.

^[1]The *Mission Support Contract*, Attachment J-11, Contract Deliverables, requires CD0182, Site-Wide Assessment of Institutional Controls, which is due annually by November 15.

Improvements made during the FY 2018 assessment included evaluating stormwater drainage during multiple inclement weather events and assessing the condition of temporary surface barriers that have an institutional control regarding enhanced recharge. This year, the MSA LTS Program also worked with 300 Area facility owners to improve surface barriers and drainage as necessary; this cooperative effort is expected to continue as part of future assessments. Other improvements included observing and tracking housekeeping items (e.g., occupational hazards, vegetation, animal/insect intrusions).

Sitewide fencing repairs were made in 8 locations, and 90 No Trespassing signs were replaced. There were three trespassing incidents reported. The ICs for WIDS sites assigned to MSA were observed to be in place, as required.

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TERMS

TERM	Definition
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
CHPRC	CH2M Hill Plateau Remediation Company
CLUP	Comprehensive Land Use Plan
CUL	clean up level
DOE	U.S. Department of Energy
ECO	environmental compliance officer
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
ESSP	East Side Storage Pad
FY	fiscal year
GDA	geographic decision area
GIS	Geographic Information System
HCP EIS	DOE/EIS-0222-F, Final Hanford Comprehensive Land-Use Plan-Environmental Impact Statement
HGIS	Hanford Geographic Information System
HRD	Horn Rapids Landfill
IC	institutional control
LTS	long-term stewardship
MSA	Mission Support Alliance, LLC
NPL	National Priorities List
OU	operable unit
PNNL	Pacific Northwest National Laboratory
RDR/RAWP	remedial design report/remedial action work plan
RI/FS	remedial investigation/feasibility study
ROD	record of decision
SAP	sampling and analysis plan
SIS	Stewardship Information System
TCE	Trichloroethylene
TPA	Tri-Party Agreement
Tri-Party Agreement	Hanford Federal Facility Agreement and Consent Order
UIC	underground injection control (well)
UPR	unplanned release
WIDS	Waste Information Data System
WSRF	waste site reclassification form

1.0 INTRODUCTION

This document presents the results of the institutional control (IC) assessment conducted by the Mission Support Alliance, LLC (MSA) Long-Term Stewardship (LTS) Program in fiscal year (FY) 2018 as required by DE-AC06-09RL14728, *Mission Support Contract*¹, and as described in HNF-54166, *Long-Term Stewardship Surveillance and Maintenance Plan*, and DOE/RL 2001-41, *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions*. The MSA LTS Program is responsible for assessing the ICs for Waste Information Data System (WIDS) sites and Sitewide ICs, as well as other ICs assigned to MSA within the outlined area of the River Corridor shown in Figure 1.

1.1 BACKGROUND

The River Corridor covers approximately 50 miles along the length of the Columbia River, and occupies approximately 220 square miles of the Hanford Site. It includes nine former plutonium production reactors and former fuel fabrication facilities. In 2007, the River Corridor was divided into six geographic areas, commonly referred to as geographic decision areas (GDA), to organize the remedial investigation/feasibility study (RI/FS) process and support the development of six records of decision (ROD) to define the final remedial actions. The GDAs encompass the 100 Area and 300 Area National Priorities List (NPL) sites, as well as the 1100 Area, which was deleted from the NPL in 1996, as shown in Figure 1.

ICs are designed to be protective of human health and the environment, and are used to protect the integrity of a response action and minimize the potential for exposure to residual contamination. ICs for which the MSA LTS Program is responsible are defined for individual waste sites, for operable units (OU), and for the entire Site in Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) decision documents, as described in DOE/RL-2001-41. Specific ICs for some of the individual waste sites also may be defined in their respective waste site reclassification forms (WSRF).²

River Corridor Geographic Decision Areas

- 100-B/C
- 100-D/H
- 100-F/IU-2/IU-6
- 100-K
- 100-N
- 300
- 1100

¹ The *Mission Support Contract*, Attachment J-11, Contract Deliverables, requires CD0182, Site-Wide Assessment of Institutional Controls, which is due annually by November 15.

² WSRFs, defined in TPA-MP-14, *Maintenance of the Waste Information Data System (WIDS)*, document agreement among parties listed authorizing classification of the subject unit as “Closed Out,” “Interim Closed Out,” “No Action,” “RCRA Post-Closure,” “Rejected,” or “Consolidated.”

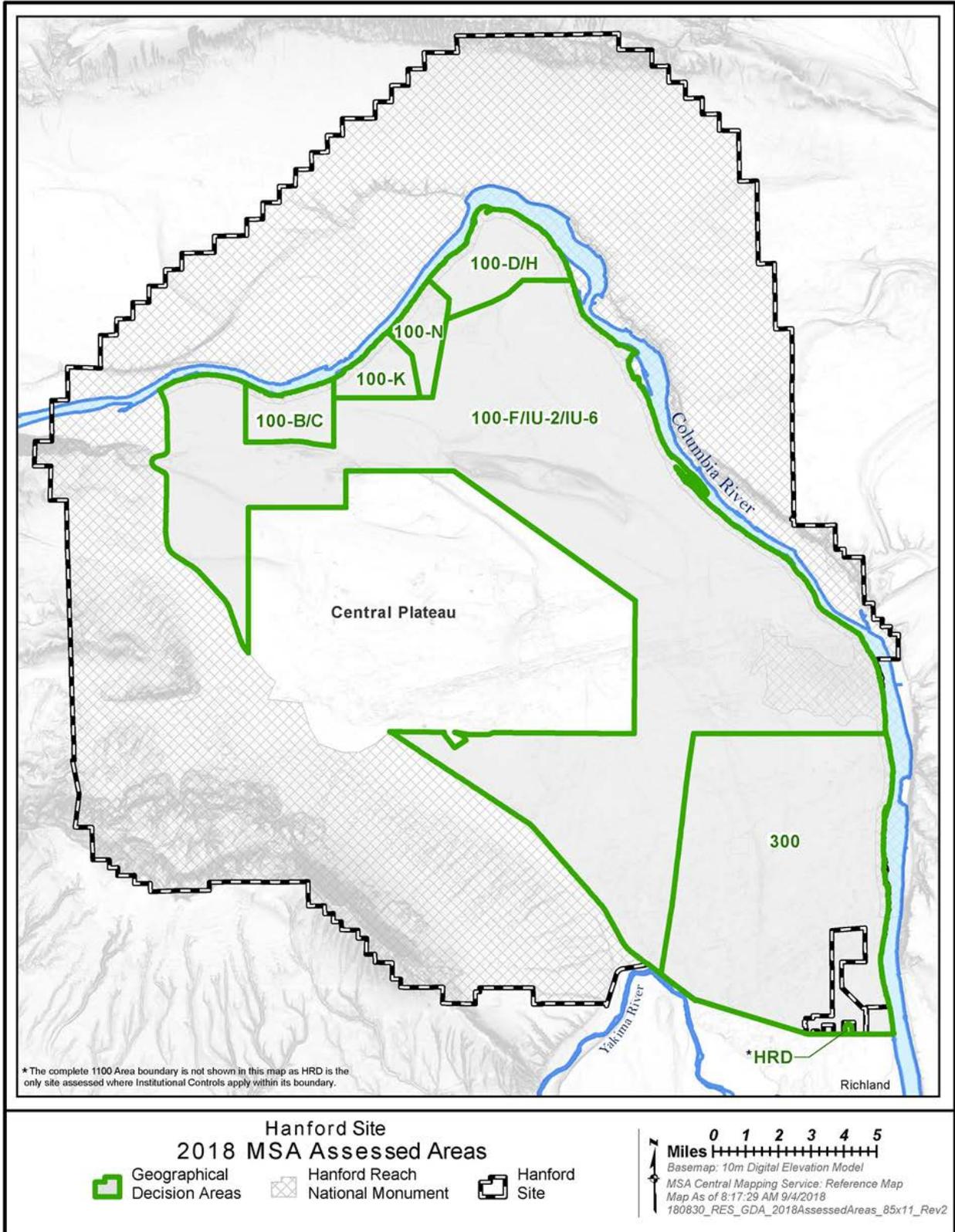


Figure 1. Surveillance and Maintenance Geographic Decision Areas.

1.2 PURPOSE AND SCOPE OF THIS REPORT

This report presents the observations and statuses resulting from the FY 2018 MSA LTS Program IC assessment. MSA currently has 1,762 assigned WIDS sites. Of these sites, 1,716 are assigned to the MSA LTS Program, 225 of these have ICs. Of the waste-site-specific ICs, 225 are ICs for which the MSA LTS Program is responsible, and 1 is officially under the management of CH2M HILL Plateau Remediation Company (CHPRC), but is geographically associated with MSA-managed sites or facilities. CHPRC and the Pacific Northwest National Laboratory (PNNL) assess the WIDS sites and areas for which they are responsible. This year, the LTS Program's assessment covered Sitewide ICs, OU-specific ICs, and waste sites with site-specific ICs.

The types of ICs assessed include:

- ICs at waste sites.
- ICs requiring warning notices (i.e., signs) to be in place at each GDA.
- Sitewide ICs, including fences, warning notices, and reporting of trespassing incidents.
- ICs defined in the CERCLA decision documents that may apply to one or more GDA, and may be applicable to one or more OU within each GDA.

1.3 GENERAL METHODS

The assessment for FY 2018 was conducted in a manner similar to and based on the objectives of the assessment conducted in FY 2017, as described in MSA-1105355.6, *2017 Annual Sitewide Institutional Control Assessment Mission Support Alliance*. The assessment objectives are designed to align with the IC objectives described in DOE/RL 2001-41. The objectives were used in defining observable methods for assessing the different types of ICs. The objectives also were used to determine which ICs would be evaluated through field verification activities and which would be evaluated through administrative review. The objectives used in this year's assessment are shown in Table 1.

ICs at WIDS sites

- 1,762 WIDS sites currently are assigned to MSA.
- 1,716 WIDS sites currently assigned to the MSA LTS Program.
- 1,168 WIDS sites assigned to MSA are waste sites.
- 225 waste sites assigned to MSA have ICs.
- 226 waste sites with ICs were assessed by MSA in FY2018.

Warning notice ICs at GDA

- Signs are required at each GDA.

Sitewide ICs

- Includes fences, warning notices, and reporting of trespassing incidents.
- Help minimize the potential for human exposure to residual contamination while helping meet Hanford Site operational requirements to protect government property.

ICs defined in CERCLA decision documents

- May apply to one or more GDA.
- May be applicable to one or more operable units within each GDA.

Figure 2. Surveillance and Maintenance Geographic Decision Areas.

Table 1. Objectives for Each Type of WIDS Site Institutional Control.

Institutional Control	Objectives
Prevent uncontrolled drilling or excavations into the deep zone (below 4.6 m/15 feet).	<ul style="list-style-type: none"> • No excavation permits were issued for excavation into the deep zone (more than 4.6 m [15 ft]). • No unauthorized excavation is observed in the deep zone.
Prevent uncontrolled drilling or excavations	<ul style="list-style-type: none"> • No excavation permits were issued. • No unauthorized excavation is observed.
Access to the site is controlled.	<ul style="list-style-type: none"> • Signage, badging, fencing, and/or other controls are used to control access to the site. • The signage, fencing, and/or other access controls are in good repair. • The signage and/or fencing meet any specific requirements in place for the site. • No unauthorized access to the site is observed or known.
Prohibit irrigation	<ul style="list-style-type: none"> • No periodic or repetitive water or other liquid discharges were requested. • No inadvertent long-term releases were made in the vicinity of the site. • No constructed drainage systems exist that would discharge to the site, as confirmed by appropriate data systems/documentation. • No constructed drainage systems that would discharge to the site are observed. • No unauthorized irrigation is observed.
Prevent an inhalation exposure pathway.	<ul style="list-style-type: none"> • No breaching of underground structures (e.g., pipes) is observed. • Access to the system entrances for the underground structures is controlled.
Prevent mobilization of remaining contamination	<ul style="list-style-type: none"> • Activities that would mobilize residual contamination are prohibited.
Control access to the Horn Rapids Landfill and maintain the integrity of the cap.	<ul style="list-style-type: none"> • Land use and the land use designation for the HRD remains unchanged. • Access is controlled with a perimeter fence for the HRD per <i>Explanation of Significant Differences for the USDOE 1100 Area</i>.^a • Any gates are locked when unattended. • Warning signs are displayed at all entrances and at intervals of 330 feet or less along the property line. • Warning signs include the statement, “Asbestos Waste Disposal Site Breathing Asbestos Dust May Cause Lung Disease and Cancer.” • The integrity of the landfill cap, as described in the 1100 Area Final Closeout Report^b, is maintained at the HRD.
Limited to industrial use only	<ul style="list-style-type: none"> • All land use requests in this area are limited to industrial uses only. • No non-industrial uses are observed.
Notice in Deed	<ul style="list-style-type: none"> • Notices in deed are in place, as required.
Prevent enhanced recharge control	<ul style="list-style-type: none"> • Potential sources of enhanced recharge (e.g., irrigation, landscape watering) are limited. • Drainage is limited (e.g., stormwater, ground cover).

^aEPA, 2010, *Explanation of Significant Differences for the USDOE 1100 Area, Hanford Site, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.

^b*Superfund Site Final Closeout Report U.S. Department of Energy Hanford 1100 Area, Richland, Washington*.
 ECO = environmental compliance officer. HRD = Horn Rapids Landfill.

The methods used to complete the assessment were designed to support a consistent, comprehensive, and efficient assessment and include the following elements:

- Reviewed the results of the previous assessment before commencing the assessment for this fiscal year.
- Used the results of the previous assessment as a baseline to observe changes in conditions to the WIDS sites; this included gathering geo-tagged photographs, maps of the sites assessed, and other observational elements.
- Identified opportunities to conduct assessments of multiple WIDS sites at the same time. The field verification activities for WIDS sites located in the same geographic area and with the same ICs were conducted during the same field assessment, and the assessment results for those WIDS sites are presented together in this report. For example, the 11 WIDS sites shown in Figure 3 were assessed as a single group, because they are co-located and have the same type of IC.
- Employed a systematic approach for field verification activities at geographically larger WIDS sites. This included walk downs of the entire site in 20 to 30 meter intervals. If the terrain differed significantly throughout a WIDS site, a shorter interval (e.g., 10 to 15 meters) was used.
- Assessed signage and access control for Sitewide ICs and GDAs while conducting site-specific WIDS ICs. This minimized the number of field visits required. Activities included inspecting the locations and conditions of warning notices at the entrances and river's edge of GDAs, and Sitewide fencing and "No Trespassing" signs.
- Conducted an administrative review of Sitewide ICs to evaluate the existing land use designations, real estate agreements, and other Site processes.
- Conducted an administrative review of WIDS sites with an IC related to controlling excavation. Hanford Site excavation permits issued throughout the FY are used to identify and evaluate permitted excavation and drilling. This process includes a Geographic Information System (GIS) spatial analysis using GIS software to compare the boundaries of the WIDS sites with the boundaries of the excavation permits.
- Supplemented field verification activities with geo-referenced low-altitude vertical aerial imagery (1 × 500 raster resolution). The imagery was used to conduct spatial analyses of WIDS sites before field visits and to supplement field verification to identify any major changes in the landscape on MSA-assessed areas, such as general ground cover gravel, asphalt, vegetation land-use changes, and excavations. Figure 4 illustrates how the imagery was used in a spatial analysis to identify groundcover types as they relate to the WIDS sites with the enhanced recharge control.
- Worked with other programs responsible for activities in the areas of the ICs, as needed. For example, environmental compliance officers (ECO) were queried to report whether any irrigation or discharges took place on WIDS sites with the no irrigation IC. Similarly, to support the ICs related to trespassing, the MSA Safeguards and Security Program was queried to identify and report whether any trespassing events occurred during FY 2018.

- Recorded housekeeping issues and was prepared to respond to imminent safety hazards if needed (no imminent safety hazards were identified during field assessments). The systematic walk down of waste sites during field assessments provided the opportunity to identify housekeeping-related issues, such as the presence of deep-rooted vegetation; evidence of burrowing insects and animals, as shown in Figure 5; ground subsidence or erosion; maintenance issues regarding site-specific signage; and potential safety hazards. Although these observations typically are not directly related to ICs, immediate responses are implemented to address any imminent safety hazards. Observations are then photographed, mapped, logged, and tracked to support overall land management.
- Documented observations made during the field verification activities (e.g., photographs) and during the administrative reviews on assessment forms. These forms will be reviewed before the assessment conducted for FY 2019.



Figure 3. WIDS Sites with Similar ICs were Grouped Together for a Single Field Assessment (100-B/C Area).

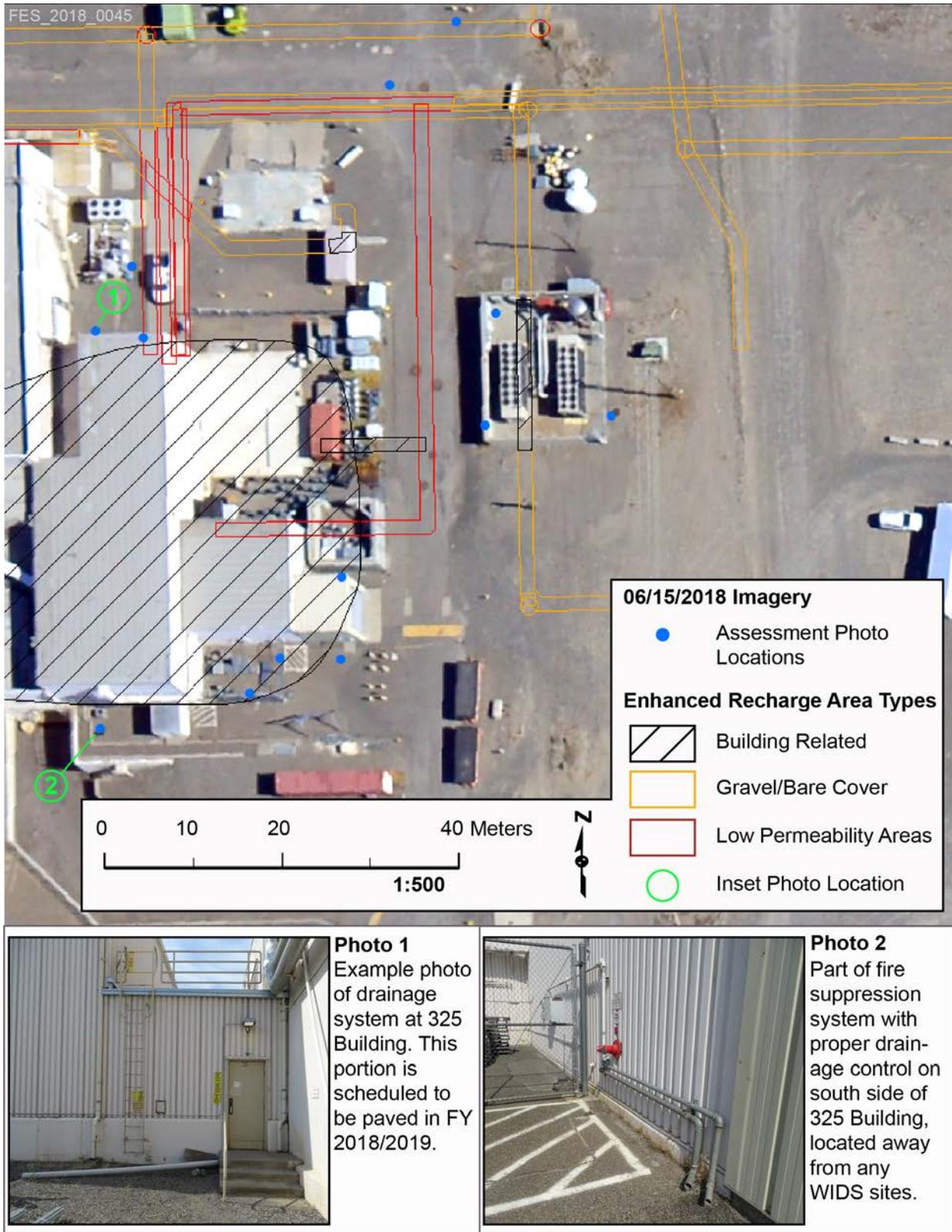


Figure 4. Example of Imagery Used to Identify Potential Locations for Field Verifications Supporting the 300 Area Enhanced Recharge IC.

1.4 UPDATES SINCE 2017

As described in Section 1.3, the assessment for FY 2018 was conducted in a manner similar to the assessment conducted in FY 2017. FY 2017 was the first year in which MSA assessed the entire River Corridor.³ Therefore, the 2018 assessment was the first opportunity for MSA to complete the River Corridor IC assessment using the previous year as a baseline to observe changes in conditions to WIDS sites. The MSA LTS Program made the following updates and refinements to the assessment process during FY 2018:

- The objectives for each type of WIDS site IC were reviewed and evaluated to determine whether they needed to be refined to more clearly articulate the intent of the IC. Minor technical edits were made to the objectives used in the FY 2018 assessment to clarify the intent of the ICs.
- Follow-on actions identified during the FY 2017 assessment for the enhanced recharge control in the 300 GDA were conducted in FY 2018:
 - Stormwater drainage was observed during inclement weather events (i.e., rain and snow events) at 14 “Final Closed Out” WIDS sites and 7 “Accepted” WIDS sites in the 300 GDA. The need for this surveillance was determined following last year’s assessment. The results of these observations can be found in section 2.6.
 - Snow pile staging area plans were developed to prevent snow pile runoff in the area of waste sites with the enhanced recharge IC. The LTS Program identified this need and worked with MSA Roads and Traffic Control before the 2017/2018 winter season to develop a snow pile staging area plan that supports the enhanced recharge control. Figure 6 shows a snow pile staging area plan near building 325. Snow removed from the parking lots around building 325 was to be piled in a designated area near the south end of the main parking lot so runoff from the piles would not affect any nearby waste sites with the enhanced recharge IC.
 - The assessment process for enhanced recharge control in FY 2018 was revised to incorporate the actions in the two preceding bullets. It now includes the following additional steps: (1) identify when a storm event with substantial rainfall or snow fall occurred, (2) visually observe the stormwater drainage near waste sites with the enhanced recharge control as soon after the event as safely possible, (3) visually observe the locations used to manage snow piles, and (4) identify where improvements could be made to the support enhanced recharge IC, such as potential improvements to stormwater drainage and how snow is managed.
- Other potential sources of enhanced recharge, such as fire suppression system testing and fire hydrant testing were evaluated. Fire suppression system testing was evaluated by working with facility owners to review flow directions and rates. Fire hydrant testing was evaluated by reviewing flow direction and rates, focusing on active hydrants (versus inactive hydrants), and reviewing water discharge permits. The results of these observations are included in this report.

³ The MSA LTS Program does not manage WIDS sites in certain areas of the River Corridor areas that were excluded from transition to the MSA LTS Program (such as the areas of ongoing cleanup activities in proximity to the 100K reactors). If ICs are associated with those WIDS sites, they are assessed by their responsible contractor.

- Follow-on actions identified during the FY 2017 assessment for the enhanced recharge control in the 300 GDA were conducted in FY 2018.
- The aerial imagery used to support the assessment of the enhanced recharge control in the 300 GDA was updated to reflect the latest available image, which was taken in 2018.
- In 2017, the assessment included recording opportunistic observations of housekeeping items, including, but not limited to, locations and general observations of frequency of non-native weeds and insect intrusions on WIDS sites with deep and shallow-zone excavation restriction ICs. Because 2017 served as a base year for recording such observations, the assessment process for 2018 included the following steps: (1) while conducting field assessment walk-downs, opportunistically record the location (by way of geo-tagged photographs) of potential bio vectors (e.g., small animal, insect intrusions, noxious and deep-rooted non-native weeds), and any other housekeeping items, (2) map locations of photographs in combination with the previous year's locations, (3) compare selected locations of potential bio vector observations and photos from previous assessments for any major differences, and (4) communicate the results with appropriate subject matter experts. Also, based on the observations of housekeeping items from 2017, along with the results of the 2017 revegetation monitoring activities described in HNF-62121, *Hanford Site Revegetation Monitoring Report for Fiscal Year 2017*, a revegetation plan was developed for FYs 2018 and 2019. This plan includes spot treatment of noxious weeds at sites with a high frequency of noxious weeds, as well as other revegetation corrective actions.
- The process for recording the results of the assessment was refined. In 2017, the individual assessments of WIDS sites were recorded in standalone electronic forms. This year's assessments were recorded in the Stewardship Information System (SIS). The SIS was developed by Washington Closure Hanford in 2007 to support the River Corridor cleanup process. It was transitioned to MSA in September 2016 to support the LTS Program's activities. The SIS application provides a mechanism to store and retrieve detailed information related to WIDS sites, facilities, and debris sites located within the areas transitioned to the LTS Program. Recently converted from a desktop system to a web-based system, it also was expanded to include the ability to record the assessment results.

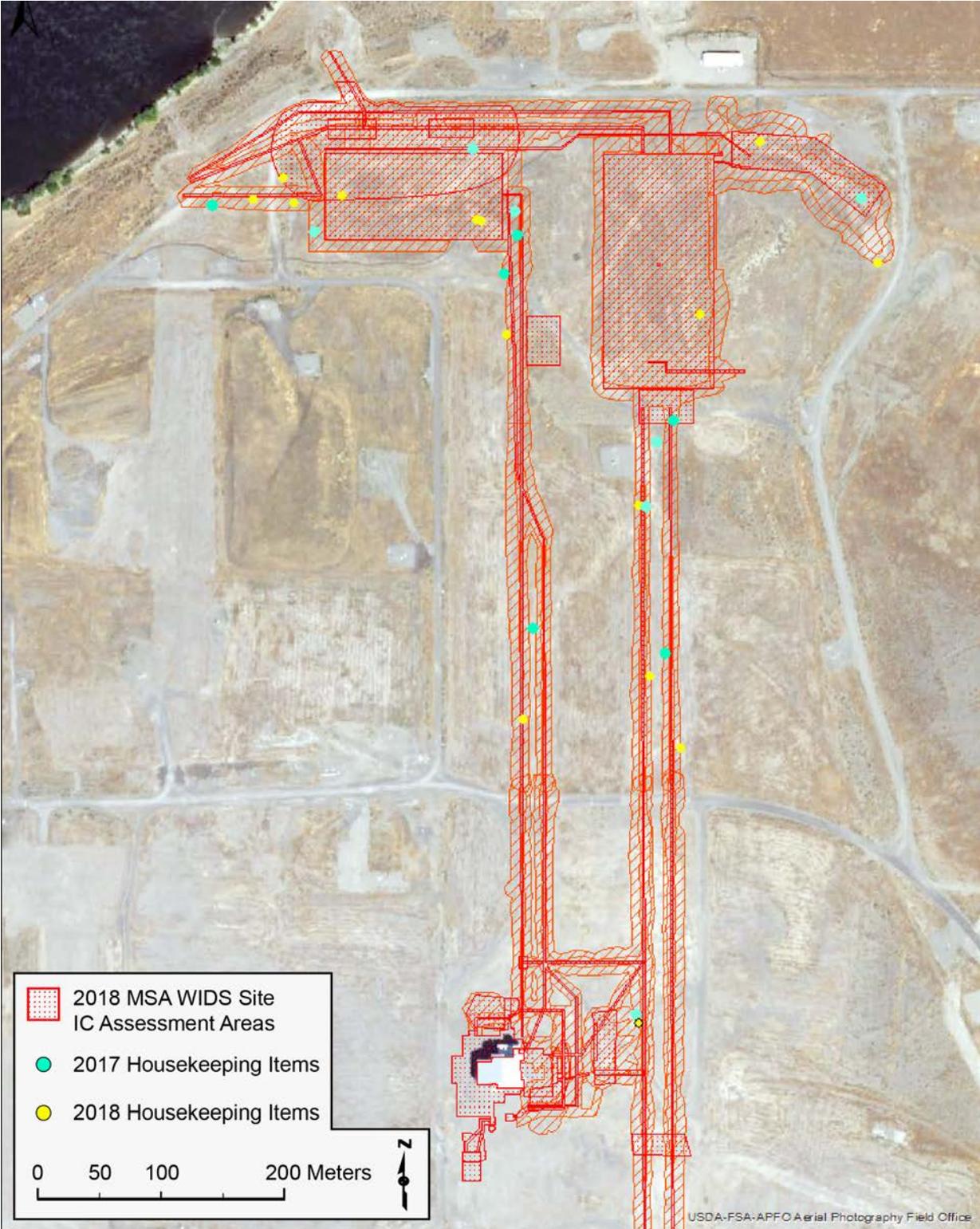


Figure 5. Example of Small Animal and Insect Intrusions Opportunistically Observed in 2017 and 2018 in the 100-D Geographic Decision Area.



Figure 6. Snow plan for the 300 Area Parking Lots and Roads near Buildings 325 and 318 to Show Road Crews where Snow Piles May be Staged.

2.0 INSTITUTIONAL CONTROLS BY GEOGRAPHIC DECISION AREA

This section presents the assessment results for MSA-maintained ICs by GDA. Figure 7 shows the number of WIDS sites that require ICs in each GDA. (Some WIDS sites may have more than one IC.)

2.1 INSTITUTIONAL CONTROLS WITHIN THE 100-B/C GEOGRAPHIC DECISION AREA

This section presents the statuses and observations resulting from the IC assessments for the 100-B/C GDA. The 100-B/C GDA encompasses the 100-BC-1 and 100-BC-2 soil OUs, as well as the 100-BC-5 groundwater OU. During FY 2018, The LTS Program assessed 34 waste sites with ICs assessed in the 100-B/C GDA. The types of ICs required at these waste sites are identified in Figure 8. Figure 9 shows the boundaries of the 100-B/C GDA and the IC assessment areas. Assessments of the WIDS sites for the 100-B/C GDA found that the appropriate ICs were in place and objectives for the ICs were met.

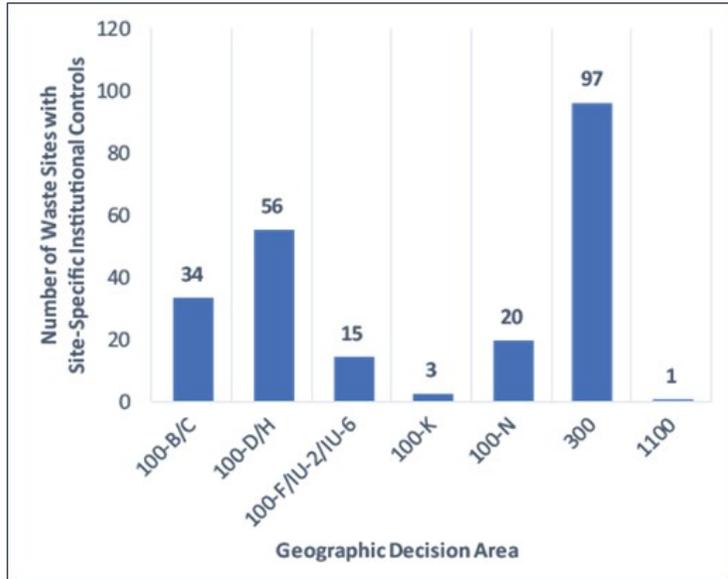


Figure 7. WIDS Sites with Site-Specific Institutional Controls in each Geographic Decision Area.

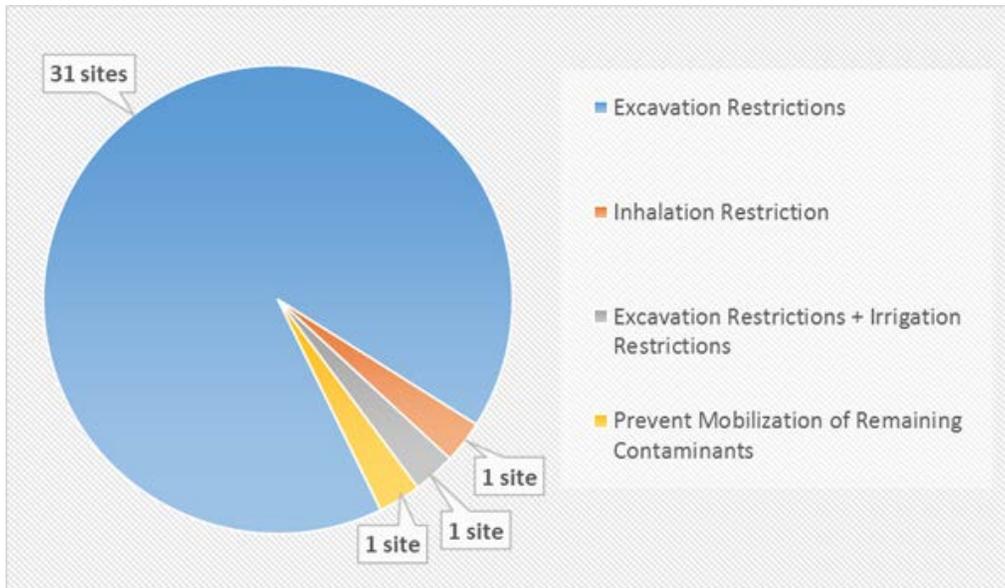


Figure 8. Types of Institutional Controls at Waste Sites in the 100-B/C Geographic Decision Area.

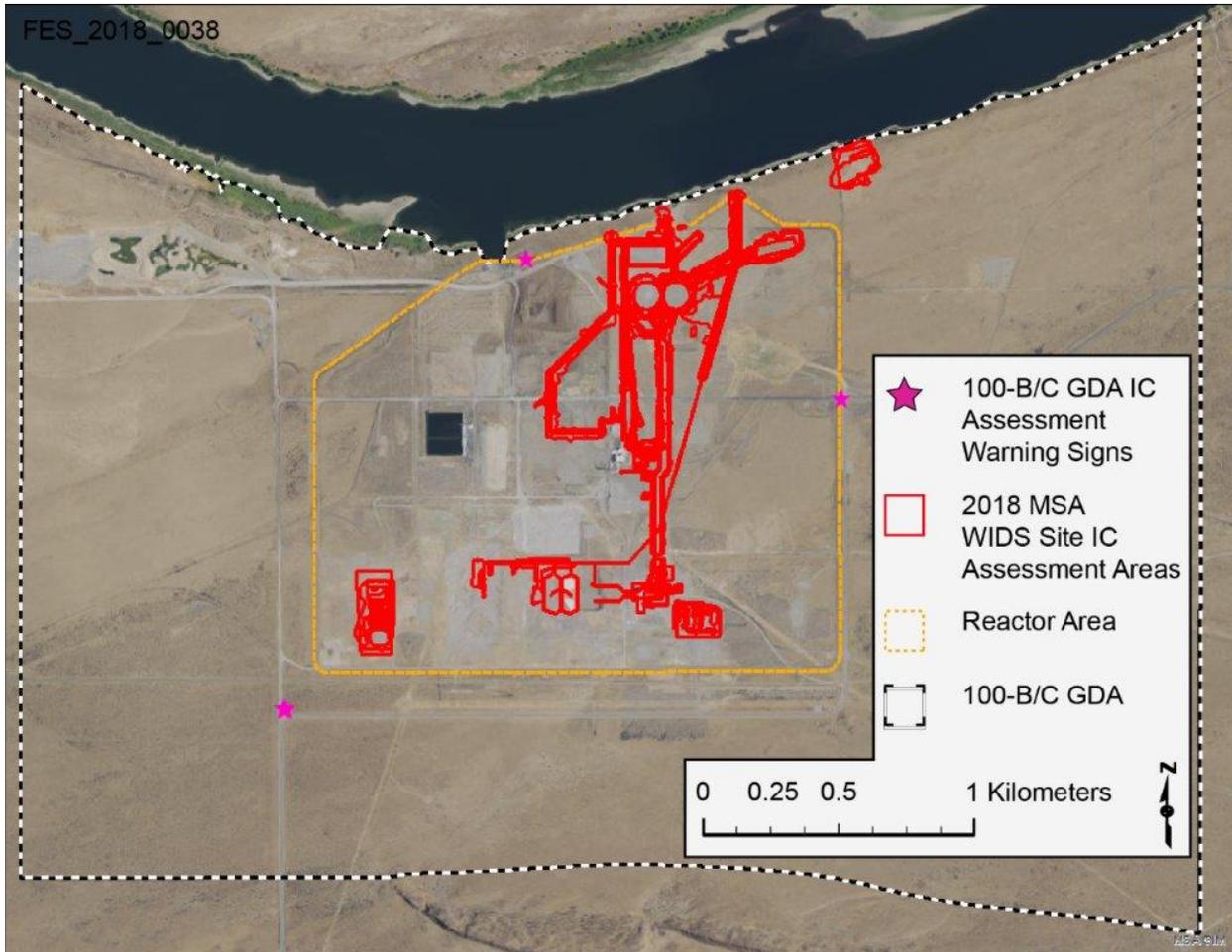


Figure 9. Areas Assessed in the 100-B/C Geographic Decision Area.

Section 2.1.1 identifies the CERCLA decision documents associated with the 100-B/C GDA. Section 2.1.2 presents the assessment results of the WIDS site-specific ICs in the 100-B/C GDA. Section 2.1.3 presents the assessment results for warning notices, ICs addressed in some of the decision documents. Section 4.0 provides the assessment results for other ICs listed in the decision documents.

2.1.1 Decision Documents for the 100-B/C Geographic Decision Area

Table 2 lists the decision documents associated with the 100-B/C GDA. These documents serve as the bases for the WIDS site-specific ICs, as well as other ICs for the 100-B/C GDA. Some of the decision documents do not have IC requirements; those documents also are noted in Table 2.

Table 2. Decision Documents Associated with the 100-B/C Geographic Decision Area.

Document	Decision Area-Wide IC Assessment Results ^a	
	Warning Notices	Other ICs
<i>Interim Action Record of Decision for the 100-BC-1, 100-DR-1 and 100-HR-1 Operable Units, Hanford Site, Benton County, Washington (EPA 1995).</i>	N/A	Section 4.1
<i>Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units, Hanford Site, Benton County, Washington (EPA 1997).</i>	N/A	Section 4.3
<i>Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (EPA 1999a). This is also known as the “100 Area Remaining Sites ROD.”</i>	Section 2.1.3	Section 4.4
<i>Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2, Operable Units, Hanford Site, Benton County, Washington (100 Area Burial Grounds) (EPA 2000a).</i>	Section 2.1.3	Section 4.7
<i>Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision, 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (EPA 2004a).</i>	N/A	This document revised the due date for the IC report from March 30 to September 30 of each year. The annual IC assessment is reported every September at the unit managers meeting.
<i>Explanation of Significant Difference for the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units (100 Area Burial Grounds), Hanford Site, Benton County, Washington (EPA 2007).</i>	N/A	Section 4.8
<i>Explanation of Significant Differences for the 100 Area Remaining Sites Record of Decision, Hanford Site, Benton County, Washington (EPA 2009a).</i>	N/A	No other ICs are identified in this document.
<i>100 Area “Plug-In” and Candidate Waste Sites for Fiscal Year 2010 – Annual Listing of Waste Sites Plugged into the Remove, Treat and Dispose Remedy in the 1999 Interim Action Record of Decision for the 100 Area (DOE-RL 2011a).</i>	N/A	No other ICs are identified in this document.
<i>100 Area “Plug-In” and Candidate Waste Sites for Calendar Year 2012 – Annual Listing of Waste Sites Plugged into the Remove, Treat Dispose Remedy in the 1999 Interim Action Record of Decision for the 100 Area Remaining Sites (DOE-RL 2013).</i>	N/A	No other ICs are identified in this document.

^aThe results of the assessments for WIDS site ICs are presented in Section 2.1.2.

IC = institutional control.

N/A = not applicable.

ROD = record of decision.

WIDS = Waste Information Data System.

2.1.2 Institutional Controls for the WIDS Sites within the 100-B/C Geographic Decision Area

This section presents the assessment results for the WIDS site-specific ICs in the 100-B/C GDA. Table 3 lists each assessment completed by WIDS site assessment group, identifies the associated WIDS sites and their respective WSRFs, the ICs being assessed, and observations for site-specific performance objectives resulting from the assessment.

Table 3. 100-B/C Geographic Decision Area WIDS Sites with Institutional Controls. (4 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
100-B-8:2 100-C-6:2 100-C-6:3 100-C-6:4 116-B-1 116-B-7 116-B-11 116-C-1 116-C-5 132-B-6 132-C-2	Interim Closed Out	2003-050 2003-050 2003-050 2003-050 99-048 2002-046 99-033 98-012 99-036 2002-046 2002-046	5/3/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.
100-B-5 100-B-8:1 100-C-6:1 116-B-2 116-B-3 116-B-4 116-B-6A 116-B-12 116-B-16 118-B-6	Interim Closed Out	2003-030 2004-020 2004-020 99-097 99-101 99-082 99-055 99-052 99-055a 2006-005	5/3/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.
100-B-21:4 100-C-6:1 116-C-2A 116-C-2B 116-C-2C 116-C-3 118-C-3:2	Interim Closed Out	2009-041 2004-020 99-098 99-099 99-100 2008-002 2000-099	5/3/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.

Table 3. 100-B/C Geographic Decision Area WIDS Sites with Institutional Controls. (4 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
118-B-1	Interim Closed Out	2007-032	5/9/2018	The IC requirements for this site include deed restrictions to prohibit irrigation and prevent uncontrolled drilling or excavation into the deep zone (4.6 m/15 ft below ground surface).	<ul style="list-style-type: none"> • No excavation permits were issued in FY 2018 at the location of the site assessed. • No unauthorized excavation was observed in the deep zone. • No known period/ repetitive water or other liquid discharges to the WIDS site as confirmed by the ECO. • There were no known inadvertent long-term or significant discharges at or near the WIDS site. • No constructed drainage systems exist that would discharge to the site, as confirmed by appropriate data systems/documentation and as observed during the systematic walk down of the WIDS area. • No evidence of unauthorized irrigation or water marks were observed during the systematic walk down of the WIDS area.
100-C-9:4	Interim No Action	2004-015	5/9/2018	Given the demonstrated maximum residual concentration of hexavalent chromium in the feedwater pipes, ICs are required to prevent an inhalation exposure pathway.	<ul style="list-style-type: none"> • No breaching of the below-grade underground features is apparent from the surface. • Access beyond the Wye Barricade is controlled. Also, "Radiation Warning" and "Confined Space" signs are posted.

Table 3. 100-B/C Geographic Decision Area WIDS Sites with Institutional Controls. (4 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
128-B-3	Interim Closed Out	2006-058	5/2/2018	An interim closure reclassification is supported for the 128-B-3 waste site, with imposition of ICs on the river embankment area to prevent activities that would mobilize residual contaminants to travel to groundwater or the river. ICs will be maintained until the results of a baseline risk assessment can be considered (for a final site remedy or closure). The remainder of the site does not have a deep zone or residual contaminant concentrations that would require any ICs.	<ul style="list-style-type: none"> • No excavation permits were issued in FY 2018. • No unauthorized excavation was observed in the shallow zone. • There were no known period/repetitive water or other liquid discharges to the WIDS site as confirmed by the ECO. • There were no known inadvertent long-term or significant releases that were reported at the mentioned sites or near the WIDS site. • No constructed drainage systems exist that would discharge to the site, as confirmed by appropriate data systems/documentation and as observed during the systematic walk of the WIDS area. • No unauthorized irrigation was observed.
100-C-9:3	Interim No Action	2004-014	5/10/2018	The 100-C-9:3 site is comprised exclusively of a deep zone (i.e., greater than 4.6 m [15 ft] below ground surface). ICs will be required because the evaluation of compliance with direct exposure standards failed for some of the semi-volatiles.	<ul style="list-style-type: none"> • No excavation permits were issued in FY 2018 at the location of the sites assessed. • No unauthorized excavation was observed in the deep zone.
118-C-1	Interim Closed Out	2006-063	5/9/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> • No excavation permits were issued in FY 2018 at the location of the sites assessed. • No unauthorized excavation was observed in the deep zone.
100-B-14:1	Interim Closed Out	2004-005	5/9/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> • No excavation permits were issued in FY 2018 at the location of the sites assessed. • No unauthorized excavation was observed in the deep zone.

Table 3. 100-B/C Geographic Decision Area WIDS Sites with Institutional Controls. (4 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
100-C-9:1	Interim Closed Out	2004-012	5/10/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> • No excavation permits were issued in FY 2018 at the location of the sites assessed. • No unauthorized excavation was observed in the deep zone.

ECO = environmental compliance officer.
 FY = fiscal year.
 IC = institutional control.

WIDS = Waste Information Data System.
 WSRF = Waste Site Reclassification Form.

2.1.3 Warning Notices in the 100-B/C Geographic Decision Area

Two decision documents have the same requirement to maintain warning notices in the 100-B/C GDA along access roads and the Columbia River to warn visitors and workers of potential hazards associated with the area (see section 2.1.1). Detailed requirements for the notices, including their locations, verbiage, and language (the signs are to be in English with one sign along the river also provided in Spanish) are defined in DOE/RL-96-17, *Remedial Design Report/Remedial Action Work Plan for the 100 Area*, section 3.8.

Table 4 presents the observations resulting from the assessments of these signs, which serve as the warning notices. Table 4 also describes the location of each sign, the language used for the verbiage, and the observations. The signs for the 100-B/C GDA were found to be in place at the correct locations (see Figure 9) with the proper text. Figure 10 presents photographs of the signs.

Table 4. Warning Notices for 100-B/C Geographic Decision Area.

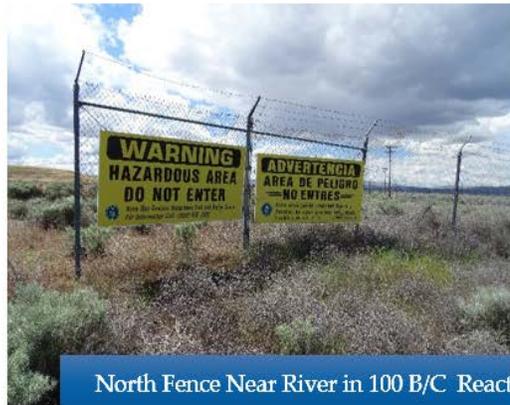
Location	Number of Signs	Language	Observations
East Entrance to 100B/C Reactor Area	1	English	In Place
Southwest Entrance to 100B/C Reactor Area	1	English	In Place
North Fence Near River in 100B/C Reactor Area	2	English & Spanish	In Place



East Entrance to 100 B/C Reactor Area



Southwest Entrance to 100 B/C Reactor Area



North Fence Near River in 100 B/C Reactor Area

Figure 10. Warning Notices for 100-B/C Geographic Decision Area.

2.2 INSTITUTIONAL CONTROLS WITHIN THE 100-D/H GEOGRAPHIC DECISION AREA

This section presents the statuses and observations resulting from the IC assessments in the 100-D/H GDA. The 100-D/H GDA encompasses the 100-DR-1, 100-DR-2, 100-HR-1, and 100-HR-2 soil OUs, as well as the 100-HR-3 groundwater OU. During FY 2018, The LTS Program assessed 56 waste sites with ICs assessed in the 100-D/H GDA; the only IC in the 100-D/H GDA at this time is that requiring excavation restrictions. Figure 11 shows the boundaries of the 100-D/H GDA and the IC assessment areas. Assessments of the WIDS sites for the 100-D/H GDA found that the appropriate ICs were in place and objectives for the ICs were met.

A new Record of Decision Hanford 100 Area Superfund Site 100-DR-1, 100-DR-2, 100-HR-2, and 100-HR-3 Operable Units (EPA 2018), was signed on July 30, 2018, after the FY 2018 IC assessments began. This decision document and any new ICs will be incorporated into next year's assessment.

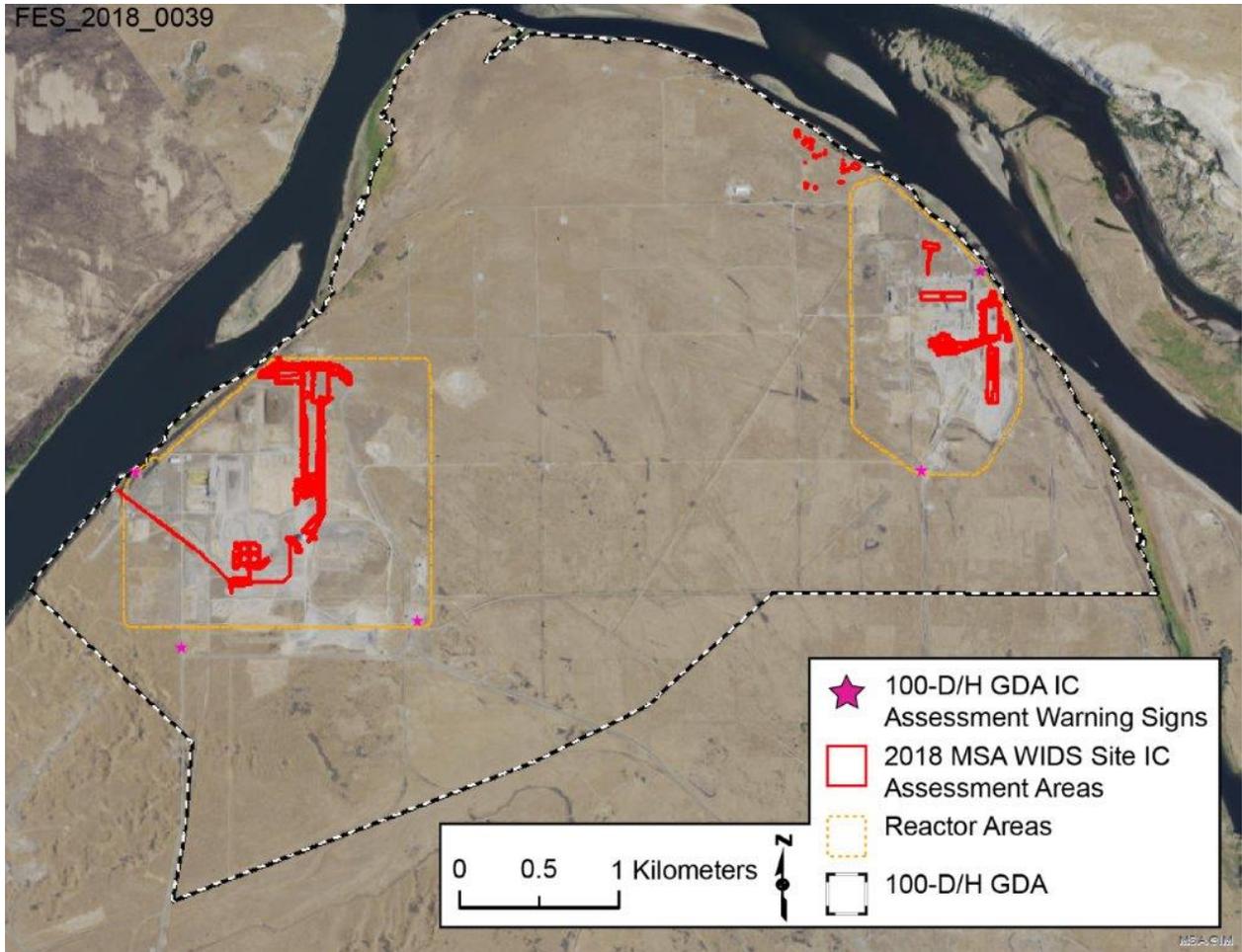


Figure 11. Areas Assessed in the 100-D/H Geographic Decision Area.

Section 2.2.1 identifies the decision documents associated with the 100-D/H GDA. Section 2.2.2 presents the assessment results for the WIDS site-specific ICs in the 100-D/H GDA. Section 2.2.3 presents the assessment results for warning notices, which are ICs addressed in some of the decision documents. Section 4.0 presents the assessment results for other ICs listed in the decision documents.

2.2.1 Decision Documents for the 100-D/H Geographic Decision Area

Table 5 lists the decision documents associated with the 100-D/H GDA. These documents serve as the bases for the WIDS site-specific ICs, as well as other ICs for the 100-D/H GDA. Some of the decision documents do not have IC requirements; those documents are also noted in Table 5.

Table 5. Decision Documents Associated with the 100-D/H Geographic Decision Area (2 sheets).

Document	Decision Area-Wide IC Assessment Results ^a	
	Warning Notices	Other ICs
<i>Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units, Hanford Site, Benton County, Washington (EPA 1995).</i>	N/A	Section 4.1
<i>Interim Action Record of Decision for the 100-HR-3 and 100-KR-4 Operable Units, Hanford Site, Benton County, Washington (EPA 1996a).</i>	N/A	Section 4.2
<i>Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units, Hanford Site, Benton County, Washington (EPA 1997).</i>	N/A	Section 4.3
<i>Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (EPA 1999a). This also is known as the “100 Area Remaining Sites ROD.”</i>	Section 2.2.3	Section 4.4
<i>Amendment to the Interim Action Record of Decision for the 100-HR-3 Operable Unit, Hanford Site, Benton County, Washington (EPA 1999c).</i>	N/A	No other ICs are identified in this document.
<i>Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, Hanford Site, Benton County, Washington (100-Area Burial Grounds) (EPA 2000a).</i>	Section 2.2.3	Section 4.7
<i>Explanation of Significant Difference for the 100-HR-3 Operable Unit Interim Action Record of Decision, Benton County, Washington (EPA 2003a).</i>	N/A	No other ICs are identified in this document.
<i>Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision, 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (EPA 2004a).</i>	N/A	The IC requirement revised the reporting date from March 30 to September 30. The annual IC assessment is reported every September at the unit managers meeting.
<i>Explanation of Significant Difference for the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units (100 Area Burial Grounds), Hanford Site, Benton County, Washington (EPA 2007).</i>	N/A	Section 4.8
<i>Explanation of Significant Differences for the 100 Area Remaining Sites Record of Decision, Hanford Site, Benton County, Washington (EPA 2009a).</i>	N/A	No other ICs are identified in this document.
<i>Explanation of Significant Differences for the 100-HR-3 and 100-KR-4 Operable Units Interim Record of Decision, Benton County, Washington (EPA 2009b).</i>	N/A	No other ICs are identified in this document.

Document	Decision Area-Wide IC Assessment Results ^a	
	Warning Notices	Other ICs
<i>100 Area “Plug In” and Candidate Waste Sites for Fiscal Year 2010 – Annual Listing of Waste Sites Plugged into the Remove, Treat and Dispose Remedy in the 1999 Interim Action Record of Decision for the 100 Area (DOE-RL 2011a).</i>	N/A	No other ICs are identified in this document.
<i>100 Area “Plug In” and Candidate Waste Sites for Calendar Year 2011 – Annual Listing of Waste Sites Plugged into the Remove, Treat and Dispose Remedy in the 1999 Interim Action Record of Decision for the 100 Area Remaining Sites (DOE-RL 2012a).</i>	N/A	No other ICs are identified in this document.
<i>100 Area “Plug In” and Candidate Waste Sites for Calendar Year 2012 – Annual Listing of Waste Sites Plugged into the Remove, Treat and Dispose Remedy in the 1999 Interim Action Record of Decision for the 100 Area Remaining Sites (DOE-RL 2013).</i>	N/A	No other ICs are identified in this document.

^aThe results of the assessments for WIDS site ICs are presented in Section 2.2.2.

IC = institutional control.

N/A = not applicable.

ROD = record of decision.

2.2.2 Institutional Controls for WIDS Sites within the 100-D/H Geographic Decision Area

This section presents the assessment results for the WIDS site-specific ICs in the 100-D/H GDA. Table 6 lists each assessment completed by WIDS site assessment group, identifies the associated WIDS sites and their respective WSRFs, assessment dates, the ICs being assessed, and observations for site-specific performance objectives resulting from the assessment.

Table 6. 100-D/H Geographic Decision Area WIDS Sites with Institutional Controls (4 sheets).

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
100-D-18 100-D-19 100-D-25 100-D-48:1 100-D-49:1 116-D-7 116-DR-1&2 116-DR-9 UPR-100-D-2 UPR-100-D-3 UPR-100-D-4	Interim Closed Out	2000-040 2000-128 99-106 2000-126 2000-127 2000-007 2000-068 99-046 2000-062 2000-063 2000-034	5/15/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.
100-D-23 100-D-53 100-D-54 100-D-64 122-DR-1:4 122-DR-1:5 132-DR-2	Interim Closed Out	2003-053	5/16/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.
116-D-8	Interim Closed Out	2009-015	5/16/2018	The direct exposure cleanup criterion for Cs-137 was exceeded in sample results from this location. However, no further remediation can be conducted without significantly adversely affecting bat colonies. The preferred alternative to eliminate or mitigate impacts to the bat colony is to leave the structure intact and add perimeter fencing and signage to deter human entry. Therefore, ICs are required at the location of Cs-137 contamination south of the 116-D-8, 100-D cask storage pad.	<ul style="list-style-type: none"> Access to the site is generally controlled through overall Site access controls, including badging requirements north of the Wye-Barricade and “No Trespassing” warning notices along the roads and Columbia River. No excavation permits were issued in FY 2018 at the location of the 116-D-8 WIDS site. No unauthorized excavation in the shallow zone was observed at the 116-D-8 site.

Table 6. 100-D/H Geographic Decision Area WIDS Sites with Institutional Controls (4 sheets).

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
100-D-86:3	Interim Closed Out	2015-016	5/16/2018	Site contamination above direct exposure RAGs extended into deep-zone soils on the north side of the excavation; therefore, ICs to prevent uncontrolled drilling or excavation into the deep zone are required. Because residual contamination remains in the deep zone, this waste site will be evaluated for additional remediation in the final ROD for the 100-D Area, and additional measures to ensure long-term viability of ICs will be identified if necessary, as explained in the interim action ROD.	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.
100-D-6 132-DR-1 116-DR-6	Interim Closed Out	2001-005 2005-035 2000-104	5/16/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.
100-D-5 100-D-46 100-D-48:4 116-D-1A 116-D-1B 116-D-6 118-D-6:2 118-D-6:3 118-D-6:4 132-D-2 132-D-3 132-D-4	Interim Closed Out	2001-022 2000-115 2000-133 2000-115 2000-115 2000-106 2005-021 2005-021 2010-071 2005-024 2005-033 2005-022	5/15/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.
100-D-48:3 100-D-49:3	Interim Closed Out	2001-004 2001-004	5/16/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.

Table 6. 100-D/H Geographic Decision Area WIDS Sites with Institutional Controls (4 sheets).

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
100-D-48:2	Interim Closed Out	2000-064	5/16/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.
100-D-49:2	Interim Closed Out	2000-065	5/15/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.
100-D-50:1	Interim Closed Out	2012-101	5/16/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.
100-D-50:6	Interim Closed Out	2013-011	5/16/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.
100-H-1 116-H-3 118-H-6:2 118-H-6:3 118-H-6:6 132-H-2	Interim Closed Out	2001-007 2000-135 2006-008 2006-009 2006-022 2006-049	5/22/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.
100-H-21 100-H-22	Interim Closed Out	2001-006 2001-006	5/22/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No unauthorized excavation was observed in the deep zone.
100-H-5	Interim Closed Out	2000-117	5/22/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.

Table 6. 100-D/H Geographic Decision Area WIDS Sites with Institutional Controls (4 sheets).

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
116-H-1	Interim Closed Out	2001-013	5/22/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.
116-H-7	Interim Closed Out	2001-026	5/22/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.
126-H-2	Interim Closed Out	2006-006	5/22/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.
1607-H-2	Interim Closed Out	2000-118	5/22/2018	ICs are required to prevent uncontrolled drilling excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.
600-151	Interim Closed Out	2011-053	5/25/2018	The approved WSRF documents state, "because arsenic and lead contamination is present in surface soil, an administrative control will be documented in the WIDS until a final decision concerning historic orchard pesticide use is made."	<ul style="list-style-type: none"> Administrative controls are still in place as documented in the 2011-053 WSRF and WIDS Summary Report until a final decision concerning historic orchard pesticide use is made.

DOE = U.S. Department of Energy.
 Ecology = Washington State Department of Ecology.
 FY = fiscal year.
 IC = institutional control.

RAG = remedial action goal.
 WIDS = Waste Information Data System.
 WSRF = waste site reclassification form.

2.2.3 Warning Notices in the 100-D/H Geographic Decision Area

Two of the decision documents have the same requirement to maintain signs that serve as warning notices in the 100-D/H GDA along access roads and the Columbia River to warn visitors and workers of potential hazards associated with the area (see section 2.2.1). Detailed requirements for the notices, including their locations, verbiage, and language (the signs are to be in English with one sign along the river also provided in Spanish), are defined in DOE/RL-96-17, section 3.8.

Table 7 lists the location of each sign, the language used for the verbiage on the sign, and the observations. In FY 2017, a sign near the east entrance to the 100D Area was observed to have fallen. The sign was repaired in early FY 2018. All signs in the 100-D/H Area were found to be in place at the correct locations (see Figure 11) with the proper text. Figure 12 shows the signs.

Table 7. Warning Notices for 100-D/H Geographic Decision Area.

Location	Number of Signs	Language	Observations
West Entrance to 100D Reactor Area	1	English	In Place
East Entrance to 100D Reactor Area	1	English	In Place
Near Columbia River in 100D Reactor Area	2	English & Spanish	In Place
Main Entrance to 100H Reactor Area	1	English	In Place
Near Columbia River in 100H Reactor Area	2	English & Spanish	In Place

FY = fiscal year.



West Entrance to 100D Reactor Area



East Entrance to 100D Reactor Area



Signs Near Columbia River in 100D Reactor Area (Spanish and English)

Figure 12. Warning Notices for 100-D/H Geographic Decision Area (sheet 1).



Figure 12. Warning Notices for 100-D/H Geographic Decision Area (sheet 2).

2.3 INSTITUTIONAL CONTROLS WITHIN THE 100-F/IU-2/IU-6 GEOGRAPHIC DECISION AREA

This section presents the statuses and observations resulting from the IC assessments for the 100-F/IU-2/IU-6 GDA. The 100-F/IU-2/IU-6 GDA encompasses the 100-FR-1, 100-FR-2, 100-IU-2, and 100-IU-6 soil OUs, as well as the

Within the 100-F/IU-2/IU-6 GDA, only the 100F Operational Area contains sites with ICs managed by MSA

100-FR-3 groundwater OU. The ROD with the final action decisions for this area, *Record of Decision, Hanford 100 Area Superfund Site 100-FR-1, 100-FR-2, 100 FR-3, 100-IU-2, and 100-IU-6 Operable Units* (EPA 2014), defines the boundaries for 100-FR-1 and 100-FR-2 OU locations where land-use ICs are required. Therefore, the IC assessments for the 100-F/IU-2/IU-6 GDA were conducted in groups based on the areas defined in the final F Area ROD, rather than the boundaries of the individual WIDS sites; no ICs are required at WIDS sites located in other areas of the GDA.

During FY 2018, the LTS Program assessed 15 waste sites with ICs in the 100-F/IU-2/IU-6 GDA. The types of ICs required at these waste sites are identified in Figure 13. Figure 14 shows the boundaries of the IC assessment areas. Assessments of the WIDS sites for the 100-F/IU-2/IU-6 GDA found that the appropriate ICs were in place and objectives for the ICs were met.

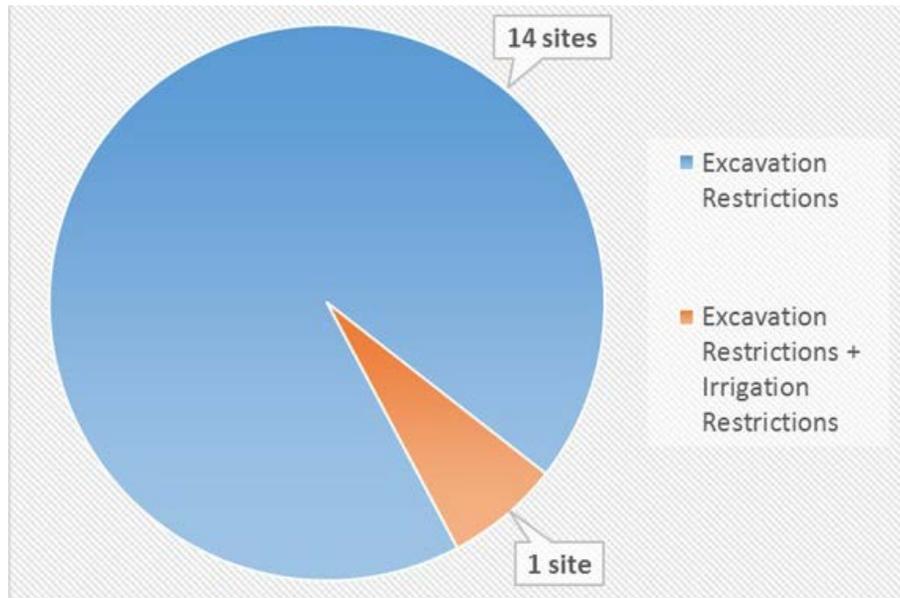


Figure 13. Areas Assessed in the 100-F/IU-2/IU-6 Geographic Decision Area.

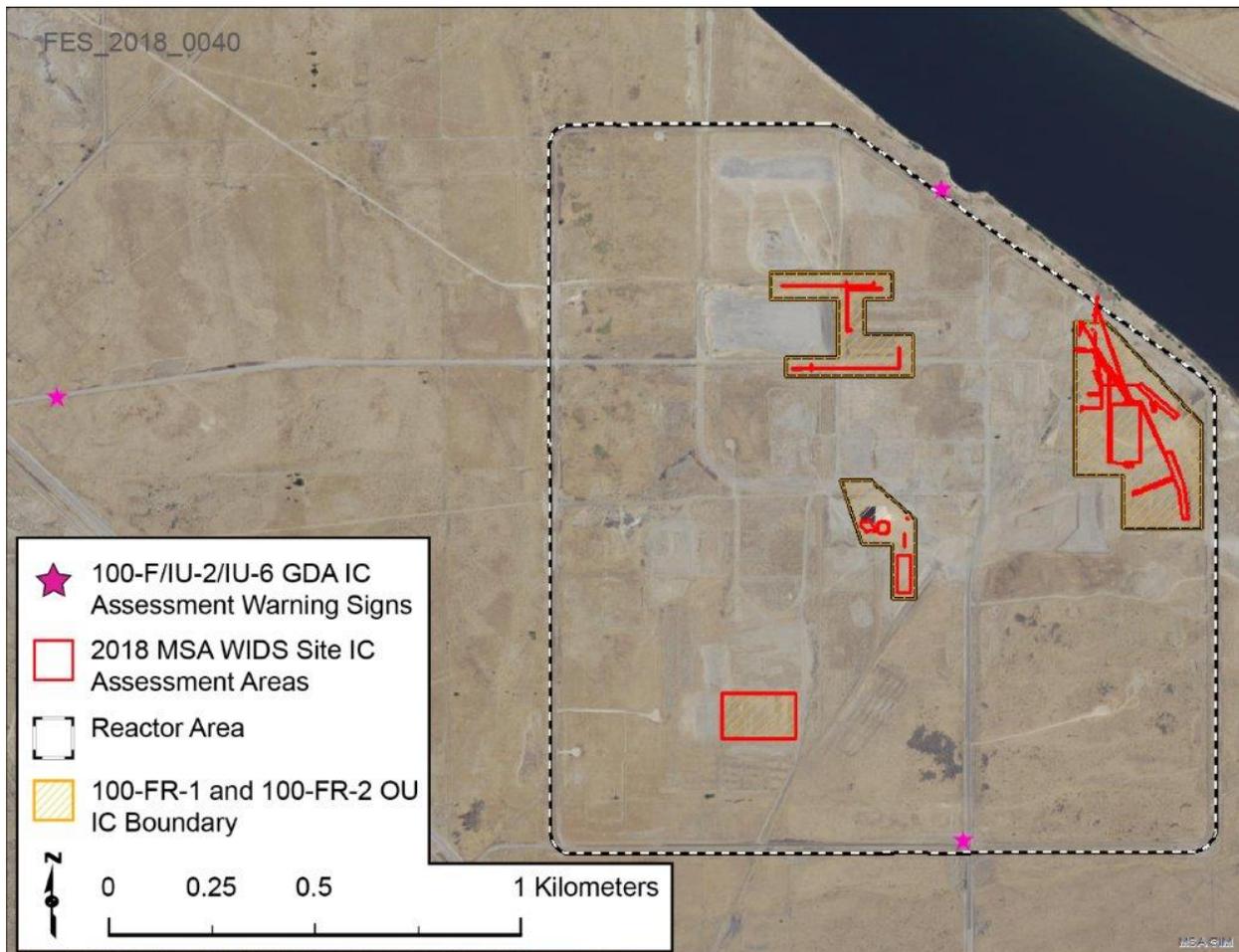


Figure 14. Areas Assessed in the 100-F/IU-2/IU-6 Geographic Decision Area.

Section 2.3.1 identifies the decision documents associated with the 100-F/IU-2/IU-6 GDA. Section 2.3.2 presents the assessment results of the WIDS site-specific ICs in the 100-F/IU-2/IU-6 GDA. Section 2.3.3 presents the assessment results for warning notices, which are also ICs addressed in some of the decision documents. Section 4.0 presents the assessment results for other ICs listed in the decision documents.

2.3.1 Decision Documents for the 100-F/IU-2/IU-6 Geographic Decision Area

The primary decision document associated with the 100-F/IU-2/IU-6 GDA, EPA (2014), a ROD that defines the final-action cleanup decisions, is listed in Table 8. This document serves as the basis for the WIDS site-specific ICs, as well as other ICs for the 100-F/IU-2/IU-6 GDA. Previously issued CERCLA decision documents (listed in a footnote of Table 8), which are no longer applicable to this area after the issuance of the final action ROD, were not assessed for the 100-F/IU-2/IU-GDA.

Table 8. Decision Documents Associated with the 100-F/IU-2/IU-6 Geographic Decision Area.

Document	Decision Area-Wide IC Assessment Results ^a	
	Warning Notices	Other ICs
<i>Record of Decision Hanford 100 Area Superfund Site 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2 and 100-IU-6 Operable Units</i> (EPA, 2014). ^b	Section 2.2.3	Section 4.9

^aThe results of the assessments for WIDS site ICs are presented in Section 2.3.2.

^bThis record of decision, which defines final action cleanup decisions for 100-F/IU-2/IU-6 OUs, supersedes the following previously issued CERCLA decision documents for this GDA:

- *Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units, Hanford Site, Benton County, Washington* (EPA 1997)
- *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington* (EPA 1999a). This is also known as the “100 Area Remaining Sites ROD.”
- *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2, Operable Units, Hanford Site, Benton County, Washington (100 Area Burial Grounds)* (EPA 2000a).
- *Explanation of Significant Differences for the 100 Area Remaining Sites Record of Decision* (EPA 2009a).
- *Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision, 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington.* (EPA 2004a).
- *Explanation of Significant Difference for the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units (100 Area Burial Grounds), Hanford Site, Benton County, Washington* (EPA 2007).
- *Explanation of Significant Differences for the 100 Area Remaining Sites Record of Decision, Hanford Site, Benton County, Washington* (EPA 2009a).
- *100 Area “Plug-In” and Candidate Waste Sites for Fiscal Year 2010 – Annual Listing of Waste Sites Plugged into the Remove, Treat and Dispose Remedy in the 1999 Interim Action Record of Decision for the 100 Area* (DOE-RL 2011a).
- *100 Area “Plug-In” and Candidate Waste Sites for Fiscal Year 2011 – Annual Listing of Waste Sites Plugged into the Remove, Treat and Dispose Remedy in the 1999 Interim Action Record of Decision for the 100 Area* (DOE-RL 2012a).
- *100 Area “Plug-In” and Candidate Waste Sites for Calendar Year 2012 – Annual Listing of Waste Sites Plugged into the Remove, Treat Dispose Remedy in the 1999 Interim Action Record of Decision for the 100 Area Remaining Sites* (DOE-RL 2013).

2.3.2 Institutional Controls for WIDS Sites within the 100-F/IU-2/IU-6 Geographic Decision Area

This section presents the assessment results for the WIDS site-specific ICs in the 100-F/IU-2/IU-6 GDA. Table 9 lists each assessment completed by WIDS site assessment group, identifies the associated WIDS sites and their respective WSRFs, assessment dates, the ICs being assessed, and observations for site-specific performance objectives resulting from the assessment.

Table 9. 100-F/IU-2/IU-6 Geographic Decision Area WIDS Sites with Institutional Controls. (2 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRFs	Date Assessed	Institutional Control	Observations
100-F-10 100-F-19:2 116-F-6 118-F-8:3 118-F-8:4	Final Closed Out	2003-051, 2015-078 2003-022, 2015-078 2003-006, 2015-078 2003-051, 2015-078 2007-027, 2015-078	5/1/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.
100-F-19:1 100-F-29 100-F-34 116-F-2 116-F-9 116-F-12 UPR-100-F-1	Final Closed Out	2001-099, 2015-078 2003-022, 2015-078 2001-099, 2015-078 2002-057, 2015-078 2002-056, 2015-078 2001-099, 2015-078 2003-022, 2015-078	5/1/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.

Table 9. 100-F/IU-2/IU-6 Geographic Decision Area WIDS Sites with Institutional Controls. (2 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRFs	Date Assessed	Institutional Control	Observations
116-F-14	Final Closed Out	2002-050, 2015-077	5/1/2018	ICs are required to restrict excavation into deep zone soils (greater than 4.6 m [15 ft] below ground surface) and to prohibit irrigation over or near the site.	<ul style="list-style-type: none"> • No excavation permits were issued in FY 2018 at the location of the sites assessed. • No unauthorized excavation was observed in the deep zone. • No constructed drainage systems that would discharge to the site was observed. • No unauthorized irrigation was observed. • No known periodic/repetitive water or other liquid discharges occurred to the 116-F-14 WIDS site, as confirmed by the ECO. • No known inadvertent long-term or significant releases were reported at the mentioned sites or near the 116-F-14 WIDS site. • No constructed drainage systems exist that would discharge to the site, as confirmed by appropriate data systems/ documentation.
100-F-19:3	Final Closed Out	2001-099, 2015-078	5/1/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> • No excavation permits were issued in FY 2018 at the location of the sites assessed. • No unauthorized excavation is observed in the deep zone.
118-F-6	Final Closed Out	2008-018, 2015-079	5/2/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> • No excavation permits were issued in FY 2018 at the location of the sites assessed. • No unauthorized excavation is observed in the deep zone.

ECO = environmental compliance officer.
 IC = institutional control.

WIDS = Waste Information Data System.
 WSRF = waste site reclassification form.

2.3.3 Warning Notices in the 100-F/IU-2/IU-6 Decision Area

Warning notice requirements for the 100-F/IU-2/IU-6 GDA are documented in *Record of Decision Hanford 100 Area Superfund Site 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2 and 100-IU-6 Operable Units* (EPA 2014) (Table 8). Detailed requirements for the signs, which serve as warning notices, including their locations, verbiage, and language (the signs are to be in English with one sign along the river also provided in Spanish) are defined in DOE/RL-2014-44-ADD1, *Remedial Design Report/Remedial Action Work Plan Addendum for 100-FR-1, 100-FR-2, 100-IU-2, and 100-IU-6 Soils*, section 4.3.

Table 10 identifies the location of each sign, the language used for the verbiage on the sign, and the observations. In FY 2017, the sign near the west entrance to the 100F Reactor Area was observed to have fallen. The sign was repaired in FY 2018. All signs for the 100-F/IU-2/IU-6 GDA were found to be in place at the correct locations and with the proper text. The signs are shown in Figure 15.

Table 10. Warning Notices for 100-F/IU-2/IU-6 Geographic Decision Area.

Location	Number of Signs	Language	Observations
Main (South) Entrance to 100F Reactor Area	1	English	In Place
West Entrance to 100F Reactor Area	1	English	In Place
Near Columbia River in 100F Reactor Area	2	English & Spanish	In Place

FY = fiscal year.



Figure 15. Warning Notices for 100-F/IU-2/IU-6 Geographic Decision Area.

2.4 INSTITUTIONAL CONTROLS IN THE 100-K GEOGRAPHIC DECISION AREA

This section presents the statuses and observations resulting from the IC assessments for the 100-K GDA. The 100-K GDA encompasses the 100-KR-1 and 100-KR-2 soil OUs, as well as the 100-KR-4 groundwater OU. Figure 16 shows the boundaries of the 100-K GDA and the IC assessment areas. Three WIDS sites in the 100-K GDA had IC requirements in FY 2018; the only IC in the 100-K GDA at this time is that requiring excavation restrictions. Assessments of the WIDS sites for the 100-K GDA found that the appropriate ICs were in place and objectives for the ICs were met.

The 100-K Geographic Decision Area includes ICs that are assessed by MSA and CHPRC. The results of MSA's assessment are in this report. The results of CHPRC's assessment are reported separately.

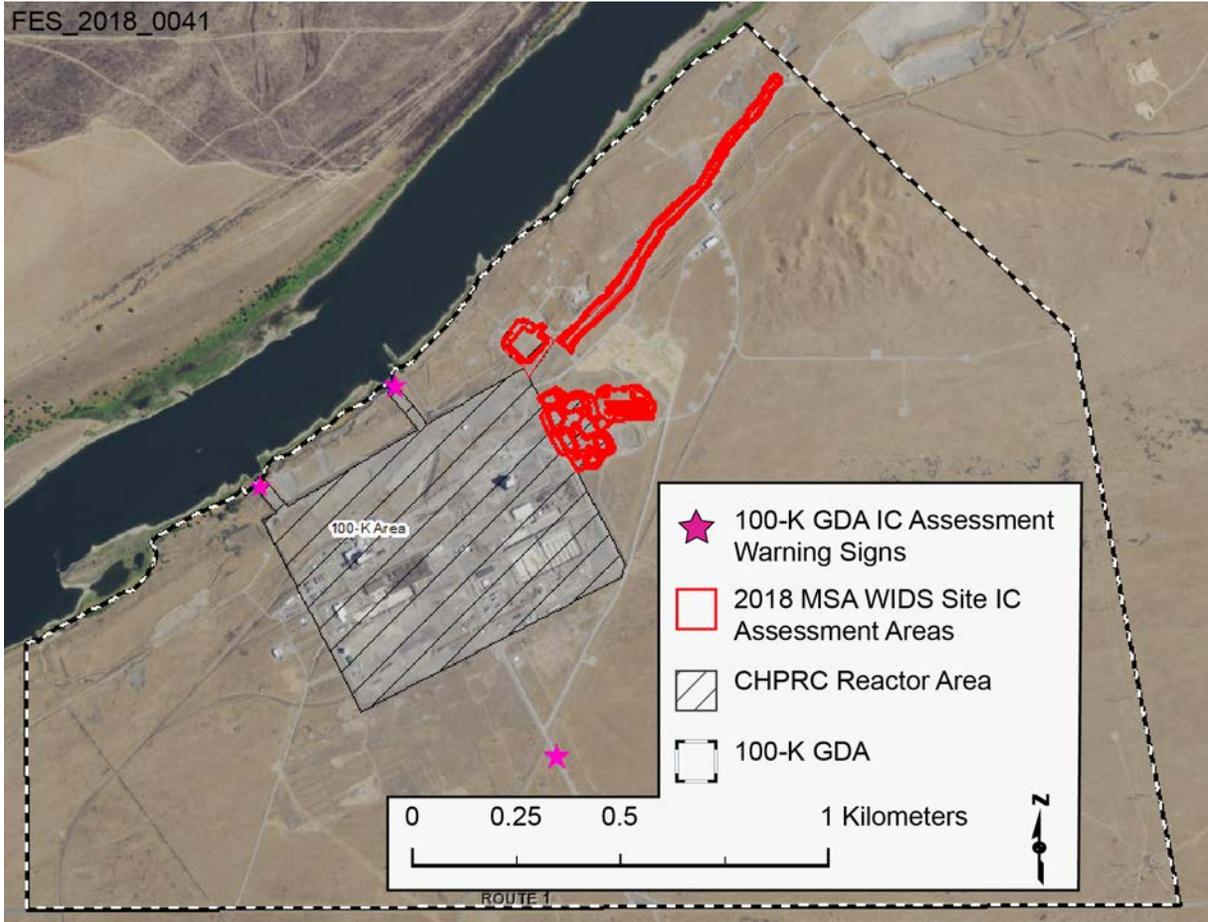


Figure 16. Areas Assessed in the 100-K Geographic Decision Area.

Section 2.4.1 identifies the decision documents associated with the 100-K GDA. Section 2.4.2 presents the assessment results of the WIDS site-specific ICs in the 100-K GDA. Section 2.4.3 presents the assessment results for warning notices, which are also ICs addressed in some of the decision documents. Section 4.0 presents the assessment results for other ICs listed in the decision documents.

2.4.1 Decision Documents for the 100-K Geographic Decision Area

Table 11 lists the decision documents associated with the 100-K GDA. These documents serve as the bases for the WIDS site-specific ICs, as well as other ICs for the 100-K GDA. Some of the decision documents do not have IC requirements; these documents also are noted in Table 11.

Table 11. Decision Documents Associated with the 100-K Geographic Decision Area.

Decision Documents	Decision Area-Wide IC Assessment Results ^a	
	Warning Notices	Other ICs
<i>Interim Action Record of Decision for the 100-HR-3 and 100-KR-4 Operable Units, Hanford Site, Benton County, Washington (EPA 1996a).</i>	N/A	Section 4.2
<i>Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units, Hanford Site, Benton County, Washington (EPA 1997).</i>	N/A	Section 4.3
<i>Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (EPA 1999a). This is also known as the “100 Area Remaining Sites ROD.”</i>	Section 2.4.3	Section 4.4
<i>Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2, Operable Units, Hanford Site, Benton County, Washington (100 Area Burial Grounds) (EPA 2000a).</i>	Section 2.4.3	Section 4.7
<i>Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision, 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (EPA 2004a).</i>	N/A	The IC requirement revised the reporting date from March 30 to September 30. The Annual IC assessment is reported every September at the unit managers meeting
<i>Explanation of Significant Difference for the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units (100 Area Burial Grounds), Hanford Site, Benton County, Washington (EPA 2007).</i>	N/A	Section 4.8
<i>Explanation of Significant Differences for the 100 Area Remaining Sites Record of Decision, Hanford Site, Benton County, Washington (EPA 2009a).</i>	N/A	No other ICs are identified in this document
<i>Explanation of Significant Differences for the 100-HR-3 and 100-KR-4 Operable Units Interim Record of Decision, Hanford Site, Benton County, Washington (EPA 2009b).</i>	N/A	No other ICs are identified in this document
<i>100 Area “Plug In” and Candidate Waste Sites for Calendar Year 2011 – Annual Listing of Waste Sites Plugged into the Remove, Treat and Dispose Remedy in the 1999 Interim Action Record of Decision for the 100 Area Remaining Sites (DOE-RL 2012a).</i>	N/A	No other ICs are identified in this document

^aThe results of the assessments for WIDS site ICs are presented in section 2.4.2.

IC = institutional control.

N/A = not applicable.

2.4.2 Institutional Controls for WIDS Sites in the 100-K Geographic Decision Area

This section presents the assessment results for the WIDS site-specific ICs in the 100-K GDA. Table 12 lists each assessment completed by WIDS site assessment group, identifies the associated WIDS sites and their respective WSRFs, assessment dates, the ICs being assessed, and observations for site-specific performance objectives resulting from the assessment.

Table 12. 100-K Geographic Decision Area WIDS Sites with Institutional Controls.

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
116-K-1	Interim Closed Out	2004-001	5/21/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> Excavation permit DAN18-0070 was issued to install several groundwater wells in the 100-K Area, including well C9920 to be located on the edge of the 116-K-1 Crib. This well was approved by DOE and EPA. This excavation into the deep zone is authorized and the IC has been maintained. No unauthorized excavation is observed in the deep zone.
116-K-2	Interim Closed Out	2006-002	5/21/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)]	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.
118-K-1	Interim Closed Out	2013-094	5/21/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)]	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation was observed in the deep zone.

DOE = U.S. Department of Energy.

EPA = U.S. Environmental Protection Agency.

FY = fiscal year.

IC = institutional control.

WSRF = waste site reclassification form.

2.4.3 Warning Notices in the 100-K Geographic Decision Area

Two of the decision documents have requirements to maintain warning notices in the 100-K GDA along access roads and the Columbia River to warn visitors and workers of potential hazards associated with the area (see section 2.4.1). Detailed requirements for the notices, including their locations, verbiage, and language (the signs are to be in English with one sign along the river also provided in Spanish) are defined in DOE/RL-96-17, section 3.8.

Table 13 describes the location of the sign that serves as the warning notice, the language used for the verbiage on the sign, and the observations. The signs for the 100-K GDA were found to be in place at the correct locations with the proper text; the signs are shown in Figure 17.

Table 13. Warning Notices for 100-K Geographic Decision Area.

Location ¹	Number of Signs	Language	Observations
Main Entrance to 100K Reactor Area	1	English	In Place
Near Columbia River in 100K Reactor Area at the 100-KW Intake Structure	2	English and Spanish	In Place
Near Columbia River in 100K Reactor Area at the 100-KE Intake Structure	1	English	In Place

¹Signs in areas managed by CHPRC were not assessed and are not included in this table.



Main Entrance to 100K Reactor Area



Near Columbia River in 100K Reactor Area at the 100-KW Intake Structure



Near Columbia River in 100K Reactor Area at the 100-KE Intake Structure

Figure 17. Warning Notice at Main Entrance to 100K Reactor Area.

2.5 INSTITUTIONAL CONTROLS IN THE 100-N GEOGRAPHIC DECISION AREA

This section presents the statuses and observations resulting from the IC assessments for the 100-N GDA. The 100-N GDA encompasses the 100-NR-1 soil OU and the 100-NR-2 groundwater OU. Figure 18 shows the boundaries of the 100-N GDA and the IC assessment areas. Twenty WIDS sites in the 100-N GDA had IC requirements in FY 2018; the only IC in the 100-N GDA at this time is that requiring excavation restrictions. Assessments of the WIDS sites for the 100-N GDA found that the appropriate ICs were in place and objectives for the ICs were met.

Section 2.5.1 identifies the decision documents associated with the 100-N GDA. Section 2.5.2 presents the assessment results of the WIDS site-specific ICs in the 100-N GDA. Section 2.5.3 presents the assessment results for warning notices, which also are ICs addressed in some of the decision documents. Section 4.0 presents the assessment results for other ICs listed in the decision documents.

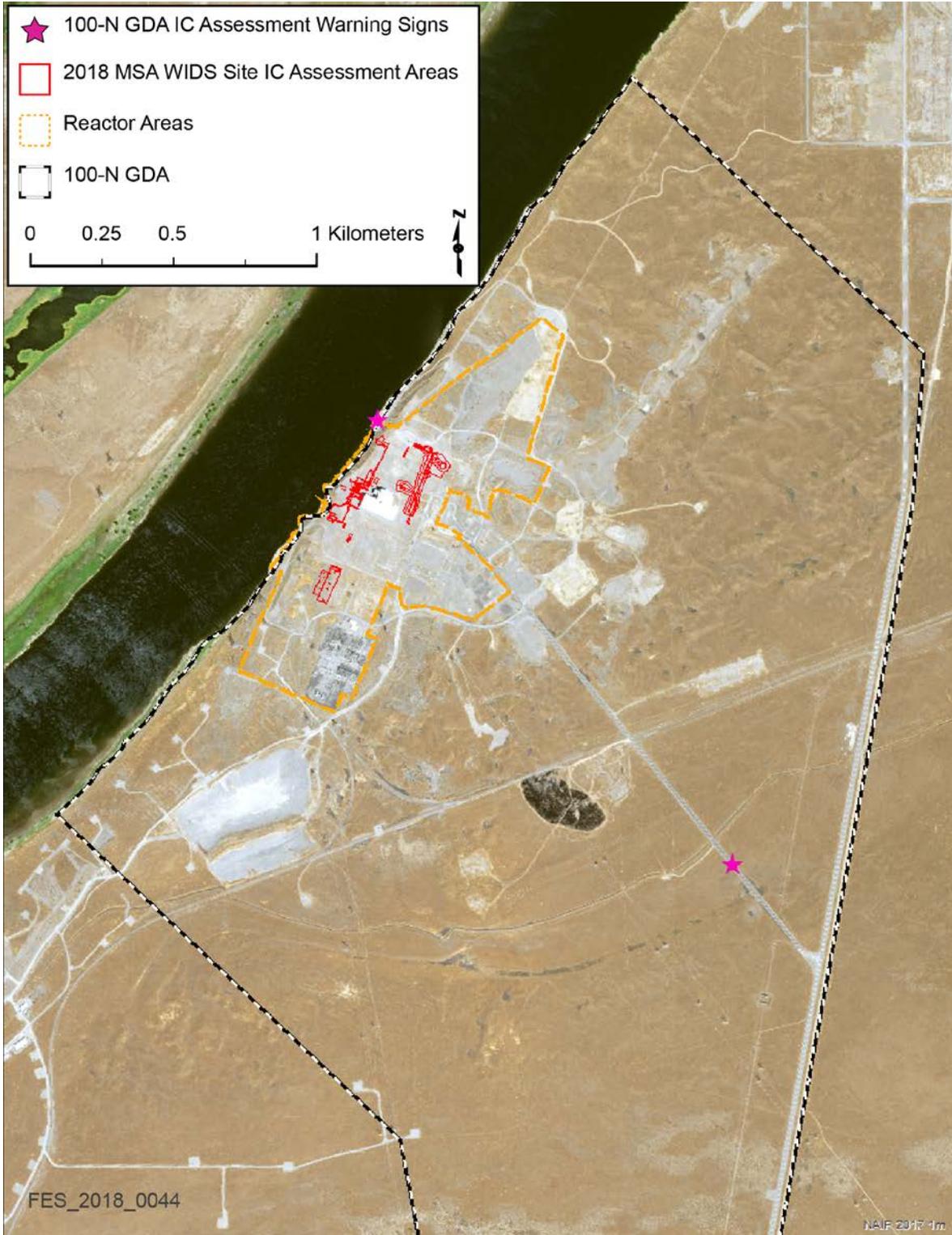


Figure 18. Areas Assessed in the 100-N Geographic Decision Area; No Other Sites in the 100 N GDA have Institutional Controls.

2.5.1 Decision Documents for the 100-N Geographic Decision Area

Table 14 lists the decision documents associated with the 100-N GDA. These documents serve as the bases for the WIDS site-specific ICs, as well as other ICs for the 100-N GDA. Some of the decision documents do not have IC requirements; those documents also are noted in Table 14.

Table 14. Decision Documents Associated with the 100-N Decision Areas.

Decision Document	Decision Area-Wide IC Assessment Results ^a	
	Warning Notices	Other ICs
<i>Interim Action Record of Decision for USDOE 100-NR-1 and NR-2 Operable Unit Hanford Site 100 Area, Benton County, Washington (EPA 1999c).</i>	Section 2.5.3	Section 4.5
<i>Interim Action Record of Decision for the 100-NR-1 Operable Units (TSD) Hanford Site, Benton County, Washington (EPA 2000b).</i>	Section 2.5.3	Section 4.6
<i>Explanation of Significant Difference for the 100-NR-1 Operable Unit Treatment, Storage, and Disposal Interim Action Record of Decision and 100-NR-1/100-NR-2 Operable Unit Interim Action Record of Decision, Hanford Site, Benton County, Washington (EPA 2003b).</i>	N/A	The IC requirement revised the reporting date from March 30 to September 30. The annual IC assessment is reported every September at the unit managers meeting.
<i>Amendment to the Interim Action Record of Decision for the 100-NR-1 and 100-NR-2 Operable Units, Hanford Site, Benton County, Washington (EPA 2010).</i>	N/A	No other ICs are identified in this document beyond those specified in the original ROD.
<i>Explanation of Significant Differences for the 100-NR-1 and 100-NR-2 Operable Units Interim Remedial Action Record of Decision, Hanford Site, Benton County, Washington (EPA 2011a).</i>	N/A	No other ICs are identified in this document beyond those specified in the original ROD.
<i>Explanation of Significant Differences for the 100-NR-1 and 100-NR-2 Operable Units Interim Remedial Action Record of Decision, Hanford Site, Benton County, Washington (EPA 2013a).</i>	N/A	No other ICs are identified in this document beyond those specified in the original ROD.

^aThe results of the assessments for WIDS site ICs are presented in section 2.5.2.

IC = institutional control.

N/A = not applicable.

ROD = record of decision.

2.5.2 Institutional Controls for WIDS Sites in the 100-N Geographic Decision Area

This section presents the assessment results for the WIDS site-specific ICs in the 100-N GDA. Table 15 lists each assessment completed by WIDS site assessment group, identifies the associated WIDS sites and their respective WSRFs, assessment dates, the ICs being assessed, and observations for site-specific performance objectives resulting from the assessment.

Table 15. 100-N Geographic Decision Area WIDS Sites with Institutional Controls.

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
100-N-31 100-N-32 100-N-38 100-N-61:3 100-N-64:3 100-N-68 118-N-1 UPR-100-N-3 UPR-100-N-7 UPR-100-N-10 UPR-100-N-12	Interim Closed Out	2013-065 2013-066 2013-067 2013-068 2013-069 2013-070 2013-076 2013-071 2013-072 2013-073 2013-074	5/24/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation is observed in the deep zone.
100-N-84:2	Interim Closed Out	2014-088	5/23/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation is observed in the deep zone.
116-N-2 UPR-100-N-5 UPR-100-N-25	Interim Closed Out	2013-015 2013-016 2013-017	5/23/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation is observed in the deep zone.
124-N-2	Interim Closed Out	2013-030	5/23/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation is observed in the deep zone.
100-N-50 100-N-51 100-N-51B UPR-100-N-37	Interim Closed Out	2004-059 2004-059 2004-059 2004-059	5/23/2018	Because unrestricted access to areas greater than 4.6 m (15 t) below the ground surface was not evaluated, ICs to prevent uncontrolled drilling or excavation into the lower basement (greater than 7.6 m [25 ft] below the ground surface) of the 185-N Building are required.	<ul style="list-style-type: none"> No excavation permits were issued in FY 2018 at the location of the sites assessed. No unauthorized excavation is observed in the deep zone.

FY = fiscal year.

IC = institutional control.

WSRF = waste site reclassification form.

2.5.3 Warning Notices in the 100-N Geographic Decision Area

Two of the decision documents have requirements to maintain warning notices in the 100-N GDA along access roads and the Columbia River to warn visitors and workers of potential hazards associated with the area (see section 2.5.1). Detailed requirements for the notices, including their locations, verbiage, and language (the signs are to be in English with one sign along the river also provided in Spanish) are defined in DOE/RL-2005-93, *Remedial Design Report/Remedial Action Work Plan for the 100-N Area*, section 3.8.

Table 16 presents the observations resulting from the assessments of these signs, describing the location of each sign, the language used for the verbiage on the sign, and the observations. Warning notices for the 100-N GDA were found to be in place at the correct locations and with the proper text, as described in Table 16. The warning notices are shown in Figure 19.

Table 16. Warning Notices for 100-N Geographic Decision Area.

Location	Number of Signs	Language	Observations
Main Entrance to 100N Reactor Area	1	English	In Place
Near Columbia River in 100N Reactor Area	2	English & Spanish	In Place

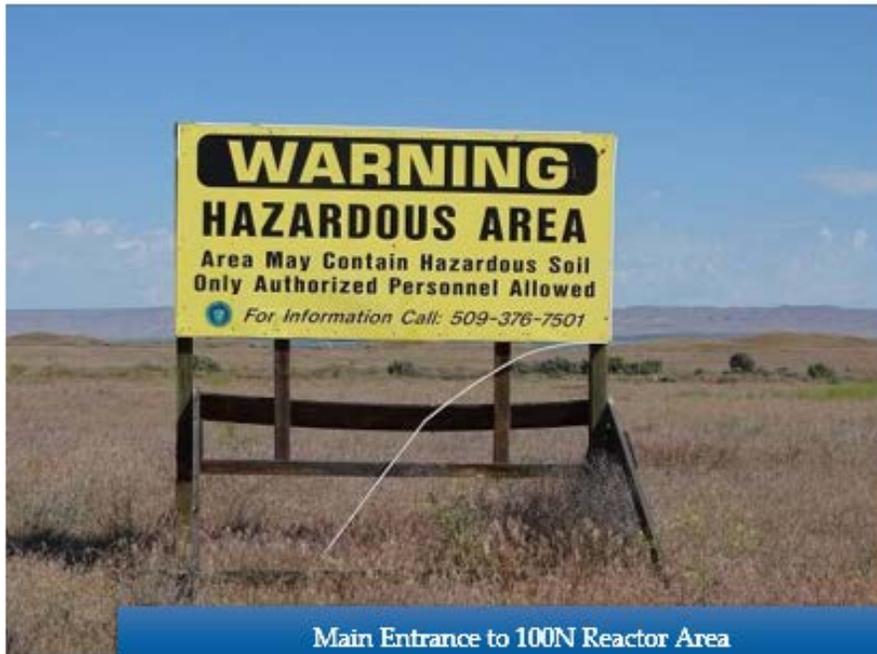


Figure 19. Warning Notices for the 100-N Geographic Decision Area.

2.6 INSTITUTIONAL CONTROLS WITHIN THE 300 GEOGRAPHIC DECISION AREA

This section presents the statuses and observations resulting from the IC assessments for the 300 GDA. The 300 GDA encompasses the 300-FF-1 and 300-FF-2 soil OUs, as well as the 300-FF-5 groundwater OU. During FY 2018, The LTS Program assessed 97 waste sites with ICs assessed in the 300 GDA. The types of ICs required at these waste sites are shown in Figure 20. Figure 21 shows the boundaries of the 300 Area Industrial Complex⁴ where the IC assessment areas are applicable.

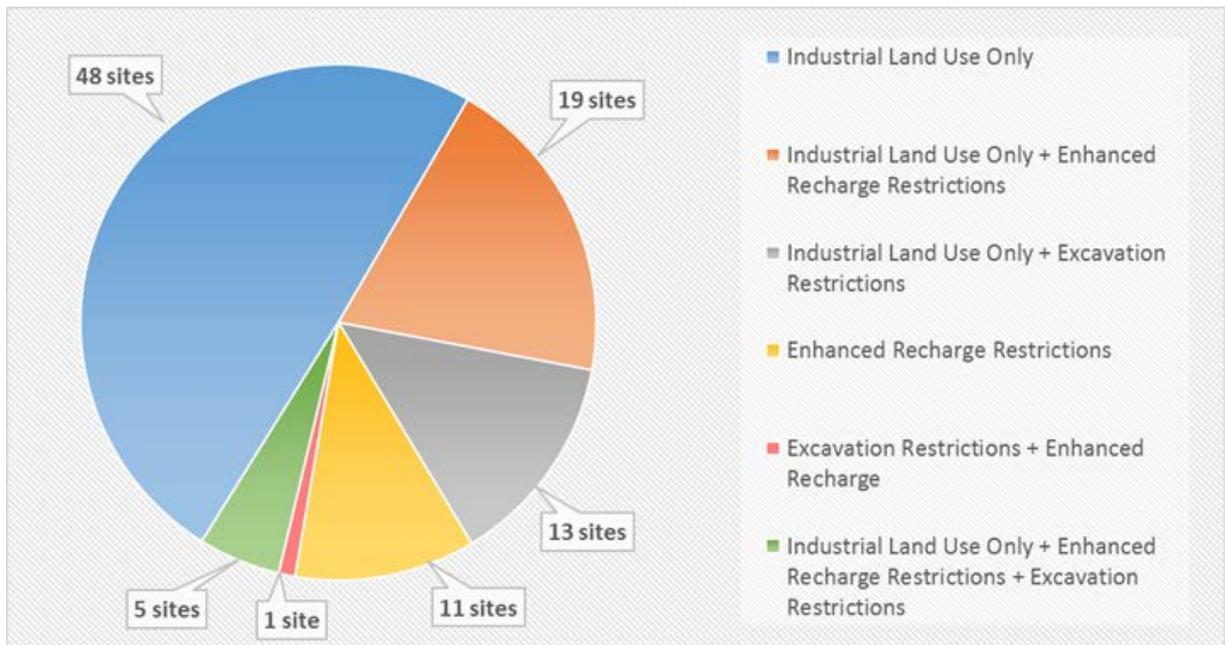


Figure 20. Types of ICs at Waste Sites in the 300 Area Geographic Decision Area.

⁴ As described in the 300 Area ROD, the 300 Area Industrial Complex includes buildings, facilities and process units where uranium nuclear fuel production plus research and development activities took place.

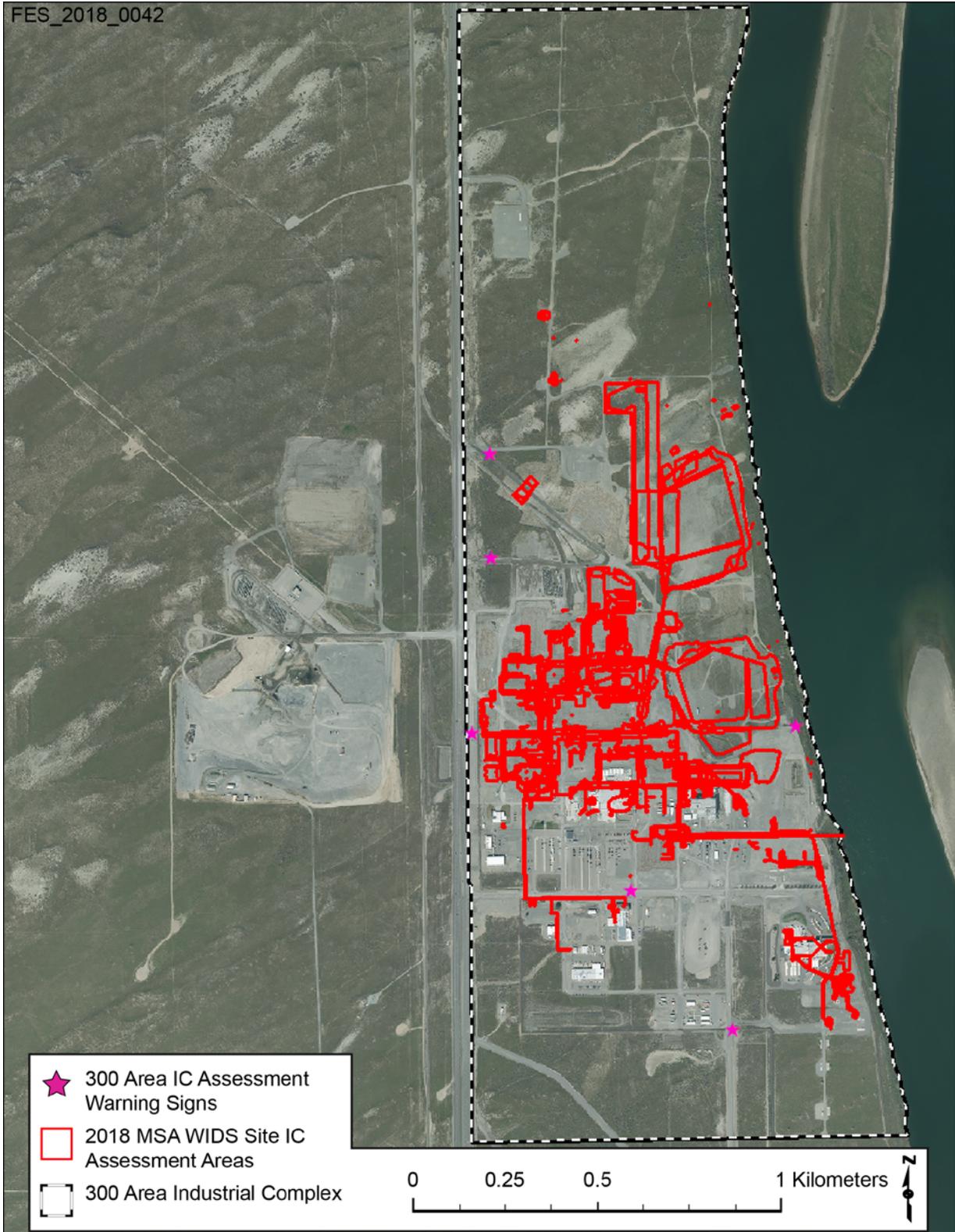


Figure 21. IC Assessment Area in the 300 Area Industrial Complex.

Assessments of the 97 WIDS sites in the 300 GDA found that the appropriate ICs were in place and objectives for the ICs were met. Generally, ICs applicable to specific WIDS sites are defined in decisions documents and WSRFs. However, the 300 Area ROD included an enhanced recharge control that is to be applied to WIDS sites that are above cleanup levels (CUL)⁵; the specific WIDS sites are not identified. Therefore, the closeout verification sampling results for the “Final Closed Out” WIDS sites in the 300 Area ROD were compared to the applicable CULs to identify the WIDS sites with the enhanced recharge control. The “Accepted” waste sites where this IC applies were identified based on DOE/RL-2014-13-ADD1, *Remedial Design Report/Remedial Action Work Plan for 300-FF-2 Soils (RDR/RAWP)*, which requires temporary surface barriers to be installed and maintained at WIDS sites that exceed applicable cleanup levels and that are adjacent to the long-term retained facilities to support implementing the enhanced recharge control.

During the 2018 IC assessment of the 300 Area for enhanced recharge drainage, LTS observed potential integrity/maintenance issues, such as surface cracks or decay and pot holes, related to the temporary surface barriers (primarily asphalt). Observations were made of where maintenance of the temporary surface barriers may be needed within the 325 and 324 retained and active facility operational areas (see Figure 29 for an example of a pothole with cracks to be sealed). LTS will communicate the results of the observations to surrounding facility owners and work with them to help support maintaining the integrity of the temporary surface barriers in their operable areas.

In addition to observing the condition of the temporary surface barriers, LTS Program personnel observed multiple inclement weather events using two different approaches to identify any areas of potential enhanced recharge. During the November 8 and 9, 2017, rainfall event, 0.20 inch of rainfall fell in a 24-hour period, LTS personnel made two site visits to observe the 300 Area. During both visits, field observations were made at preselected locations of potential enhanced recharge from low-permeability areas (e.g., paved or concrete barrier areas) to high-permeability gravel transition areas near WIDS sites with enhanced recharge ICs. Geo-tagged photo locations taken during this 2-day period were used to conduct a spatial analysis comparison to mapped WIDS site locations.

During the subsequent rain (November 20 and 21, 2017, with 0.10 inch of rain) and snowfall events (January 8 and 9, 2018, with 0.18 inch of rain water), the LTS Program employed a different approach for the site observation process. Instead of revisiting preselected targeted areas, they assessed the 300 Area by observing and recording any pooling or rain water runoff with geo-tagged photos. Drainage from snow pile areas also was observed in the afternoon of January 9, 2018. The LTS Program then used the photo locations to conduct spatial analysis comparing runoff and pooling or puddling areas to WIDS sites with enhanced recharge ICs.

CHPRC reported on September 21, 2018 that the 300-FF-5 Uranium Sequestration Polyphosphate Injection project had an unplanned release of 4,000 gallons of purge water from the collection tanks that overflowed onto the ground. The spill occurred over the 618-12 and 300-15:1 WIDS sites area with enhanced recharge drainage institutional controls. The release was reported following spill procedures in place by CHPRC ECO to MSA ECO which in turn

⁵Enhanced recharge control is implemented to prevent enhanced aquifer recharge for WIDS sites in the 300 Area Industrial Complex where contamination levels are above the residential groundwater/surface water protection CUL specified in the 300 Area FF-2 ROD and DOE/RL-2014-13-ADD1.

reported to the effected WIDS site owner LTS. Initial field instruments did not detect contaminants of concern and no cleanup actions are currently required. The LTS Program is working closely with CHRPC to determine if further actions are required or procedures require updating and implementation.

No enhanced recharge drainage events or areas were observed near any of the monitored IC WIDs site areas except for active WIDS site 300-15:1 and accepted WIDS sites 300 RLWS:3, 300 RRLWS:2 and 300-214:2. These stabilized (grout- or epoxy-filled) pipe segments were deemed to pass the criteria for enhanced recharge because of the pipeline stabilization as described in RDR/RAWP DOE-RL-2014-13-ADD1. These deferred WIDS sites are generally related to retained facilities operational areas (324, 325, and 331) and active utilities as described in the RDR/RAWP.

Other (Active WIDS sites 600-255 and 300-86) drainage systems influencing enhanced recharge drainage were evaluated during the inclement weather to determine performance functionality and to identify maintenance issues. As a result of the evaluation, the MSA LTS Program is working with facility owners and utilities programs to address where improvements could be made to support enhanced recharge control, such as potential improvements to stormwater drainage and to how snow is managed. In addition, the MSA LTS Program continue to evaluate the flow rates and directions of fire hydrant testing and fire suppression system testing to support enhanced recharge control in FY 2019 because fire system maintenance activities will continue after the writing of this report.

Section 2.6.1 identifies the decision documents associated with the 300 GDA. Section 2.6.2 presents the assessment results of the WIDS site-specific ICs in the 300 GDA. Section 2.6.3 presents the assessment results for warning notices, which also are ICs addressed in some of the decision documents. Section 4.0 presents the assessment results for other ICs listed in the decision documents.

2.6.1 Decision Documents for the 300 Geographic Decision Area

Table 17 lists the decision documents associated with the 300 GDA. These documents serve as the bases for the WIDS site-specific ICs, as well as other ICs for the 300 GDA. Some of the decision documents do not have IC requirements; those documents also are noted in Table 17. In addition to the decision documents listed in Table 17, DOE/RL-2014-13-ADD1, Rev. 1, provides additional guidance for implementing IC requirements. Previously issued decision documents (listed in a footnote of Table 17), which are no longer applicable to this area after the issuance of the final action ROD in 2013, were not assessed for the 300 GDA.

Table 17. Decision Documents Associated with the 300 Geographic Decision Area. (2 sheets)

Decision Document	Decision Area-Wide IC Assessment Results ^a	
	Warning Notices	Other ICs
<i>Hanford Site 300 Area Record of Decision for 300-FF-1 and 300-FF-5 Operable Units, Hanford Site, Benton County, Washington (EPA 1996b).</i>	N/A	Section 4.10

Table 17. Decision Documents Associated with the 300 Geographic Decision Area. (2 sheets)

Decision Document	Decision Area-Wide IC Assessment Results ^a	
	Warning Notices	Other ICs
<i>Explanation of Significant Differences for Hanford 300 Area, 300-FF-1 Operable Unit, Benton County, Washington</i> (EPA 2000c)	N/A	This document identifies no other ICs
<i>Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1, Hanford Site, Benton County, Washington</i> (EPA 2013b) ^b	Section 2.6.3	Section 4.11

^aThe results of the assessments for WIDS site ICs are presented in section 2.6.2.

^bThis final record of decision supersedes the following previously issued interim decision documents for the 300-FF-2 OU:

- *Explanation of Significant Difference for the 300-FF-5 Operable Unit Record of Decision, Hanford Site, Benton County, Washington* (EPA 2000d).
- *Interim Action Record of Decision, 300-FF-2, Hanford Site, Benton County, Washington* (EPA 2001).
- *Explanation of Significant Difference for the 300-FF-2 Operable Unit Record of Decision, Hanford Site, Benton County, Washington* (EPA 2004b).
- *Explanation of Significant Difference for the 300-FF-2 Operable Unit Interim Action Record of Decision, Hanford Site, Benton County, Washington* (EPA 2009c).
- *Explanation of Significant Differences, Hanford 300 Area, 300-FF-2 Operable Unit, 618-10 Burial Ground, Hanford Site, Benton County, Washington* (EPA 2011b).
- *300-FF-2 “Plug-In” Waste Sites for Fiscal 2010 – Annual Listing of Waste Sites Plugged into the Remove, Treat and Dispose Remedy in the 2001 Interim Action Record of Decision for 300-FF-2* (DOE-RL 2010).
- *300 Area “Plug-In” Waste Sites for Fiscal 2011 – Annual Listing of Waste Sites Plugged into the Remove, Treat, and Dispose Remedy in the 2001 Interim Action Record of Decision for 300-FF-2* (DOE-RL 2011b)
- *Hanford 300 Area “Plug-In” Waste Sites for Fiscal Year 2012 – Annual Listing of Waste Sites “Plugged-in” to the Remove, Treat, and Dispose Remedy in the 2011 Interim Action Record of Decision for 300-FF-2* (DOE-RL 2012b). IC = institutional control. N/A = not applicable. OU = operable unit.

2.6.2 Institutional Controls for WIDS Sites within the 300 Geographic Decision Area

This section presents the assessment results for the WIDS site-specific ICs in the 300 GDA. Table 18 lists each assessment completed by the WIDS site assessment group, identifies the associated WIDS sites and their respective WSRFs, assessment dates, the ICs being assessed, and observations for site-specific performance objectives resulting from the assessment. If the source of the IC requirement is a document other than the WSRF, or if there is no WSRF, information regarding the source of the IC is provided.

Table 18. 300 Geographic Decision Area WIDS Sites with Institutional Controls. (13 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
300 RFBP 316-1 UPR-300-32 UPR-300-33 UPR-300-34 UPR-300-35 UPR-300-36 UPR-300-37	Final Closed Out	2000-112 2000-112 2003-001 2003-001 2003-001 2003-001 2003-001 2003-001	5/29/2018	Site restricted to industrial land use and ICs are required to prevent uncontrolled drilling or excavation.	<ul style="list-style-type: none"> All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the site assessment. No excavation permits were issued in FY 2018 at the location of the sites assessed in this assessment. No unauthorized excavation was observed within the listed WIDS site excavation areas.
UPR-300-FF-1	Final Closed Out	2003-002	5/30/2018	Site restricted to industrial land use and ICs are required to prevent uncontrolled drilling or excavation.	<ul style="list-style-type: none"> All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the site assessment. Excavation permit DAN14-0149, Rev. 3, was issued to perform uranium sequestration activities in the deep vadose zone at the vicinity of the 316-2 pond and 316-5 trenches, including a portion of the UPR-300-FF-1 site. The project will install numerous boreholes, wells, piezometers, and subsurface infiltration lines, and was approved by DOE and EPA in the applicable DOE/RL-2014-13-ADD1 and SAP. This excavation is authorized and the IC has been maintained. No unauthorized excavation was observed within the listed WIDS site excavation areas.

Table 18. 300 Geographic Decision Area WIDS Sites with Institutional Controls. (13 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
300-50	Final Closed Out	2000-110	5/29/2018	Site restricted to industrial land use and ICs are required to prevent uncontrolled drilling or excavation.	<ul style="list-style-type: none"> • All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the site assessment. • Excavation permit DAN14-0149, Rev. 3, was issued to perform uranium sequestration activities in the deep vadose zone at the vicinity of the 316-2 pond and 316-5 trenches, including the location of the 300-50 site. The project will install numerous boreholes, wells, piezometers, and subsurface infiltration lines, and was approved by DOE and EPA in the applicable RDR/RAWP and SAP. This excavation is authorized and the IC has been maintained. • No unauthorized excavation was observed within the listed WIDS site excavation areas.
618-1 618-1:1 618-1:2 618-2	Final Closed Out	2010-028, 2015-069 2010-028, 2015-069 2010-028, 2015-069 2006-062, 2015-071	5/30/2018	ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)] and prevent enhanced recharge.	<ul style="list-style-type: none"> • No excavation permits were issued in FY 2018 at the location of the sites assessed in this assessment. • No unauthorized excavation was observed within the listed WIDS site excavation areas. • No drainage or irrigation issues were observed at the time of assessment and no opportunities for enhanced recharge were identified. • No paved roads, parking lots, facilities, or slabs are located in or adjacent to the WIDS site.

Table 18. 300 Geographic Decision Area WIDS Sites with Institutional Controls. (13 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
300-110 303-M SA 303-M UOF 333 ESHWSA	Final Closed Out	2010-024, 2014-017 2010-025, 2014-018 2010-026, 2014-028 2010-027, 2014-018	5/30/2018	Site restricted to industrial land use and ICs are required to prevent enhanced recharge.	<ul style="list-style-type: none"> All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the site assessment. No drainage or irrigation issues were observed at the time of assessment and no opportunities for enhanced recharge. No paved roads, parking lots, facilities, or slabs are located in or adjacent to the WIDS site.
628-4	Final Closed Out	2000-111	5/30/2018	Site restricted to industrial land use and ICs are required to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)].	<ul style="list-style-type: none"> All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the site assessment. No excavation permits were issued in FY 2018 at the location of the sites assessed in this assessment. No unauthorized excavation was observed within the listed WIDS site excavation areas.
300-15:1	Accepted	DOE/RL-2014-13-ADD1 ^a	11/20/2017 11/21/2017 1/9/2018	DOE/RL-2014-13-ADD1, <i>Remedial Design Report/Remedial Action Work Plan for 300-FF-2 Soils</i> , indicates that the 300-15:1 active portion of the WIDS site has enhanced recharge IC applied.	<ul style="list-style-type: none"> No irrigation activities were observed. As described in DOE/RL-2014-13-ADD1, portions of the inactive pipelines are within revegetated areas meet the intent of preventing contamination mobilization and supporting the enhanced recharge control. Areas that were targeted for further assessment in 2017 were assessed in 2018 during inclement weather occurrences.

Table 18. 300 Geographic Decision Area WIDS Sites with Institutional Controls. (13 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
UPR-300-8 UPR-300-9 UPR-300-15 UPR-300-19 UPR-300-20 UPR-300-21 UPR-300-22 UPR-300-23 UPR-300-24 UPR-300-25 UPR-300-26 UPR-300-27 UPR-300-28 UPR-300-29 UPR-300-30 UPR-300-47	Final Closed Out	98-013 98-014 98-015 98-016 98-017 98-018 98-019 98-020 98-021 98-022 98-023 98-024 98-025 98-026 98-027 98-028	5/29/2018	Site restricted to industrial land use and ICs are required to prevent uncontrolled drilling and excavation. ^c	<ul style="list-style-type: none"> All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the assessment. Excavation permit DAN14-0149, Rev. 3, was issued to perform uranium sequestration activities in the deep vadose zone at the vicinity of the 316-2 pond and 316-5 trenches. These 16 UPR sites are co-located with the 316-5 site. The project will install numerous boreholes, wells, piezometers, and subsurface infiltration lines, and was approved by DOE and EPA in the applicable RDR/RAWP and SAP. This excavation is authorized and the IC has been maintained. No unauthorized excavation was observed within the listed WIDS site excavation areas.
300 RLWS:3 300 RRLWS:2 300-175 300-214:2 300-265	Accepted	- - - ^a	5/29/2018	DOE/RL-2014-13-ADD1, <i>Remedial Design Report/Remedial Action Work Plan for 300-FF-2 Soils</i> , indicates that these accepted sites have enhanced recharge ICs.	<ul style="list-style-type: none"> No irrigation activities were observed. As described in DOE/RL-2014-13-ADD1, the barriers and stabilization measures meet the intent of preventing contamination mobilization and supporting the enhanced recharge control. Drainage near the sites was observed (including any temporary surface barriers constructed per DOE/RL-2014-13-ADD1^b) during inclement weather in FY 2018.

Table 18. 300 Geographic Decision Area WIDS Sites with Institutional Controls. (13 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
UPR-300-10 UPR-300-12 UPR-300-48	Accepted	- - - ^a	6/7/2018	DOE/RL-2014-13-ADD1, <i>Remedial Design Report/Remedial Action Work Plan for 300-FF-2 Soils</i> , indicates that these accepted sites have enhanced recharge ICs.	<ul style="list-style-type: none"> No irrigation activities were observed. As described in DOE/RL-2014-13-ADD1, the barriers and stabilization measures meet the intent of preventing contamination mobilization and supporting the enhanced recharge control. Drainage near the sites was observed (including any temporary surface barriers constructed per DOE/RL-2014-13-ADD1^b) during inclement weather in FY 2018.
300-5 (300 Area Fire Station - 3709A Facility)	Accepted	- - - ^a	6/6/2018	DOE memo to MSA (MSA-1105355.5 ^d) clarifies how activities at the fire station are to prevent enhanced recharge at this location. ICs include restrictions on lawn and tree irrigation near the building, use and testing of fire hydrant 1, and locations for washing fire trucks.	<p>Although this WIDS site is assigned to CHPRC, not MSA, MSA is responsible for assessing implementation of the restrictions at the fire station:</p> <ul style="list-style-type: none"> Irrigation restriction were posted prominently in the 3709A fire station. No drainage or irrigation from the fire station to the WIDS site was observed.
300-16:2 300-24 300-80 300-218	Final Closed Out	2011-071, 2014-030 2011-071, 2014-030 2011-071, 2014-030 2011-071, 2014-030	5/30/2018	Site restricted to industrial land use and ICs are required to prevent enhanced recharge.	<ul style="list-style-type: none"> All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the assessment. No low-permeability areas were observed that would induce enhanced recharge. No source of irrigation is present. The area has been revegetated.

Table 18. 300 Geographic Decision Area WIDS Sites with Institutional Controls. (13 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
618-3	Final Closed Out	2006-035, 2015-072	5/30/2018	Site restricted to industrial land use and ICs are required to prevent enhanced recharge.	<ul style="list-style-type: none"> • All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the assessment. • No drainage or irrigation issues were observed at time of assessment and no opportunities for enhanced recharge. • No paved roads, parking lots, facilities, or slabs are located in or adjacent to the WIDS site.
300-270 313 ESSP UPR-300-38	Final Closed Out	2012-006, 2014-039 2012-005, 2014-039 2012-004, 2014-039	5/30/2018	Site restricted to industrial land use and ICs are required to prevent enhanced recharge.	<ul style="list-style-type: none"> • All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the assessment. • No paved roads, parking lots, facilities, or slabs are located within or adjacent to the 300-270 or UPR-300-38 WIDS sites. • No irrigation issues were observed at the assessment. • 313 ESSP is located immediately north of Ginkgo Street. Road pavement may remain in place. • No stormwater run-off, drainage, or pooling in the area of the WIDS sites was observed during inclement weather events in FY 2018.

Table 18. 300 Geographic Decision Area WIDS Sites with Institutional Controls. (13 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
300-15:2	Final Closed Out	2012-120, 2015-081	5/30/2018	Site restricted to industrial land use and ICs are required to prevent enhanced recharge.	<ul style="list-style-type: none"> • All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the assessment. • No irrigation issues were observed at time of assessment. • 300-15:2 is located around and underneath Ginkgo Street. Road pavement may remain in place. • No stormwater run-off, drainage, or pooling in the area of the WIDS sites was observed during inclement weather events in FY 2018.
300-15:3	Final Closed Out	2015-047	5/30/2018	Site restricted to industrial land use and ICs are required to prevent enhanced recharge.	<ul style="list-style-type: none"> • All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the assessment. • No irrigation sources were observed or discovered during assessment. • Decision Unit 3 was above the CUL for Aroclor-1248. This portion of the site was immediately adjacent to Apple Street, Alaska Avenue, and Wisconsin Avenue. Road pavement may remain in place. • No stormwater run-off, drainage, or pooling in the area of the WIDS sites was observed during inclement weather events in FY 2018.

Table 18. 300 Geographic Decision Area WIDS Sites with Institutional Controls. (13 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
300-33 300-41 300-53 300-256 300-262	Final Closed Out	2010-058, 2014-017 2010-058, 2014-017 99-014, 2014-011 2010-058, 2014-017 2000-112, 2014-017	5/30/2018	Site restricted to industrial land use, and ICs are required to prevent enhanced recharge.	<ul style="list-style-type: none"> • All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the assessment. • No paved roads, parking lots, facilities, or slabs are located within or adjacent to the 300-41, 300-53, and 300- 262 WIDS sites. • Nor irrigation issues were observed at the time of the assessment. • WIDS sites 300-33 and 300-256 are located immediately north of Gingko Street. • No stormwater run-off, drainage, or pooling in the area of the WIDS sites was observed during inclement weather events in FY 2018.
300-253	Final Closed Out	99-042, 2014-012	5/30/2018	Site restricted to industrial land use and ICs are required to prevent enhanced recharge.	<ul style="list-style-type: none"> • All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the assessment. • No irrigation issues were observed at the time of the assessment. • This site is located immediately north of Apple Street where road pavement may remain in place. Drainage near the site was evaluated for enhanced recharge and found no stormwater run-off, drainage, or pooling was observed during inclement weather events in FY 2018.

Table 18. 300 Geographic Decision Area WIDS Sites with Institutional Controls. (13 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
316-2	Final Closed Out	99-050	5/30/2018	Site restricted to industrial land use and ICs are required to prevent uncontrolled drilling and excavation. ^c	<ul style="list-style-type: none"> • All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the assessment. • Excavation permit DAN14-0149, Rev. 3, was issued to perform uranium sequestration activities in the deep vadose zone at the vicinity of the 316-2 pond and 316-5 trenches. The project will install numerous boreholes, wells, piezometers, and subsurface infiltration lines, and was approved by DOE and EPA in the applicable RDR/RAWP and SAP. This excavation is authorized and the IC has been maintained. • No unauthorized excavation was observed within the listed WIDS site excavation areas.
316-3	Final Closed Out	2015-049	5/31/2018	Site restricted to industrial land use.	<ul style="list-style-type: none"> • All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the assessment.

Table 18. 300 Geographic Decision Area WIDS Sites with Institutional Controls. (13 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
300-121	Accepted	- - - ^a	6/7/2018	DOE/RL-2014-13-ADD1, <i>Remedial Design Report/Remedial Action Work Plan for 300-FF-2 Soils</i> , indicates that these accepted sites have enhanced recharge ICs.	<ul style="list-style-type: none"> • All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the assessment. • The UIC at this site is inactive; the associated facility, 3612D, has been demolished. • No irrigation activities were observed. • As described in DOE/RL-2014-13-ADD1, the barriers and stabilization measures meet the intent of preventing contamination mobilization and supporting the enhanced recharge control. Drainage near the sites was observed (including any temporary surface barriers constructed per DOE/RL-2014-13-ADD1^b) during inclement weather in FY 2018.
UPR-300-17	Final Closed Out	2010-014, 2014-018	5/30/2017	Site restricted to industrial land use and ICs are required to prevent enhanced recharge.	<ul style="list-style-type: none"> • All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the assessment. • No drainage or irrigation issues were observed at the time of the assessment. • No paved roads, parking lots, facilities, or slabs are located within or adjacent to the UPR-300-17 WIDS site.
300-269	Accepted	- - - ^a	5/31/2018	DOE/RL-2014-13-ADD1, <i>Remedial Design Report/Remedial Action Work Plan for 300-FF-2 Soils</i> , indicates the 300-269 site has enhanced recharge drainage ICs.	<ul style="list-style-type: none"> • As described in DOE/RL-2014-13-ADD1, the concrete barrier over the entire area meets the intent of preventing contamination mobilization and supporting the enhanced recharge control. • No drainage or irrigation issues were observed at the time of the assessment.

Table 18. 300 Geographic Decision Area WIDS Sites with Institutional Controls. (13 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
618-12	Final Closed Out	99-050	5/29/2018	Site restricted to industrial land use and ICs are required to prevent uncontrolled drilling and excavation. ^c	<ul style="list-style-type: none"> All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the assessment. Excavation permit DAN14-0149, Rev. 3, was issued to perform uranium sequestration activities in the deep vadose zone at the vicinity of the 316-2 pond and 316-5 trenches, including the location of the 618-12 site. The project will install numerous boreholes, wells, piezometers, and subsurface infiltration lines, and was approved by DOE and EPA in the applicable RDR/RAWP and SAP. This excavation is authorized and the IC has been maintained. No unauthorized excavation was observed within the listed WIDS site excavation areas.
300 ASH PITS	Final Closed Out	98-004	5/29/2018	Site restricted to industrial land use and ICs are required to prevent uncontrolled drilling and excavation. ^c	<ul style="list-style-type: none"> All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the assessment. No unauthorized excavation was observed within the listed WIDS site excavation areas.
300-44	Final Closed Out	99-109	5/30/2018	Site restricted to industrial land use and ICs are required to prevent uncontrolled drilling and excavation. ^c	<ul style="list-style-type: none"> All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the assessment. No unauthorized excavation was observed within the listed WIDS site excavation areas.

Table 18. 300 Geographic Decision Area WIDS Sites with Institutional Controls. (13 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
300 RLWS:1 300 RLWS:2 300 RRLWS:1 300-9 300-15:4 300-15:6 300-16:1 300-16:3 300-28 300-34 300-43 300-46 300-48 300-214:1 300-219 300-224 300-249 300-251 300-257 300-263 300-274 300-284 300-286 331 LSLDF 333 WSTF UPR-300-4 UPR-300-7 UPR-300-46	Final Closed Out	2015-031 2015-032 2015-033 2015-010 2013-117 2015-054, 2011-105 2014-029 2011-100, 2014-031 2011-100, 2014-031 2015-048 2011-100, 2014-031 2013-007, 2014-034 2011-100, 2014-031 2015-030 2011-106, 2014-035 2011-106, 2014-035 2011-100, 2014-031 2011-042, 2014-036 2013-033, 2014-037 2015-050 2011-091, 2014-040 2014-100 2012-037, 2014-045 2008-020, 2014-019 2011-106, 2014-035 2012-110, 2014-049 99-050 2010-009, 2014-018	5/29/2018 5/30/2018 5/31/2018	Site restricted to industrial land use.	All land-use requests for the 300 Area in FY 2018 were consistent with industrial use; no non-industrial uses were observed during the assessment.

Table 18. 300 Geographic Decision Area WIDS Sites with Institutional Controls. (13 sheets)

WIDS Site Assessment Group	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observations
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^a Accepted sites are not closed out and, therefore, are not assigned a reclassification status and do not have a WSRF. However, DOE/RL-2014-13-ADD1, Rev. 1, *Remedial Design Report/Remedial Action Work Plan for 300-FF-2 Soils*, provides additional guidance for the implementation of IC requirements.

^b To support implementation of the enhanced recharge control, temporary surface barriers were planned to be installed and maintained, per DOE/RL-2014-13-ADD1, for waste sites that exceed applicable cleanup levels and are adjacent to the long-term retained facilities. These temporary surface barriers are intended to reduce infiltration and contaminant flux to groundwater at the following waste sites: 300 RLWS (subsite 3 is an Accepted site, other subsites are Final Closed Out); 300 RRLWS (subsite 2 is an Accepted site, while subsite 1 is Final Closed Out), 300-5, 300-121, 300-214 (subsite 2 is an Accepted site, while subsite 1 is Final Closed Out), and 300-265. DOE/RL-2014-13-ADD1 also describes that 300-175 has been covered with a concrete slab adjacent to the 325 facility.

(Temporary surface barriers also were planned to be installed and maintained at waste sites 331-LSLT1, 331-LSLT2, 400-37 and 400-38, which are not assigned to MSA and thus, are not within the scope of this assessment).

^c Source of the institutional control is from 2005 DOE-RL correspondence, Data Revisions in Institutional Controls IC) Field of Waste Information Data System (WIDS), 118360.

^c MSA-1105355.5, 2017, *2017 Annual Sitewide Institutional Control Assessment-Mission Support Alliance*, Mission Support Alliance, LLC, Richland, Washington.

CHPRC = CH2M HILL Plateau Remediation Company.

CUL = cleanup level.

DOE = U.S. Department of Energy.

EPA = U.S. Environmental Protection Agency.

ESSP = East Side Storage Pad.

FY = fiscal year.

IC = institutional control.

MSA = Mission Support Alliance, LLC.

RDR/RAWP = remedial design report/remedial action work plan.

SAP = sampling and analysis plan.

UIC = underground injection control (well).

UPR = unplanned release.

WIDS = Waste Information Data System.

WSRF = waste site reclassification form.

2.6.3 Warning Notices in the 300 Decision Area

The 300 Area signage requirements are documented in *Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2013a). Detailed requirements for the signs, including their locations, verbiage, and language (the signs are to be in English with one sign along the river also provided in Spanish) are outlined in DOE/RL-2014-13-ADD1, *Remedial Design Report/Remedial Action Work Plan for 300-FF-2 Soils*, section 4.3.4.

Table 19 presents the observations resulting from the assessments of these signs, which serve as the warning notices. Table 19 describes the location of each sign, the language used for the verbiage on the sign, and the observations. The signs for the 300 Area were found to be in place at the correct locations with the proper text and are shown in Figures 22 and 23.

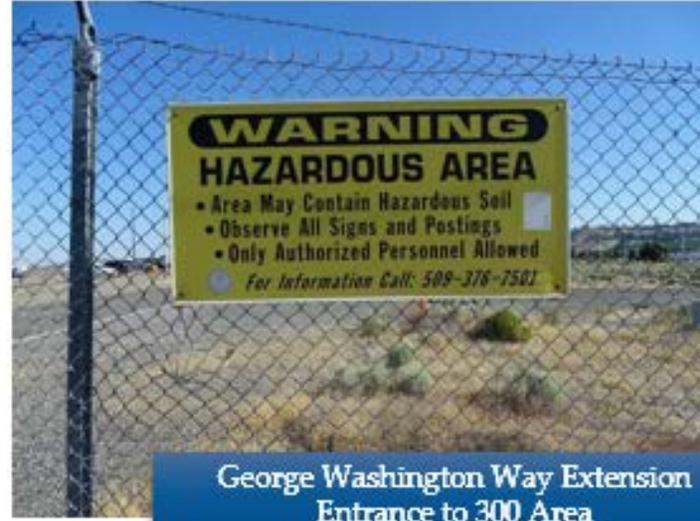
Table 19. Warning Notices for 300 Geographic Decision Area.^a

Location 1	Number of Signs	Language	Observations
Cypress Street Entrance to 300 Industrial Zone	1	English	In Place
George Washington Way Extension Entrance to 300 Industrial Zone	1	English	In Place
Apple Street Entrance to 300 Industrial Zone	1	English	In Place
Former North Parking Lot Entrance	1	English	In Place
Former 300-FF-1 Remediation Entrance	1	English	In Place
Near Columbia River in 300 Industrial Area	2	English & Spanish	In Place

^aSigns in areas managed by CHPRC were not included in this assessment and are not included in this table.



Cypress Street Entrance to 300 Area



George Washington Way Extension Entrance to 300 Area



Apple Street Entrance to the 300 Area



North Parking Lot Entrance to 300 Area, Following Repair

Figure 22. Warning Notices for the 300 Geographic Decision Area.



Figure 23. Warning Notices for the 300 Geographic Decision Area.

2.7 INSTITUTIONAL CONTROLS WITHIN THE 1100 AREA

This section presents the statuses and observations resulting from the IC assessments for the 1100 Area. The 1100 Area NPL site contains four operable units – 1100-EM-1, 1100-EM-2, 1100-EM-3, and 1100-IU-1.⁶ One WIDS site in the 1100 GDA had IC requirements in FY2018; these are summarized in Figure 24. Figure 25 shows the location within the 1100 Area where ICs are applicable, which is at the Horn Rapids Landfill (WIDS site HRD). This figure also shows the boundaries from the WIDS Hanford Geographic Information System (HGIS) that correlate to the fence surrounding the landfill, as well as the location of the soil cap that was installed in the 1990s. Assessments of the HRD WIDS sites in the 1100 Area found that the appropriate ICs were in place and objectives for the ICs were met.



Figure 24. Institutional Controls Required in the 1100 Area.

2.7.1 Decision Documents for the 1100 Area

Table 20 lists the decision documents associated with the 1100 Area. These documents serve as the bases for the WIDS site-specific ICs, as well as other ICs for the 1100 Area.

Table 20. Decision Documents Associated with the 1100 Area.

Decision Document	Decision Area-Wide IC Assessment Results ^a	
	Warning Notices	Other ICs
<i>Record of Decision for the USDOE Hanford 1100-Area Final Remedial Action, Benton County, Washington (EPA 1993).</i>	N/A	Section 4.12
<i>Explanation of Significant Differences for the USDOE Hanford 1100 Area, Benton County, Washington (EPA 1996c).</i>	N/A	No other ICs are identified in this document.
<i>Superfund Site Final Closeout Report, U.S. Department of Energy Hanford 1100 Area, Richland, Washington (DOE 1996).</i>	N/A	Section 4.13
<i>Explanation of Significant Differences for USDOE Hanford 1100 Area, Benton County, Washington, (EPA 2010).</i>	Section 2.7.3	Section 4.14

^aThe results of the assessment for the WIDS site ICs are presented in Section 2.6.2
 IC = institutional control. N/A = not applicable.

⁶ The 1100 Area NPL site was deleted from the NPL in 1996 after the Horn Rapids Landfill was capped and revegetated in accordance with the *Record of Decision for the USDOE Hanford 1100 Area (EPA 1993)*.

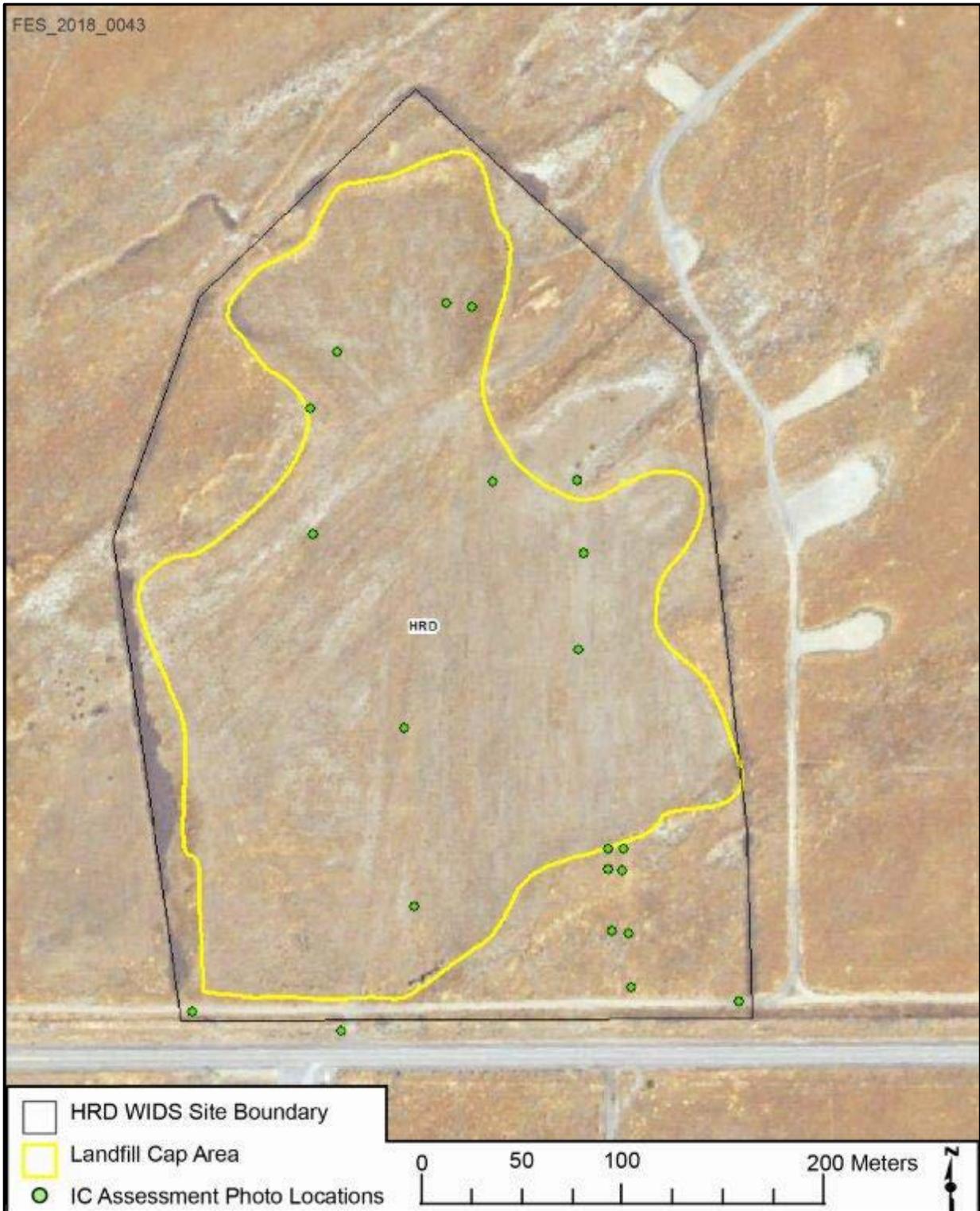


Figure 25. Area Assessed in the 1100 Area.

2.7.2 Institutional Controls for WIDS Sites within the 1100 Area

This section presents the assessment results for the WIDS site-specific ICs in the 1100 Area. Table 21 identifies the WIDS sites, their status, the assessment dates, the ICs being assessed, and observations for site-specific performance objectives resulting from the assessment.

Table 21. 1100 Area WIDS Sites with Institutional Controls.

WIDS Site	Reclassification Status	WSRF	Date Assessed	Institutional Control	Observation
HRD	Deleted From NPL	- - -	6/6/2018	Control access to the landfill property, including inspecting and maintaining the fencing and signs (which are to be in accordance with 40 CFR 61.151 ^a as an asbestos-containing landfill) at the Horn Rapids Landfill ^b .	Access is controlled by fencing and gates. Signs are in place as required (see section 2.7.3).

^a40 CFR 61.151, “Standard for Inactive Waste Disposal Sites for Asbestos Mills and Manufacturing and Fabricating Operations,” *Code of Federal Regulations*, as amended.

^bThe sources of this IC requirement is *Superfund Site Final Closeout Report, U.S. Department of Energy Hanford 1100 Area and Explanation of Significant Differences, USDOE, Hanford 1100 Area, Benton County, Washington*.

HRD = Horn Rapids Landfill. NPL = National Priorities List WSRF = waste site reclassification form.

2.7.3 Warning Notices in the 1100 Area

The *Explanation of Significant Differences for the USDOE Hanford 1100 Area* (EPA 2010) includes an IC requirement for the Horn Rapids Landfill to control access to the landfill property. This includes maintaining the fencing and signs to prevent disturbance of the landfill contents. Detailed requirements for the locations and verbiage on the signs are provided in Title 40 *Code of Federal Regulations* (CFR) Part 61.151, “Standard for Inactive Waste Disposal Sites for Asbestos Mills and Manufacturing and Fabricating Operations.” In FY 2018, the fencing was found to be intact and the signs, bearing the correct text, were visible at regular intervals around the perimeter of the fence line. No disturbance to the landfill cap was observed. Photographs of the signs, which serve as warning notices, were collected during MSA LTS FY 2018 field assessments (see Figure 26 for a representative sign).



Figure 26. Example of a Warning Notice at the Locked Gate Entrance of the Horn Rapids Landfill.

3.0 SITEWIDE INSTITUTIONAL CONTROLS ASSESSMENT

Some of the institutional controls specified by decision documents are implemented at a Sitewide level. This section describes access control requirements and notification of trespassing incidents implemented Site wide.

3.1 FENCES AND SIGNAGE

Several decision documents include a requirement to control access to the Hanford Site, as noted in section 4. In addition to the area-specific warning notices described in section 2, access to the entire Site is controlled by fencing and/or “No Trespassing” signs. These controls serve a dual purpose of helping to minimize the potential for human exposure to residual contamination while helping meet Hanford Site operational requirements to protect government property. Fencing is installed along Horn Rapids Road and State Route 240, which, respectively, comprise the southern and western perimeters of the Hanford Site. Fencing also is installed along other

portions of the Site that may potentially be accessible to the public (i.e., around the perimeter of the 300 Area). “No Trespassing” signs are maintained at 500-ft intervals along these identified fence locations, major roadways south of the Wye Barricade, and along the Columbia River shoreline near the high-water mark.

The fence line and “No Trespassing” signs outside of the Wye Barricade were inspected in August 2018 along State Route 240 (Figure 27). In these areas, 90 “No Trespassing” signs were found to be illegible or damaged due to general weathering or vandalism. Damaged fencing was identified in eight locations. The damaged fencing and signs were replaced in FY 2018.

In FY 2016, the MSA LTS Program conducted a riverside signs assessment from the Columbia River vantage point. Approximately 80 “No Trespassing” signs could not be seen from the Columbia River. In FY 2017, MSA LTS completed a project to replace 69 missing signs where existing posts could be used. In FY 2018, the locations identified in the FY 2016 assessment were revisited to identify any additional signs that need to be replaced. The MSA LTS organization has initiated a project to replace approximately 54 damaged or missing “No Trespassing” signs in FY 2019.

3.2 TRESPASSING INCIDENTS

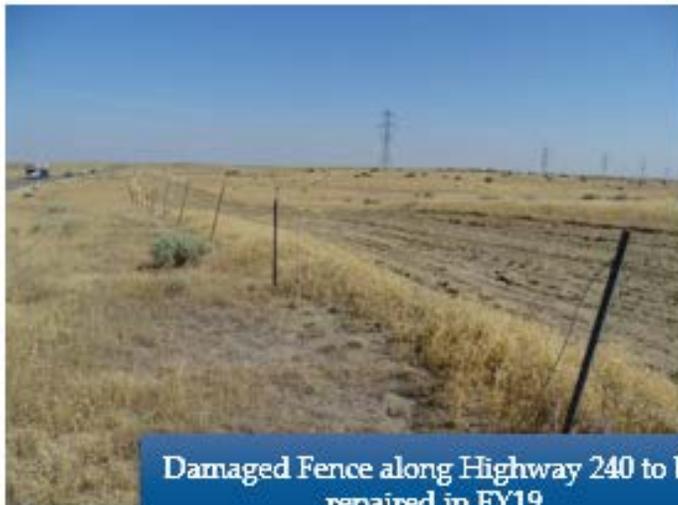
Several decision documents include a requirement to report trespassing incidents on the Hanford Site to the Benton County Sheriff’s Office, as noted in section 4. The MSA Safeguards and Security group is responsible for tracking and reporting these incidents. Three reportable trespassing incidents occurred from October 2017 to September 2018. Information regarding the details of the incidents is considered to be official use only and is not discussed in this report.



Example of a "No Trespassing" sign along the Columbia River



Faded and damaged "No Trespassing" sign along the Columbia River to be replaced in FY18/19



Damaged Fence along Highway 240 to be repaired in FY19



Fallen "No Trespassing" sign along Highway 240 to be repaired in FY19

Figure 27. "No Trespassing" Signs.

4.0 DECISION DOCUMENTS THAT INCLUDE INSTITUTIONAL CONTROLS

This section details IC requirements from the decision documents mentioned in previous sections, and includes assessment results from FY 2017. Each decision document listed in this section contains one or more ICs. Each IC was assessed by evaluating current Hanford Site procedures and processes and performing field verification, where applicable.

4.1 INTERIM ACTION RECORD OF DECISION FOR 100-BC-1, 100-DR-1, AND 100-HR-1 OPERABLE UNITS

Table 22 lists the ICs identified in *Interim Action Record of Decision for 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units, Hanford Site, Benton County, Washington* (EPA 1995).

These ICs apply to locations in the 100-B/C and 100-D/H GDAs, which are shown in green in the inset map in the table.

<p>Table 22. Assessment of Institutional Controls Listed in <i>Interim Action Record of Decision for 100 BC 1, 100 DR 1, and 100 HR 1 Operable Units Hanford Site, Benton County, Washington</i> (EPA 1995).</p> 	
Institutional Controls Requirement	Institutional Control Status
<p><i>The U.S. Department of Energy will control access and use of the Hanford Site for the duration of the cleanup, including restrictions on the drilling of new groundwater wells in the existing plumes or their paths. It is expected that institutional controls will be enforced until the remedial action objectives have been attained.</i></p>	<p>Access to the Hanford Site is controlled through barricades and warning notices (see section 3.1). Use of the Hanford Site is controlled through the site evaluation and excavation permitting processes. Construction of new groundwater wells is controlled through the regulatory approval and excavation permitting processes. The ICs are assessed and reported annually to ensure that they continue to be enforced.</p>

IC = institutional control.

4.2 INTERIM ACTION RECORD OF DECISION FOR 100-HR-3 AND 100-KR-4 OPERABLE UNITS

Table 23 lists the ICs identified in *Interim Action Record of Decision Hanford 100-HR-3 and 100-KR-4 Operable Units, Hanford Site, Benton County, Washington* (EPA 1996a). These ICs apply to locations in the 100-K and 100-D/H GDAs, which are shown in green in the inset map in the table.

Table 23. Assessment of Institutional Controls Listed in *Interim Action Record of Decision Hanford 100-HR-3 and 100 KR-4 Operable Units, Hanford Site, Benton County, Washington* (EPA 1996a).



Institutional Controls Requirement	Institutional Control Status
<p><i>Institutional controls are required to prevent human exposure to groundwater. The U.S. Department of Energy is responsible for establishing and maintaining land use and access restrictions until maximum contaminant levels and risk based criteria are met or the final remedy is selected. Institutional controls include placing written notification of the remedial action in the facility land use master plan. The U.S. Department of Energy will prohibit any activities that would interfere with the remedial activity without U.S. Environmental Protection Agency and Washington State Department of Ecology concurrence. In addition, measures necessary to ensure the continuation of these restrictions will be taken in the event of any transfer or lease of the property before a final remedy is selected. A copy of the notification will be given to any prospective purchaser/transferee before any transfer or lease. The U.S. Department of Energy will provide the U.S. Environmental Protection Agency and Washington State Department of Ecology with written verification that these restrictions have been put in place.</i></p>	<p>Access to the Hanford Site is controlled through barricades, warning notices, and a badging program (see section 3.1). DOE/EIS-0222, <i>Hanford Comprehensive Land Use Plan (CLUP) Final Environmental Impact Statement (HCP EIS)</i>, identifies the institutional controls plan as an implementing control for the HCP EIS. DOE/RL-2001-41, <i>Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions</i>, Rev. 8, lists the CERCLA decision documents for the remedial actions, along with their associated ICs. In addition, use of the Hanford Site is controlled through the site evaluation and excavation permitting processes. These processes include the review of any associated ICs. No activities that would interfere with the remedial activities have been identified. No land was transferred or leased in FY 2018 from the area covered by the ROD.</p>

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act of 1980.
 CLUP = Comprehensive Land Use Plan.

RCRA = Resource Conservation and Recovery Act of 1976.
 ROD = record of decision.

4.3 ADMENDMENT TO THE INTERIM ACTION RECORD OF DECISION FOR 100-BC-1, 100-DR-1, AND 100-HR-1 OPERABLE UNITS

Table 24 lists the ICs identified in *Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units, Hanford Site, Benton County, Washington* (EPA 1997). These ICs apply to locations in the 100-B/C, 100-K, and 100-D/H GDAs, which are shown in green in the inset map in the table.

Table 24. Assessment of Institutional Controls Listed in *Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units, Hanford Site, Benton County, Washington* (EPA 1997).



Institutional Controls Requirement	Institutional Control Status
<i>Institutional controls and long-term monitoring will be required for sites where wastes are left in place.</i>	ICs have been applied to the individual WIDS sites with waste left in place. Each WIDS site with an IC was assessed in FY 2018. No excavation into the deep zone occurred during the assessment period at these locations.

FY = fiscal year.

IC = institutional control.

WIDS = Waste Information Data System.

4.4 INTERIM ACTION RECORD OF DECISION FOR THE 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, AND 200-CW-3 OPERABLE UNITS

Table 25 lists the ICs identified in *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (100 Area Remaining Sites ROD)* (EPA 1999a). These ICs apply to locations in the 100-B/C, 100-K, and 100-D/H GDAs, which are shown in green in the inset map in the table. The ICs were not evaluated for the 100-FR-1, 100-FR-2, 100-IU-2, and 100-IU-6 OUs because this interim action ROD has been superseded by a final ROD for those operable units (see sections 2.3.1 and 4.9); therefore, those operable units are not shown in the inset map.

Table 25. Assessment of Institutional Controls Listed in *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100 HR 2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington, (100 Area Remaining Sites ROD)* (EPA 1119a). (2 sheets)



Institutional Controls Requirement	Institutional Controls Status
<i>DOE will continue to use a badging program to control access to the associated sites for the duration of the interim action. Visitors entering the sites associated with the Interim Action ROD are required to be escorted at all times.</i>	DOE has an active badging program to control access to Hanford Site. Visitors entering the sites associated with the interim action ROD are escorted at all times.
<i>DOE will use the onsite excavation permit process to control land use (e.g., well drilling or excavation of soil) within the 100 Area operable units.</i>	The DOE excavation permit program is in place as defined in DOE-0344, <i>Hanford Site Excavating, Trenching and Shoring Procedure</i> .

Table 25. Assessment of Institutional Controls Listed in *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100 HR 2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington, (100 Area Remaining Sites ROD) (EPA 1119a). (2 sheets)*



Institutional Controls Requirement	Institutional Controls Status
<i>DOE will maintain existing signs prohibiting public access.</i>	The signage (see sections 2.1.3, 2.2.3, and 2.4.3) and the access controls (see section 3.1) are in place and are being maintained.
<i>DOE will provide notification to EPA and Ecology upon discovery of any trespass incidents.</i>	DOE transmits copies of the annual IC assessment report to EPA and Ecology. The assessment includes a report on the trespassing incidents.
<i>Trespass incidents will be reported to the Benton County Sheriff's Office for investigation and evaluation for possible prosecution.</i>	Trespassing incidents are reported to the Benton County Sheriff's Office (see section 3.2).
<i>DOE will add access restriction language to any land transfer, sale, or lease of property that the U.S. Government considers appropriate while ICs are compulsory.</i>	No land was transferred or leased from the area covered by the ROD in FY 2018.
<i>Until final remedy selection, DOE shall not delete or terminate any IC requirement established in this Interim Action ROD unless EPA and Ecology have provided written concurrence on the deletion or termination and appropriate documentation has been placed in the Administrative Record.</i>	None of the IC requirements established in this interim action ROD were deleted or terminated in FY 2018.
<i>DOE will evaluate the implementation and effectiveness of ICs for the 100 Area operable units on an annual basis. DOE shall submit a report to EPA and Ecology by March 30 of each year summarizing the results of the evaluation for the preceding calendar year. At a minimum, the report shall contain an evaluation of whether or not the IC requirements continue to be met and a description of any deficiencies discovered and measures taken to correct problems.</i>	DOE conducts an annual assessment on the implementation and effectiveness of the ICs. The annual IC assessment is reported every September at the unit managers meeting.

Note: ICs were not evaluated for the 100-FR-1, 100-FR-2, 100-IU-2, and 100-IU-6 operable units, because this interim action ROD has been superseded by a final ROD for those operable units (see Sections 2.3.1 and 4.9).

- | | | | |
|---------|---|-----|----------------------------------|
| DOE | = U.S. Department of Energy. | LTS | = long-term stewardship. |
| Ecology | = Washington State Department of Ecology. | MSA | = Mission Support Alliance, LLC. |
| EPA | = U.S. Environmental Protection Agency. | ROD | = record of decision. |
| IC | = institutional control. | UMM | = unit managers meeting. |

4.5 INTERIM ACTION RECORD OF DECISION FOR 100-NR-1 AND 100-NR-2 OPERABLE UNITS

Table 26 lists the ICs identified in *Interim Action Record of Decision for the 100-NR-1 and 100-NR-2 Operable Units, Hanford Site 100 Area, Benton County, Washington (EPA 1999b)*. These ICs apply to locations in the 100-N GDA, which is shown in green in the inset map in the table.

Table 26. Assessment of Institutional Controls Listed in *Interim Action Record of Decision for the 100-NR-1 and 100-NR-2 Operable Units, Hanford Site 100 Area, Benton County, Washington* (EPA 1999b).



Institutional Controls Requirement	Institutional Controls Status
<i>DOE will continue to use a badging program to control access to the sites associated with this ROD for the duration of the interim action. Visitors entering the sites associated with the Interim Action ROD are required to be escorted at all times.</i>	DOE has an active badging program to control access to the Hanford Site. Visitors entering the sites associated with the interim action ROD are escorted at all times.
<i>DOE will use the onsite excavation permit process to control well drilling and excavation of soil within the 100 Area OUs to prohibit any drilling or excavation except as approved by Ecology.</i>	The DOE excavation permit program, as defined in DOE-0344, <i>Hanford Site Excavating, Trenching and Shoring Procedure</i> , is in place.
<i>DOE will maintain existing signs prohibiting public access.</i>	The signage (see section 2.5.3) and the access controls (see section 3.1) are in place and are being maintained.
<i>DOE will provide notification to Ecology upon discovery of any trespass incidents.</i>	DOE transmits copies of the annual IC assessment report to EPA and Ecology. The assessment includes a report on the trespassing incidents.
<i>Trespass incidents will be reported to the Benton County Sheriff's Office for investigation and evaluation for possible prosecution.</i>	Trespassing incidents are reported to the Benton County Sheriff's Office (see section 3.2).
<i>DOE will add access restriction language to any land transfer, sale, or lease of property that the U.S. Government considers appropriate while ICs are compulsory, and Ecology will have to approve any access restrictions before transfer, sale, or lease.</i>	No land was transferred or leased from the area covered by the ROD in FY 2018.
<i>Until final remedy selection, DOE shall not delete or terminate any IC requirements established in this Interim Action ROD unless Ecology has provided written concurrence on the deletion or termination and appropriate documentation has been placed in the Administrative Record.</i>	None of the IC requirements established in this interim action ROD were deleted or terminated in FY 2018.
<i>DOE will evaluate the implementation and effectiveness of ICs for the 100 NR 1 and 100 NR 2 OUs on an annual basis. DOE shall submit a report to Ecology by July 31 of each year summarizing the results of the evaluation for the preceding calendar year. At a minimum, the report shall contain an evaluation of whether or not the IC requirements continue to be met, a description of any deficiencies discovered, and measures taken to correct problems.</i>	DOE conducts an annual assessment on the implementation and effectiveness of the ICs. The annual IC assessment is reported every September at the unit managers meeting.

DOE = U.S. Department of Energy.
 FY = fiscal year.
 IC = institutional control.
 MSA = Mission Support Alliance, LLC.

OU = operable unit.
 ROD = record of decision.
 UMM = unit managers meeting.

4.6 INTERIM ACTION RECORD OF DECISION FOR 100-NR-1 OPERABLE UNIT (TSD)

Table 27 lists the ICs identified in *Interim Action Record of Decision for the DOE Hanford 100-NR-1 Operable Unit (TSD), Hanford Site, Benton County, Washington (EPA 2000a)*. These ICs apply to locations in the 100-N GDA, which is shown in green in the inset map in the table.

<p>Table 27. Assessment of Institutional Controls Listed in <i>Interim Action Record of Decision for the DOE Hanford 100 NR 1 Operable Unit (TSD), Hanford Site, Benton County, Washington (EPA 2000a)</i>. (2 sheets)</p>		
Institutional Controls Requirement	Institutional Controls Status	
<i>DOE will continue to use a badging program to control access to the sites associated with this ROD for the duration of the interim action. Visitors entering any of the sites associated with the Interim Action ROD are required to be escorted at all times.</i>	DOE has an active badging program to control access to the Hanford Site. Visitors entering the sites associated with the interim action ROD are escorted at all times.	
<i>DOE will use the onsite excavation permit process to control land use (e.g., well drilling and excavation of soil) within the 100 Area OUs to prohibit any drilling or excavation except as approved by Ecology.</i>	The DOE excavation permit program is in place as defined in DOE-0344, <i>Hanford Site Excavating, Trenching and Shoring Procedure</i> .	
<i>DOE will maintain existing signs prohibiting public access.</i>	The signage (see section 2.5.3) and the access controls (see section 3.1) are in place and are being maintained.	
<i>DOE will provide notification to Ecology upon discovery of any trespass incidents.</i>	DOE transmits copies of the annual IC assessment report to EPA and Ecology. The assessment includes a report on the trespassing incidents.	
<i>Trespass incidents will be reported to the Benton County Sheriff's Office for investigation and evaluation for possible prosecution.</i>	Trespassing incidents are reported to the Benton County Sheriff's Office (see section 3.2).	
<i>DOE will add access restriction language to any land transfer, sale, or lease of property that the U.S. Government considers appropriate while ICs are compulsory, and Ecology will have to approve any access restrictions before transfer, sale, or lease.</i>	No land was transferred or leased from the area covered by the ROD in FY 2018.	
<i>Until final remedy selection, DOE shall not delete or terminate any IC requirement established in this Interim Action ROD unless Ecology has provided written concurrence on the deletion or termination and appropriate documentation has been placed in the Administrative Record.</i>	None of the IC requirements established in this interim action ROD were deleted or terminated in FY 2018.	

Table 27. Assessment of Institutional Controls Listed in *Interim Action Record of Decision for the DOE Hanford 100 NR 1 Operable Unit (TSD), Hanford Site, Benton County, Washington (EPA 2000a)*. (2 sheets)



Institutional Controls Requirement	Institutional Controls Status
<i>DOE will evaluate the implementation and effectiveness of ICs for the 100-NR-1 Operable Units on an annual basis. DOE will submit a report to Ecology by July 31 of each year summarizing the results of the evaluation for the preceding calendar year. At a minimum, the report shall contain an evaluation of whether or not the IC requirements continue to be met, a description of any deficiencies discovered, and measures taken to correct problems.</i>	DOE conducts an annual assessment on the implementation and effectiveness of the ICs. The annual IC assessment is reported every September at the unit managers meeting.

DOE = U.S. Department of Energy.
IC = institutional control.

MSA = Mission Support Alliance, LLC.
UMM = unit managers meeting.

4.7 INTERIM ACTION RECORD OF DECISION FOR THE 100-BC-1, 100-BC-2, 100-DR-1, 100-DR 2, 100-FR-2, 100-HR-2, AND 100-KR-2, OPERABLE UNITS, HANFORD SITE, BENTON COUNTY, WASHINGTON (100 AREA BURIAL GROUNDS)

Table 28 lists the ICs identified in *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2, Operable Units, Hanford Site, Benton County, Washington (100-Area Burial Grounds) (EPA 2000b)*. These ICs apply to locations within the 100-B/C, 100-K, and 100-D/H GDAs, which are shown in green in the inset map in the table. These ICs were not evaluated for the 100-FR-2 OU because this interim action ROD has been superseded by a final ROD for that OU (see sections 2.3.1 and 4.9); therefore, the 100-FR-2 OU is not shown in the inset map.

Table 28. Assessment of Institutional Controls listed in *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100 DR 1, 100-DR-2, 100-FR-2, 100 HR 2, and 100-KR-2, Operable Units, Hanford Site, Benton County, Washington (100 Area Burial Grounds) (EPA 2000b)*. (5 sheets)



Institutional Controls Requirement	Institutional Controls Status
<i>DOE will continue to use a badging program to control access to the associated sites for the duration of the interim action. Visitors entering the sites associated with the Interim Action ROD are required to be escorted at all times.</i>	DOE has an active badging program to control access to the Hanford Site. Visitors entering the sites associated with the interim action ROD are escorted at all times.

Table 28. Assessment of Institutional Controls listed in *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100 DR 1, 100-DR-2, 100-FR-2, 100 HR 2, and 100-KR-2, Operable Units, Hanford Site, Benton County, Washington (100 Area Burial Grounds) (EPA 2000b). (5 sheets)*



Institutional Controls Requirement	Institutional Controls Status
<i>Well drilling is prohibited, except for monitoring or remediation wells authorized in documents approved by EPA and/or the Ecology. Groundwater use is prohibited, except for monitoring and treatment, as approved by EPA or Ecology.</i>	The DOE excavation permit program is in place as defined in DOE-0344, <i>Hanford Site Excavating, Trenching and Shoring Procedure</i> . This program prevents unauthorized well drilling. Groundwater use is managed by CHPRC.
<i>No intrusive work is allowed on or near the waste sites covered in this ROD without prior approval of EPA or Ecology.</i>	Interim remedial actions have been completed for the sites covered in this ROD. Intrusive work near waste sites with excavation/drilling ICs is controlled by the excavation permit process.
<i>DOE shall maintain signs that warn river users of potential hazards along the shoreline from 100 Area waste sites.</i>	The signage is in place and being maintained (see sections 2.1.3, 2.2.3, and 2.4.3).
<i>DOE shall post and maintain in good condition "No Trespassing" signs along the 100 Area shoreline.</i>	The "No Trespassing" signs are in place and being maintained (see section 3.1).
<i>DOE shall maintain signs along access roads that warn Site visitors and workers of potential hazards from 100 Area waste sites.</i>	The signage is in place and being maintained (see sections 2.1.3, 2.2.3, and 2.4.3).
<i>DOE shall report trespass incidents to the Benton County Sheriff's Office for investigation and evaluation for possible prosecution.</i>	Trespassing incidents are reported to the Benton County Sheriff's Office, (see Section 3.2).

Table 28. Assessment of Institutional Controls listed in *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100 DR 1, 100-DR-2, 100-FR-2, 100 HR 2, and 100-KR-2, Operable Units, Hanford Site, Benton County, Washington (100 Area Burial Grounds) (EPA 2000b). (5 sheets)*



Institutional Controls Requirement	Institutional Controls Status
<p><i>DOE shall submit a Sitewide IC plan that includes the applicable ICs for the 100 Area OUs. This Sitewide plan will be submitted to EPA and Ecology for approval as a primary document under the Tri Party Agreement by July 2001. This plan shall be updated by DOE periodically at the request of EPA or Ecology. At a minimum, the plan shall contain the following:</i></p> <p><i>A comprehensive facility wide list of all areas or locations covered by any and all decision documents at the Hanford Site that have or should have ICs for protection of human health or the environment. The information on the list will include, at a minimum, the location of the area, the objectives of the restriction or control, the timeframe that the restrictions apply, and the tools and procedures DOE will use to implement the restrictions or controls and to evaluate the effectiveness of these restrictions or controls.</i></p> <p><i>Cover, and legally bind where appropriate, all entities and persons, including, but not limited to, employees, contractors, lessees, agents, licensees, and visitors. In areas where DOE is aware of routine trespassing, trespassers also must be covered.</i></p> <p><i>Cover all activities, and reasonably anticipated future activities, including, but not limited to, any future soil disturbances, routine and non routine utility work, well placement and drilling, recreational activities, Hanford Reach National Monument related uses, groundwater withdrawals, paving, construction, renovation work on structures, Tribal use, or other activities.</i></p> <p><i>Include a tracking mechanism that identifies all land areas under restriction or control.</i></p> <p><i>Include a process to promptly notify EPA and Ecology before any making anticipated change in land use designation, restriction, land users, or activity for any ICs required by a decision document.</i></p>	<p><i>DOE/RL-2001-41, Sitewide Institutional Controls Plan For Hanford CERCLA Response Actions, Rev. 0 was published in 2002. It is revised within 180 days of the publication of a decision document that specifies ICs. Rev. 8, the current version of DOE/RL 2001 41, Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions, was published March 17, 2015.</i></p>
<p><i>DOE will notify EPA and Ecology immediately upon discovery of any activity that is inconsistent with the OU-specific IC objectives for the Site, or of any change in the land use or land-use designation of a site. DOE will work together with EPA and Ecology to determine a plan of action to rectify the situation, except in the case where DOE believes the activity creates an emergency situation, DOE can respond to the emergency immediately upon notification to EPA and Ecology and need not wait for EPA or Ecology input to determine a plan of action. DOE also will identify deficiencies with the IC process, evaluate how to correct the process to avoid future problems, and implement these changes after consulting with EPA and Ecology.</i></p>	<p><i>No activities inconsistent with the OU-specific ICs have been discovered. There were no changes in land use/designations in the 100 Areas in FY 2018.</i></p>

Table 28. Assessment of Institutional Controls listed in *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100 DR 1, 100-DR-2, 100-FR-2, 100 HR 2, and 100-KR-2, Operable Units, Hanford Site, Benton County, Washington (100 Area Burial Grounds) (EPA 2000b). (5 sheets)*



Institutional Controls Requirement	Institutional Controls Status
<i>DOE will identify a point of contact for implementing, maintaining, and monitoring ICs for the 100 Area, as well as for the Hanford Site.</i>	DOE has a person responsible for maintaining and monitoring ICs in the 100 Areas.
<i>"DOE will comply with TPA requirements to request and obtain funding to institute and maintain ICs as a compliance requirement under the TPA. NOTE: This is an existing TPA requirement.</i>	Funding is requested for maintaining and monitoring ICs through the DOE Long-Term Stewardship Program.
<i>DOE will notify EPA and Ecology at least 6 months before any transfer, sale, or lease of any property subject to ICs required by a CERCLA decision document so that EPA and Ecology can be involved in discussions to ensure that appropriate provisions are included in the conveyance documents to maintain effective ICs. If it is not possible for DOE to notify EPA and Ecology at least 6 months before any transfer, sale, or lease, then DOE will notify EPA and Ecology as soon as possible, but no later than 60 days before the transfer, sale, or lease of any property subject to ICs.</i>	No land has been transferred or leased from the area covered by the ROD in FY 2018.
<i>DOE will not delete or terminate any ICs unless EPA and Ecology have concurred in the deletion or termination.</i>	None of the IC requirements established in this interim action ROD were deleted or terminated in FY 2018.
<i>DOE will evaluate the implementation and effectiveness of ICs for the Hanford Site and the 100 Area OUs on an annual basis. The annual IC monitoring report shall be written by DOE and submitted to EPA and Ecology as a primary document under the TPA. The report shall be consistent with the requirements established in the Sitewide IC plan. Justification will be provided for any information that is not included as required by the Sitewide plan. The annual monitoring report will be due on September 30 of each year and will summarize the results of the evaluation for the preceding calendar year. In addition, after the comprehensive Sitewide approach is well established and DOE has demonstrated its effectiveness, the frequency of future monitoring reports may be modified subject to approval by EPA and Ecology. The IC monitoring report, at a minimum, must contain the following: A description of how DOE is meeting the Sitewide IC requirements. A description of how DOE is meeting the OU-specific objectives, including results of visual field inspections of all areas subject to OU-specific restrictions.</i>	DOE conducts an annual assessment on the implementation and effectiveness of the ICs. The annual IC assessment is reported every September at the unit managers meeting.
<i>EPA and Ecology review of the IC monitoring report will follow existing procedures for agency review of primary documents.</i>	This requirement is the responsibility of the EPA and Ecology.

Note: ICs were not evaluated for the 100-FR-2 operable unit, because this interim action ROD has been superseded by a final ROD for that operable unit (see sections 2.3.1 and 4.9).

Table 28. Assessment of Institutional Controls listed in *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100 DR 1, 100-DR-2, 100-FR-2, 100 HR 2, and 100-KR-2, Operable Units, Hanford Site, Benton County, Washington (100 Area Burial Grounds)* (EPA 2000b). (5 sheets)



Institutional Controls Requirement		Institutional Controls Status	
CHPRC Company.	= CH2M HILL Plateau Remediation Company.	OU	= operable unit.
DOE Ecology.	= U.S. Department of Energy. Washington State Department of Ecology.	ROD	= record of decision.
EPA Agency	= U.S. Environmental Protection Agency	TPA	= Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement).
IC	= institutional control.	UMM	= unit managers meeting.

4.8 EXPLANATION OF SIGNIFICANT DIFFERENCES FOR THE INTERIM ACTION RECORD OF DECISION FOR 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, AND 100-KR-2 OPERABLE UNITS (100 AREA BURIAL GROUNDS)

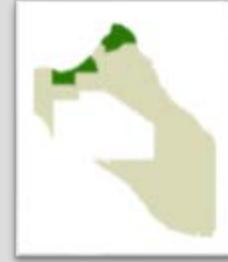
Table 29 lists the ICs identified in *Explanation of Significant Differences for the 100 Area Interim Action Record of Decision for 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units (100 Area Burial Grounds), Hanford Site, Benton County, Washington* (EPA 2007). These ICs apply to locations within the 100-B/C, 100-K, and 100-D/H GDAs, which are shown in green in the inset map in the table. These ICs were not evaluated for the 100-FR-2 OU, because this interim action ROD has been superseded by a final ROD for that OU, and thus, the 100-FR-2 OU is not shown in the inset map.

Table 29. Assessment of Institutional Controls Listed in *Explanation of Significant Differences for the 100 Area Interim Action Record of Decision for 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units (100 Area Burial Grounds), Hanford Site, Benton County, Washington* (EPA 2007). (2 sheets)



Institutional Controls Requirement	Institutional Controls Status
<i>A report is required every 5 years to document effectiveness of the institutional controls, which must include identification of any deficiencies and corrective actions taken or to be taken.</i>	The effectiveness of the ICs is evaluated every 5 years and published in the CERCLA 5-Year Review Report. The most recent report (2011 – 2015) can be found in DOE/RL-2016-01, <i>Hanford Site Fourth CERCLA Five-Year Review Report</i> .

Table 29. Assessment of Institutional Controls Listed in *Explanation of Significant Differences for the 100 Area Interim Action Record of Decision for 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units (100 Area Burial Grounds), Hanford Site, Benton County, Washington (EPA 2007).* (2 sheets)



Institutional Controls Requirement	Institutional Controls Status
<i>Institutional controls are required to be maintained in accordance with both the Burial Ground Record of Decision and the Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions (DOE/RL-2001-41, as amended [current version]).</i>	The ICs are maintained as required by DOE/RL-2001-41, <i>Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions</i> , Rev. 8.

Note: ICs were not evaluated for the 100-FR-2 operable unit, because this interim action ROD has been superseded by a final ROD for that operable unit (see sections 2.3.1 and 4.9).

DOE = U.S. Department of Energy.
IC = institutional control.

MSA = Mission Support Alliance, LLC.
UMM = unit managers meeting.

4.9 RECORD OF DECISION HANFORD 100 AREA SUPERFUND SITE 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2 AND 100-IU-6 OPERABLE UNITS

Table 30 lists the ICs identified in *Record of Decision Hanford 100 Area Superfund Site 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2 and 100-IU-6 Operable Units (EPA 2014)*. These ICs apply to locations in the 100-F/IU-2/IU-6 GDA, which is shown in green in the inset map in the table.

Table 30. Assessment of Institutional Controls Listed in *Record of Decision for 100-FR-1, 100-FR-2, 100-FR-3, 100 IU-2, and 100-IU-6 (EPA 2014).* (4 sheets)



Institutional Controls Requirement	Institutional Control Status
<i>ICs are required before, during and after the active phase of remedial action implementation where ICs are needed to protect human health and the environment. ICs are used to control access to residual contamination in soil and groundwater above standards for unlimited use and unrestricted exposure.</i>	ICs required to control access to residual contamination in soil and groundwater above standards for unlimited use and unrestricted exposure are in place.

Table 30. Assessment of Institutional Controls Listed in *Record of Decision for 100-FR-1, 100-FR-2, 100-FR-3, 100 IU-2, and 100-IU-6* (EPA 2014). (4 sheets)



Institutional Controls Requirement	Institutional Control Status
<p><i>No later than 180 days after the ROD is signed, DOE shall update the Sitewide Institutional Controls Plan to include the ICs required by this ROD and specify the implementation and maintenance actions that will be taken, including periodic inspections. The revised Sitewide Institutional Controls Plan shall be submitted to EPA and the Washington State Department of Ecology (Ecology) for review and approval as a Tri-Party Agreement primary document. The DOE shall comply with the Sitewide Institutional Controls Plan as updated and approved by EPA and Ecology.</i></p>	<p>The Sitewide Institutional Control Plan was revised within 180 days and submitted to EPA and Ecology for review and approval. The approved plan was published as DOE/RL 2001-41, Rev. 8, in March 2015.</p>
<p><i>In the event that land is transferred out of federal ownership, deed restrictions (proprietary controls such as easements and covenants) are required that are legally enforceable against subsequent property owners.</i></p>	<p>No land was transferred from the area covered by the ROD in FY 2018.</p>
<p><i>In the event of any unauthorized access (e.g. trespassing), DOE shall report such incidents to the Benton County Sheriff's Office for investigation and evaluation of possible prosecution.</i></p>	<p>Trespassing incidents are reported to the Benton County Sheriff's Office (see section 3.2).</p>
<p><i>Activities that would disrupt or lessen the performance of any component of the remedies are prohibited.</i></p>	<p>No activities that would disrupt or lessen the performance of any remedy component have taken place.</p>
<p><i>Signage and access control to waste sites with contamination above cleanup levels will be provided.</i></p>	<p>The signage (see section 2.3.3) and the access controls (see section 3.1) are in place and are being maintained.</p>
<p><i>Maintain the integrity of any current or future remedial or monitoring system such as monitoring wells.</i></p>	<p>Any potential impacts to remedial or monitoring systems are reviewed through the site evaluation and site excavation permit processes. CHPRC maintains the integrity of the monitoring wells.</p>
<p><i>Prohibit the development and use of property for residential housing, elementary and secondary schools, child care facilities and playgrounds until cleanup levels are met.</i></p>	<p>No development or use for residential purposes in the area covered by this ROD occurred in FY 2018.</p>
<p><i>DOE shall employ and maintain an excavation permit program for protection of human health against unacceptable exposure, and protection of environmental and cultural resources.</i></p>	<p>The DOE excavation permit program is in place as defined in DOE-0344, <i>Hanford Site Excavating, Trenching and Shoring Procedure</i>.</p>
<p><i>The DOE shall report on the effectiveness of ICs for all OUs that are the subject of this ROD in an annual report, or on an alternative reporting frequency specified by the lead regulatory agency. Such reporting may be for OUs individually or may be part of the Hanford Sitewide ICs report.</i></p>	<p>DOE conducts an annual assessment on the implementation and effectiveness of the ICs. The annual IC assessment is reported every September at the unit managers meeting.</p>

Table 30. Assessment of Institutional Controls Listed in *Record of Decision for 100-FR-1, 100-FR-2, 100-FR-3, 100 IU-2, and 100-IU-6* (EPA 2014). (4 sheets)



Institutional Controls Requirement	Institutional Control Status
<p><i>Measures that are necessary to ensure continuation of ICs shall be taken before any lease or transfer of any land subject to ICs. DOE will provide notice to Ecology and EPA at least 6 months before any transfer or sale of land subject to ICs so that the lead regulatory agency can be involved in discussions to ensure that appropriate provisions are included in the transfer terms or conveyance documents to maintain effective ICs. If it is not possible for DOE to notify Ecology and EPA at least 6 months before any transfer or sale, DOE will notify Ecology and EPA as soon as possible, but no later than 60 days before the transfer or sale of any property subject to ICs. In addition to the land transfer notice and discussion provisions, DOE further agrees to provide Ecology and EPA with similar notice, within the same time frame, as to federal-to-federal transfer of property. DOE shall provide a copy of the executed deed or transfer assembly to Ecology and EPA.</i></p>	<p>No land was transferred from the area covered by the ROD in FY 2018.</p>
<p><i>DOE shall notify EPA and Ecology immediately upon discovery of any activity inconsistent with the specific ICs.</i></p>	<p>No activities inconsistent with the ICs have been discovered.</p>
<p>Institutional Controls Component Unique to 100-FR-1 and 100-FR-2 Operable Units</p>	
<p><i>Exposure to contamination deeper than 4.6 m (15 ft) bgs is not anticipated. Where contamination at depth exceeds the residential or industrial use CULs, ICs are required to ensure future activities do not bring this contamination to the surface or otherwise result in exposure to contaminant concentrations that exceed the CULs.</i></p>	<p>Excavation at the locations with deep-zone ICs is controlled by the excavation permitting process. No excavation to the deep zone occurred during the assessment period at these locations in the 100-F/IU-2/IU-6 area.</p>
<p><i>Prohibit irrigation over or near waste site 116-F-14 that represents an unacceptable surface water protection risk.</i></p>	<p>The irrigation restriction at the 116-F-14 site remains in place. No irrigation activities occurred at the site in FY 2018. Refer to Section 2.3.2 for more information.</p>
<p>Institutional Controls Component Unique to 100-FR-3 Operable Unit</p>	
<p><i>DOE shall employ and maintain an excavation permit program limiting 100-FR-3 groundwater access and use to research purposes and for monitoring and treatment in areas where groundwater is above cleanup levels (Figure A1-3).</i></p>	<p>DOE excavation permit program is in place as defined in DOE-0344, <i>Hanford Site Excavating, Trenching and Shoring Procedure</i>. Excavation at the locations with ICs is controlled by the excavation permitting process. No excavation to the groundwater occurred during the assessment period.</p>

<p>Table 30. Assessment of Institutional Controls Listed in <i>Record of Decision for 100-FR-1, 100-FR-2, 100-FR-3, 100 IU-2, and 100-IU-6</i> (EPA 2014). (4 sheets)</p> 	
Institutional Controls Requirement	Institutional Control Status
<p><i>Prevent access or use of the groundwater for drinking water purposes until cleanup levels are met.</i></p>	<p>Access to groundwater is controlled through the excavation permitting process. Access and use of existing groundwater wells is managed by CHPRC.</p>
<p>bgs = below ground surface. CHPRC = CH2M HILL Plateau Remediation Company. CUL = cleanup level. DOE = U.S. Department of Energy.</p>	<p>IC = institutional control. OU = operable unit. ROD = record of decision. Tri-Party Agreement = Hanford Federal Facility Agreement and Consent Order.</p>

4.10 RECORD OF DECISION FOR THE 300-FF-1 AND 300-FF-5 OPERABLE UNITS

Table 31 lists the ICs identified in *Record of Decision for the 300-FF-1 and 300-FF-5 Operable Units, Hanford Site, Benton County, Washington*, (EPA 1996b). These ICs apply to locations within the 300 GDA, which is shown in green in the inset map in the table.

<p>Table 31. Assessment of Institutional Controls Listed in <i>Record of Decision for the 300-FF-1 and 300-FF-5 Operable Units, Hanford Site, Benton County, Washington</i> (EPA 1996b). (2 sheets)</p> 	
Institutional Controls Requirement	Institutional Controls Status
<p>ICs are required to prevent human exposure to groundwater and to ensure that unanticipated changes in land use do not occur that could result in unacceptable exposure to residual contamination. DOE is responsible for establishing and maintaining land-use and access restrictions until cleanup criteria are met.</p>	<p>Access to groundwater is controlled through the excavation permitting process. Access and use of groundwater wells is managed by CHPRC. Land-use requests for the Hanford Site are managed in accordance with the DOE/EIS-0222, <i>Hanford Comprehensive Land Use Plan (CLUP) Final Environmental Impact Statement (HCP EIS)</i>. Access to the 300 Area is controlled by signage and/or fences (see sections 2.6.3 and 3.1).</p>

Table 31. Assessment of Institutional Controls Listed in *Record of Decision for the 300-FF-1 and 300-FF-5 Operable Units, Hanford Site, Benton County, Washington* (EPA 1996b). (2 sheets)



Institutional Controls Requirement	Institutional Controls Status
<i>ICs include placing written notification of the remedial action in the facility land-use master plan.</i>	The HCP EIS identifies the institutional controls plan as an implementing control for the HCP EIS. The institutional controls plan, DOE/RL-2001-41, <i>Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions</i> , Rev. 8, lists the CERCLA decision documents for the remedial actions, along with their associated ICs.
<i>DOE will prohibit any activities that would interfere with the remedial activity without EPA concurrence.</i>	No activities that interfere with the remedial activity have been identified.
<i>In addition, measures acceptable to EPA that are necessary to ensure the continuation of these restrictions will be taken before any transfer or lease of the property. A copy of the notification will be given to any prospective purchaser/ transferee before any transfer or lease. DOE will provide EPA with written verification that these restrictions have been put in place.</i>	No land was transferred or leased from the area covered by the ROD in FY 2018.

DOE = U.S. Department of Energy. FY = fiscal year.
 CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act of 1980. IC = institutional control.
 EPA = U.S. Environmental Protection Agency. MSA = Mission Support Alliance, LLC.
 ROD = record of decision.
 UMM = unit managers meeting.

4.11 HANFORD SITE 300 AREA RECORD OF DECISION FOR 300-FF-2 AND 300-FF-5, AND RECORD OF DECISION AMENDMENT FOR 300-FF-1

Table 32 lists the ICs identified in *Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2013a). These ICs apply to locations within the 300 GDA, which is shown in green in the inset map in the table.

Table 32. Assessment of Institutional Controls Listed in *Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2013b).
(4 sheets)



Institutional Controls Requirement	Institutional Controls Status
<i>ICs are required before, during and after the active phase of remedial action implementation where ICs are needed to protect human health and the environment. ICs are used to control access to residual contamination in soil and groundwater above standards for unlimited use and unrestricted exposure.</i>	ICs required to control access to residual contamination in soil and groundwater above standards for unlimited use and unrestricted exposure are in place.
<i>No later than 180 days after the ROD is signed, DOE shall update the Sitewide Institutional Controls Plan to include the ICs required by this ROD and specify the implementation and maintenance actions that will be taken, including periodic inspections. The revised Sitewide Institutional Controls Plan shall be submitted to EPA and the Washington State Department of Ecology (Ecology) for review and approval as a Tri-Party Agreement primary document. The DOE shall comply with the Sitewide Institutional Controls Plan as updated and approved by EPA and Ecology.</i>	The Sitewide Institutional Control Plan was revised within 180 days and submitted to EPA and Ecology for review and approval. The approved plan was published as DOE/RL-2001-41, Rev. 7, in May 2014.
<i>Activities that would disrupt or lessen the performance of any component of the remedies are prohibited.</i>	No activities that would disrupt or lessen the performance of any remedy component have taken place.
<i>In the event that land is transferred out of federal ownership, deed restrictions (proprietary controls such as easements and covenants) are required that are legally enforceable against subsequent property owners.</i>	No land was transferred out of federal ownership from the area covered by the ROD in FY 2018.
<i>In the event of any unauthorized access (e.g. trespassing), DOE shall report such incidents to the Benton County Sheriff's Office for investigation and evaluation of possible prosecution.</i>	Trespassing incidents are reported to the Benton County Sheriff's Office (see section 3.2).
<i>The DOE shall report on the effectiveness of ICs for 300-FF-2 and 300-FF-5 in an annual report, or on an alternative reporting frequency specified by the lead regulatory agency. Such reporting may be for 300-FF-2 and 300-FF-5 alone or may be part of the Hanford Sitewide ICs report.</i>	DOE conducts an annual assessment on the implementation and effectiveness of the ICs, which is reported every September at the unit managers meeting.

Table 32. Assessment of Institutional Controls Listed in *Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2013b).
(4 sheets)



Institutional Controls Requirement	Institutional Controls Status
<p><i>The IC performance objectives are required to be met as part of this remedial action. Land-use controls will be maintained until CULs are achieved and concentrations of hazardous substances are at such levels to allow for unlimited use and unrestricted exposure and EPA authorizes the removal of restrictions.</i></p>	<p>Land-use requests for the Hanford Site are managed in accordance with DOE/EIS-0222, <i>Hanford Comprehensive Land Use Plan (CLUP) Final Environmental Impact Statement (HCP EIS)</i>. Use of the Hanford Site is controlled through the site evaluation and excavation permitting processes. DOE/RL-2001-41, <i>Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions</i>, Rev. 8, maintains the list of ICs.</p>
<p><i>Measures that are necessary to ensure continuation of ICs shall be taken before any lease or transfer of any land subject to ICs. DOE will provide notice to Ecology and EPA at least 6 months before any transfer or sale of land subject to ICs so that the lead regulatory agency can be involved in discussions to ensure that appropriate provisions are included in the transfer terms or conveyance documents to maintain effective ICs. If it is not possible for DOE to notify Ecology and EPA at least 6 months before any transfer or sale, DOE will notify Ecology and EPA as soon as possible, but no later than 60 days before the transfer or sale of any property subject to ICs. In addition to the land transfer notice and discussion provisions, DOE further agrees to provide Ecology and EPA with similar notice, within the same time frame, as to federal-to-federal transfer of property. DOE shall provide a copy of the executed deed or transfer assembly to Ecology and EPA.</i></p>	<p>No land was leased or transferred from the area covered by the ROD in FY 2018.</p>
<p><i>DOE shall notify EPA and Ecology immediately upon discovery of any activity inconsistent with the specific ICs.</i></p>	<p>No activities inconsistent with the ICs have been discovered.</p>

Table 32. Assessment of Institutional Controls Listed in *Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2013b).
(4 sheets)



Institutional Controls Requirement	Institutional Controls Status
<p><i>Exposure to contamination deeper than 4.6 m (15 ft) bgs is not anticipated. Where contamination at depth exceeds the residential or industrial use CULs, ICs are required to ensure future activities do not bring this contamination to the surface or otherwise result in exposure to contaminant concentrations that exceed the CULs.</i></p>	<p>Excavation at the locations with deep-zone ICs is controlled by the excavation permitting process. Each WIDS site with this IC was assessed in FY 2018. Excavation permit DAN14-0149, Rev. 3, was issued to perform uranium sequestration activities in the deep vadose zone at the vicinity of the 316-2 pond and 316-5 trenches, including the location of the 300-50 site. The project will install numerous boreholes, wells, piezometers, and subsurface infiltration lines, and was approved by DOE and EPA in the applicable RDR/RAWP and SAP. This excavation is authorized and the IC has been maintained. No other excavations into the deep zone occurred during the assessment period at these locations.</p>
<p><i>The DOE will prevent the development and use of property that does not meet residential CULs at the 300 Area Industrial Complex and 618-11 (figure 10) for other than industrial uses, including use of property for residential housing, elementary and secondary schools, childcare facilities and playgrounds.</i></p>	<p>Land-use requests for the Hanford Site are managed in accordance with DOE/EIS-0222, <i>Hanford Comprehensive Land Use Plan (CLUP) Final Environmental Impact Statement</i> (HCP EIS). All site evaluation requests for the 300 Area in FY 2018 were consistent with industrial land uses.</p>
<p><i>Signage and access control to waste sites with contamination above CULs will be provided.</i></p>	<p>The signage (see section 2.6.3) and the access controls (see section 3.1) are in place and are being maintained.</p>
<p><i>DOE shall employ and maintain an excavation permit program for protection of human health against unacceptable exposure, and protection of environmental and cultural resources.</i></p>	<p>The DOE excavation permit program, as defined in DOE-0344, <i>Hanford Site Excavating, Trenching and Shoring Procedure</i>, is in place.</p>
<p><i>Prevent enhanced recharge in the 300 Area Industrial Complex and 618-11 over or near waste sites with soil concentration at any depth that exceed residential (irrigation-based) groundwater and surface water protection CULs until the CULs are achieved. Enhanced recharge controls are no irrigation or landscape watering, control drainage from low permeability areas including paved parking lots or buildings, and prevent bare gravel or bare sand covers.</i></p>	<p>Enhanced recharge has been evaluated for the individual waste sites with soil concentrations above the specified CULs. Drainage and potential sources of enhanced recharge (e.g., irrigation, landscape watering) are prevented.</p>

Table 32. Assessment of Institutional Controls Listed in *Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2013b).
(4 sheets)



Institutional Controls Requirement	Institutional Controls Status
<i>Administrative controls limiting 300-FF-5 groundwater access and use in a manner that is protective of human health where groundwater is above CULs.</i>	Access to groundwater is controlled through the excavation permitting process. Access and use of groundwater wells is managed by CHPRC.

- | | | | |
|-------|--|----------|--|
| CHPRC | = CH2M HILL Plateau Remediation Company. | IC | = institutional control. |
| CUL | = clean up level. | MSA | = Mission Support Alliance, LLC. |
| DOE | = U.S. Department of Energy. | RDR/RAWP | = remedial design report/remedial action work plan |
| EPA | = U.S. Environmental Protection Agency | SAP | = sampling and analysis plan. |
| FY | = fiscal year. | | |

4.12 RECORD OF DECISION FOR THE USDOE HANFORD 1100 AREA

The ICs identified in *Record of Decision for the USDOE Hanford 1100 Area* (EPA, 1993) are listed in Table 33. The only portion of these operable units where ICs still apply is the HRD site, which is shown in green in the inset map in Table 4-12.

Table 33. Assessment of Institutional Controls Listed in *Record of Decision for the USDOE Hanford 1100 Area* (EPA 1993).
(2 sheets)



Institutional Controls Requirement	Institutional Controls Status
<i>The U.S. Department of Energy will control access and use of the Site for the duration of the cleanup, including restrictions on the drilling of new groundwater wells in the plume or its path will be enforced until the remedial action objectives have been attained.</i>	The groundwater remedial action objectives have been attained. TCE concentrations have met cleanup goals in all three 1100-EM-1 compliance wells since 2001. Data from thirteen years of subsequent sampling confirm that concentrations are stable at levels well below the cleanup goal. No further groundwater monitoring is needed for 1100-EM-1 (TPA-CN-679, “TPA Change Notice for PNNL-12220, Sampling and Analysis Plan Update for Groundwater Monitoring 1100-EM-1”).

<p>Table 33. Assessment of Institutional Controls Listed in <i>Record of Decision for the USDOE Hanford 1100 Area</i> (EPA 1993). (2 sheets)</p> 	
Institutional Controls Requirement	Institutional Controls Status
<p><i>The U.S. Department of Energy will record a notation on the deed to the Horn Rapids Landfill property as specified in the asbestos National Emission Standards for Hazardous Air Pollutants standards.</i></p>	<p>The Notice in Deed was recorded by the Benton County Auditor in April 1997 (Benton County Notice in Deed for Horn Rapids Landfill-Notice in Deed recorded date by Benton County Auditor April 18, 1997; File No. 1997-008784).</p>

TCE = Trichloroethylene.

4.13 SUPERFUND SITE FINAL CLOSEOUT REPORT, U.S. DEPARTMENT OF ENERGY HANFORD 1100 AREA

Table 34 lists the ICs identified in *Superfund Site Final Closeout Report, U.S. Department of Energy Hanford 1100 Area, Richland, Washington* (DOE 1996). These ICs apply to the HRD site, which is shown in green in the inset map in the table.

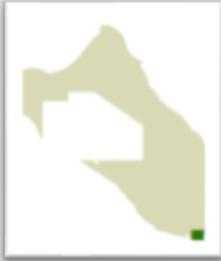
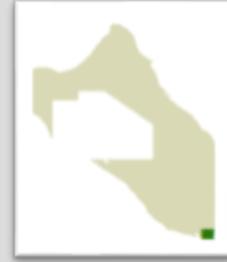
<p>Table 34. Assessment of Institutional Controls Listed in <i>Superfund Site Final Closeout Report, U.S. Department of Energy Hanford 1100 Area, Richland, Washington</i> (DOE 1996)a. (2 sheets)</p> 	
Institutional Controls Requirement	Institutional Controls Status
<p><i>Plans are in place for the U.S. Department of Energy to inspect and maintain the integrity of the cap and fencing at the Horn Rapids Landfill.</i></p>	<p>The integrity of the cap and fencing at the Horn Rapids Landfill is inspected on an annual basis.</p>
<p><i>Continued groundwater monitoring around the Horn Rapids Landfill is necessary to verify the modeled contaminant attenuation predictions and to evaluate the need for active remedial measures.</i></p>	<p>Groundwater monitoring for the Horn Rapids Landfill has been discontinued. TCE concentrations have met cleanup goals in all three 1100-EM-1 compliance wells since 2001. Data from 13 years of subsequent sampling confirm that concentrations are stable at levels well below the cleanup goal. No further groundwater monitoring is needed for 1100-EM-1 (TPA-CN-679, "TPA Change Notice for PNNL-12220, Sampling and Analysis Plan Update for Groundwater Monitoring 1100-EM-1").</p>

Table 34. Assessment of Institutional Controls Listed in *Superfund Site Final Closeout Report, U.S. Department of Energy Hanford 1100 Area, Richland, Washington* (DOE 1996)a. (2 sheets)



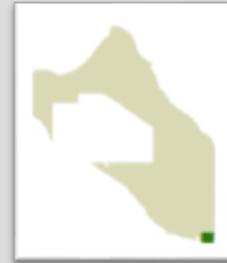
Institutional Controls Requirement	Institutional Controls Status
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TCE = trichloroethylene.

4.14 EXPLANATION OF SIGNIFICANT DIFFERENCES, USDOE HANFORD 1100 AREA

Table 35 lists the ICs identified in *Explanation of Significant Differences, USDOE Hanford 1100 Area, Hanford Site, Benton County, Washington* (EPA 2010a). These ICs apply to the HRD site, which is shown in green in the inset map in the table.

Table 35. Assessment of Institutional Controls Listed in *Explanation of Significant Differences, USDOE Hanford 1100 Area, Hanford Site, Benton County, Washington* (EPA 2010a). (2 sheets)



Institutional Controls Requirement	Institutional Controls Status
<i>DOE is responsible for implementing, maintaining, reporting on, and enforcing the IC and land use control. Although DOE may later transfer these procedural responsibilities to another party by contract, property transfer agreement, or through other means, DOE shall retain ultimate responsibility for remedy integrity and ICs in perpetuity.</i>	DOE currently maintains ownership of the Horn Rapids Landfill and all associated responsibilities.
<i>DOE shall comply with the Sitewide Institutional Controls Plan as approved by EPA and Ecology.</i>	The ICs are maintained as required by DOE/RL-2001-41, <i>Sitewide Institutional Control Plan</i> , Rev. 8, approved by EPA and Ecology.
<i>DOE will control access to the landfill property, including maintaining the fencing and signs, to prevent disturbance of the landfill contents. The ICs are required to be maintained at the fenced area, which is shown in Figure A4-1.</i>	Access to the landfill is controlled. The fencing and signs are assessed on an annual basis (see Section 2.7.3). The ICs continue to be maintained at the fenced area.

5.0 SUMMARY

This section summarizes the status and observations resulting from this year’s IC assessment and the related ongoing efforts. Figure 28 illustrates the types and numbers of site-specific ICs that the MSA LTS Program assessed in FY 2018. Because last year’s assessment was the first year the entire River Corridor was assessed by MSA, the results of the 2017 assessment served as a basis for this year’s assessment. As described in Section 2.0, the ICs for WIDS sites assigned to MSA were observed to be in place, as required.

Updated methods for assessing the enhanced recharge ICs were implemented as described in section 1.4. Implementation included evaluating stormwater drainage during multiple inclement weather events at 21 sites and the condition of temporary surface barriers. As described in Section 2.6, Figure 29 shows examples of enhanced recharge-related observations from the FY 2018 assessment. The MSA LTS Program also worked with 300 Area facility owners to identify additional improvements to be implemented for fire testing procedures (e.g., fire suppression system testing), drainage control, stormwater management, and ongoing surface barrier

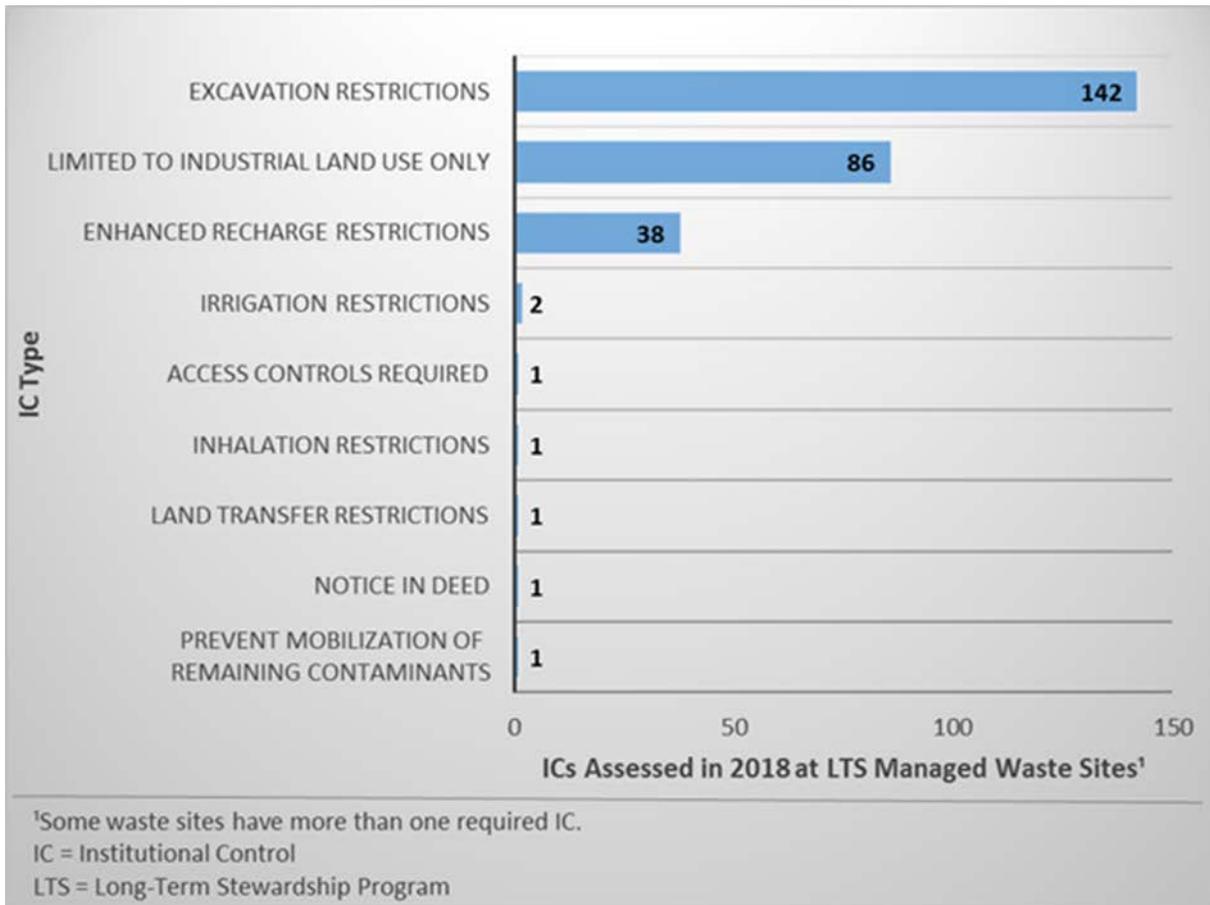


Figure 28. Site-Specific ICs Assessed by Long-Term Stewardship Program in FY 2018.

maintenance that will help to support the enhanced recharge IC. Some of these proposed improvements (e.g., snow staging areas and maintenance of the 300-86 WIDS site, stormwater drainage system) have been implemented. Others will continue to be evaluated in FY 2019.

The LTS Program is also working with other contractors to integrate the reporting process for unplanned releases and spills that occur over WIDS sites managed by the MSA LTS Program.

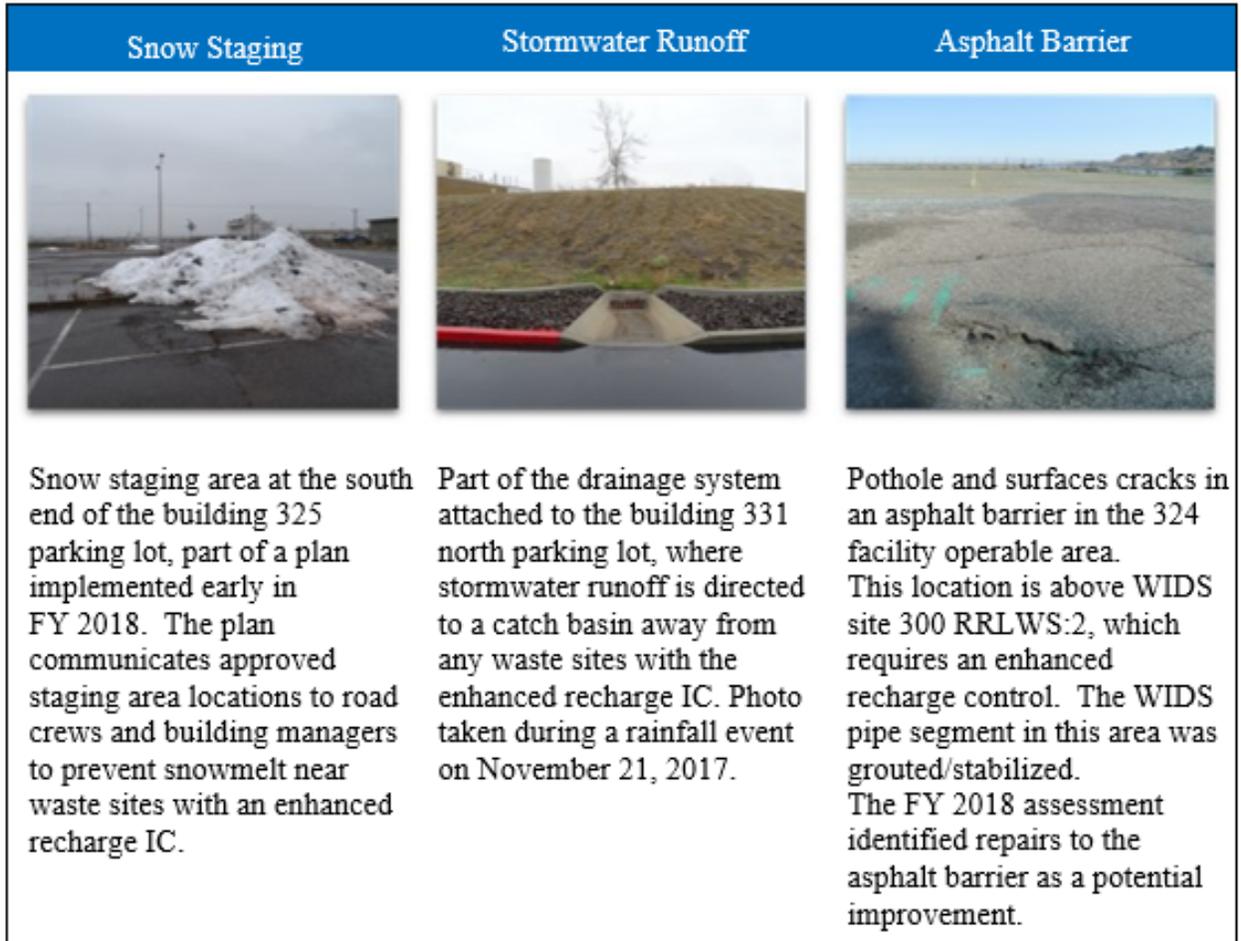


Figure 29. FY 2018 Enhanced Recharge Related Observations.

In addition, housekeeping items (e.g., occupational hazards, vegetation, animal/insect intrusions) were observed and will be tracked to disposition and/or to compare with FY 2017 and future assessments. This year several biological-related housekeeping items were revisited (i.e., insect intrusions and noxious weed frequency) that were identified in FY 2017 and will be revisited in future assessments. The team will then compare results after 3 consecutive years to identify any significant changes to locations, sizes, and frequency of observations. Figure 31 shows an example of the locations revisited during this year's field assessment. The MSA LTS Program also has been working with the MSA Ecological Monitoring and Environmental Surveillance department to determine a path forward for managing noxious weeds and monitoring habitats on LTS WIDS sites with ICs.

Site-specific signage observed during the IC assessment but not related to IC requirements will be addressed separately and individually, in accordance with applicable requirements. As described in section 3.0, Sitewide ICs, including “No Trespassing” signs and fencing, are in place. Several damaged Sitewide warning signs observed in FY 2017 were replaced in FY 2018 (see Figure 30). Also as described in section 3.0, three reportable trespassing incidents occurred from October 2017 to September 2018 (information regarding details of the incidents is considered official use only and is not discussed in this report). As described in section 4.0, the ICs defined in each CERCLA decision document, which may affect one or more GDAs, also are in place. The ICs defined in the CERCLA decision documents include access controls, land-use-management ICs, groundwater-management ICs and waste-site-information-management ICs. Even though many of the ICs are similar, each IC was assessed separately for the specific GDA to which it applies.



Damage observed during 2017 field assessments



Repairs observed in FY2018

Figure 30. Sign at the West Entrance of the 100F Geographic Decision Area.



Figure 31. Example of Insect Intrusions in the 100-H GDA at the 1607-H2 WIDS Site Observed in 2017 and Revisited in 2018.

6.0 REFERENCES

- 40 CFR 61.151, “Standard for Inactive Waste Disposal Sites for Asbestos Mills and Manufacturing and Fabricating Operations,” *Code of Federal Regulations*, as amended.
- Benton County Notice in Deed for Horn Rapids Landfill-Notice in Deed recorded date by Benton County Auditor April 18, 1997; File No. 1997-008784.
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, 42 USC 9601, et seq.
- DAN14-0149, 2015, Hanford Site Excavation Permit in 300 Area, Northern Portion, Rev 2.
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- DOE-0344, 2017, “*Hanford Site Excavating, Trenching, and Shoring Procedure*,” Rev 4-1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
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- DOE/EIS-0222, 1999, *Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
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- DOE-RL, 2011a, *100 Area “Plug-In” and Candidate Sites for Fiscal Year 2010 – Annual Listing of Waste Sites Plugged into the Remove, Treat and Dispose Remedy in the 1999 Interim Action Record of Decision for the 100 Area*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
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- 1999 Interim Action Record of Decision for the 100 Area Remaining Sites*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-96-17, 2009, *Remedial Design Report/Remedial Action Work Plan for the 100 Area*, Rev. 6, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2001-41, 2002, *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2001-41, 2014, *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions*, Rev. 7, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2001-41, 2015, *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions*, Rev. 8, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2005-93, 2013, *Remedial Design Report/Remedial Action Work Plan for the 100-N Area*, Rev. 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2014-13-ADD1, 2016, *Remedial Design Report/Remedial Action Work Plan for 300-FF-2 Soils*, Rev. 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
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- EPA, 2000c, *Explanation of Significant Differences for Hanford 300 Area, 300-FF-1 Operable Unit, Benton County, Washington*, EPA/ESD/R-10-00/505, U.S. Environmental Protection Agency, Region 10, Richland, Washington.
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- Waste Site Reclassification Form, Control Number 2012-101, 2013, with attachment, *Remaining Sites Verification Package for the 100-D-50:1 Emergency Discharge Pipeline*, Rev. 0, Washington State Department of Ecology and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2012-110, 2013, with attachment, *Remaining Sites Verification Package for the UPR-300-4, UN-300-4, Contaminated Soil Beneath the 321 Building Waste Site*, Rev. 0, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2012-120, 2013, with attachment, *Remaining Sites Verification Package for the 300-15:2, 300 Area Process Sewer North of Apple Street*, Rev. 0, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2013-007, 2013, with attachment, *Remaining Sites Verification Package for the 300-46, Soil Contamination and French Drains Surrounding 3706 Building Waste Site*, Rev. 0, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form, Control Number 2013-011, 2013, with attachment, *Remaining Sites Verification Package for the 100-D-50:6, 183-DR Clearwell Pipelines*, Rev. 0, Washington State Department of Ecology and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form, Control Numbers 2013-015, 2013-016, and 2013-017, 2013, with attachment, *Remaining Sites Verification Package for the 116-N-2; 1310-N Chemical Waste Storage Tank; 1310-N Waste Storage Area; The Golf Ball, UPR-100-N-5; 116-N-2 Radioactive Chemical Waste Treatment Storage Facility; 1310-N Chemical Waste Storage Tank Leak; UN-100-N-5, UPR-100-N-25; UN-100-N-25; Uncontrolled Venting of 1310-N Tank Waste Sites*, Rev. 0, Washington State Department of Ecology and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form, Control Number 2013-030, 2013, with attachment, *Remaining Sites Verification Package for the 124-N-2, 124-N-2 Septic Tank; 100-N Sanitary Sewer System No. 2 Waste Site*, Rev. 0, Washington State Department of Ecology and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2013-033, 2013, with attachment, *Remaining Sites Verification Package for the 300-257, 309 Process Sewer to River*, Rev. 0, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

- Waste Site Reclassification Form, Control Numbers 2013-065, 2013-066, 2013-067, 2013-068, 2013-069, 2013-070, 2013-071, 2013-072, 2013-073, 2013-074, and 2013-075, 2013, with attachment, *Remaining Sites Verification Package for the 100-N-31, 100-N-32, 100-N-38, 100-N-61:3, 100-N-64:3, 100-N-68, UPR-100-N-3, UPR-100-N-7, UPR-100-N-10, UPR-100-N-12, and UPR-100-N-39 Waste Sites*, Rev. 0, Washington State Department of Ecology and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form, Control Number 2013-076, 2013, with attachment, *Remaining Sites Verification Package for the 118-N-1, 1303-N Spacer Silos Waste Site*, Rev. 0, Washington State Department of Ecology and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2013-117, 2015, with attachment, *300-15:4, 3906 North Side and 3906-B Lift Stations Subsite*, Rev. 0, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2013-094, 2014, 118-K-1 Burial Ground, Waste Site Code 118-K-1, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-011, 2014, 300-53, Unplanned Release East Side of 303-G, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-012, 2014, 300-253, 384-W Original Brine Pit, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-017, 2014, 300-33, 306W Metal Fabrication Development Building Releases; 300-41, 306E Neutralization Tank; 300-110, 333 Building Stormwater Runoff; 300-256, 306E Fabrication and Testing Laboratory Releases, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-018, 2014, 303-M SA, 303-M Storage Area; 303-M UOF, 303-M Uranium Oxide Facility; UPR-300-17, UN-300-17, Metal Shavings Fire; UPR-300-46, Contamination North of 333 Building; 333 ESHWSA, 333 East Side HWSA, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-019, 2014, 331 LSLDF, 331 LSL Drain Field, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-028, 2014, 300-6, 366/366A Fuel Oil Bunkers; 300-123, 366 Building Fuel Oil Bunker Loading Station Steam Condensate French Drain; 300-268, 3741 Building Foundation; 300-273, Fuel Oil Transfer Pipeline; UPR-300-42, 300 Area Powerhouse Fuel Oil Spill, with attachment, *Evaluation of 300 Area Waste Sites*, Rev. 0, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

- Waste Site Reclassification Form 2014-029, 2014, 300-16:1, Utility Pole Northwest of the 314 Building, with attachment, *Evaluation of 300 Area Waste Sites*, Rev. 0, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-030, 2014, 300-24, Soil Contamination at the 314 Metal Extrusion Building; 300-80, 314 Building Stormwater Runoff and Steam Condensate; 300-218, 314, 314A, and 314B Buildings; 300-16:2, Utility Pole East of 314 Building, with attachment, *Evaluation of 300 Area Waste Sites*, Rev. 0, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-031, 2014, 300-28, Contamination Found Along Ginko Street, Solid Waste Near 303-G Building; 300-43, Unplanned Release Outside the 304 Building; 300-48, Thorium Oxide and Fuel Fabrication Chemical Wastes Around 3732 Building; 300-249, 304 Building, Residual Rad Contamination; 300-16:3, Utility Pole Southeast of 314 Building, with attachment, *Evaluation of 300 Area Waste Sites*, Rev. 0, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-034, 2014, 300-46, Soil Contamination and French Drains Surrounding 3706 Building, with attachment, *Evaluation of 300 Area Waste Sites*, Rev. 0, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-035, 2014, 300-219, 300 Area Waste Transfer Line; 300-224, WATS and U-Bearing Piping Trench; 333 WSTF, West Side Tank Farm, with attachment, *Evaluation of 300 Area Waste Sites*, Rev. 0, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-036, 2014, 300-251, Unplanned Release Outside the 303-K Building, with attachment, *Evaluation of 300 Area Waste Sites*, Rev. 0, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-037, 2014, 300-257, 309 Process Sewer to River, with attachment, *Evaluation of 300 Area Waste Sites*, Rev. 0, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-039, 2014, UPR-300-38, Soil Contamination Beneath the 313 Building; 313 ESSP, 313 East Side Storage Pad; 300-270, Unplanned Release at 313 Building, with attachment, *Evaluation of 300 Area Waste Sites*, Rev. 0, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-040, 2014, 300-274, Surface Debris, with attachment, *Evaluation of 300 Area Waste Sites*, Rev. 0, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

- Waste Site Reclassification Form 2014-045, 2014, 300-286, Three 300 Area Potentially Contaminated French Drain/Drywells, with attachment, *Evaluation of 300 Area Waste Sites*, Rev. 0, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-049, 2014, UPR-300-4, Contaminated Soil Beneath the 321 Building, with attachment, *Evaluation of 300 Area Waste Sites*, Rev. 0, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form, Control Number 2014-088, 2014, with attachment, *Remaining Sites Verification Package for the 100-N-84:2, 100-N Area Fuel and Foam Pipelines Subsite*, Rev. 0, Washington State Department of Ecology and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-100, 2014, 300-284, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2015-010, 2015, 300-9, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form, Control Number 2015-016, 2015, with attachment, *Remaining Sites Verification Package for the 100-D-86:3, 105-DR Fan Room Sewer Pipelines Subsite*, Rev. 0, Washington State Department of Ecology and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2015-030, 2015, 300-214:1, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2015-031, 2015, 300 RLWS:1, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2015-032, 2015, 300 RLWS:2, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2015-033, 2015, 300 RRLWS:1, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2015-047, 2015, 300-15:3, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2015-048, 2015, 300-34, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2015-049, 2015, 316-3, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

- Waste Site Reclassification Form 2015-050, 2015, 300-263, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2015-054, 2015, 300-15:6, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2015-069, 2015, 618-1, Solid Waste Burial Ground No. 1, 318-1, 300 Area Burial Ground No. 1, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2015-071, 2015, 618-2, Solid Waste Burial Ground No. 2, 318-2, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2015-077, 2015, 16-F-14, 107-F Retention Basin, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2015-078, 2015, 100-F-10, French Drain at East End of 105-F Storage Room (Southeast Corner); 100-F-19:1, 100-F Reactor Cooling Water Effluent Underground Pipelines (North Group); 100-F-19:2, 100-F Reactor Cooling Water Effluent Underground Pipelines (South Group); 100-F-19:3, 100-F Reactor Cooling Water Effluent Underground Pipelines (West Group); 100-F-29, 100-F Experimental Animal Farm Process Sewer Pipelines; 100-F-34, Biology Facility French Drain; 116-F-2, 107-F Liquid Waste Disposal Trench; 116-F-6, 1608-F Liquid Waste Disposal Trench; 116-F-9, Animal Waste Leaching Trench; 116-F-12, 148-F French Drain; 118-F-8:3, 105-F Reactor Fuel Storage Basin Underlying Soils; 118-F-8:4, 105-F Fuel Storage Basin West Side Adjacent and Side Slope Soils; UPR-100-F-1, 141 Building Sewer Line Spill, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2015-079, 2015, 118-F-6, PNL Solid Waste Burial Ground, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2015-081, 2015, 300-15:2, 300 Area Process Sewer North of Apple Street, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington

APPENDIX A EXAMPLES OF COMPLETED ASSESSMENT FORMS

Figure A-1 is an example of a completed assessment form for a grouping of WIDS sites with a similar institutional control in the 100-N Area.

Figure A-2 is an example of a completed assessment form for a grouping of WIDS sites with similar institutional controls in the 300 Area.

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Figure A-1. Example of a Completed Assessment Form for a Grouping of WIDS Sites with a Similar Institutional Control in the 100-N Area.

WIDS Site Institutional Control Assessment 10/18/2018

Number: LTS-WSIC-2018-0047

Basis for Assessment: DOE/RL-2001-41 *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions*

Status: Complete

Assessor: Collom, Landon (MSA)

Assessment Date: 05/23/2018

WIDS Sites:

Name	Site Names	Turnover Area	Hanford Area	Classification Status	Reclassification Status	Status
100-N-50	100-N-50, HGP SWMU 4, Turbine Oil filter Unit, Turbine oil cleaning system	100-N	100N	Accepted	Interim Closed Out	Removed
100-N-51	100-N-51, HGP Building Oil Storage Area, 100-N-51A, HGP SWMU #2	100-N	100N	Accepted	Interim Closed Out	Removed
100-N-51B	100-N-51B, HGP Building Floor Drains and Sumps, HGP SWMU #3	100-N	100N	Accepted	Interim Closed Out	Removed
UPR-100-N-37	UPR-100-N-37, HGP Transformer Yard Oil Stained Gravel (SWMU #1)	100-N	100N	Accepted	Interim Closed Out	Removed

Attendees:

Name	Organization/Role
Lucas, Jonathan G (MSA)	GPS/Mapping
Rohlfing, Deanna B (MSA)	Assessment Team Member

IC Observation:

Institutional Control: Prevent uncontrolled drilling or excavation into the lower basement of the 185N Building (below 7.6 m/25 feet).

Performance Objective: No excavation permits were issued at the location of the site.

Objective Met: Yes

Observation: No excavation permits were issued in FY 2018 at the location of the sites assessed in this assessment.

WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0047

IC Observation:

Institutional Control: Prevent uncontrolled drilling or excavation into the lower basement of the 185N Building (below 7.6 m/25 feet).

Performance Objective: No unauthorized excavation is observed.

Objective Met: Yes

Observation: No unauthorized man-made excavations were observed during the field assessment of the site area. Bio-vector activity was observed; ants (Harvester) colonies and deep rooted (skeleton knapweed) plants were observed within the site boundaries see attached map for location and photo identification information.

Additional Notes: Examples of intrusive insects/animal and deep rooted plants are tracked as potential bio-vector monitoring sites and selected sites are visited during the annual assessment to note conditions changes such as activity and recruitment rates or population changes. Not all insect/animal intrusion or invasive deep rooted plant locations were inventoried/cataloged or mapped.

WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0047

Image:

Date Taken: 05/23/2018

Historical Photo Number: DSC00054

Description: Harvester ant colony and rabbit brush. No fresh ant activity was observed.



WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0047

Image:

Date Taken: 05/23/2018

**Historical Photo
Number:**

DSC00053

Description: General site photo from near the south end of the assessment area viewing northwest towards the N-Reactor facility. Typical ground cover and vegetation of the assessment area.



WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0047

Image:

Date Taken: 05/23/2018

Historical Photo Number: DSC00051

Description: Active Harvester ant colony. For size reference a standard 12 inch ruler was placed next to the ant nest site.



WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0047

Image:

Date Taken: 05/23/2018

**Historical Photo
Number:**

DSC00050

Description: Skeleton knapweed is a non-native invasive species Class B noxious weed. See attached 2017 NAIP Aerial image map for geo-tagged photo location.



WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0047

Image:

Date Taken: 05/23/2018

**Historical Photo
Number:**

DSC00049

Description: This is a juvenile skeleton knapweed plant growing in last year's dead skeleton.



WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0047

Image:

Date Taken: 05/23/2018

**Historical Photo
Number:**

DSC00042

Description: Active harvester ant colony and juvenile knapweed.



WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0047

Image:

Date Taken: 05/23/2018

**Historical Photo
Number:**

DSC00052

Description: South end of the site area looking east. There are several juvenile knapweed visible in this portion of the site ground cover vegetation.



WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0047

Image:

Date Taken: 05/23/2018

Historical Photo Number: DSC00048

Description: Several types of knapweed weed are visible in this geo-tagged photograph.



WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0047

Image:

Date Taken: 05/23/2018

**Historical Photo
Number:**

DSC00047

Description: Another ant colony appears active as the entrance and exit holes are all still open.



WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0047

Image:

Date Taken: 05/23/2018

**Historical Photo
Number:**

DSC00045

Description: Knapweed and harvester ant colony see 2017 imagery map for location information.



WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0047

Image:

Date Taken: 05/23/2018

Historical Photo Number: DSC00043

Description: Northwest end of the site viewing south east at the site assessment area ground cover and vegetation.



WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0047

General Observations: No significant subsidence/erosion were observed. No immediate hazards were identified/observed requiring expedited response.

Comments: Knapweeds are robust weedy plants. Their leaves, spiny in some species, are usually deeply divided into elongated lobes at least in the plants' lower part, becoming entire towards the top. The "flowers" (actually pseudanthium inflorescences) are diverse in colour, ranging from intense blues, reds and yellows to any mixture of these and lighter shades towards white. Often, the disk flowers are much darker or lighter than the ray flowers, which also differ in morphology and are sterile. Each pseudanthium sits atop a cup- or basket-like cluster of scaly bracts, hence the name "basketflowers". Many species, in particular those inhabiting more arid regions, have a long and strong taproot. Certain knapweeds have a tendency to dominate large stretches of landscape. Certain knapweeds have a tendency to dominate large stretches of landscape. Due to their habit of dominating ecosystems under good conditions, many *Centaurea* species can become invasive weeds in regions where they are not native. In parts of North America, diffuse knapweed (*C. diffusa*), spotted knapweed (*C. maculosa*) and yellow starthistle (*C. solstitialis*) cause severe problems in agriculture due to their uncontrolled spread.
<https://en.wikipedia.org/wiki/Centaurea>

Red harvester ant nests are characterized by a lack of plant growth and small pebbles surrounding the entrance to the tunnel, which usually descends at a pronounced angle. Hulls of seeds may be found scattered around the nest. In grassland areas, such as ranches, the lack of plant life makes red harvester ant colonies very easy to spot, and where they are very plentiful, they may make serious inroads into the grazing available to livestock.

The mounds are typically flat and broad, 0 to 100 mm (0.0 to 3.9 in) high, and 300 to 1,200 mm (12 to 47 in) in diameter. Even larger denuded areas have been reported, on the order of 10 m² (110 sq ft). Three to eight trails typically lead away from the mound, like "arms". These trails are used by ants to collect and bring food back to the mound. "Scout" ants are the first ones out of the mound every morning. They seek food, and mark their path as they return to the mound to alert the worker ants. The worker ants follow the scent trail and collect the food. Other worker ants clean, extend, and generally tend to the mound, the queen, and the brood. All the ants in the colonies are females apart from the winged males produced in the breeding season. Red harvester ants are eusocial insects, characterized by a high level of cooperation and an organized division of labor. The worker caste is sterile. As with most ant species, reproduction is performed by a mating caste that consists of winged alates (reproductives) that reside in the nest until weather permits them to fly away and mate. After copulation, the male usually dies, while the now-fertilized queen returns to the ground to search for a suitable nesting site. Once she has chosen a site, she sheds her wings and begins to reproduce, creating a new colony. She produces "worker ants" for 1–20 years until her death. Some queens have been known to live up to 30 years in the wild.

https://en.wikipedia.org/wiki/Red_harvester_ant

Certifier:

Collom, Landon (MSA)

Date Certified:

10/18/2018

WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0047

Location Map:



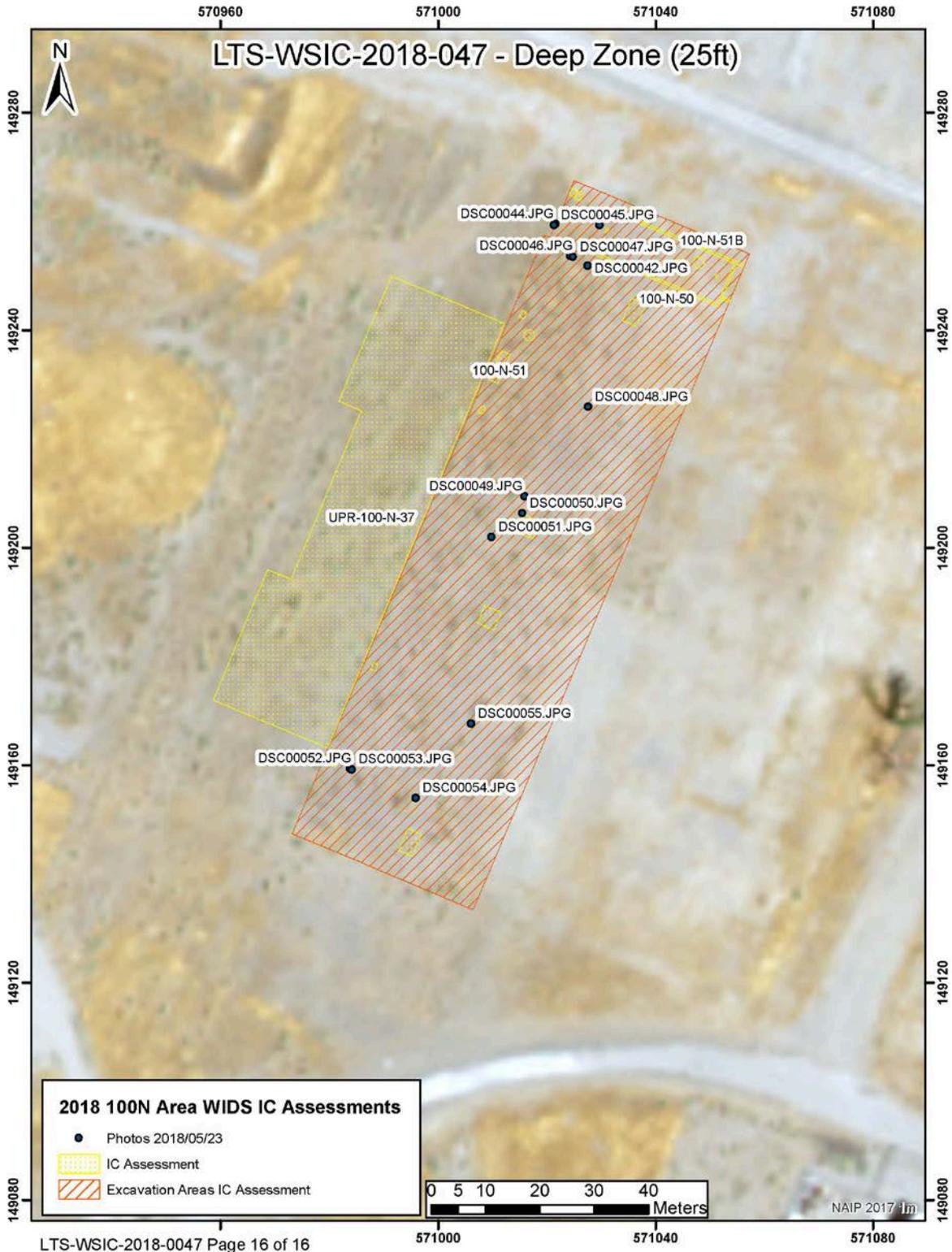


Figure A-2. Example of a Completed Assessment Form for a Grouping of WIDS Sites with Similar Institutional Controls in the 300 Area.

WIDS Site Institutional Control Assessment 10/18/2018

Number: LTS-WSIC-2018-0068

Basis for Assessment: DOE/RL-2001-41 *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions*

Status: Complete

Assessor: Collom, Landon (MSA) **Assessment Date:** 05/30/2018

WIDS Sites:

Name	Site Names	Turnover Area	Hanford Area	Classification Status	Reclassification Status	Status
300-110	300-110, 333 Building Stormwater Runoff, Miscellaneous Stream #456	300	300	Accepted	Final Closed Out	Removed
303-M SA	303-M SA, 303-M Storage Area, 303 -M Building Storage Area	300	300	Accepted	Final Closed Out	Removed
303-M UOF	303-M UOF, 303-M Uranium Oxide Facility	300	300	Accepted	Final Closed Out	Removed
333 ESHWSA	333 ESHWSA, 333 East Side HWSA, 333 Building East Side Hazardous Waste Storage Area	300	300	Accepted	Final Closed Out	Removed

Attendees:

Name	Organization/Role
Lucas, Jonathan G (MSA)	GPS/Mapping
Rohlfing, Deanna B (MSA)	Assessment Team Member

IC Observation:

Institutional Control: Limited to industrial use only

Performance Objective: All land use requests in this area are limited to industrial uses only.

Objective Met: Yes

Observation: All land use requests for the 300 Area in FY 2018 were consistent with industrial use.

Additional Notes: See attached e-mail reference regarding site evaluations.

WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0068

IC Observation:

Institutional Control: Limited to industrial use only

Performance Objective: No non-industrial uses are observed.

Objective Met: Yes

Observation: No non-industrial uses were observed during the 5/30/2018 field assessment or in the 7/7/2018 high resolution (1 to 450 raster resolution) aerial imagery site spatial analysis see included map with field verification labeled photograph locations.

Additional Notes: There are no existing structures in the site area.

WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0068

Image:

Date Taken: 05/30/2018

Historical Photo Number: DSC00071

Description: This is near the southwest end of the site viewing east of general/typical ground cover this portion of the site. The site area has no land use present. Knapweed and bunch grasses area visible vegetation types.



WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0068

IC Observation:

Institutional Control: Prevent enhanced recharge

Performance Objective: Potential sources of enhanced recharge (irrigation, landscape watering, etc.) are limited.

Objective Met: Yes

Observation: The area was assessed on 5/30/2018 no sources of enhanced recharge were observed. The site area has no facilities. No visible sources of enhanced recharge within the site specific assessment area were observed in the 300 area 7/7/2018 high resolution (raster resolution 1 to 453) vertical aerial imagery.

Additional Notes: Everything in the assessment area is cold and dark all facilities have been removed or demolished and all waste sites have been remediated so all sources of enhanced drainage recharge were removed.

WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0068

Image:

Date Taken: 05/30/2018

Historical Photo Number: DSC00010

Description: Near northwest end of the assessment area viewing south no non industrial land uses were observed. Photo taken at the NE corner of the 618-1 site area and is typical of that site area cover. There area no observable sources of enhanced recharge visible in this or any other of the documenting photographs available. The vegetation cover has abundant amount of juvenile knapweed present.



WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0068

IC Observation:

Institutional Control: Prevent enhanced recharge

Performance Objective: Drainage is limited (stormwater, ground cover, etc.).

Objective Met: Yes

Observation: The 300 area was assessed during 4 inclement weather events and no puddling/pooling or excessive drainage was observed in this assessment area. The site terrain topography is relatively flat with no clearly visible preferential drainage pathways or apparent site slope, the area was revegetated in 2013. The overall area ground cover appeared to have equal distribution of permeable drainage material.

Additional Notes: The assessment area was systematically walked and geo-tagged photos documenting the general site terrain and vegetation ground cover condition were acquired.

No low permeability (asphalt or concrete surfaces) area to high permeability areas (gravel or bare cover) were observed during the systematic walk down assessment of the IC's area. No enhanced stormwater drainage should occur during typical natural rain or snow fall events under present conditions for this IC site area.

WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0068

Image:

Date Taken: 05/30/2018

Historical Photo Number: DSC00064

Description: From the 618-1 site viewing north towards the 618-2 site IC area, of typical ground cover in this area of the site. Rabbit brush, bunch grasses and knapweed are the dominant vegetation types visible in the photo.



WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0068

Image:

Date Taken: 05/30/2018

**Historical Photo
Number:**

DSC00066

Description: Harvester ants colony were observed on portions of the site area. One of many sites documented with geo-tagged photograph locations.



WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0068

General Observations: No significant subsidence/erosion were observed. No immediate hazards were identified/observed requiring expedited response. Photo DSC00010 shows that portion of the assessment site area that the vegetation cover has abundant amount of juvenile knapweed present. The area has insect intrusion through out the site area.

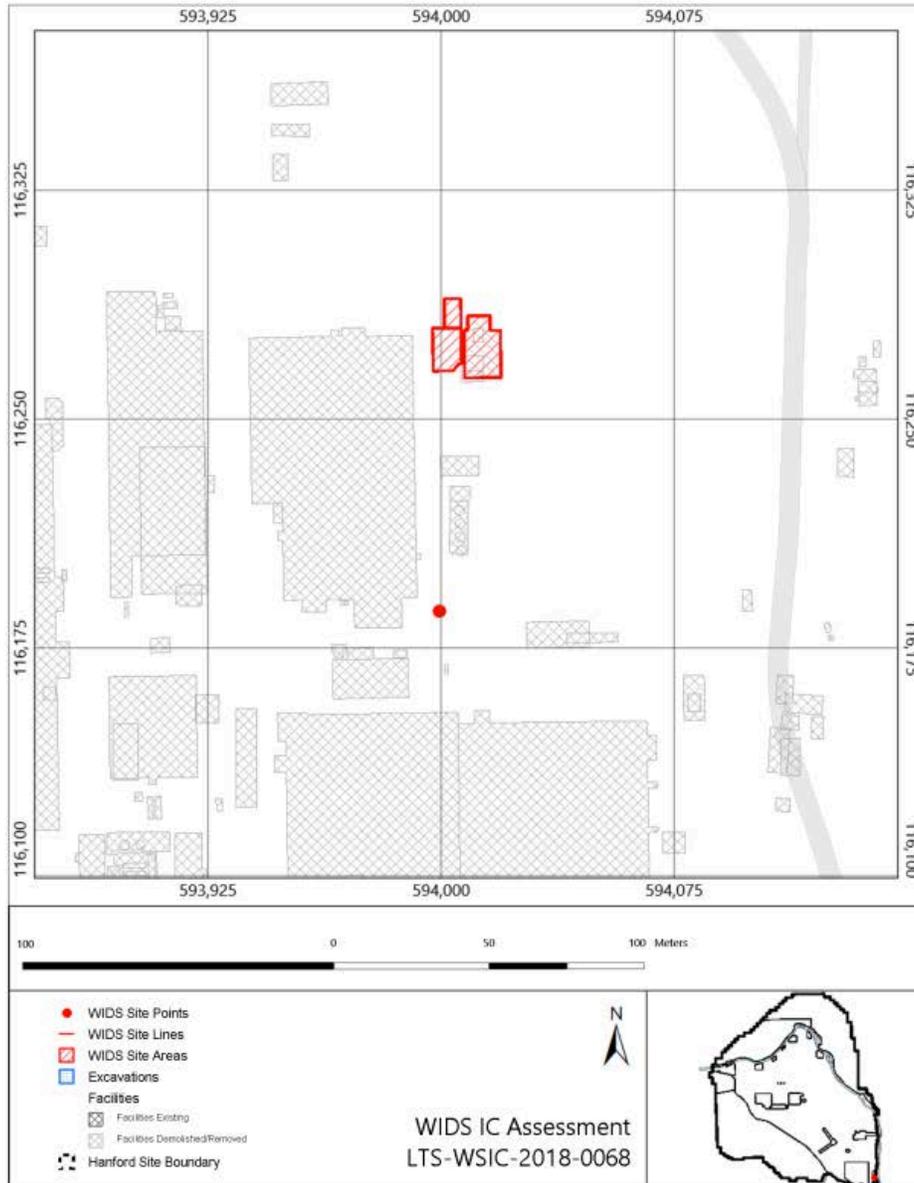
Certifier: Collom, Landon (MSA) **Date Certified:** 10/18/2018

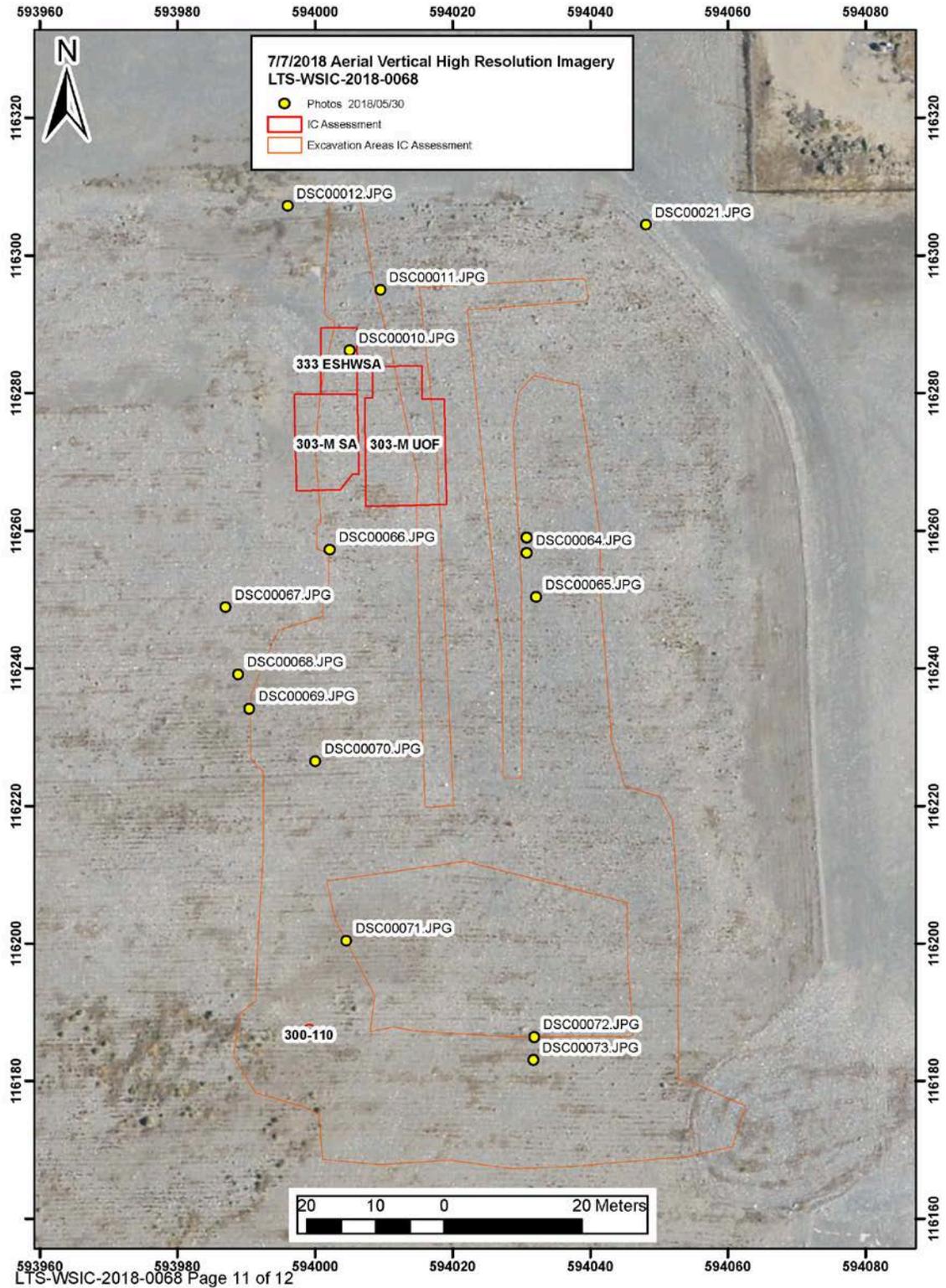
WIDS Site Institutional Control Assessment

10/18/2018

Number: LTS-WSIC-2018-0068

Location Map:





From: Harmon, Brian C
Sent: Tuesday, August 28, 2018 4:31 PM
To: Cowin, Benjamin J
Cc: Rohlfing, Deanna B; Ranade, Digambar G (Raja)
Subject: RE: Residential Land Use

Ben,
In FY18, I had **no requests** for any of the uses that you identify in your message below.
Thanks,
Brian Harmon
MSA Site Evaluations
Long Term Stewardship
373-6528

From: Cowin, Benjamin J
Sent: Tuesday, August 28, 2018 1:20 PM
To: Harmon, Brian C <Brian_C_Harmon@rl.gov>
Cc: Rohlfing, Deanna B <Deanna_B_Rohlfing@rl.gov>; Ranade, Digambar G (Raja) <Digambar_G_Raja_Ranade@rl.gov>
Subject: Residential Land Use

Brian,
In FY 2018, were there any requests to develop or use any property on the site for residential housing, elementary or secondary schools, child care facilities, or playgrounds?

Thank you,

Ben Cowin
MSA Long-Term Stewardship
(509) 372-0116

MSA-1105355.7

CONTRACT NO. DE-AC06-09RL14728

ATTACHMENT 2

Contract Deliverable CD0182
October 2018

**2018 ANNUAL SITEWIDE INSTITUTIONAL CONTROL ASSESSMENT
CH2M HILL PLATEAU REMEDIATION COMPANY**

Consisting of 14 pages,
including this cover page

**2018 ANNUAL SITEWIDE INSTITUTIONAL CONTROL ASSESSMENT
CH2M HILL PLATEAU REMEDIATION COMPANY**

Background and Introduction

The 100-K Basins Interim Remedial Action Record of Decision calls for Institutional Controls that will minimize the potential for human exposure to hazardous substances that will be addressed by the remedial action. The specific controls are identified in the work plans that implement the remedial action decision. This assessment checklist identifies the required controls and provides an evaluation of the whether the control has been implemented and whether the implementation has been effective in minimizing the potential for human exposure to hazardous substances.

Institutional Control Category	Institutional Controls Requirement	2018 Status
Entry Restrictions	Continue the current badging program and access controls for the duration of the interim action. Visitors entering the sites associated with this interim action are required to be escorted at all times.	The badging and other entry restrictions remain in place and appear to be effective.
	Utilize the onsite excavation permit process to control intrusive activities such as well drilling and excavation of soil.	The excavation permit process remains in place as an effective control.
Warning Notices	Maintain existing signs prohibiting public access.	No trespassing signs are in place along the river. Large warning signs are present at the entrance to the 100-K area and at the former location of the 181KW and 181KE buildings along the river (Figures 1 through 6). The signs are effective controls.
Miscellaneous Provision	Provide notification to the lead regulator upon discovery of any trespass incidents.	Security forces continue to patrol the area and report trespass. MSA manages this function.
Miscellaneous Provision	Report trespass incidents to the Benton County Sheriff's Office for investigation and evaluation for possible prosecution.	DOE reports trespass incidents to appropriate authorities.
Land-Use Management	Take the necessary precautions to add access restriction language to any land transfer, sale, or lease of property that the U.S. Government considers appropriate while institutional controls are compulsory. The lead regulator will have to approve any access restrictions prior to transfer, sale, or lease.	No land transfers have taken place in 100-K. The controls remain in place as managed by MSA.
Miscellaneous Provision	Until final remedy selection, institutional control requirements will not be deleted or terminated unless the lead regulator has provided written concurrence on the deletion or termination and appropriate documentation has been placed in the Administrative Record.	Institutional control requirements were modified and placed in the Administrative Record.
Miscellaneous Provision	The implementation and effectiveness of institutional controls will be evaluated and reported in accordance with DOE/RL-2001-41, Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions.	The assessment of the implementation and effectiveness of the institutional controls were evaluated and reported.
Warning Notices Entry Restrictions	Current access controls include signs along the river, non-continuous fencing, locked access to buildings containing the primary hazards, and routine security patrols.	Signs along the river are in place, buildings are locked, and there are routine security patrols. A non-continuous fence is in place. Fencing and/or signs are present at locations where access is most likely to occur.



Figure 1. Approaching Main Entrance to 100-K.



Figure 2. Signage to main entrance to 100-K.



Figure 3. Southwest fence line of 100-K.



Figure 4. West fence line at 100-K.



Figure 5. Warning signs at the former 100-KW Intake Structure.



Figure 6. Warning signs at the former 100-KE Intake Structure.



Figure 7. Taken on the North West side of the KW Reactor.



*

Figure 8. East fence line at 100-K.



Figure 9. Southeast gate entrance to 100-K.

Background and Introduction

The 200 Area Central Plateau Records of Decision calls for Institutional Controls that will minimize the potential for human exposure to hazardous substances that will be addressed by the remedial action. The specific controls are identified in the work plans that implement the remedial action decision. This assessment identifies the required controls and provides an evaluation of the whether the control has been implemented and whether the implementation has been effective in minimizing the potential for human exposure to hazardous substances.

Table 1. Institutional Controls Requirements Listed in Record of Decision for Final Remedial Action for Hanford 200 Area, 200-UP-1 Operable Unit (Required through time of completion of the remedy.)

Institutional Controls Category	Institutional Controls Requirement	2018 Status
Entry Restrictions	The DOE shall control access to 200-UP-1 OU Groundwater to prevent unacceptable exposure of humans to contaminants, except as otherwise authorized in lead regulatory agency approved documents.	No findings, access controls still in place.
Land-Use Management	Visitors entering any site areas of the 200-UP-1 OU will be required to be badged and escorted at all times.	No findings, work plans are being/have been submitted for approval.
Land-Use Management	No intrusive work shall be allowed in the 200-UP-1 OU unless the lead regulatory agency has approved the plan for such work and that plan is followed.	No findings, no unauthorized wells have been drilled.
Groundwater-Use Management	The DOE shall prohibit well drilling in the 200-UP-1 OU, except for monitoring, characterization, or remediation wells authorized in EPA approved documents.	No findings, no unauthorized well drilling.
Groundwater-Use Management	Groundwater use at the 221-U Facility site is prohibited, except for limited research purposes and monitoring and treatment authorized in EPA approved documents.	No findings, no unauthorized groundwater use has occurred.
Warning Notices	The DOE shall post and maintain warning signs along pipelines conveying untreated groundwater that caution site visitors and workers of potential hazards from the 200-UP-1 OU.	No findings.
Miscellaneous Provision	In the event of any unauthorized access (e.g. trespassing), DOE shall report such incidents to the Benton County Sheriff's Office for investigation and evaluation of possible prosecution.	No findings, no unauthorized access or trespass.
Land-Use Management	Activities that would disrupt or lessen the performance of the any component of the remedy are to be prohibited, except as otherwise authorized in lead regulatory agency approved documents.	No findings, no activities have been implemented that would disrupt/lessen performance of the interim remedy
Miscellaneous Provision	The DOE shall prohibit activities that would damage the remedy components (e.g. extraction wells, piping, treatment plant, and monitoring wells), except as otherwise authorized in lead regulatory agency approved documents.	No findings.

Table 1. Institutional Controls Requirements Listed in Record of Decision for Final Remedial Action for Hanford 200 Area, 200-UP-1 Operable Unit (Required through time of completion of the remedy.)

Institutional Controls Category	Institutional Controls Requirement	2018 Status
Land-Use Management	The DOE will prevent the development and use of property above the 200-UP-1 OU for residential housing, elementary and secondary schools, childcare facilities, and playgrounds.	No findings.
Miscellaneous Provision	The DOE shall report on the effectiveness of ICs for the 200-UP-1 OU interim remedy in an annual report, or on an alternative reporting frequency specified by the lead regulatory agency. Such reporting may be for the 200-UP-1 OU alone or may be part of the Hanford Site wide report.	No findings, included in annual report.
Land-Use Provision	Measures that are necessary to ensure continuation of ICs shall be taken before any lease or transfer of any land above the 200-UP-1 OU. DOE will provide notice to Ecology and EPA at least 6 months before any transfer or sale of 200-UP-1 OU or any land above the 200-UP-1 OU so that the lead regulatory agency can be involved in discussions to ensure that appropriate provisions are included in the transfer terms or conveyance documents to maintain effective ICs. If it is not possible for DOE to notify Ecology and EPA at least 6 months before any transfer or sale, DOE will notify Ecology and EPA as soon as possible, but no later than 60 days before the transfer or sale of any property subject to ICs. In addition to the land transfer notice and discussion provisions, DOE further agrees to provide Ecology and EPA with similar notice, within the same time frames, as to federal-to-federal transfer of property. DOE shall provide a copy of the executed deed or transfer assembly to Ecology and EPA.	No findings, no transfer/sale of land has taken place.
Miscellaneous Provision	DOE shall notify EPA and Ecology immediately upon discovery of any activity inconsistent with the OU-specific institutional control objectives for the Site.	No findings, no inconsistent activity discovered.

Table 2. Institutional Controls Requirements (Required through the Time of Completion of Remedy Construction) Listed in Record of Decision for 221-U Facility (Canyon Disposition Initiative).

Institutional Controls Category	Institutional Controls Requirement	2018 Status
Entry Restrictions	DOE shall control access to prevent unacceptable exposure of humans to contaminants at the 221-U Facility site addressed in the scope of this ROD until remedy construction is complete. Visitors entering any site areas are required to be badged and escorted at all times. See Figure 7 of the 221-U Facility ROD (US EPA 2005) for a site map showing the extent of the 221-U Facility site and the boundaries of the land-use controls. A more detailed map will be developed and included in the RD/RA work plan to be approved by EPA and Ecology.	No findings, access controls still in place.
Land-Use Management	No intrusive work shall be allowed at the 221-U Facility site unless the EPA and Ecology have approved the plan for such work and that plan is followed.	No findings, work plans are being/have been submitted for approval.
Land-Use Management	DOE shall prohibit well drilling at the 221-U Facility site except for monitoring, characterization, or remediation wells authorized in EPA-and Ecology-approved documents.	No findings, no unauthorized wells have been drilled.
Groundwater-Use Management	Groundwater use at the 221-U Facility site is prohibited, except for limited research purposes and monitoring and treatment authorized in EPA-and Ecology-approved documents. This prohibition applies until drinking water standards are achieved and EPA and Ecology authorize removal of restrictions. Decision documents for the 200-UW-1 Source Operable Unit and 200-UP-1 Groundwater Operable Unit as well as the Sitewide institutional controls plan will contain the institutional controls and implementing details prohibiting well drilling and groundwater use in the U Plant Area and portions of the 200 West Area as defined in those decision documents.	No findings, no unauthorized groundwater use has occurred.
Warning Notices	DOE shall post and maintain warning signs along access roads to caution site visitors and workers of potential hazards from the 221-U Facility site.	No findings, warning signs are in place.
Miscellaneous Provision	In the event of any unauthorized access to the site, such as trespass, DOE shall report such incidents to the Benton County Sheriff's Office for investigation and evaluation of possible prosecution.	No findings, no unauthorized access to the site has occurred.

Table 3. Institutional Controls Requirements Listed in Record of Decision Hanford 200 Area 200-ZP-1 OU Superfund Site Benton County, Washington (2 Sheets).

Institutional Controls Category	Institutional Controls Requirement	2018 Status
Entry Restrictions	The DOE shall control access to prevent unacceptable exposure of humans to contaminants in the 200-ZP-1 OU groundwater addressed in the scope of this ROD until the remedy is complete. Visitors entering any site areas of the 200-ZP-1 OU will be required to be badged and escorted at all times.	No findings, access controls are in place.
Land-Use Management	No intrusive work shall be allowed in the 200-ZP-1 OU unless EPA has approved the plan for such work and that plan is followed.	No findings, work plans are being/have been submitted for approval.
Land-Use Management	The DOE shall prohibit well drilling in the 200-ZP-1 OU, except for monitoring, characterization or remediation wells authorized in EPA approved documents.	No findings, no unauthorized wells have been drilled.
Groundwater-Use Management	Groundwater use in the 200-ZP-1 OU is prohibited, except for limited research purposes, monitoring, and treatment authorized in EPA approved documents. The <i>Sitewide Institutional Controls Plan</i> will contain the institutional controls and implementing details prohibiting well drilling and groundwater use in the 200-ZP-1 OU, as defined in the Decision document for the 200-ZP-1 OU.	No findings, no unauthorized groundwater use has occurred.
Warning Notices	The DOE shall post and maintain warning signs along pipelines conveying untreated groundwater that caution site visitors and workers of potential hazards from the 200-ZP-1 OU groundwater.	No findings, signs have been/will be installed along pipelines. (Figures 8– 11)
Miscellaneous Provision	In the event of any unauthorized access to the site (e.g., trespassing), DOE shall report such incidents to the Benton County Sheriff's Office for investigation and evaluation of possible prosecution.	No findings, no unauthorized access to the site has occurred.
Land-Use Management	Activities that would disrupt or lessen the performance of the pump-and-treat, MNA (Monitored Natural Attenuation), and flow-path control components of the remedy are to be prohibited.	No findings, no activities have been implemented that would disrupt/lesson performance of remedy.
Land-Use Management	The DOE shall prohibit activities that would damage the pump-and-treat, MNA, and flow-path control components (e.g., extraction wells, injection wells, piping, treatment plant, or monitoring wells).	No findings, no activities have been implemented that would damage the remedy components.
Miscellaneous Provision	The DOE shall report on the effectiveness of institutional controls for the 200-ZP-1 OU remedy in an annual report, or on an alternative reporting frequency specified by EPA. Such reporting may be for this OU alone or may be part of a Hanford sitewide report.	No findings.
Land-Use Management	The DOE will provide notice to EPA at least six months prior to any transfer or sale of the any land above the 200-ZP-1 OU so EPA can be involved in discussions to ensure that appropriate provisions are included in the transfer terms or conveyance documents to maintain effective institutional controls. If it is not possible for DOE to notify EPA at least six months prior to any transfer or sale, then the DOE will notify EPA as soon as possible but no later than 60 days prior to the transfer or sale of any property subject to institutional controls. In addition to the land transfer notice and discussion provisions above, the DOE further agrees to provide	No findings, no transfer/sale of land has taken place.

Table 3. Institutional Controls Requirements Listed in Record of Decision Hanford 200 Area 200-ZP-1 OU Superfund Site Benton County, Washington (2 Sheets).

Institutional Controls Category	Institutional Controls Requirement	2018 Status
	EPA with similar notice, within the same time frames, as to federal-to-federal transfer of property. The DOE shall provide a copy of executed deed or transfer assembly to EPA.	
Land -Use Management	The DOE will prevent the development and use of property above the 200-ZP-1 groundwater OU for residential housing, elementary and secondary schools, childcare facilities and playgrounds.	No findings, no property development has taken place.
Land -Use Management	Land use controls will be maintained until cleanup levels are achieved and the concentrations of hazardous substances in groundwater are at such levels to allow for unrestricted use and exposure and EPA authorizes the removal of restrictions.	No findings, land use controls are still in place.

Table 4. Institutional Controls Requirements (Required through the Time of Completion of Remedy Construction) Listed in Record of Decision for 200-CW-2 and 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units.

Institutional Controls Category	Institutional Controls Requirement	2018 Status
Entry Restrictions	DOE shall controls access to prevent unacceptable exposure of humans to contaminants in the 200-CW-5 and 200-PW-1. 200-PW-3, and 200-PW-6 OUs. Visitors entering any of these OUs will be required to be badged and escorted at all time.	No findings, access controls still in place.
Warning Notices	DOE shall post and maintain warning signs at the waste sites in these OUs that caution visitors and workers of potential hazards from contaminants below the ground surface.	No findings, warning signs are in place.
Miscellaneous Provision	In the event of any unauthorized access to the site, such as trespass, DOE shall report such incidents to the Benton County Sheriff's Office for investigation and evaluation of possible prosecution.	No findings, no unauthorized access to the site has occurred.
Land-Use Management	DOE shall prohibit activities that are not industrial in nature, and prohibit drilling, excavation, or use of soil at these waste sites.	No findings.
Groundwater Use Management	DOE shall prohibit use of groundwater located beneath the 200-CW-5, 200-PW-1, 200-PW-3, and 200-PW-6 OUs for the foreseeable future until drinking water standards are achieved.	No findings, no use of groundwater as a drinking water standards.
Land-Use Management	DOE shall maintain the integrity of and prohibit activities that could damage or lessen the performance of required evapotranspiration caps and soil covers.	Not applicable at present time.
Miscellaneous Provision	DOE shall report annually on the effectiveness of ICs for the 200-CW-4 and 200-PW-1, 200-PW-3, and 200-PW-6 OUs as specified in the Hanford Site-wide Institutional Controls Plan or an alternative report reporting frequency specified by EPA.	No findings, ICs have been effective.
Land-Use Management	DOE will provide notice to EPA at least 6 months prior to any transfer or sale of any land in the 200-CW-1 and 200-PW-1, 200-PW-3, and 200-PW-6 so EPA can be involved in discussions to ensure that appropriate provisions are included in the transfer terms or conveyance documents to maintain effective ICs. If it is not possible for DOE to notify Ecology and EPA at least 6 months before any transfer or sale, DOE will notify Ecology and EPA as soon as possible, but no later than 60 days before the transfer or sale of any property subject to ICs. In addition to the land transfer notice and discussion provisions, DOE further agrees to provide Ecology and EPA with similar notice, within the same time frames, as to federal-to-federal transfer of property. DOE shall provide a copy of the executed deed or transfer assembly to Ecology and EPA.	Land has not been transferred or sold, no findings.
Land-Use Management	DOE will prevent the development and use of 200-CW-5, 200-PW-1, 200-PW-3, and 200-Pw-6 OUs for residential housing, elementary and secondary schools, childcare facilities, and playgrounds.	Development of land has not occurred, no findings.

Table 4. Institutional Controls Requirements (Required through the Time of Completion of Remedy Construction) Listed in Record of Decision for 200-CW-2 and 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units.

Institutional Controls Category	Institutional Controls Requirement	2018 Status
Land-Use Management	Land-use controls will be maintained as long as the contamination remains at levels do not allow for unrestricted use and unlimited exposure and shall not be removed without the prior authorization of EPA.	Land use controls are still being maintained.

MSA-1105355.7

CONTRACT NO. DE-AC06-09RL14728

ATTACHMENT 3

Contract Deliverable CD0182

**ASSESSMENT OF CERCLA INSTITUTIONAL CONTROLS
FOR BUILDINGS OCCUPIED BY PNNL IN THE
HANFORD 300 AREA**

Consisting of 11 pages,
including this cover page

MEMORANDUM



Date: **August 20, 2018** Project No.: **N/A**
To: **Raja Ranade, MSA** Internal Distribution: **KM McDonald**
Landon Collom, MSA Distribution: **MJ Stephenson**
From: **Dan Edwards** File/LB
Subject: **Assessment of CERCLA**
Institutional Controls for
Buildings Occupied by PNNL in
the Hanford 300 Area

Pacific Northwest National Laboratory (PNNL) occupies 300 Area facilities that are being retained to support PNNL missions. As of this date, those facilities include:

Table 1. PNNL-Occupied 300 Area Retained Facilities

Building #	Building Name/Function
312	Pump Pit
318	Radiological Calibrations Laboratory
318 T4	Office Trailer
325	Radiochemical Processing Laboratory (RPL)
331	Life Sciences Laboratory I
350	Plant Operations and Maintenance Facility
350A	Paint Shop
350B	Warehouse
350C	Storage Building
350D	Oil Storage Facility
3614A	River Water Support Building
385	Sanitary Water Pump Building

The “Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1”, dated November 2013 (hereinafter “300 Area ROD”) identifies several waste sites which, while not the direct responsibility of PNNL, rely on measures utilized by PNNL as part of the management of the retained facility for compliance with the institutional controls requirements. These waste sites are associated with the retained facilities in that they lie underneath or in close proximity to

Raja Ranade/Landon Collom
August 20, 2018
Page 2

these facilities, which prevents the exercise of the selected remedy (i.e., remove contaminated soil to disposal until industrial cleanup levels have been reached) until the buildings can be demolished. The waste sites identified in the 300 Area ROD that are deferred and located adjacent to PNNL-occupied retained facilities are:

Table 2. WIDS Sites Included in 300 Area ROD That Are Associated with Retained 300 Area Facilities Occupied by PNNL and Require Further (Deferred) Remedial Action

WIDS ID	Description	Associated With
300 RLWS	Radioactive Liquid Waste System	325RPL
300 RRLWS	Retired Radioactive Liquid Waste System	325RPL
300-15	300 Area Process Sewer	318, 325RPL, 331
300-265	324/325 Building Transfer Pipeline	325RPL
300-269	331-A Building Foundation	331
331 LSLT1	LSL Septic Tank/Drainfield	331
331 LSLT2	LSL Septic Tank/Drainfield	331
UPR-300-10	Pipeline Leak Under 325-B Building	325RPL
UPR-300-12	Pipeline Leak Under 325-A Building	325RPL
UPR-300-48	Broken Pipe Under 325 Building	325RPL

This assessment identifies the applicable 300 Area ROD requirements that are met or partially met through PNNL's management activities for the 300 Area retained facilities it occupies and those facilities' associated WIDS sites.

Table 3. Assessment of Institutional Controls in 300 Area ROD and Applicable to PNNL Retained Facilities.

Institutional Controls Requirement ¹	Institutional Controls Status
Signage and access control to waste sites	Warning sign posted at 300 Area entrances (maintained by MSA). PNNL maintains access control (using key cards) to its facilities.

¹ From 300 Area ROD Section 9.2.

Raja Ranade/Landon Collom
August 20, 2018
Page 3

Table 3. Assessment of Institutional Controls in 300 Area ROD and Applicable to PNNL Retained Facilities.

Institutional Controls Requirement¹	Institutional Controls Status
Maintenance and operation of an excavation permit program for protection of environmental and cultural resources and site workers	PNNL has a fully deployed and operated excavation permit program. This is coordinated with Mission Support Alliance's excavation permit program for the Hanford Site when excavation is proposed in the 300 Area.
Administrative controls limiting groundwater access and use where groundwater is above clean up levels (CULs)	Groundwater access and use is prohibited, except for utilization of the 399-4-12 well for supplemental water supply for the aquatic research facility in 331 as previously authorized.

Raja Ranade/Landon Collom
 August 20, 2018
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Table 3. Assessment of Institutional Controls in 300 Area ROD and Applicable to PNNL Retained Facilities.

Institutional Controls Requirement ¹	Institutional Controls Status
<p>Prevent enhanced recharge over or near waste sites with potential to pose an unacceptable groundwater risk from irrigation</p>	<p>No irrigation at any PNNL-occupied 300 Area facility except for 331. PNNL discontinued irrigation around the 331 Building except for the west tree line and a few shrubs near the south building entrance in June 2014.</p> <p>Drinking water system flushing is performed routinely at fire hydrants in the 300 Area and is coordinated with CHPRC to obtain groundwater vadose zone (GVZ) approval prior to allowing discharge, in accordance with MSC-PRO-EI-15333, <i>Environmental Protection Processes</i>. GVZ forms showing discharge locations are included as an attachment.</p> <p>PNNL confirmed with Hanford Fire/MSA that the directional discharge requirements (as identified in the 7/30/2014 R. Guercia email) are incorporated in the hydrant specific data sheets that are used to direct hydrant testing and maintenance.</p>
<p>Prevent bare gravel or bare sand covers over waste sites in the 300 Area Industrial Complex in areas where contamination exceeds residential groundwater and river protection CULs</p>	<p>Areas around PNNL-occupied 300 Area buildings are paved with asphalt except for 331. WIDS sites directly adjacent to 331 (east side of building) are currently being capped with a ROD-compliant cover under a project managed and executed by CHPRC, with completion slated prior to the end of FY18.</p>

Raja Ranade/Landon Collom
 August 20, 2018
 Page 5

Table 3. Assessment of Institutional Controls in 300 Area ROD and Applicable to PNNL Retained Facilities.

Institutional Controls Requirement¹	Institutional Controls Status
<p>Prevent enhanced recharge from the discharge of water (such as drainage from paved parking lots or buildings) in areas where contamination exceeds residential groundwater and river protection CULs. Prevent irrigation in areas where contamination exceeds residential groundwater and river protection CULs.</p>	<p>Paved areas are generally graded to drain away from buildings and waste sites. CHPRC has re-routed parking lot runoff on the east side of the 331 Building and installed a ROD-compliant cover over the WIDS sites (see above). Building and roof drains are routed to: 1) registered underground injection control (UIC) wells in the 300 Area (see attached miscellaneous streams map and description); 2) paved areas that follow the natural slope of the 300 Area towards the Columbia River.</p>

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Raja Ranade/Landon Collom
August 20, 2018
Page 6

Attachment 1 – PNNL 300A UIC Locations

**Pacific Northwest National Laboratory
Hanford Site Miscellaneous Streams Inventory**

ACTIVE STREAMS								
Stream Number	WIDS Site Code	Process Description	Flow (gpm)	Disposal Structure	Washington State Planar Coordinates (meters) Lat/Long	Comments	Stream Status/ UIC Code	PNNL STATUS
792	300-243	318 Building – LOCATION: Storm water runoff from paved area on North side of building. Catch basin leads to UIC well.	<0.01	Injection Well	E594031.5 N115528.2	Catch basin drains to injection well.	AC/ 5D2	<ul style="list-style-type: none"> • Status Verified 5/15/98. • Status verified 5/19/99. (BPA / MJM) • Status verified 11/28/12 during Hanford UIC Well Assessment (EAR/TWM).
793	300-244	318 Building – LOCATION: Storm water runoff from east side of building in graveled area between road and building. No UIC well is visible.	<0.01	Injection Well	E594057.3 N115485.3	No UIC well is visible.	AC/ 5D2	<ul style="list-style-type: none"> • Status Verified 5/15/98. • Status verified 5/19/99. (BPA / MJM) • Status verified 11/28/12 during Hanford UIC Well Assessment (EAR/TWM).
883	N/A	318 Building - Stormwater runoff from stairwell pit. LOCATION: West side of building at bottom of stairwell pit near rollup door.	<0.01	Injection Well	E594007 N115525	Registered with Ecology on 9/5/2008	AC/ 5D2	<ul style="list-style-type: none"> • New – To be installed in 2008. Rerouting stormwater from sewer to ground as part of 300 Area transition project. • Well installation verified via photos 3/12 (EAR).
706	300-97	325 Building – Storm water runoff and fire system test water. LOCATION: south side of building.	<0.01	Injection Well	E594029.0 N415758.9 E594034.0 N115765.6	ADDED: Per 8/2/96 cc:Mail from B. Atencio	AC/ 5D2	<ul style="list-style-type: none"> • Status Verified 5/8/98. • Status verified 5/19/99. (BPA / MJM) • Coordinates/location corrected by Dave Encke, WCH 8/13/09. • Status verified 11/28/12 during Hanford UIC Well Assessment (EAR/TWM).
447	300-107	331 Building – Storm water runoff. LOCATION: west side of building by kennels	<0.01	Injection Well	E594469.0 N115383.0	Injection Well # 32.	AC/ 5D2	<ul style="list-style-type: none"> • Status Verified 5/6/98. • Status verified 5/19/99. (BPA / MJM) • Status verified 11/28/12 during Hanford UIC Well Assessment (EAR/TWM).
448	300-108	331 Building – Storm water runoff. LOCATION: west side, 40' south from the northwest corner of building. Catch basins drain low lying areas from two doorways.	<0.01	Injection Well	E594492.9 N115453.3	Injection Well #37.	AC/ 5D2	<ul style="list-style-type: none"> • Status Verified 5/6/98. Revise location description. • Status verified 5/19/99. (BPA / MJM) • Status verified 11/28/12 during Hanford UIC Well Assessment (EAR/TWM).

Pacific Northwest National Laboratory
Hanford Site Miscellaneous Streams Inventory

ACTIVE STREAMS								
Stream Number	WIDS Site Code	Process Description	Flow (gpm)	Disposal Structure	Washington State Planer Coordinates (meters) Lat/Long	Comments	Stream Status/ UIC Code	PNNL STATUS
513	300-105	331 Building - Steam Condensate. LOCATION: 30 feet off the northwest corner of the 331 building.	<0.01	Injection Well	E594497.438 N115462.891		AC/ 5A19	<ul style="list-style-type: none"> Stream incorrectly assigned to PNNL. DynCorp owner per June 1, 1998 e-mail message from Michelle Gunter. Status verified 8/17/98. BPA- (PNNL), SW - (BHI), TJ - (BHI) Assigned to WCH in Hanford Site UIC database update 8/22/11.
827	N/A	350 Building - French drain to collect storm water. LOCATION: Inside west gate to the Service Yard on the north side of the driveway near 350A	<0.01	Injection Well	E593898 N115384	Added per e-mail to D. Korematsu-Olund on 8/31/00 from E. Raney	AC/ 5D2	<ul style="list-style-type: none"> New - Installed September 2000 Status verified 11/28/12 during Hanford UIC Well Assessment (EAR/TWM).
828	N/A	350 Building - French drain to collect storm water. LOCATION: Near the north edge of the Service driveway, midway between 350B and 350C	<0.01	Injection Well	E593948 N115384	Added per e-mail to D. Korematsu-Olund on 8/31/00 from E. Raney	AC/ 5D2	<ul style="list-style-type: none"> New - Installed September 2000 Status verified 11/28/12 during Hanford UIC Well Assessment (EAR/TWM).
TBD	N/A	331 Building – WCH disconnected stormwater line from process sewer in 2009 and installed new injection well north of 331 by lift station #12	<0.01	Injection Well	N115516.43 E59483.22	NA	???	<ul style="list-style-type: none"> TBD on PNNL operational control.
INACTIVE STREAMS								
Stream Number	WIDS Site Code	Process Description	Flow (gpm)	Disposal Structure	Washington State Planer Coordinates (meters)	Comments	Stream Status	PNNL STATUS
264	300-98	325 Building – LOCATION: inside 325 Building, south stairwell drain, accessed via cafeteria. This drain is located indoors and does not receive stormwater.	<0.01	Injection Well	E593978.0 N115745.0		AC SA/ 5D2	<ul style="list-style-type: none"> Status Verified 5/8/98 Status verified 5/19/99. (BPA / MJM) Status verified 11/28/12 during Hanford Site UIC Well Assessment. Well is located indoors. Status kept as active at request of MSA.

Pacific Northwest National Laboratory
 Hanford Site Miscellaneous Streams Inventory

ACTIVE STREAMS								
Stream Number	WIDS Site Code	Process Description	Flow (gpm)	Disposal Structure	Washington State Planar Coordinates (meters) Lat/Long	Comments	Stream Status/ UIC Code	PNNL STATUS
791	300-242	325 Building –Source unknown. Large-diameter carbon steel line coming from the basement of 325 and terminating in the concrete box. LOCATION: Northwest side of building approximately 35 feet from corner of building. Source abandoned (pipe has been cut and plugged). Does not receive stormwater.	0.04 0.00	Injection Well	E593960.2 N115829.4 E593968.835 N115829.598	X_COORD 593968.8349 (-119.278638865) Y_COORD 115829.5984 (46.368894489)	AG SA	<ul style="list-style-type: none"> • Status Verified 5/20/98. • Status Verified 5/19/99 (BPA / MJM). Pipe has been cut and permanently plugged. • New coordinates identified by WCH 4/15/09 for waste site 300-242 (Joan Woolard, Len Habel, James D Anderson) • Status verified 11/28/12 during Hanford Site UIC Well Assessment. Does not receive stormwater. Pipe is plugged.

