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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

19-SSD-0025

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Ms. Alexandra K. Smith, Program Manager
Nuclear Waste Program
Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354

Mr. David Einan, Manager
Office of Environmental Cleanup
Site Cleanup Unit 4
U.S. Environmental Protection Agency
825 Jadwin Avenue, Suite 210
Richland, Washington 99352

Addressees:

TRANSMITTAL OF THE SITEWIDE INSTITUTIONAL CONTROLS PLAN FOR HANFORD COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT (CERCLA) RESPONSE ACTIONS AND RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) CORRECTIVE ACTIONS, U.S. DEPARTMENT OF ENERGY/RICHLAND OPERATIONS OFFICE (DOE/RL), DOE/RL-2001-41, REVISION 9

Please find enclosed a copy of the Sitewide Institutional Controls Plan (IC Plan) for Hanford CERCLA Response Actions and RCRA Corrective Actions, DOE/RL-2001-41, Revision 9, dated February 2019. This plan was revised due to the publication of the Record of Decision for 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 Operable Units on July 30, 2018. The IC Plan will be added to the Administrative Record and posted on the U.S. Department of Energy Richland Operations Office (RL) Long-Term Stewardship Website: <https://www.hanford.gov/page.cfm/LongTermStewardship>.

If you have any questions, please contact me, or your staff may contact Jeffrey A. Frey, Assistant Manager for Mission Support, at (509) 376-7727.

Sincerely,

A handwritten signature in black ink, appearing to read "B. T. Vance".

Brian T. Vance
Manager

SSD:RNK

Attachment

cc w/attach: See page 2

RECEIVED

APR 03 2019

EDMC

Addressees
19-SSD-0025

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APR 0 1 2019

cc w/attach:

Craig E. Cameron, EPA

John B. Price, Ecology

Joy M. Shoemake, MSA

Clark W. Stolle, MSA

Administrative Record

Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions

G. T. Berlin
Mission Support Alliance

Date Published
February 2019

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

 U.S. DEPARTMENT OF
ENERGY | Richland Operations
Office
P.O. Box 550
Richland, Washington 99352

APPROVED
By Janis D. Aardal at 12:19 pm, Feb 06, 2019

Release Approval

Date

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APPROVAL

Title: SITEWIDE INSTITUTIONAL CONTROLS PLAN FOR HANFORD CERCLA
RESPONSE ACTIONS AND RCRA CORRECTIVE ACTIONS

Randall W. Krekel

Print Name

U.S. Department of Energy
Richland Operations Office

Randall W. Krekel

Signature

2-7-2019

Date

Craig E. Cameron

Print Name

U.S. Environmental Protection Agency
Hanford Project Office

Craig E. Cameron

Signature

2/7/2019

Date

John B. Price

Print Name

Washington State
Department of Ecology

John B. Price

Signature

2/8/2019

Date

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Revision History DOE/RL-2001-41, Sitewide Institutional Controls Plan for Hanford
CERCLA Response Actions and RCRA Corrective Actions.

Revision Number	Publication Date	Description
9	February 9, 2019	Revision 9 includes the following changes: <ul style="list-style-type: none"> • Added 100-D/H ROD ICs • Added ICs from Waste Site Reclassification Forms • Added ICs from the implementing documents • Added new figure showing location of operable units at Hanford • Updated tables in chapter 3 • Updated tables in Appendix A-1 to list ICs from the 100-D/H ROD and other decision documents • Streamlined information for clarity • Appendix C – Deleted 2012 annual institutional control assessment. The Annual Institutional Controls Assessment Report will be publically available this year and will be incorporated by reference. • Updated 5-year review table in Appendix C.
8	March 17, 2015	Revision 8 included following changes: <ul style="list-style-type: none"> • Editorial and minor text changes made. • Added two new terms – Deed Restrictions and Notice in Deed in the “Definitions” Section. • Deleted Explanation of Significant Difference document for 100-IU-6 Operable Unit from Table 3-1. • Added 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-1, and 100-IU-6 Operable Units Record of Decision in Table 3-1 • Added Section 3.5.2.5, Notice in Deed • Added new table 3-5 listing institutional controls associated with operable units. • Added new Table 3-7 to list Notices in Deed registered with Benton County Auditor. • Added a paragraph in Section 3.7 addressing 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-1, and 100-IU-6 Operable Units Record of Decision. • Added Tables A1-23 and A1-24 to list Area - specific and waste site - specific institutional controls. • Deleted tables listing institutional controls specific to 100-FR-1 Operable Unit waste sites. • Added figures A1-1, A1-2, and A1-3 to show land-use control boundaries for the 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6 operable units. • Added Figure A3-2 to show land-use control area for 300-FF-5 Operable Unit. • Added Table B1-3, Table B1-4, and Table B1-5 to list institutional controls for 1301-N, 1324-N and 1325-N Treatment, Storage, and Disposal Units. • Replaced the 2013 Annual Institutional Control Assessments report in Appendix C with 2014 Annual Institutional Control Assessments report.
7	May 21, 2014	Revision 7 included the following changes: <ul style="list-style-type: none"> • Document number changed from DOE/RL-2001-41, Rev. 6 to DOE/RL-2001-41, Rev. 7. • Added Revision History Table Rev. 7.

Revision History DOE/RL-2001-41, Sitewide Institutional Controls Plan for Hanford
CERCLA Response Actions and RCRA Corrective Actions.

Revision Number	Publication Date	Description
		<ul style="list-style-type: none"> • Removed references and text related to Interim ROD, Explanation of Significant Difference, and ROD Amendment documents for 300-FF-2 and 300-FF-5 Operable Units. • Editorial and minor text changes made. • Updated documents listed in the Executive Summary. • Added two new terms TPA Change Notice (TPA-CN), and Cleanup Verification Packages (CVP) to the Definitions section. • Added interim and final RODs, TPA-CN forms, cleanup verification packages (CVPs), and work plans to CERCLA document listing in Section 3.1. • Added new Section 3.3 describing waste sites with institutional controls. • Table 3-1, added five new rows to table. One row for Interim Remedial Action ROD Amendment and four rows for TPA-CN forms. • Table 3-3, added a new row to the table listing 2013 ROD for 300-FF-2 and 300-FF-5 and ROD Amendment for 300-FF-1. Deleted five rows that listed 300-FF-2 and 300-FF-5 CERCLA documents. • Table 3-5, Deleted a row listing 216-A-10 crib and added a row addressing 331-C Storage Unit. • Revised Table 3-6 to address access controls. • Added Section 2.4.1 describing access controls, Section 2.4.1.2 describing entry restrictions and rearranged Section 3.5. • Section 2.4.1, added a paragraph describing warning signs addressed in the Hanford Site RCRA Permit and WAC 173-303-310, "Security." • Added new Section 3.5.2.4 "Industrial Use Institutional Controls". • Updated Table 3-7, added Remedial Design/Remedial Action Work Plans. • Made changes to Section 3.7 to address ICs listed the 300 Area ROD. • Added new Tables A1-13 to A1-27, and Figure A3-1 to Appendix A. • Deleted Tables – A3-2 through A3-5 and added new Tables A3-2 and A3-3 in Appendix A. • Added new Table B-2 listed ICs for waste site 600-235 and new Figure B-1 to Appendix B. • Appendix C, deleted 2006-2012 annual IC assessments. • Appendix C, added the 2013 Annual Sitewide IC tables and figures.
6	January 31, 2013	<p>Revision 6 included the following changes:</p> <ul style="list-style-type: none"> • Document number changed from DOE/RL-2001-41, Rev. 5 to DOE/RL-2001-41, Rev. 6. • Added Revision History Table for Rev. 6. • Editorial and minor text changes made. • Table 3-2 - Added a new row to table listing the ROD for the Interim Remedial Action for 200-UP-1 OU. • Section 5.0 – Removed hyperlink references to web sites. • Appendix A - Added new Table A2-11 that identifies the institutional controls listed in the 200 UP-1 OU. • Added Figure A-5 to show 200-UP-1 OU institutional control boundaries. • Deleted reference sections from Appendices A and B. • Appendix C - Added 2012 annual institutional control assessment.

EXECUTIVE SUMMARY

The *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions (Plan)* describes the institutional controls (IC) for the Hanford Site and how they are implemented and maintained in accordance with the following policy, laws, and regulations:

- DOE Policy 454.1, *Use of Institutional Controls*¹
- *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*² (CERCLA)
- *Superfund Amendments and Reauthorization Act of 1986*³
- Title 40 *Code of Federal Regulations* (CFR) Part 300, “National Oil and Hazardous Substances Pollution Contingency Plan (NCP)”
- *Resource Conservation and Recovery Act of 1976*⁴ (RCRA) and the *Hazardous Waste Management Act* (Revised Code of Washington 70.105, “Hazardous Waste Management”) as implemented through Washington Administrative Code 173-303, “Dangerous Waste Regulations.”

CERCLA decision documents present the selected remedial actions chosen in accordance with CERCLA, 40 CFR 300, and implementing documents such as remedial design reports and remedial action work plans that have IC requirements. RCRA decision documents describe the closure and corrective actions selected under RCRA. These documents are part of the cleanup mission at the Hanford Site. The selected remedies/corrective actions chosen under CERCLA or RCRA may include ICs.

The appendices list the IC requirements identified in the CERCLA and/or RCRA decision documents by operable units and ICs specific to the remediated waste sites.

This Plan is required by the 100 Area record of decision (ROD) (EPA/ROD/R10-00/121⁵), 2001 CERCLA 5-Year Review (EPA [2001a]), 300 Area ROD (EPA/ROD/R10-01/119⁶) and Hanford Comprehensive Land-Use Plan Environmental Impact Statement (DOE/EIS-0222-F, *Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement*⁷).

The ICs are mechanisms to prevent inappropriate uses of land, facilities, and environmental media and to prevent unacceptable human health and environmental exposure to residual

¹DOE P 454.1, 2003, *Use of Institutional Controls*, U.S. Department of Energy, Washington, D.C.

²*Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, 42 USC 9601, et seq.

³Public Law 99-499, 1986, “Superfund Amendments and Reauthorization Act of 1986 (SARA),” 100 Stat. 1728.

⁴*Resource Conservation and Recovery Act of 1976*, 42 USC 6901, et seq.

⁵EPA/ROD/R10-00/121, 2000, *Record of Decision for the USDOE Hanford 100 Area Burial Grounds (100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units)*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.

⁶EPA/ROD/R10-01/119, 2001, *Record of Decision for the USDOE Hanford 300 Area, 300-FF-2 Operable Unit, Hanford Site, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.

⁷DOE/EIS-0222-F, 1999, *Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement*, U.S. Department of Energy, Washington, D.C.

contaminants that could pose risks above levels deemed protective. ICs generally include nonengineered restrictions on activities and access to land, groundwater, surface water, waste sites, waste disposal areas, and other areas or media that may contain hazardous substances to minimize the potential for human exposure to the substances.

This Plan addresses the elements of the U.S. Environmental Protection Agency (EPA) Region 10 guidance (*Region 10 Final Policy on the Use of Institutional Controls at Federal Facilities* [EPA 1999]⁸) regarding the implementation of ICs at federal facilities and the elements of IC implementation addressed in following EPA OSWER 2012 guidance documents.

- EPA-540-R-09-001, *A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites*, OSWER 9355.0-89 E December 2012
- EPA-540-R-09-002, *Institutional Controls: A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites*, OSWER 9200.0-77 December 2012

This Plan provides project managers with information for developing funding requests and serves as a reference for selecting ICs in the future. The Plan will be updated when CERCLA decision documents and/or RCRA corrective-action documents listing new ICs are issued.

⁸EPA, 1999a, *Region 10 Final Policy on the Use of Institutional Controls at Federal Facilities, Memorandum*, U.S. Environmental Protection Agency, Office of Environmental Cleanup Region 10, Seattle, Washington.

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TERMS

AMD	record of decision amendment
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>
CFR	<i>Code of Federal Regulations</i>
CVP	cleanup verification package
DOE	U.S. Department of Energy
DOE-RL	U.S. Department of Energy, Richland Operations Office
DOE-ORP	U.S. Department of Energy, Office of River Protection
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
ERDF	Environmental Restoration Disposal Facility
ESD	explanation of significant differences
IC	institutional control
NCP	National Contingency Plan (National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR 300)
NESHAP	“National Emission Standards for Hazardous Air Pollutants”
NPL	“National Priorities List” (40 CFR 300, Appendix B)
O&M	operations and maintenance
OU	operable unit
Plan	<i>Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions</i>
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
RCW	Revised Code of Washington
RDR/RAWP	remedial design report/remedial action work plan
RI/FS	remedial investigation/feasibility study
ROD	record of decision
TPA-CN	Tri-Party Agreement-change notice
Tri-Party Agreement	<i>Hanford Federal Facility Agreement and Consent Order</i>
TSD	treatment, storage, and disposal
UU/UE	unlimited use and unrestricted exposure
WAC	<i>Washington Administrative Code</i>
WIDS	Waste Information Data System (database)
WSRF	waste site reclassification form

DEFINITIONS

Action Memorandum. A primary decision document for a removal action (equivalent to a record of decision for a remedial action). An action memorandum documents the need for a removal response, selects the proposed action, and explains the rationale for the removal.

CERCLA Decision Document. Refers to *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* action memoranda, interim and final records of decision, record of decision amendments, and explanations of significant difference.

CERCLA Record of Decision. A document that states the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*-selected remedial action. One or more interim action records of decision presenting the selected interim remedial actions may be issued before developing a final record of decision, which would specify the final remedy selection decision.

CERCLA Record of Decision Amendment. A document that amends a *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* record of decision to make a fundamental change to the remedial action selected in a previously signed record of decision. Provides an explanation of how the amended remedial action for a site differs from the record of decision.

Cleanup Verification Package. Cleanup verification packages (CVP) document verification of interim remedial actions at a waste site. CVPs are prepared for individual remediated waste sites, or a group of remediated waste sites, as needed. Each package contains a description of the waste site history, the current waste site condition, the basis for reclassifying a site as “closed” or “interim closed,” and verification sampling results. CVPs also include a description of the remediation activities, the logic for determining the contaminants of concern for verification sampling, and supporting calculations. Regulatory agency review and approval of each CVP is part of reclassifying the waste site from “accepted” to “interim closed out.”

Deed. A written instrument whereby title to real estate is transferred.

Deed Restrictions. Real estate deed restrictions are restrictions on the deed that place limitations on the use of the property. Deed restrictions “bind” land. Most deed restrictions are permanent and “run with the land;” that is, they generally bind all current and future owners of the lot or parcels involved.

Disposal (of Real Property). Permanent or temporary transfer of U.S. Department of Energy control and custody of real property to a third party that has the right to control, use, or relinquish control and custody of the property.

Easement. The right to use land belonging to another for a specific purpose with the owner retaining fee or title. An easement restricts, but does not abridge, the rights of the fee owner to the use and enjoyment of the easement holder’s rights.

Enhanced Recharge Control. The 300 Area record of decision defines enhanced recharge controls as no irrigation or landscaping watering, control drainage from low-permeability areas, including paved parking lots or buildings, and prevent bare gravel or bare sand covers.

Explanation of Significant Difference. A document that revises a *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* record of decision to make a significant change to the remedial action selected in a previously signed record of decision. Explains how the selected remedial action for a Superfund site differs from the record of decision.

Final Closeout Report. Documents compliance with the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* decision documents and remedial design reports/remedial action work plans for a Superfund site and provides a consolidated record of all removal and remedial actions on the National Priorities List (Title 40 *Code of Federal Regulations* (CFR) Part 300, “National Oil and Hazardous Substances Pollution Contingency Plan,” Appendix B, “National Priorities List”). The final closeout report describes how cleanup was accomplished and provides the overall technical justification for site deletion from the National Priorities List.

Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement).

The Tri-Party Agreement is an agreement for achieving compliance with *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* remedial action provisions and with *Resource Conservation and Recovery Act of 1976* treatment, storage, and disposal unit regulations and corrective action provisions. More specifically, the Tri-Party Agreement defines and ranks *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* and *Resource Conservation and Recovery Act of 1976* cleanup commitments, establishes responsibilities, provides a basis for budgeting, and reflects a concerted goal of achieving full regulatory compliance and remediation, with enforceable milestones in an aggressive manner.

Institutional Controls. Institutional controls include non-engineered restrictions on activities and access to land, groundwater, surface water, waste sites, waste disposal areas, and other areas or media that contain hazardous substances, pollutants, or contaminants to minimize the potential for human and environmental exposure. Common types of institutional controls include procedural restrictions for access, fencing, warning notices, permits, easements, deed notifications, leases and contracts, and land-use controls.

Irrigation Controls. Irrigation controls eliminate the potential driving force of irrigation water to mobilize the residual contaminants in the soil. This action assists in protecting groundwater and the Columbia River.

Isolated Unit. An operable unit that is not associated with a particular facility or geographic area. This term is presented in this document using the acronym “IU” (e.g., 100-IU-2).

National Priorities List (40 CFR 300, “National Oil and Hazardous Substances Pollution Contingency Plan,” Appendix B, “National Priorities List”). A list maintained by the U.S. Environmental Protection Agency of hazardous waste sites that are a national priority for longer term remedial action and response because of known releases or threatened releases of hazardous substances into the environment and that are subject to the requirements of the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*. Four sites at Hanford were placed on the National Priorities List in 1989. One site, the 1100 Area, was removed from the National Priorities List in 1996, and portions of the 100 Area were removed from the National Priorities List in 1998.

Notice in Deed. It is a notice to convey deed restrictions. The Notice in Deed is recorded with the county register of deeds records where the property is located.

Operable Unit. A group of land disposal sites placed together for the purposes of doing a remedial investigation/feasibility study and subsequent cleanup actions. The primary criteria for placing a site into an operable unit include geographic proximity, similarity of waste characteristics and site type, and the possibility for economies of scale (Source: *Hanford Federal Facility Agreement and Consent Order Action Plan*, Appendix A [Ecology et al. 1989a]). Soil and groundwater contamination generally are placed in separate operable units.

RCRA Corrective Action. Corrective action refers to the cleanup process or program under the *Resource Conservation and Recovery Act of 1976* and all activities related to the investigation, characterization, and cleanup of a release of hazardous wastes or hazardous waste constituents from solid waste management units at permitted treatment, storage, and disposal facilities to any environmental medium. For the purpose of this Plan, “RCRA” also includes *Revised Code of Washington*, Chapter 70.105, “Hazardous Waste Management Act” (RCW 70.105). However, the term also may refer to a specific action taken to remediate a solid waste management unit at an individual facility.

Remedial Design and Remedial Action Work Plan. This definition reflects changes to the Tri-Party Agreement Action Plan (*Hanford Federal Facility Agreement and Consent Order Action Plan* [Ecology et al. 1989a]) (resulting from Change Control Form P-11-06-01) to clarify requirements for remedial-design and remedial-action deliverables. This is the plan for implementing the remedy selected in the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* remedial action decision documents. All remedial design/remedial action activities must conform to the remedy set forth in the related record of decision or other decision documents (e.g., record of decision amendment). The remedial design and remedial action work plan contains a conceptual-level design.

Remedial Design Report. This definition reflects changes to the Tri-Party Agreement Action Plan (*Hanford Federal Facility Agreement and Consent Order Action Plan* [Ecology et al. 1989a]) (resulting from Change Control Form P-11-06-01) to clarify requirements for remedial-design and remedial-action deliverables. This report documents the 90 percent level of the remedial design. It may contain a different level of design than 90 percent if agreed to by the lead regulatory agency. The Tri-Party Agreement Action Plan, Section 11.6 requires that a remedial design and remedial action work plan to be delivered within 180 days of signature of the record of decision. Therefore, the record of decision report is likely to be a separate deliverable because the remedial design and remedial action work plan submittal requires only a conceptual-level design.

Remedial Design Report/Remedial Action Work Plan. The plan for implementing the remedy selected in the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* remedial action decision documents. All remedial-design/remedial-action activities must conform to the remedy set forth in the related record of decision or other decision document (e.g., record of decision amendment).

Solid Waste Management Unit. Any discernible location at a facility, as defined for the purposes of corrective action, where solid waste has been placed at any time, irrespective of whether the location was intended for the management of solid or dangerous waste. Such locations include any area at a facility at which solid waste, including spills, has been

routinely and systematically released. Such units include regulated units as defined by *Washington Administrative Code* 173 303, “Dangerous Waste Regulations.”

Treatment, Storage, and Disposal Facilities. Facilities that treat, store, or dispose of hazardous wastes and operate under permit in compliance with the *Resource Conservation and Recovery Act of 1976*.

Tri Parties. U.S. Environmental Protection Agency, Washington State Department of Ecology, and U.S. Department of Energy are the parties to the *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement).

Tri-Party Agreement (TPA). See *Hanford Federal Facility Agreement and Consent Order*.

Tri-Party Agreement-Change Notice (TPA-CN). A TPA-CN is used to make minor changes to the TPA primary document or other regulator-approved document as described in the TPA Action Plan, Section 9.3, “Document Revisions.” Section 9.0, “Documentation and Records,” of the TPA Action Plan identifies what documents are considered primary documents.

Waste Information Data System. A database that identifies all waste management units on the Hanford Site, describes the status of each unit, and includes descriptive information (e.g., location, waste types) (Source: *Hanford Federal Facility Agreement and Consent Order Action Plan*, Appendix A [Ecology et al. 1989a]). This system is maintained by the U.S. Department of Energy, Richland Operations Office, in accordance with the Waste Information Data System change control system that documents and traces additions, deletions, and/or other changes dealing with the status of waste management units.

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1.0 INTRODUCTION

This *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions* (Plan) describes the institutional controls (IC) for the Hanford Site and how they are implemented and maintained in accordance with the following policies, laws, and regulations:

- DOE Policy 454.1, *Use of Institutional Controls*
- *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA)
- *Superfund Amendments and Reauthorization Act of 1986*
- Title 40 *Code of Federal Regulations* (CFR) Part 300, “National Contingency Plan” (NCP)
- *Resource Conservation and Recovery Act of 1976* (RCRA) and the *Hazardous Waste Management Act* (Revised Code of Washington 70.105, “Hazardous Waste Management”) as implemented through Washington Administrative Code 173-303, “Dangerous Waste Regulations”.

The CERCLA decision documents present the selected remedial actions chosen in accordance with CERCLA, 40 CFR 300, and implementing documents such as remedial design reports/remedial action work plans (RDR/RAWP) that have IC requirements. “National Oil and Hazardous Substances Pollution Contingency Plan”; RCRA decision documents describe the closure and corrective actions selected under RCRA. These documents are part of the cleanup mission at the Hanford Site. The selected remedies/corrective actions chosen under CERCLA or RCRA may include ICs.

The Hanford Site, located in south-central Washington State, is approximately 580 mi² of semiarid shrub and grasslands adjacent to the city of Richland, Washington, as shown in Figure 1-1. The original site was 670 mi² and included buffer areas across the Columbia River in Grant and Franklin counties. Some of this land has been returned to private use.

Significant natural, biological, and cultural resources exist on the Site, including habitat for numerous endangered, protected, and listed species, as well as significant historical and cultural sites. The Site is bisected by a free-flowing stretch of the Columbia River, and is just north of the confluence of the Snake and Yakima Rivers with the Columbia River.

1.1 PURPOSE

This Sitewide IC plan is required by the following documents:

- EPA/ROD/R10-00/121, *Record of Decision for the USDOE Hanford 100 Area, Benton County, Washington*
- EPA 2001a, *USDOE Hanford Site, First Five-year Review Report*
- EPA/ROD/R10-01/119, *Record of Decision for the USDOE Hanford 300 Area, Benton County, Washington*
- DOE/EIS-0222-F, *Final Hanford Comprehensive Land-Use Plan Environmental Impact Statements*.



Figure 1-1. Hanford Site.

This Plan addresses the elements of the U.S. Environmental Protection Agency (EPA) Region 10 guidance (*Region 10 Final Policy on the Use of Institutional Controls at Federal Facilities* (EPA 1999) regarding the implementation of ICs at federal facilities.

The scope of this Plan is limited to DOE-managed land and covers only CERCLA operable units (OU) that have associated CERCLA decision documents or RCRA corrective action documents that require ICs. This Plan serves as a reference for the selection of ICs in the future. The appendices to this Plan list the specific IC requirements identified in the applicable CERCLA and/or RCRA decision documents. The focus of ICs may change as cleanup is completed. Active ICs, such as controlling access to the site or controlling activities that may affect remedial action, generally are required during remediation. After cleanup is completed, passive ICs such as permanent markers, public records and archives, or regulations regarding land or resource use are required. Some active ICs, such as monitoring and controlling access to the site, also may be required after cleanup is completed. CERCLA record of decision (ROD) documents and RCRA decision documents identify specific requirements for ICs. The purpose of these different types of ICs, as implemented at various stages of cleanup, is to help protect the following:

- U.S. Department of Energy (DOE) employees
- DOE contractors
- Non DOE entities using DOE land. Individuals who are associated with an organization, other than DOE or its contractors, that is located on the Hanford Site or that is conducting activities on the Hanford Site
- Hanford Site visitors. Individuals who access the Hanford Site for a Hanford Site-related purpose (e.g., public tour)
- Inadvertent intruders. Individuals who inadvertently access the Hanford Site (e.g., inadvertent access to the Hanford Site along the Columbia River shoreline for recreational purposes)
- Remedies (e.g., engineered barriers or a vegetative soil layer).

1.2 MANAGEMENT AND OVERSIGHT OF INSTITUTIONAL CONTROLS

The DOE, Richland Operations Office (DOE-RL) is the responsible party in implementing ICs at the Hanford Site. DOE and EPA select the IC requirements as part of a selected remedy as defined in a CERCLA decision document. The Washington State Department of Ecology (Ecology) approves ICs selected in RCRA closure/post closure plans. This section describes the roles of these key parties.

The responsibility for implementing Sitewide IC requirements resides with DOE-RL; the U.S. Department of Energy, Office of River Protection (DOE-ORP) is responsible for RCRA closure decisions and associated ICs in the tank farms. DOE-ORP does not have responsibility for CERCLA actions at this time. DOE-RL is the interface with the regulatory agencies and the local governments.

EPA and Ecology are the primary agencies that conduct oversight for DOE-RL cleanup activities at the Hanford Site as identified in the *Hanford Federal Facility Agreement and Consent Order* (Tri Party Agreement) (Ecology et al 1989). Each OU and RCRA treatment, storage, and

disposal (TSD) unit is assigned a lead regulatory agency that has regulatory oversight responsibility with respect to actions under the Tri Party Agreement regarding that particular OU. EPA and Ecology have joint authority to determine the choice of lead regulatory agency and the regulatory process, in consultation with DOE-RL, for each OU and RCRA TSD unit. Requirements for the review and inspection of RCRA TSD units are contained in the Hanford Site RCRA Permit (WA7890008967, *Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste*).

The CERCLA ROD documents require that no later than 180 days after a decision document is signed, DOE shall revise the Sitewide IC plan to include the ICs required by the new decision document. Revisions to this Plan, which is a Tri-Party Agreement primary document, are managed by DOE, EPA, and Ecology pursuant to the requirements established in the Tri Party Agreement for primary documents. This Plan will be revised as CERCLA and/or RCRA decision documents with new institutional controls are issued.

Assessment and Reporting

Periodic self-assessment and reporting of ICs provides for an evaluation of the effectiveness of the controls and the opportunity for cost-effective improvements. This oversight includes the following activities:

- Assessing the performance of the ICs to ensure their effectiveness.
- Identifying the need to adjust the ICs based on performance findings.
- Tracking of waste sites with temporary ICs and reporting on those sites where the radioactive decay of elements decreases to concentrations less than cleanup levels and the IC may no longer be required.

DOE contractors have the primary responsibility for these activities, with oversight from DOE to ensure adequate implementation of assessments. Surveillance is the primary tool used to measure the day-to-day performance of the ICs. Each contractor has surveillance procedures that address the planning, performing, and reporting of surveillance, along with the activities required to address any noted deficiencies. Furthermore, DOE-RL conducts oversight and evaluation of contractor activities based on the corresponding procedures in the DOE-RL Integrated Management System.

DOE has determined that the effectiveness of the ICs is most appropriately assessed by evaluating a 5-year “roll up” of annual IC assessment results as collected during the CERCLA 5-year review period. These results are presented in the Hanford Site CERCLA 5-year review. Summaries of the 5-year reviews are provided in Appendix C. The ongoing review of the ICs by the contractors will continue.

The contractors will provide an annual update on the effectiveness of the ICs to EPA and Ecology at the Area Unit Managers Meetings every September. The annual IC assessments performed by DOE-RL’s contractors are publicly released documents and are not included in this plan.

1.3 ORGANIZATION OF THIS PLAN

In general, this Plan has been structured as follows:

- Chapter 1. Introduction (this chapter)
- Chapter 2. Regulatory Basis and General Categories/Types of Institutional Controls
- Chapter 3. Institutional Controls at the Hanford Site
- Chapter 4. References
- Appendices:
 - Appendix A, Institutional Controls Required by Hanford’s CERCLA Decision Documents
 - Appendix B, Institutional Controls Required by Hanford’s RCRA Corrective Actions Documents
 - Appendix C, 5-Year Evaluation of Annual Institutional Control Assessments.

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2.0 INSTITUTIONAL CONTROLS

This section summarizes the regulatory basis for and definitions of institutional controls discussed in this Plan. It also describes the categories of institutional controls used at the Hanford Site.

2.1 REGULATORY BASIS

DOE, EPA, and Ecology regulations govern ICs. Remediation at the Hanford Site is conducted under CERCLA or RCRA, and any related remedial/corrective action documents may specify ICs.

DOE P 454.1 documents a commitment to the effective and appropriate use of ICs; establishes a general framework for a consistent approach to the use of ICs throughout DOE; and recognizes that DOE sites need flexibility to tailor ICs to specific needs, jurisdictions, and times.

DOE P 454.1 also delineates how DOE will use ICs in the management of resources, facilities, and properties under its control and in the implementation of programmatic responsibilities.

The EPA addresses ICs in the National Contingency Plan (NCP), 40 CFR 300, as follows:

Institutional controls may be used during the conduct of the remedial investigation/feasibility study (RI/FS) and implementation of the remedial action and, where necessary, as a component of the completed remedy. The use of institutional controls shall not substitute for active response measures (e.g., treatment and/or containment of source material, restoration of ground waters to their beneficial uses) as the sole remedy unless such active measures are determined not to be practicable, based on the balancing of trade-offs among alternatives that is conducted during the selection of [the] remedy.

The EPA uses the term “Land-Use Controls” synonymously with institutional controls. The EPA also has published guidance documents¹ that address many of the common issues that might be encountered when using ICs pursuant to several EPA cleanup programs. It also provides an overview of EPA’s policy regarding the roles and responsibilities of stakeholders involved in various aspects of the IC life cycle, namely planning, implementing, maintaining, and enforcing ICs. The ROD documents published by EPA contain diagrams showing the IC boundaries.

In addition to requiring the use of ICs for corrective action, RCRA closure regulations, such as 40 CFR 264.119(b)(1), “Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities,” specifically require a deed notice for units where waste is left in place. The owner or operator must record, in accordance with state law, a notation on the deed to the facility property that will, in perpetuity, notify any potential purchaser that the land

¹EPA-540-F-00-005, 2000, *A Site Manager’s Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups*; EPA-540-R-09-001, 2012, *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites*; and EPA-540-R-09-002, 2012, *Institutional Controls: A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites*.

had been used to manage hazardous waste, and that its use is restricted under the closure regulations.

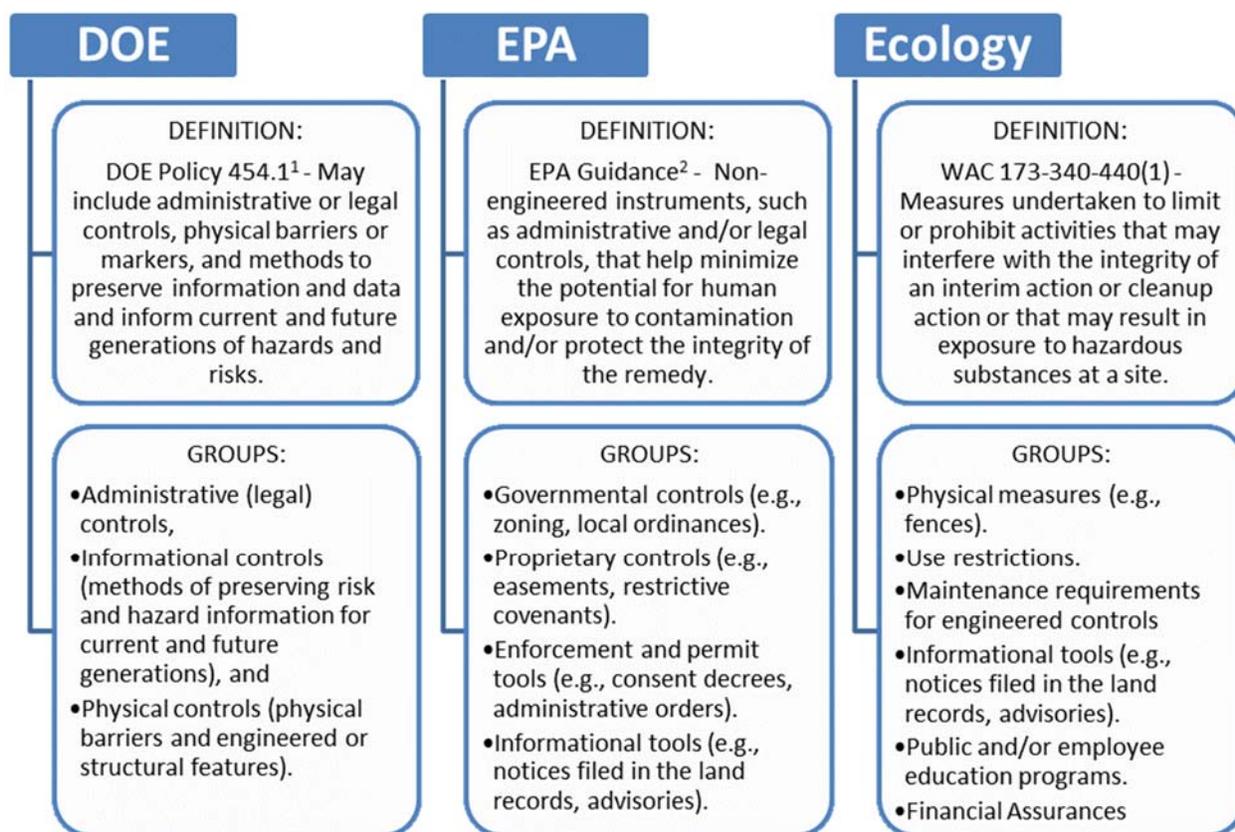
Ecology implements a federally authorized state RCRA program using *Washington Administrative Code* (WAC) 173-303, “Dangerous Waste Regulations,” to promulgate the requirements. Ecology’s implementing regulations for RCRA corrective action (WAC 173-303-64620, “Requirements”) use Ecology’s cleanup regulations found in WAC 173-340, “Model Toxics Control Act — Cleanup.”

When ICs are part of the remedy or corrective action, they are listed in the CERCLA/RCRA decision documents or other implementing document, as shown in Appendices A and B. These decision documents provide the regulatory basis for ICs.

In October 1989, the Hanford Site was included in 40 CFR 300, Appendix B, “National Priorities List” (NPL). In anticipation of the NPL listing, DOE entered into the Tri-Party Agreement with EPA and Ecology, which established the legal framework and schedule for Hanford Site cleanup. Waste management units at Hanford are grouped into OUs. The Tri-Party Agreement generally designates EPA or Ecology as the lead regulatory agency for cleanup of each OU.

2.2 DEFINING INSTITUTIONAL CONTROLS

DOE manages waste sites under a number of regulatory regimes with oversight by EPA and Ecology. DOE, EPA, and Ecology have differing definitions for ICs that result in different types of ICs, as briefly summarized in Figure 2-1. This IC Plan follows the DOE’s broader definition for ICs, which are described in greater detail in sections 2.3 and 2.4. DOE’s Hanford Site controls such as fencing, signs, and badging programs also satisfy some of the IC requirements included in OU-specific decision documents.



¹DOE P 454.1, 2003, *Use of Institutional Controls*, U.S. Department of Energy, Washington, D.C.

²EPA-540-R-09-001, 2012, *Institutional Controls: A Guide to Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

Figure 2-1. Agency Definitions of Institutional Controls.

2.3 CATEGORIES AND TYPES OF INSTITUTIONAL CONTROLS

DOE Legacy Management classifies ICs into the three general groups². These groups are further divided into Hanford-specific categories and types.

1. **Administrative Controls.** Administrative controls are legally enforceable mechanisms. “Enforceable” means that an identified entity has the legal power to halt any activity that violates established controls. The Hanford Site IC Categories that fall into this group include Land-Use Management and Groundwater-Use Management.
2. **Informational Controls** (methods of preserving risk and hazard information for current and future generations). Informational controls are mechanisms that inform

² DOE/LM-1414, 2015, *Guidance for Developing and Implementing Institutional Controls for Long-Term Surveillance and Maintenance at DOE Legacy Management Sites*, U.S. Department of Energy, Office of Legacy Management, Washington, D.C.

current and future generations about past site activities and maintain awareness of residual contamination, sensitive resources, and the associated restrictions on the land use or resource. Some examples of informational controls are deed notices, state registries of contaminated sites. The Hanford Site IC Category that falls into this group is Information Controls.

3. **Physical Controls** (physical barriers and engineered or structural features). Physical controls are manmade structures or site staffing that limit access or that provide physical barriers to limit access to a site. They may also limit intrusion to residual contamination or entombed waste. Physical controls include fences, gates, radiological-hazard signs, wellhead protection, and active human intervention, such as guards. Engineered controls are the subset of physical controls that are designed for site-specific conditions to provide isolation from residual contamination or site hazards. The Hanford Site IC Categories that fall into this group include Access Controls and Barriers.

These groups are not mutually exclusive; one group may contain aspects of another group. For example, a sign that warns of radioactivity at a disposal site serves as both a notice of the radiation and a physical control to limit access to the site. This Plan uses this broad context of titles and protections to incorporate the terminology and common use of ICs in different regulations, such as CERCLA and RCRA, and as could be used in state statutes regarding restrictions. For instance, EPA considers ICs a subset of land-use controls, while DOE uses ICs to convey the broad definition for protective measures, with land-use controls as a type of administrative control.

The ICs that apply to the Hanford Site are defined by decision documents and fall within some of these general groups, but are more specific in nature. Using the guidance provided by DOE, the ICs at the Hanford Site generally are divided into the following categories:

- Access controls
- Land-use management
- Groundwater-use management
- Barriers
- Information controls
- Miscellaneous.

These categories are further divided into types. Table 2-1 identifies categories, types and objectives for the ICs implemented at the Hanford Site. This section describes the categories listed in the table.

Table 2-1. Categories, Types, and Objectives of Sitewide Institutional Controls. (2 sheets)

Category/Section of the Plan where discussed	Types	Objectives
Access Controls (Section 2.3.1)	Warning Notices <ul style="list-style-type: none"> • Signs • Monuments 	<ul style="list-style-type: none"> • Provide visual identification and warning of hazardous or sensitive areas • Provide information on restrictions, access information, contact information, and emergency information • Limit access to the site or portions of the site
	Entry Restrictions	<ul style="list-style-type: none"> • Control human access to hazardous or sensitive areas • Ensure adequate training for those who enter hazardous or sensitive areas • Avoid disturbance and exposure to remedies such as engineered barriers or an effective vegetative soil layer • Provide a basis for the enforcement of access restrictions
	Fencing	<ul style="list-style-type: none"> • Prevent unauthorized human access to hazardous or sensitive areas • Provide protective barriers to standard industrial hazards • Provide visual warnings • Avoid disturbance and exposure to remedies such as engineered barriers or an effective vegetative soil layer
Land-Use Management (Section 2.3.2)	Land-use and real property controls	<ul style="list-style-type: none"> • Ensure that use of the land is compatible with any hazards that exist • Ensure that any changes in use of the land are adequately assessed before being allowed
	Site Evaluation Excavation permits	<ul style="list-style-type: none"> • Avoid unplanned disturbance or infiltration • Inform and protect workers regarding potential exposure to hazardous waste • Avoid the creation of potential pathways for the migration of hazardous waste
	Industrial Use	Maintain industrial use designation
	Enhanced Recharge	Minimize water infiltration with the potential to enhance contaminant transport to groundwater
	Irrigation Control	Eliminate the potential for irrigation water to mobilize residual contaminants in the soil
Groundwater-Use Management (Section 2.3.3)	Land-use and real property controls, Excavation permits	Ensure proper use of groundwater
Barriers (Section 2.3.4)	Engineered Controls	<ul style="list-style-type: none"> • Isolate contaminants from the accessible environment • Maintain engineered cap • Fencing is an example of a barrier
	Administrative support, archives and libraries	Maintain and provide access to information on the location and nature of contamination

Table 2-1. Categories, Types, and Objectives of Sitewide Institutional Controls. (2 sheets)

Category/Section of the Plan where discussed	Types	Objectives
Information Controls (Section 2.3.5)	Notifications and restrictions	<ul style="list-style-type: none"> • Ensure that any changes in the property ownership or control or oversight will be communicated to the appropriate parties and required notifications will be made • Ensure that the ICs are maintained beyond change of ownership, as appropriate • Notify Benton County Sheriff's Office of trespassing incidents
	Notice in Deed	Ensure that the actual land use is limited to the designated land use
Miscellaneous (Section 2.3.6)	Administrative	Compliance with administrative requirements such as updating the Sitewide IC Plan

IC = institutional control.

2.3.1 Access Controls

Access control is the selective restriction of access to a place or other resources. The term “access control” refers to the practice of permitting authorized access or denying unauthorized access to facilities. At the Hanford Site, access controls include warning notices, entry restrictions, and fences. Sections 2.3.1.1 through 2.3.1.3 describe the access controls.

2.3.1.1 Warning Notices

Warning notices are signs that provide visual identification and warning of hazardous or sensitive areas. DOE generally uses two types of warning signs that, while not specifically designed as CERCLA notification signs, can serve the same purpose. The two types of signs are “No Trespassing” signs (Figure 2-2) and notification signs for hazardous (including radiological control) and sensitive areas (Figure 2-3).



Figure 2-2. No Trespassing Sign.



Figure 2-3. Warning Notification Signs for a Hazardous Area.

Signs located along the Hanford Site's perimeter and public road corridors are designed and maintained in accordance with DOE O 473.3A. In addition, DOE identifies and implements the structures, systems, and components necessary to reduce the risks posed by facilities and their

operations by performing a hazard and accident analysis. General Site criteria for signs and markers related to Site safeguards and security include the following references:

- Signs and markers for radiological controls are in accordance with the 10 CFR 835, “Occupational Radiation Protection,” Final Rule, and section 229 of the *Atomic Energy Act of 1954*, as amended.
- WAC 173-303-310, “Security” has specific requirements for warning signs. The Hanford Site RCRA Permit, Condition II M, requires compliance with WAC 173-303-310. The permit also specifies signage requirements for TSDs, some operating units and post-closure units. Warning signs for operating units and post-closure units are described in unit-specific sections of the permit. Section 3.1.1, Attachment 3, of the permit describes Hanford facility signs for non-operating units, as follows:

Signs are posted at area boundaries within the Hanford Site stating:

- “No Trespassing, Security Badges Required Beyond This Point”
- “Authorized Vehicles Only, Public Access Prohibited” (or an equivalent legend).

In addition, warning signs bearing the legend “Danger Unauthorized Personnel Keep Out” (or an equivalent legend) are posted at operating TSD units or unit groups or at active portions of operating TSD units or unit groups and along the fence lines of the operating unit groups at distances not to exceed 250 feet between signs. These signs are written in English, legible from a distance of 25 feet, and visible from all angles of approach.

- DOE has placed yellow “No Trespassing” signs every 152 m (500 ft) along the perimeter of the Hanford Site and on the public roadways that pass through the Hanford Site as specified in CRD O 473.3, Protection Program Operations. The signs also prohibits unauthorized entry to any facility, installation, or real property subject to the jurisdiction, administration, or in the custody of DOE, that has been subject to the provisions of 10 CFR 860, “Trespassing on Department of Energy Property.”

2.3.1.2 Entry Restrictions

DOE strives to prevent entry into waste sites in accordance with the Hanford Site RCRA Permit, Condition II M, the IC requirements of the CERCLA decision documents, and as described in applicable work plans. Entry restrictions are ICs that prevent or limit access to particular geographical areas. Procedural requirements are in place at Hanford to restrict entry to the waste sites.

2.3.1.2.1 Procedural Requirements for Entry

Procedural requirements for entry and fencing are the two main types of access controls. The objectives of the procedural requirements for access are as follows:

- Control human access to hazardous or sensitive areas
- Ensure adequate training for those who enter hazardous or sensitive areas
- Avoid disturbance and exposure to hazardous materials
- Provide a basis for the enforcement of access restrictions.

Security badges must be worn by employees, contractors, and others who require access to restricted areas. Qualified personnel possessing security badges can escort personnel who do not possess security badges (visitors still require visitor badges) to access the restricted areas. Visitors remaining on some roadways in the 600 Area can drive up to the Hanford Site access barricades (i.e., Rattlesnake, Yakima, and Wye) without a security badge. Foreign nationals will require a properly trained foreign national escort, and areas being visited must be included in the person’s security plan approved by DOE. Signs at the Hanford Site entrances identify the requirements for access.

Trespassing on the Hanford Site is subject to criminal prosecution under state and federal laws. Access to the Site and associated facilities, other than locations designated as public access areas or general access areas, is controlled through the use of security badges and access authorizations (security clearances). These controls comply with DOE directives and are implemented through the contractor policies and procedures. Visitors, Hanford Site contractors, and DOE personnel are required to obtain a badge from DOE’s Central Badging Office to obtain access to the restricted areas. Before receiving a badge, all individuals must complete training at the level required to access controlled areas or to perform work. This includes training on recognizing signs and hazard postings and following appropriate procedures. Security police officers are located at the Rattlesnake, Yakima, and Wye barricades to prevent unauthorized access.

The procedural requirements for access address the items listed in Table 2-2.

Table 2-2. Procedural Requirements for Access.

Badges
<ul style="list-style-type: none"> • Wearing and displaying badges at all times while on the Hanford Site and presenting badges on request • Badging for employees, visitors, and foreign nationals • Levels of security and badging required based on specialized need, such as the presence of special nuclear material or firing ranges
Verification and Tracking
<ul style="list-style-type: none"> • Verification of proper badges at entry points where necessary to check identity and to control unauthorized entry • Employee responsibility when hosting Site visitors, including knowing the visitor’s location at all times and the work being performed
Orientation and Training
<ul style="list-style-type: none"> • Appropriate training for visitors and workers regarding policies and procedures, including safety, security, and escorting requirements, as well as emergency preparedness information • Escort training, which provides qualifications for personnel who will act as escorts
Violations
<ul style="list-style-type: none"> • Denying security clearance and access to Hanford Site • Reporting security incidents • Reporting trespassing incidents to regulators and local authorities in accordance with DOE policy, contracts, and as required by regulatory decision documents.

DOE = U.S. Department of Energy.

2.3.1.3 Perimeter and Area Fences

Fences prevent unauthorized human and, in some cases, large animal access to hazardous or sensitive areas; provide protective barriers to remedies such as engineered barriers or vegetative soil layers; and provide visual warnings. The Hanford Facility perimeter fence is installed that extends approximately 32 miles from the northwest corner of the Hanford Facility, where the facility meets with the Columbia River at the Vernita Bridge, to the southeast corner of the facility near Stevens Road. The perimeter fence is constructed of steel fence posts strung with barbed wire. This fence provides a barrier to vehicle access on the west and south portion of the Hanford Facility. All other unimproved vehicle access roads along the facility boundary are controlled by locked vehicle access gates combined with the Hanford Facility perimeter fence. In addition to the perimeter fence, area fences located inside the boundary of the Hanford Facility are installed around the 200 East, 200 West, 300, and 400 Areas.

The 200 East and 200 West areas are each surrounded by an area fence. Many of the active portions of the Hanford Facility are located within the 200 area fences. The area fences are chain link fencing that may be topped with barbed wire in certain places. Access through the 200 area fences is provided only at a limited number of entrances.

The 300 Area is surrounded by fencing except at the entrance points. The 300 Area perimeter fencing is chain link, with the exception of the northeast corner where a portion of the chain link fencing has been removed and replaced with metal posts with a single wire strand. The 400 Area is surrounded by chain link fencing with triple strand barbed wire on top, except at the entrance points.

The fences are maintained through regular surveillance activities in accordance with contractor procedures. Deficiencies (e.g., signs missing, fences down) are identified and corrective actions taken through the approved work control procedures.

2.3.2 Land-Use Management

DOE restricts the use of land on waste sites and prohibit activities that would interfere with the remedial activity in accordance with the IC requirements of the CERCLA decision documents and as described in applicable work plans. Deed restrictions will be applied as necessary during the transfer of property ownership to a non-DOE entity. DOE prohibits activities that would damage the monitoring systems and their components identified in the CERCLA decision documents. Such monitoring systems could include wells and systems monitoring engineered barrier performance.

ICs that address land use are grouped into the following three main elements:

- Land-use and real property controls, which are used to ensure that the land is used in accordance with Hanford Site plans and CERCLA decision documents (section 2.3.2.1).
- Site evaluations that are required before any major land disturbance or land-use activity (section 2.3.2.2).
- Excavation permits required for excavations on the Site to prevent unplanned disturbance or infiltration as prohibited by CERCLA decision documents (section 2.3.2.3).

2.3.2.1 Land-Use and Real Property Controls

The objectives of the ICs related to land use and real property management are the following:

- Ensure the use of the land is compatible with any hazards that exist, and limit access to hazardous materials.
- Ensure that any changes in the land are adequately assessed before being allowed, thereby avoiding unplanned or prohibited use.
- Ensure that controls associated with real estate are in the property record and otherwise ensure that the restrictions remain in place beyond DOE-RL ownership or management of the property.

The land-use management process and real property management process are integrated and managed together and are in compliance with DOE O 430.1C, *Real Property Asset Management*.

The land-use policies, real property management process, and implementing procedure requirements are integrated into the DOE-RL Integrated Management System and contractor procedures. The comprehensive land-use plan for the Site is set forth in DOE/EIS-0222-F and DOE/EIS-0222-SA-01, *Supplement Analysis*, and contains the land-use map, land-use definitions, and the land-use policies that DOE uses to manage land-use and its interactions with the local governments.

DOE manages changes to land-use and the land-use requests through a process involving the local stakeholders, Tribal Nations, and affected local governments. DOE/EIS-0222-F, chapter 6, describes how the cooperating agencies with land-use authority and affected Tribal governments advise DOE on land-use and resource management issues, such as considering proposals for changes to land-use and land-use requests that are not in conformance with DOE/EIS-0222-F.

DOE/EIS-0222-F, chapter 6, defines the review process for site-specific land use and land-use requests. To ensure compatibility with DOE/EIS-0222-F, any proposed changes in land use must be submitted to the DOE-RL Real Estate Office.

The DOE-RL Real Estate Office reviews and approves the disposition of land. Before the transfer, sale, or lease of any property subject to cleanup under CERCLA or RCRA corrective action, DOE assesses whether the property is subject to IC requirements based on the corresponding CERCLA decision documents and RCRA corrective action decisions. DOE will notify the EPA and the state before any such transaction in accordance with the Sitewide IC requirements and applicable requirements in the CERCLA decision documents and work plans. Notification of a land-use action or a real property action occurs in accordance with Tri-Party Agreement requirements.

The following sections summarize land-use management in the River Corridor Area, on the Central Plateau, and at RCRA TSD units.

2.3.2.1.1 River Corridor Area and the Central Plateau

Land-use is managed according to the comprehensive land-use plan as described in DOE/EIS-0222-F and DOE/EIS-0222-SA-01 and in compliance with DOE orders and cleanup end states as established in CERCLA decision documents.

Except for areas where DOE is conducting cleanup, land-use for the Hanford Reach National Monument is managed by the U.S. Fish and Wildlife Service in accordance with the *First Amended Memorandum of Understanding Between the U.S. Department of the Interior, Fish and Wildlife Service and the U.S. Department of Energy, Richland Operations Office for the Operation of the Fitzner Eberhardt Arid Lands Ecology Reserve at the Hanford Site; Fourth Amendment to the Wahluke Slope Permit* (DOE-RL et al 2001).

2.3.2.1.2 1100 Area Site

Land-use for the portion of land owned by the Port of Benton is managed under the jurisdiction of local governments through the implementation of state and local laws.

As required EPA/ROD/R10 93/063, *Record of Decision for the USDOE Hanford 1100 Area Final Remedial Action*, Section X (F), DOE recorded a notation on the deed to the Horn Rapids Landfill property as specified in 40 CFR 61.151(d)(4), “National Emission Standards for Hazardous Air Pollutants” (NESHAP). See Table 2-3 for the recorded notation.

2.3.2.1.3 RCRA TSD Units

Land-use is managed according to the comprehensive land-use plan as described in DOE/EIS-0222-F and DOE/EIS-0222-SA-01 and in compliance with DOE orders and RCRA closure plan requirements.

2.3.2.2 Site Evaluation

The Hanford Site has a Sitewide requirement for site evaluation before starting any project requiring land-use. The formal site evaluation process identifies possible sites for a proposed project and compares their relative merits based on environmental protection, technical, safety, and health protection, infrastructure availability, efficiency of operations, and lifecycle cost requirements. The site evaluation process is used to request, reserve, and use a specific parcel of land when multiple sites do not need to be evaluated. The outcome of the process is the documentation necessary to compare site alternatives, confirm site suitability, make recommendations, and ensure that the site selected meets requirements.

The site evaluation process generally consists of the following:

- Determining that a potential action requires a site evaluation
- Identifying site requirements
- Identifying possible waste sites
- Submitting the land-use request to a multi-contractor team and subject matter experts to evaluate the request
- Resolving any land-use concerns that may arise from the evaluation
- Developing recommendations
- Selecting the site.

Site evaluation applies to all land development, disturbances, and improvements on the Hanford Site, both temporary and permanent. Examples of the scope of site evaluation process include the following:

- Construction of new structures that preempt present or projected land-use. Examples would be a new fixed structure or building, parking lot, roadway, material/equipment staging area, or new utility corridor
- Expansion of an existing land-use for a designated purpose, such as burial grounds and associated remediation efforts, or gravel pits
- Installation of temporary or portable structures including trailers, cargo containers, or shelters.

Projects may be modified or terminated if they potentially conflict with IC requirements.

2.3.2.3 Excavation Permits

An excavation permit is required for any mechanical digging or hand digging deeper than 304.8 mm (12 in.). A permit also is required for any mechanical digging shallower than 304.8 mm (12 in.), except when using a guzzler (vacuum excavation). The contractors at the Hanford Site are required to obtain excavation permit before performing any excavation work, including well drilling.

The work control process requires an excavation permit as part of the work planning process. The excavation permit process contains the following features:

- A review of institutional controls
- A review of the Waste Information Data System (WIDS) database is required to identify the proximity of existing waste sites
- Identification of documents required for compliance with *National Environmental Policy Act of 1969*
- Compliance with the *National Historic Preservation Act of 1966*, section 106, and the *Endangered Species Act of 1973* for cultural and biological resource surveys
- Identification of any underground objects (e.g., utilities)
- Compliance with the applicable health and safety requirements.

Review of the excavation permit by subject matter experts in disciplines such as environmental, radiological, and safety before it is issued. Each Hanford Site contractor is responsible for ensuring that excavations are performed in accordance with excavation permit requirements.

2.3.2.4 Industrial Use

Land-use designations for different portions of the Hanford Site include Conservation/Mining and Industrial Exclusive. Cleanup of some waste sites in designated Industrial Use areas achieves unrestricted use cleanup standards and the sites can be closed with no requirement for ICs. Other waste sites meet industrial cleanup levels (or TSD unit closure); remedies for sites that meet industrial cleanup levels have ICs that limit land-uses and achieve a level of protectiveness consistent with sites achieving unrestricted cleanup levels. The 300 Area has been designated for industrial use (Figure A3-2); cleanup levels for some 200 Area RODs are based on industrial land-use.

2.3.2.5 Enhanced Recharge Controls

EPA/ROD/R10-96/143, *Record of Decision for the USDOE Hanford 300 Area, Benton County, Washington*, defines enhanced recharge controls as no irrigation or landscaping watering, control drainage from low-permeability areas, including paved parking lots or buildings, and prevent bare gravel or bare sand covers.

2.3.2.6 Irrigation Controls

Irrigation controls are required for waste sites to eliminate the potential driving force of irrigation water to mobilize the residual contaminants in the soil. This action assists in protecting groundwater and the Columbia River.

2.3.3 Groundwater-Use Management

Groundwater use on the Hanford Site generally is restricted, except for limited research purposes and for monitoring and treatment, as approved by EPA or Ecology. Groundwater access and use are controlled through excavation permits and the land-use management process (as described in section 2.3.2).

The following limited number of wells are operating for purposes other than research or testing; some wells also provide dust suppression water for waste site cleanups:

- Fast Flux Test Facility in the 400 Area (one main and two backup drinking water wells)
- Energy Northwest (two wells for drinking water and two wells for backup fire protection)
- B Plant (282B is used as emergency back-up water for the Waste Encapsulation and Storage Facility pool cells)
- Pacific National Northwest Laboratory, 300 Area (one well for aquatic studies).

Drinking water systems are operated in accordance with the Washington State Department of Health regulations; all new wells must be registered with Ecology. Control measures that protect groundwater for drinking water systems are described in HNF-35051, *Small Water Systems Management Program for Group A Water Systems Managed by Mission Support Alliance, LLC, and CH2M HILL Plateau Remediation Company*, Revision 12, Appendix A, "Hanford Site Wellhead Protection Plan." The 400 Area uses water from three underground, deep water wells as the drinking water source. The control measures taken to protect the water that drains into the rivers on or near the Site and that also interacts with and affects the groundwater are described in *Hanford Site Watershed Control Plan* (Wastren 1995). DOE restricts well drilling and groundwater use in accordance with the IC requirements of the CERCLA decision documents and as described in applicable work plans.

Oversight of DOE water systems is the responsibility of DOE-RL, which must approve all uses. Groundwater management activities include ensuring compliance with applicable laws and regulations, implementing the groundwater protection and watershed control programs, identifying potential sources of contamination, conducting groundwater and vadose zone monitoring, conducting maintenance programs, and conducting emergency response actions. DOE will restricts well drilling and groundwater use in accordance with the IC requirements of the CERCLA decision documents and as described in applicable work plans.

Groundwater protection strategies consist of source control, remediation, and monitoring. The Hanford Site Groundwater Monitoring Project produces an annual report (not covered in this Plan) documenting the results of groundwater monitoring for the previous calendar year. The groundwater monitoring project report summarizes groundwater monitoring conducted under CERCLA and RCRA requirements and provides an assessment of the effects of remediation or interim measures conducted under CERCLA and RCRA. The report, along with OU-specific reports, fulfills the reporting requirements of DOE orders and the WAC.

Results of the groundwater monitoring project are reviewed and reported annually to identify any trends regarding the condition of the groundwater and the potential implication of those trends to ICs (e.g., prohibition of groundwater use). Data from the report are considered in evaluating the protectiveness of the remedy, effectiveness of the ICs, and the need for any changes to the remedy or institutional controls.

In the event that DOE transfers property with groundwater use restrictions to another entity, the appropriate use restrictions will be attached to the real estate transaction to ensure that specific ICs remain in place.

The following summarizes groundwater use management in the River Corridor Area (100, 300, and 1100 Areas) and the Central Plateau:

- Groundwater use is restricted, except for monitoring and treatment, as approved by EPA or Ecology.
- Groundwater use and drilling are prohibited on the Horn Rapids Landfill property.

2.3.4 Barriers

Barriers are engineered controls used to isolate contaminants from the accessible environment. Examples of barriers are fences and engineered barriers, such as a multi-layered cover, an evapotranspiration barrier, or an engineered cap. The purpose of barriers is to protect the contaminants left behind from intrusion by humans and/or biota and recharge from precipitation or runoff or release into the air. For example, a fence would be used to keep intruders away. An evapotranspiration barrier could consist of a vegetative soil layer that promotes native plants. An engineered cap would keep contaminants from releasing into the air. The Horn Rapids Landfill has an engineered cap as specified in NESHAP for asbestos.

2.3.5 Information Controls

Information controls are mechanisms that inform current and future generations about past site activities and maintain awareness of residual contamination, sensitive resources, and the associated restrictions on the land-use or resource.

2.3.5.1 Administrative Support, Archives and Libraries

DOE maintains WIDS, an information tracking mechanism that identifies waste management units on the Hanford Site, their location, waste type, status, and associated ICs. WIDS also contains other descriptive information, including size, extent, and appearance; testing or sampling efforts; regulatory information; bibliographic references; images; and change history.

DOE and the lead regulatory agency initially evaluate candidate sites using a Discovery Site Evaluation Checklist. This evaluation leads to the classification of the WIDS sites as “accepted”

or “rejected/not accepted.” If the “accepted” classification is approved, a WIDS site is classified as a “waste site” and is subject to further action, such as a CERCLA remedial action or RCRA corrective action. The rejected WIDS sites are not considered waste sites and are not addressed in this Plan, but remain in WIDS to document institutional memory. ICs are required at waste sites when residual contamination remains at a level that does not currently allow for unlimited use and unrestricted exposure (UU/UE) after remediation; in some situations, temporary ICs may be required until radioactive decay of elements decreases to levels that allow for UU/UE and the lead regulator (EPA or Ecology) authorizes the removal of restrictions. WIDS also documents areas of concern that were evaluated and determined to not be waste management units. The WIDS administrator keeps the system current.

DOE maintains WIDS in accordance with the WIDS change control system, which documents and traces additions, deletions, and other changes dealing with the status of waste management units. The long-term preservation of waste site information is addressed in RL TPA 90-0001, *Tri-Party Agreement Handbook Management Procedures*, Guideline Number TPA MP-14, “Maintenance of the Waste Information Data System (WIDS),” which will be a key part of the Long-Term Stewardship Program.

In addition to WIDS, the Hanford Site Administrative Record, which is the body of documents and information considered or relied on to arrive at a decision for remedial action or hazardous waste management at a particular OU, is publicly available at <http://pdw.hanford.gov/arpir/>.

2.3.5.2 Notifications

Notifications are used to ensure that any changes in the property ownership or control or oversight are communicated to the appropriate parties. They also are required when IC violations occur or property is transferred to government or non-government agencies. Some RODs require that the regulatory agencies and Benton County Sheriff’s Office be notified of trespassing incidents on the Hanford Site.

2.3.5.3 Notice in Deed

Real estate deed restrictions, recorded using notice in deed, place limitations on property use. The regulatory agencies use the terms “Deed Restrictions” and “Notice in Deed” to describe these restrictions. Deed restrictions “bind” land. Typically, a deed restriction is created in a document (i.e., Notice in Deed) that is recorded with the county register of deeds records where the property is located. Most deed restrictions are permanent and “run with the land”; that is, they generally bind all current and future owners of the lot or parcels involved. Table 2-3 lists the deed restrictions on the Hanford Site and a survey plat for 1325-N registered with the Benton County Auditor.

Table 2-3. Hanford Site Deed Restrictions Filed with the Benton County Auditor. (2 sheets)

Title	Certificate of Recording	Area/Location	Deed Restriction Description
100-D Ponds	Benton Co. Auditor: File No. 1999-025478 08/06/1999	100-D Area Located in Section 15, T14N, R26E	The 100-D ponds were used to manage dangerous waste pursuant to WAC 173-303 ^a . The DOE-RL closed this facility by removing dangerous waste constituents from the site during closure activities, meeting “clean closure” standards under WAC 173-303-610 (2)(b). Groundwater contamination attributable to sources upgradient of the 100-D ponds remains beneath the ponds above cleanup standards at the time this record of survey was prepared. Therefore, use of this groundwater is restricted until such time as cleanup standards are met or it has been determined that cleanup is not necessary.
183-H Solar Evaporation Basins	Benton Co. Auditor: File No. 1996-29990 12/04/1996	100-H Area Located in Section 18, T14N, R27E	DOE-RL has disposed of hazardous and/or dangerous waste under the terms of regulations promulgated by the EPA and Ecology at the 183-H solar evaporation basins. Future use of this land is restricted under the terms of 40 CFR 264.119 (c) ^b and WAC 173-303-610 (7) (d) ^a .
1324-NA Percolation Pond; 1324-N Surface Impoundment	Benton Co. Auditor: File No. 2003-013391 03/24/2003	100-N Area Located in Section 28, T14N, R26E	The 1324-NA percolation pond and the 1324-N surface impoundment were used to manage dangerous waste pursuant to WAC 173-303 ^a . DOE-RL closed these units in December 2002 by removing wastes from the site during closure activities meeting soil “clean closure” standards under WAC 173-303-610 (2)(b) ^a . Groundwater contamination attributable to these facilities remains above the secondary drinking water standard for sulfate. Therefore, use of this groundwater is restricted until such time as cleanup standards are met.
1325-N Liquid Waste Disposal Facility. Certification of Closure & Survey Plat	Benton Co. Auditor: Survey Vol. #1, Pg 3445, File No. 2005-006314 03/01/2005	100-N Area Located in portions of Sections 22, 27, and 28 of T14N, R26E	The 1325-N unit received radiologically contaminated liquid effluent from the 100-N Reactor from 1985 to 1991. Closure of this unit commenced pursuant to WAC 173-303-610. The soil closure activities for 1325-N meet the cleanup levels and performance standards of the closure plan (DOE/RL-96-39) ^c . As a result, there is no requirement to file a “notice in deed.” However, the survey plat for 1325-N has been recorded with Benton County and a “Certification of Closure” has been submitted to Ecology in accordance with WAC 173-303-610(6) ^a .

Table 2-3. Hanford Site Deed Restrictions Filed with the Benton County Auditor. (2 sheets)

Title	Certificate of Recording	Area/Location	Deed Restriction Description
300 Area Process Trenches (APT)	Benton Co. Auditor: File No. 1998-025988 09/03/1998	300 Area Located in Section 2, T10N, R28E	The 300 APT was used to manage dangerous waste pursuant to WAC 173-303 ^a . DOE-RL closed this facility in May 1998 by removing dangerous waste constituents from the site, meeting "clean closure" standards under WAC 173-303-620 (2)(b) ^a . Radioactive contamination remains in the unit at levels above unrestricted use limits. Groundwater contamination attributable to the 300 APT remains at levels above cleanup standards at the time this record of survey was prepared. Therefore, use of this groundwater is restricted until such time as cleanup standards are met.
Solid Waste Landfill	Benton Co. Auditor: File No. 1997-006444 03/25/1997	600 Area Located in Sections 20 and 29, T12N, R27E	DOE-RL has disposed of asbestos-containing material under the terms of regulations promulgated by the EPA and Ecology at the Solid Waste Landfill. The future use of the Solid Waste Landfill is restricted under the terms of 40 CFR 61.151 ^d as an asbestos-containing landfill.
Horn Rapids Landfill	Benton Co. Auditor: File No. 1997-008784 04/18/1997	1100 Area Located in Section 15, T10N, R28E	DOE-RL has disposed of hazardous and/or dangerous waste under the terms of regulations promulgated by the EPA and Ecology at the Horn Rapids Landfill. The future use of the Horn Rapids Landfill is restricted under the terms of 40 CFR 61.151 ^d as an asbestos-containing landfill.
1301-N Surface Impoundment	Benton County Auditor No. 2015-009914	100 Area Located in the northwest quarter of Section 28 and the southeast quarter of Section 21, T14N, R26E	The facility was used to manage dangerous waste pursuant to WAC 173-303 ^a and is considered a RCRA ^e liquid waste treatment and disposal facility. The facility underwent cleanup under a CERCLA ^f remedial action and was identified as CERCLA waste Site 116-N-1 crib trench.

^a WAC 173-303, "Dangerous Waste Regulations," Washington Administrative Code, as amended.^b 40 CFR 264.119, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," Code of Federal Regulations, as amended.^c DOE/RL-96-39, 100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan. March 2002.^d 40 CFR 61.151, "National Emission Standards for Hazardous Air Pollutants," Code of Federal Regulations, as amended.^e Resource Conservation and Recovery Act of 1976, 42 USC 6901, et seq.^f Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 USC 9601, et seq.CERCLA = *Comprehensive Environmental Response, Compensation, and Liability Act of 1980.*CFR = *Code of Federal Regulations.*

DOE-RL = U.S. Department of Energy, Richland Operations Office.

Ecology = Washington State Department of Ecology.

EPA = U.S. Environmental Protection Agency.

RCRA = *Resource Conservation and Recovery Act of 1976.*

2.3.6 Miscellaneous

The ICs listed in the CERCLA decision documents sometimes include requirements that are miscellaneous in nature (i.e., they do not clearly fit into any specific IC category).

These miscellaneous requirements include the following:

- DOE shall evaluate the effectiveness of the ICs and report to EPA and Ecology.
- DOE contractors will provide an annual update on the effectiveness of the ICs to EPA and Ecology at the area unit managers meetings every September.
- DOE shall comply with the Sitewide ICs plan as approved by EPA and Ecology.

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3.0 CERCLA AND RCRA INSTITUTIONAL CONTROLS AT THE HANFORD SITE

This chapter describes the types of ICs used and their implementation at the Hanford Site. Information in this chapter is presented in an order that generally aligns with Hanford's NPL sites (i.e., the 100 Area, 200 Area, 300 Area, and 1100 Area NPL sites). The EPA created the NPL in the 1980's to address priorities among the known or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL primarily guides the EPA in identifying sites that warrant further investigation.

Each of Hanford's NPL sites has been subdivided into multiple source and groundwater OUs. Table 3-1 lists the source and groundwater OUs located in Hanford's River Corridor and Central Plateau that currently include ICs. Table 3-1 also identifies the general alignment of OUs with Hanford's broader geographic areas (i.e., the River Corridor and Central Plateau), Hanford's NPL sites (i.e., 100, 200, 300 and 1100 Area NPL sites), and Hanford past-production-era areas. Figure 3-1 presents the approximate geographic areas associated with each Hanford OU that currently has ICs.

Table 3-1. Hanford Site Locations with Institutional Controls.

Geographic Area	National Priorities List Unit	CERCLA ¹ Operable Units		Past-Production-Era Hanford Areas
		Source Operable Units ²	Groundwater Operable Units ²	
River Corridor	100	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-IU-2, 100-IU-6, 100-KR-1, 100-KR-2, 100-NR-1	100-FR-3, 100-HR-3, 100-KR-4, 100-NR-2	100BC, 100D, 100F, 100H, 100K, 100N, 600 ³
	300	300-FF-1, 300-FF-2	300-FF-5	300, 400, 600 ³
	1100	1100-EM-1		1100, 600 ³
Central Plateau	200	200-CU-1, 200-CW-3, 200-CW-5, 200-DF-1, 200-DV-1, 200-PW-1, 200-PW-3, 200-PW-6	200-UP-1, 200-ZP-1	200E, 200W, 600 ³

¹ *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, 42 USC 9601, et seq.

² This table lists only operable units with institutional controls.

³ The 600 Area is defined as all locations outside of the other Hanford operating areas, and therefore extends into all the National Priorities List units.

The basic CERCLA and RCRA categories and types of ICs are the same. Table 3-2 shows the basic categories that apply to each OU. Appendix A provides a detailed listing of the ICs identified in the CERCLA decision documents. Appendix B provides a detailed listing of ICs identified in the RCRA closure plans.

Waste sites, or waste management units, are located within OUs. A waste site may require specific ICs that are not required at the OU level.

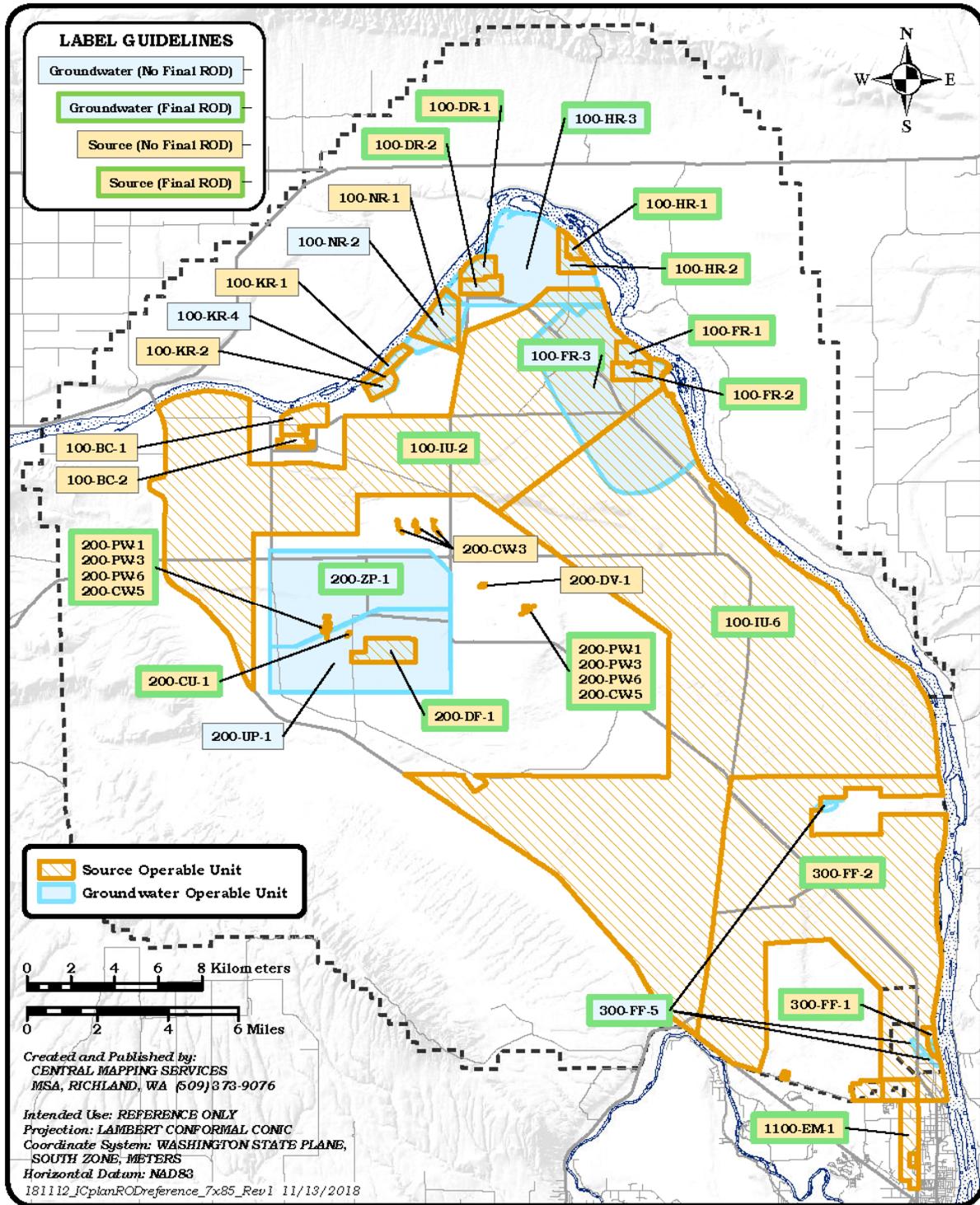


Figure 3-1. General Locations¹ of Hanford Site Operable Units with ICs.

¹ This graphic shows approximate locations of CERCLA Operable Units with ICs; some of the labels (e.g., 200-DV-1) point to a portion of the given OU that has ICs. For better detail of Operable Units (OU) locations and specific waste sites with ICs, see the decision documents noted in Appendix A.

Table 3-2. Institutional Controls for CERCLA Operable Units and RCRA TSD Units. (4 sheets)

Institutional Controls												Tables where ICs are described in the IC Plan
Operable Unit	Access Control			Land-Use Management						Ground water-Use Mgmt	Misc. Provision	
	Warning Notices	Entry Restrictions	Fencing	Land Use	Excavation Permits	Notice in Deed	Industrial Use	Irrigation Control	Enhanced Recharge Control			
100-BC-1	x	x		x	x			x		x	x	A1-1, A1-3, A1-4, A1-5, A1-6, A1-7, A1-8
100-BC-2	x	x		x	x			x		x	x	A1-4, A1-5, A1-6, A1-7, A1-9
100-DR-1	x	x		x	x					x	x	A1-1, A1-3, A1-4, A1-5, A1-6, A1-7, A1-10, A1-11
100-DR-2	x	x		x	x					x	x	A1-4, A1-5, A1-6, A1-7, A1-10, A1-12
100-FR-1	x	x		x	x			x		x	x	A1-4, A1-6, A1-15, A1-16
100-FR-2	x	x		x	x					x	x	A1-4, A1-5, A1-6, A1-7, A1-15, A1-17
100-FR-3	x	x		x	x					x	x	A1-15
100-HR-1	x	x		x	x			x			x	A1-1, A1-3, A1-4, A1-6, A1-10, A1-13

Table 3-2. Institutional Controls for CERCLA Operable Units and RCRA TSD Units. (4 sheets)

Institutional Controls												Tables where ICs are described in the IC Plan
Operable Unit	Access Control			Land-Use Management						Ground water-Use Mgmt	Misc. Provision	
	Warning Notices	Entry Restrictions	Fencing	Land Use	Excavation Permits	Notice in Deed	Industrial Use	Irrigation Control	Enhanced Recharge Control			
100-HR-2	x	x		x	x					x	x	A1-4, A1-5, A1-6, A1-7, A1-10, A1-14
100-HR-3		x		x							x	A1-10, A1-19
100-IU-2	x	x			x						x	A1-4, A1-6, A1-15
100-IU-6	x	x			x						x	A1-4, A1-6, A1-15
100-KR-1		x			x							A1-4, A1-6, A1-25
100-KR-2	x	x	x	x	x					x	x	A1-4, A1-5, A1-6, A1-7, A1-18, A1-20, A1-26
100-KR-4		x		x								A1-19
100-NR-1	x	x		x				x			x	A1-28, A1-29, A1-30, A1-31, A1-32, A1-27
100-NR-2	x	x		x							x	A1-29, A1-31, A1-27
200-CW-3	x	x			x						x	A1-4, A1-6
200-CW-5	x	x		x	x		x			x	x	A2-5, A2-6
200-DV-1	x			x	x					x	x	A2-10

Table 3-2. Institutional Controls for CERCLA Operable Units and RCRA TSD Units. (4 sheets)

Institutional Controls												Tables where ICs are described in the IC Plan
Operable Unit	Access Control			Land-Use Management						Ground water-Use Mgmt	Misc. Provision	
	Warning Notices	Entry Restrictions	Fencing	Land Use	Excavation Permits	Notice in Deed	Industrial Use	Irrigation Control	Enhanced Recharge Control			
200-UP-1	x	x		x						x	x	A2-11
200-ZP-1	x	x		x						x	x	A2-12
200-PW-1	x	x		x						x	x	A2-5, A2-7
200-PW-3	x	x		x						x	x	A2-5, A2-8
200-PW-6	x	x		x						x	x	A2-5, A2-9
300-FF-1	x	x		x			x			x	x	A3-1, A3-3
300-FF-2	x	x		x			x		x		x	A3-2, A3-4
300-FF-5	x	x		x						x	x	A3-1, A3-2
1100-EM-1 (includes Horn Rapids Landfill)		x	x	x							x	A4-1, A4-2, A4-3, A4-4
1100-EM-2		x										A4-1
1100-EM-3		x										A4-1
1100-IU-1		x										A4-1
200-DF-1 (ERDF)		x										A2-1, A2-2, A2-3, A2-4
200-CU-1 (221-U Facility)	x	x		x						x	x	A2-13

Table 3-2. Institutional Controls for CERCLA Operable Units and RCRA TSD Units. (4 sheets)

Institutional Controls												Tables where ICs are described in the IC Plan
Operable Unit	Access Control			Land-Use Management						Ground water-Use Mgmt	Misc. Provision	
	Warning Notices	Entry Restrictions	Fencing	Land Use	Excavation Permits	Notice in Deed	Industrial Use	Irrigation Control	Enhanced Recharge Control			
RCRA TSD Units												
183-H Solar Evaporation Basin	x					x				x		Table B-1
300 Area Process Trenches										x		Table B-2

CERCLA = *Comprehensive Environmental Response, Compensation and Liability Act of 1980.*
 IC = institutional control.
 RCRA = *Resource Conservation and Recovery Act of 1976.*
 TSD = Treatment, storage, or disposal

3.1 CERCLA REQUIRED INSTITUTIONAL CONTROLS

IC requirements are described in the following CERCLA documents:

- Interim and final RODs
- ROD amendment (AMD)
- Explanation of Significant Differences (ESD)
- Tri-Party Agreement change notices (TPA-CN)
- Cleanup verification packages (CVP)
- Waste site reclassification forms (WSRF)
- RDR/RAWPs
- Action Memorandum (AM)

When a ROD is published, it supersedes any associated interim RODs, ESDs, and AMDs. Action memoranda are a type of CERCLA decision document used for removal actions. However, because removal actions generally are temporary measures and not intended to fulfill NPL cleanup requirements, action memoranda typically do not contain ICs.

CERCLA decision documents specify ICs at the OU level, as well as for certain waste sites within the OU; waste sites with waste-site-specific ICs also are subject to ICs at the OU level. Table 3-3 lists ICs required at the OU level. Appendix A lists ICs required for remediated waste sites.

Table 3-3 through 3-6 list the CERCLA decision documents issued for the 100, 200, 300, and 1100 Areas. Each table includes the type of decision documents issued for that particular NPL site in chronological order (from earliest to most recent), the dates the documents were signed, and the OU/remedial action addressed by each document. Some of the decision documents listed may not specify the ICs.

Table 3-3. 100 Area National Priorities List CERCLA Decision Documents. (4 sheets)

Decision Document Type/Reference	Decision Document Subject	Decision Document Signature Date	Operable Units Addressed by the Decision Documents	Table Listing Institutional Controls
ROD EPA/ROD/R10-95/126 ¹	Record of Decision for USDOE Hanford 100 Area	09/28/1995	100-BC-1, 100-DR-1, 100-HR-1	Table A1-1
ROD EPA/ROD/R10-96/151	Record of Decision for USDOE Hanford 100 Area	02/02/1996	100-IU-1, 100-IU-3, 100-IU-4, 100-IU-5	-- ²
ROD EPA/ROD/R10-96/134 ¹	Record of Decision for USDOE Hanford 100 Area	03/26/1996	100-HR-3, 100-KR-4	Table A1-19
AMD EPA/AMD/R10-97/044 ^{1,3}	Record of Decision Amendment for USDOE Hanford 100 Area	04/04/1997	100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-HR-1, 100-KR-1, 100-KR-2	Table A1-3

Table 3-3. 100 Area National Priorities List CERCLA Decision Documents. (4 sheets)

Decision Document Type/Reference	Decision Document Subject	Decision Document Signature Date	Operable Units Addressed by the Decision Documents	Table Listing Institutional Controls
ROD EPA/ROD/R10-99/039 ^{1,3}	Interim Action Record of Decision for U.S. Department of Energy Hanford 100 Area Remaining Sites and 200 Area	07/15/1999	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, 200-CW-3	Table A1-4
ROD EPA/ROD/R10-99/059	Record of Decision for USDOE Hanford 100 Area	09/17/1999	100-KR-2	Table A1-18
ROD EPA/ROD/R10-99/112	Interim Remedial Action Record of Decision for USDOE Hanford 100 Area	09/29/1999	100-NR-1, 100-NR-2	Table A1-27
AMD EPA/AMD/R10-00/122 ¹	Interim Remedial Action Record of Decision Amendment for USDOE Hanford 100 Area	10/24/1999	100-HR-3	-- ²
ROD EPA/ROD/R10-00/120	Interim Remedial Action Record of Decision for USDOE Hanford 100 Area	01/18/2000	100-NR-1	Table A1-28
ESD EPA/ESD/R10-00/045 ³	Explanation of Significant Differences for the 100 Area Remaining Sites ROD	06/15/2000	100-IU-6	-- ¹
ROD EPA/ROD/R10-00/121 ^{1,3}	Declaration of the Record of Decision for USDOE Hanford 100 Area (100 Area Burial Grounds)	09/25/2000	100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, 100-KR-2	Table A1-5
ESD EPA/ESD/R10-03/606 ¹	Explanation of Significant Difference for the 100-HR-3 Operable Unit Record of Decision	03/31/2003	100-HR-3	-- ²
ESD EPA/ESD/R10-03/605	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	05/21/2003	100-NR-1, 100-NR-2	Table A1-29

Table 3-3. 100 Area National Priorities List CERCLA Decision Documents. (4 sheets)

Decision Document Type/Reference	Decision Document Subject	Decision Document Signature Date	Operable Units Addressed by the Decision Documents	Table Listing Institutional Controls
ESD EPA, 2004a ^{1,3}	Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision	04/26/2004	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, 200-CW-3	Table A1-6
AMD EPA, 2005a	Interim Remedial Action Record of Decision Amendment, U.S. Department of Energy, 100 K Area K Basins, Hanford Site - 100 Area, Benton County, Washington	06/20/2005	100-KR-2	-- ²
ESD EPA, 2007a ^{1,3}	Explanation of Significant Differences for the interim Record of Decision (100 Area Burial Grounds)	11/1/2007	100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, 100-KR-2	Table A1-7
ESD EPA, 2009a ^{1,3}	Explanation of Significant Differences for the 100 Areas Remaining Sites Interim Remedial Action Record of decision	08/11/2009	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, 200-CW-3	-- ²
ESD EPA, 2009b ¹	Explanation of Significant Differences for the 100-HR-3 and 100-KR-4 Operable Units Interim Record of Decision	08/11/2009	100-HR-3, 100-KR-4	-- ²
AMD EPA, 2010a	U.S. Department of Energy 100-NR-1 and 100-NR-2 Operable Units Hanford Site – 100 Area Benton County, Washington	09/29/2010	100-NR-1, 100-NR-2	-- ²
ESD EPA, 2011a	Explanation of Significant Differences for the 100-NR-1 and 100-NR-2 Operable Units Interim Record of Decision	03/11/2011	100-NR-1, 100-NR-2	-- ²

Table 3-3. 100 Area National Priorities List CERCLA Decision Documents. (4 sheets)

Decision Document Type/Reference	Decision Document Subject	Decision Document Signature Date	Operable Units Addressed by the Decision Documents	Table Listing Institutional Controls
ESD EPA, 2013a	Explanation of Significant Differences for the 100-NR-1 and 100-NR-2 Operable Units Interim Remedial Action Record of Decision	08/29/2013	100-NR-1, 100-NR-2	-- ²
ROD EPA, 2014	Record of Decision Hanford 100 Area Superfund Site	09/30/2014	100-FR-1,100-FR-2, 100-FR-3,100-IU-2, 100-IU-6	A1-15
ESD EPA, 2016a	Explanation of Significant Differences For The Hanford Site 100 K Area K Basins Interim Remedial Action Record Of Decision	05/31/2016	100-KR-2	-- ²
ROD EPA, 2018	Record of Decision Hanford 100 Area Superfund Site	07/30/2018	100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, 100-HR-3	A1-10

¹The institutional controls listed for 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and/or 100-HR-3 are superseded by institutional controls listed in the ROD for 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-2 published on 07/30/2018.

²No table because ICs were not identified in the decision document or ICs are identical to those in previous decision documents for the corresponding OUs.

³The institutional controls listed for 100-FR-1, 100-FR-2, 100-IU-2, and/or 100-IU-6 in this document are superseded by institutional controls listed in the ROD for 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6 published on 09/30/2014.

AMD = record of decision amendment.

EPA = U.S. Environmental Protection Agency.

ESD = explanation of significant difference.

IC = institutional control.

OU = operable unit.

ROD = record of decision.

TPA-CN = Tri-Party Agreement change notice

USDOE = U.S. Department of Energy.

Table 3-4. 200 Area National Priorities List CERCLA Decision Documents. (3 sheets)

Decision Document Type/Reference	Decision Document Subject	Decision Document Signature Date	Operable Units Addressed by the Decision Documents	Table Listing Institutional Controls
ROD EPA/ROD/R10-95/100	Record of Decision, USDOE Hanford Environmental Restoration Disposal Facility (ERDF)	01/20/1995	200-DF-1 (ERDF)	Table A2-1
ROD EPA/ROD/R10-95/114	Record of Decision, USDOE Hanford 200 Area	05/24/1995	200-ZP-1	-- ¹

Table 3-4. 200 Area National Priorities List CERCLA Decision Documents. (3 sheets)

Decision Document Type/Reference	Decision Document Subject	Decision Document Signature Date	Operable Units Addressed by the Decision Documents	Table Listing Institutional Controls
ESD EPA/ESD/R10-96/145	Explanation of Significant Differences, USDOE Hanford, Environmental Restoration Disposal Facility	07/30/1996	200-DF-1 (ERDF)	-- ¹
ROD EPA/ROD/R10-97/048	Record of Decision, USDOE Hanford 200 Area	02/11/1997	200-UP-1	-- ²
AMD EPA/AMD/R10-97/101	Amended Record of Decision, USDOE Hanford Environmental Restoration Disposal Facility	09/25/1997	200-DF-1	-- ¹
AMD EPA/AMD/R10-99/038	Amended Record of Decision, USDOE Hanford Environmental Restoration Disposal Facility	03/25/1999	200-DF-1 (ERDF)	Table A2-2
AMD EPA/AMD/R10-02/030	Amended Record of Decision, USDOE Hanford Environmental Restoration Disposal Facility	03/11/2002	200-DF-1 (ERDF)	Table A2-3
ROD EPA, 2005b	Record of Decision, 221-U-Facility, (Canyon Disposition Initiative), Hanford Site, Washington	09/30/2005	200-CU-1 (221-U Facility)	Table A2-13
AMD EPA, 2007b	US Department of Energy ERDF Amended Record of Decision Summary And Responsiveness Summary May 2007	05/24/2007	200-DF-1 (ERDF)	-- ¹
ROD EPA, 2008	Record of Decision, Hanford 200 Area, 200-ZP-1 Superfund Site, Benton County, Washington	09/29/2008	200-ZP-1	Table A2-12
ESD EPA, 2009c	Explanation of Significant Differences for the Interim Action Record of Decision for the 200-UP-1 Groundwater Operable Unit, Hanford Site, Benton County, Washington	02/24/2009	200-UP-1	-- ²
AMD/ESD EPA, 2009d	ROD Amendment and Explanation of Significant Differences	08/06/2009	200-DF-1 (ERDF)	-- ¹

Table 3-4. 200 Area National Priorities List CERCLA Decision Documents. (3 sheets)

Decision Document Type/Reference	Decision Document Subject	Decision Document Signature Date	Operable Units Addressed by the Decision Documents	Table Listing Institutional Controls
ROD EPA, 2011b	Record of Decision for the 200-CW-5 and 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units	07/30/2011	200-CW-5, 200-PW-1, 200-PW-3, 200-PW-6	Table A2-5
ROD EPA, 2012	Record of Decision for Interim Remedial Action Hanford 200 Area Superfund Site 200-UP-1 Operable Unit	09/27/2012	200-UP-1	Table A2-11
AM DOE/RL-2014-34	Action Memorandum for 200-DV-1 Operable Unit Perched Water Pumping/Pore Water Extraction	12/16/2014	200-DV-1	Table A2-10
ESD EPA, 2015a	Explanation of Significant Differences For The U.S. Department of Energy Environmental Restoration Disposal Facility, Hanford Site - 200 Area, Benton County, WA EPA ID: WA1890090078	03/11/2015	200-DF-1 (ERDF)	-- ¹
ESD EPA, 2015b	Explanation of Significant Differences for the U.S. Department of Energy Environmental Restoration Disposal Facility Hanford Site - 200 Area Benton County, WA EPA ID: WA1890090078, October 2015	10/15/2015	200-DF-1 (ERDF)	-- ¹
AMD EPA, 2015c	Amended Record of Decision and Responsiveness Summary ERDF, Benton County, Washington	12/22/2015	200-DF-1 (ERDF)	-- ¹

¹No table listed because no ICs were identified in the decision document or ICs are identical to those in previous decision documents for the corresponding OUs.

²The ICs listed for 200-UP-1 in this document are superseded by the ICs listed in the ROD for 200-UP-1 published 09/27/2012.

AM = action memorandum.

AMD = record of decision amendment.

EPA = U.S. Environmental Protection Agency.

ERDF = Environmental Restoration Disposal Facility.

ESD

IC

ROD

USDOE

= explanation of significant difference.

= institutional control.

= record of decision.

= U.S. Department of Energy.

Table 3-5. 300 Area National Priorities List CERCLA Decision Documents. (2 sheets)

Decision Document Type/Reference	Decision Document Subject	Decision Document Signature Date	Operable Units Addressed by the Decision Documents	Table Listing Institutional Controls
ROD EPA/ROD/R10-96/143 ¹	Record of Decision, USDOE Hanford 300 Area	07/17/1996	300-FF-1, 300-FF-5	Table A3-1
ESD EPA/ESD/R10-00/505	Explanation of Significant Differences, USDOE Hanford 300 Area	01/12/2000	300-FF-1	-- ²
ESD ¹ EPA, 2000	Explanation of Significant Difference for the 300-FF-5 Record of Decision	06/27/2000	300-FF-5	-- ²
ROD ¹ EPA, 2001b	Record of Decision (300-FF-2 Interim Action ROD)	04/05/2001	300-FF-2	-- ²
ESD ¹ EPA, 2004b	Explanation of Significant Differences for the 300-FF-2 Operable Unit Record of Decision	05/06/2004	300-FF-2	-- ²
ESD ¹ EPA, 2009e	Explanation of Significant Differences for the 300-FF-2 Operable Unit Interim Action Record of Decision	8/11/2009	300-FF-2	-- ²
ESD ¹ EPA, 2011c	Explanation Of Significant Differences Hanford 300 Area 300-FF-2 Operable Unit 618-10 Burial Ground	7/29/2011	300-FF-2	-- ²
ROD/AMD EPA, 2013b	Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1	11/26/2013	300-FF-2, 300-FF-5, (ROD) 300-FF-1 (AMD)	Table A3-2
ESD EPA, 2015d	Explanation of Significant Differences for 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, EPA #: WA2890090077	9/28/2015	300-FF-1, 300-FF-2, 300-FF-5	-- ²
ESD EPA, 2016b	Explanation of Significant Differences for 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"	4/14/2016	300-FF-1, 300-FF-2, 300-FF-5	-- ²

Table 3-5. 300 Area National Priorities List CERCLA Decision Documents. (2 sheets)

Decision Document Type/Reference	Decision Document Subject	Decision Document Signature Date	Operable Units Addressed by the Decision Documents	Table Listing Institutional Controls
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¹The institutional controls listed for 300-FF-2 and/or 300-FF-5 in this document are superseded by institutional controls listed in the Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1 (EPA 2013b)

² No table because ICs were not identified in the decision document or ICs are identical to those in previous decision documents for the corresponding OUs.

AMD = record of decision amendment.

EPA = U.S. Environmental Protection Agency.

ESD = explanation of significant difference.

IC = institutional control.

ROD = record of decision.

USDOE = U.S. Department of Energy.

Table 3-6. 1100 Area National Priorities List CERCLA Decision Documents.

Decision Document Type/Reference	Decision Document Subject	Decision Document Signature Date	Operable Units Addressed by the Decision Documents	Table Listing Institutional Controls
ROD EPA/ROD/R10-93/063	Record of Decision	09/24/1993	1100-EM-1, 1100-EM-2, 1100-EM-3, 1100-IU-1	Table A4-1
FCR DOE, 1996	Superfund Final Closeout Report, USDOE Hanford, 1100 Area	07/25/1996	1100-EM-1, 1100-EM-2, 1100-EM-3, 1100-IU-1	Table A4-2
ESD EPA, 2010b	ESD USDOE Hanford 1100 Area	09/27/2010	1100-EM-1 (Horn Rapids Landfill)	Table A4-3

EPA = U.S. Environmental Protection Agency

ESD = Explanation of Significant Difference

FCR = Final Closeout Report

ROD = Record of Decision

USDOE = U.S. Department of Energy

The implementation and maintenance actions, including specific inspections, generally are identified in project-specific documents such as remedial design/remedial action work plans, surveillance and maintenance plans, or operation and maintenance (O&M) plans. Table 3-7 lists documents that address the implementation and maintenance actions for ICs for the OUs.

This table will be updated as necessary during the next revision of this Plan.

Table 3-7. Documents Implementing Institutional Controls and Maintenance Actions. (3 sheets).

Operable Units	Remedial Design Report/Remedial Action Work Plan or Operations and Maintenance Plan	Table Listing Institutional Controls
100-BC-1 100-BC-2	DOE/RL-96-17, Rev. 6, Remedial Design Report/Remedial Action Work Plan for the 100 Area	Table A1-2
100-DR-1 100-DR-2 100-HR-1 100-HR-2	DOE/RL-96-17, Rev. 6, Remedial Design Report/Remedial Action Work Plan for the 100 Area	Table A1-2

Table 3-7. Documents Implementing Institutional Controls and Maintenance Actions. (3 sheets).

Operable Units	Remedial Design Report/Remedial Action Work Plan or Operations and Maintenance Plan	Table Listing Institutional Controls
100-HR-3	DOE/RL-2013-31, Rev. 0, <i>100-HR-3 Groundwater Operable Unit Remedial Design/Remedial Action Work Plan</i>	-- ¹
	DOE/RL-2013-49 Rev. 1, <i>100-HR-3 Pump and Treat System Operations and Maintenance Plan</i>	-- ¹
100-FR-1 100-FR-2 100-IU-2 100-IU-6	DOE/RL-2014-44, Rev. 0, <i>Integrated Remedial Design Report/Remedial Action Work Plan for 100-F/IU</i>	Table A1-15
	DOE/RL-2014-44-ADD1, Rev. 0, <i>Remedial Design Report/Remedial Action Work Plan Addendum for 100-FR-1, 100-FR-2, 100-IU-2, and 100-IU-6 Soils</i>	Table A1-15
100-FR-3	DOE/RL-2014-44, Rev. 0, <i>Integrated Remedial Design Report/Remedial Action Work Plan for 100-F/IU</i>	Table A1-15
	DOE/RL-2014-44-ADD2, Rev. 0, <i>Remedial Design Report/Remedial Action Work Plan Addendum for the 100-F/IU Groundwater</i>	Table A1-15
100-KR-1 100-KR-2	DOE/RL-96-17, Rev. 6, <i>Remedial Design Report/Remedial Action Work Plan for the 100 Area</i>	Table A1-2
	DOE/RL-99-89, Rev. 1, <i>Remedial Design Report and Remedial Action Work Plan for the K Basins Interim Remedial Action</i>	Table A1-18
	DOE/RL-2007-41, Rev. 0, <i>Remedial Design Report and Remedial Action Work Plan for the K Basins Interim Remedial Action: 105-K East Basin Deactivation</i>	Table A1-20
	DOE/RL-2007-48, Rev. 0, <i>Remedial Design Report and Remedial Action Work Plan for the 100 Area Remaining Sites Interim Remedial Action: 105-K East Basin Demolition</i>	Table A1-21
	DOE/RL-2010-52, Rev. 0, <i>Remedial Design and Remedial Action Work Plan for the K Basins Interim Remedial Action: 105-K West Basin Deactivation</i>	Table A1-22
	DOE/RL-2010-53, Rev. 0, <i>Remedial Design/Remedial Action Work Plan for the 100 Area Remaining Sites Interim Remedial Action: 105-K West Basin Demolition and Removal</i>	Table A1-23
	DOE/RL-2010-63, Rev. 1, <i>Remedial Design/Remedial Action Work Plan for the K Basins Interim Remedial Action</i>	Table A1-24
	DOE/RL-2011-15, Rev. 1, <i>Remedial Design/Remedial Action Work Plan for K Basins Interim Remedial Action: Treatment and Packaging of K Basins Sludge</i>	-- ¹
100-KR-4	DOE/RL-2013-33, Rev. 0, <i>Remedial Design/Remedial Action Work Plan for the 100-KR-4 Groundwater Operable Unit Interim Action</i>	-- ¹
	DOE/RL-2013-48, Rev. 1, <i>Operations and Maintenance Plan for the 100-KR-4 Pump and Treat Systems</i>	-- ¹
100-NR-1	DOE/RL-2000-16, Rev. 2, <i>Remedial Design Report/Remedial Action Work Plan for the 100-NR-1 Treatment, Storage, and Disposal Units</i>	Table A1-30
	DOE/RL-2005-93, Rev. 1, <i>Remedial Design Report/Remedial Action Work Plan for the 100-N Area</i>	Table A1-31
100-NR-2	DOE/RL-2001-27, Rev. 2, <i>Remedial Design/Remedial Action Work Plan for the 100-NR-2 Operable Unit</i>	-- ¹

Table 3-7. Documents Implementing Institutional Controls and Maintenance Actions. (3 sheets).

Operable Units	Remedial Design Report/Remedial Action Work Plan or Operations and Maintenance Plan	Table Listing Institutional Controls
200-CW-3	DOE/RL-2006-69, Rev. 0, <i>Remedial Design/Remedial Action Work Plan for Select 200 North Area Waste Sites (216-N-2, -3, -5, and -7) in the 200-CW-3 Operable Unit</i>	-- ¹
	DOE/RL-2007-55, Rev. 0, <i>Remedial Design/Remedial Action Work Plan for 200 North Area Waste Sites Located in the 200-CW-3 Operable Unit</i>	-- ¹
200-CW-5 200-PW-1 200-PW-3 200-PW-6	DOE/RL-2015-23, Rev. 0, <i>Remedial Design/Remedial Action Work Plan for the 200-CW-5, 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units</i>	Table A2-5
200-DV-1	DOE/RL-2014-37, Rev. 0, <i>Removal Action Work Plan for 200-DV-1 Operable Unit Perched Water Pumping/Pore Water Extraction</i>	Table A2-10
	DOE/RL-2009-124, Rev. 5, <i>200 West Pump and Treat Operations and Maintenance Plan</i>	Table A2-10
200-UP-1	DOE/RL-2013-07, Rev. 0, <i>200-UP-1 Groundwater Operable Unit Remedial Design/Remedial Action Work Plan</i>	Table A2-11
	DOE/RL-2009-124, Rev. 5, <i>200 West Pump and Treat Operations and Maintenance Plan</i>	Table A2-11
200-ZP-1	DOE/RL-2008-78, Rev. 0, <i>200 West Area 200-ZP-1 Pump-and-Treat Remedial Design/Remedial Action Work Plan</i>	Table A2-12
	DOE/RL-2009-124, Rev. 5, <i>200 West Pump and Treat Operations and Maintenance Plan</i>	Table A2-12
221-U (200-CU-1)	DOE/RL-2006-21, Rev. 0, <i>Remedial Design/Remedial Action Work Plan for the 221-U Facility</i>	Table A2-13
300-FF-1	DOE/RL-2001-47, Rev. 0, <i>Remedial Design Report/Remedial Action Work Plan for the 300 Area</i>	-- ¹
300-FF-2	DOE/RL-2014-13, Rev. 0, <i>Integrated Remedial Design Report/Remedial Action Work Plan for the 300 Area (300-FF-1, 300-FF-2, and 300-FF-5 Operable Units)</i>	Table A3-2
	DOE/RL-2014-13-ADD1, Rev. 0, <i>Remedial Design Report/Remedial Action Work Plan for 300-FF-2 Soils</i>	Table A3-2
300-FF-5	DOE/RL-2014-13, Rev. 0, <i>Integrated Remedial Design Report/Remedial Action Work Plan for the 300 Area (300-FF-1, 300-FF-2, and 300-FF-5 Operable Units)</i>	Table A3-2
	DOE/RL-2014-13-ADD2, Rev. 0, <i>Remedial Design Report/Remedial Action Work Plan for the 300 Area Groundwater</i>	Table A3-2

¹The implementing document does not provide specific details for institutional control requirements.

3.2 RCRA REQUIRED INSTITUTIONAL CONTROLS

When a TSD unit is no longer required to treat, store, and/or dispose of dangerous or mixed waste, the TSD unit is closed in a manner that protects human health and the environment. The Hanford Site RCRA Permit, Condition II.K.3.a states, "For 'modified closures,' the Permittees shall provide ICs in accordance with [WAC 173-340-440](#), which restricts access to the

TSD unit for a minimum of five (5) years following completion of closure. The specific details and duration of ICs shall be specified in Parts III, V, and/or VI of this Permit for a particular TSD unit.”

The Hanford Site RCRA permit lists the TSD units. Some TSD units are still operating (actively managing wastes); some are clean closed. Some are in post-closure mode while others are waiting for final closure. The closure of the remaining units may be integrated with the CERCLA remediation action. The post-closure actions may or may not include ICs. Table 3-8 lists the TSD units closed under the RCRA Permit.

Table 3-8. Hanford Site Treatment, Storage, and Disposal Units Closed under Hanford Site RCRA Permit. (3 sheets)

Units	WIDS Site Code(s)	Closure Type (Date Closed)	Table Listing Institutional Controls
100 Area			
183-H Solar Evaporation Basins	116-H-6	Modified Closure (5/13/1997)	Table B-1
100-D Ponds	120-D-1	Clean Closed (8/9/1999)	No ICs identified
105-DR Large Sodium Fire Facility	122-DR-1:1 122-DR-1:3 122-DR-1:6 122-DR-1:7	Clean Closed (7/16/1996)	No ICs identified
	122-DR-1:2 122-DR-1:4 122-DR-1:5	Clean Closed (7/1/2004)	
1324-N Surface Impoundment & 1324-NA Percolation Pond	120-N-2, 120-N-1	Clean Closed (4/25/2017)	No ICs identified
1706-KE Waste Treatment System Facility	116-KE-6A, 116-KE-6B, 116-KE-6C, 116-KE-6D	Clean Closed (1/11/2018)	No ICs identified
1301-N Liquid Waste Disposal Facility	116-N-1, 100-N-63	Clean Closed (11/28/2018)	No ICs identified
1325-N Liquid Waste Disposal Facility	116-N-3, 100-N-63	Clean Closed (11/28/2018)	No ICs identified
200 Area			
216-B-3 Expansion Ponds	216-B-3A, 216-B-3B, 216-B-3C	Clean Closed (7/31/1995)	No ICs identified
2727-S Storage Facility	2727-S	Clean Closed (7/31/1995)	No ICs identified
200 West Area Ash Pit Demolition Site	200-W ADS	Clean Closed (11/28/1995)	No ICs identified
218-E-8 Borrow Pit Demolition Site	200-E8 BPDS	Clean Closed (11/28/1995)	No ICs identified
2101-M Pond	2101-M POND	Clean Closed (11/28/1995)	No ICs identified

Table 3-8. Hanford Site Treatment, Storage, and Disposal Units Closed under Hanford Site RCRA Permit. (3 sheets)

Units	WIDS Site Code(s)	Closure Type (Date Closed)	Table Listing Institutional Controls
221-T Test Facility	221-T CSTF	Procedurally Closed (2/22/1999)	No ICs identified
2727-WA SRE Sodium Storage Building	2727-WA	Procedurally Closed (2/22/1999)	No ICs identified
Hanford Waste Vitrification Plant	HWVP	Permit application rejected, Closed (11/3/1999)	No ICs identified
Plutonium Finishing Plant Treatment Unit	200-W-233	Clean Closed (2/8/2005)	No ICs identified
241-Z Treatment & Storage Tanks	241-Z	Clean Closed (2/22/2007)	No ICs identified
216-U-12 Crib	216-U-12	Procedurally Closed (7/19/2007)	No ICs identified
224-T Transuranic Waste Storage & Assay Facility	TRUSAF	Clean Closed (11/12/2008)	No ICs identified
207-A South Retention Basin	207-A-SOUTH	Clean Closed (5/18/2017)	No ICs identified
300 Area			
311 Tanks (Capacity transferred to 300 Area Waste Treatment System)	311-TK-40, 311-TK-50	Procedurally Closed (6/2/1990)	No ICs identified
300 Area Solvent Evaporator	300 SE	Clean Closed (7/31/1995)	No ICs identified
304 Concretion Facility	304 CF	Clean Closed (1/21/1996)	No ICs identified
300 Area Solvent Evaporator	300 SE	Procedurally Closed (5/13/1996)	No ICs identified
304 Concretion Facility	304 CF	Procedurally Closed (5/13/1996)	No ICs identified
Physical and Chemical Treatment Test Facilities	PCTTF	Procedurally Closed (12/10/1996)	No ICs identified
Thermal Treatment Test Facilities	TTTF	Procedurally Closed (4/21/1997)	No ICs identified
Biological Treatment Test Facilities	BTTF	Procedurally Closed (6/9/1997)	No ICs identified
332 Storage Facility	332 SF	Procedurally Closed (4/21/1997)	No ICs identified
324 Sodium Pilot Plant	300-19	Procedurally Closed (6/9/1997)	No ICs identified
3718-F Alkali Metal Treatment & Storage Area	3718-F SF	Clean Closed (8/4/1998)	No ICs identified
300 Area Process Trenches	316-5	Modified Closure (8/10/1998)	Table B-2
303-K Storage Facility	303-K CWS	Clean Closed (7/22/2002)	No ICs identified

Table 3-8. Hanford Site Treatment, Storage, and Disposal Units Closed under Hanford Site RCRA Permit. (3 sheets)

Units	WIDS Site Code(s)	Closure Type (Date Closed)	Table Listing Institutional Controls
300 Area Waste Acid Treatment System	311-TK-40, 311-TK-50, 313 CENTRIFUGE, 313 FP, 313-TK-2, 333-TK-7, 333-TK-11, 334 TFWAST, 334-A-TK-B, 334-A-TK-C, 300-219	Clean Closed (10/30/2005)	No ICs identified
303-M Oxide Facility	303-M UOF	Clean Closed (6/15/2006)	No ICs identified
305-B Storage Facility	305-B SF	Clean Closed (7/2/2007)	No ICs identified
331-C Storage Unit	300-278	Clean Closed (7/22/2011)	No ICs identified
400 Area			
4843 Alkali Metal Storage Facility	4843	Clean Closed (4/14/1997)	No ICs identified
437 Maintenance and Storage Facility	437 MASF	Procedurally Closed (9/11/2003)	No ICs identified
Sodium Storage Facility/Sodium Reaction Facility	400-31	Procedurally Closed (9/17/2003)	No ICs identified
600 Area			
Hanford Patrol Academy Demolition Sites	1100 HPADS	Clean Closed (11/28/1995)	No ICs identified
616 Nonradioactive Dangerous Waste Storage Facility	616	Clean Closed (9/5/2001)	No ICs identified
600 Area Purgewater Storage and Treatment Facility	600-214	Clean Closed (2/16/2018)	No ICs identified
1100 Area			
Simulated High-Level Waste Slurry Treatment/Storage	SHLWSTS	Clean Closed (9/6/1995)	No ICs identified

IC = institutional control

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4.0 REFERENCES

- 10 CFR 835, "Occupational Radiation Protection," *Code of Federal Regulations*, as amended.
- 10 CFR 860, "Trespassing on Department of Energy Property," *Code of Federal Regulations*, as amended.
- 40 CFR 61, "National Emission Standards for Hazardous Air Pollutants," *Code of Federal Regulations*, as amended.
40 CFR 61.151, "National Emission Standards for Hazardous Air Pollutants."
- 40 CFR 264.119, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," *Code of Federal Regulations*, as amended.
40 CFR 264.119(b)(1), "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities."
- 40 CFR 300, "National Oil and Hazardous Substances Pollution Contingency Plan," *Code of Federal Regulations*, as amended.
40 CFR 300.425(e), "Establishing Remedial Priorities"
40 CFR 300, Appendix B, "National Priorities List."
- Atomic Energy Act of 1954*, 42 USC 2011, et seq.
- Benton County Deed Notice for 183-H Solar Evaporation Basins; File No. 1996-29990; December 4, 1996.
- Benton County Deed Notice for Solid Waste Landfill; File No. 1997-006444; March 25, 1997.
- Benton County Deed Notice for Horn Rapids Landfill; File No. 1997-008784; April 18, 1997.
- Benton County Deed Notice for 300 Area Process Trenches (APT); File No. 1998-025988; September 3, 1998.
- Benton County Deed Notice for 100-D Ponds; File No. 1999-025478; August 6, 1999.
- Benton County Deed Notice for Percolation Pond: 1324-N Surface Impoundment; File No. 2003-013391; March 24, 2003.
- Benton County Deed Notice for 1325-N Liquid Waste Disposal Facility, Certification of Closure and Survey Plat; File No. 2005-006314; March 1, 2005
- Benton County Deed Notice for 1301-N Surface Impoundment; File No. 2015-009914; April 14, 2015.
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, 42 USC 9601, et seq.
- DE-AC06-09RL14728, 2008, *Mission Support Contract*, as amended, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
CRD O 473.3, Protection Program Operations, Supplemented Rev. 0.
- DOE O 430.1C, 2016, *Real Property Asset Management*, U.S. Department of Energy, Washington, D.C.

- DOE O 473.3A, 2016, *Protection Program Operations*, Change 1, U.S. Department of Energy, Washington, D.C.
- DOE P 454.1, 2003, *Use of Institutional Controls*, U.S. Department of Energy, Washington, D.C.
- DOE, 1996, *Superfund Final Closeout Report, U.S. Department of Energy 1100 Area*, U.S. Department of Energy, Washington, D.C.
- DOE-RL, DOI, and USFWS, 2001, *First Amended Memorandum of Understanding Between the U.S. Department of the Interior, Fish and Wildlife Service and the U.S. Department of Energy, Richland Operations Office for the Operation of the Fitzner Eberhardt Arid Lands Ecology Reserve at the Hanford Site; Fourth Amendment to the Wahluke Slope Permit*, U.S. Department of Energy, Richland Operations Office, Richland, Washington, and U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C..
- DOE/EIS-0222-F, 1999, *Final Hanford Comprehensive Land-Use Plan Environmental Impact Statements*, U.S. Department of Energy, Washington, D.C.
- DOE/EIS-0222-SA-01, 2008, *Supplement Analysis*, U.S. Department of Energy, Washington, D.C.
- DOE/LM-1414, 2015, *Guidance for Developing and Implementing Institutional Controls for Long-Term Surveillance and Maintenance at DOE Legacy Management Sites*, U.S. Department of Energy, Office of Legacy Management, Washington, D.C.
- 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-96-39, 2002, *100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan*, Rev. 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-99-89, 2001, *Remedial Design Report and Remedial Action Work Plan for the K Basins Interim Remedial Action*, Rev. 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2000-16, 2001, *Remedial Design Report/Remedial Action Work Plan for the 100-NR-1 Treatment, Storage, and Disposal Units*, Rev. 2, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2001-27, 2014, *Remedial Design/Remedial Action Work Plan for the 100-NR-2 Operable Unit*, Rev. 1, 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, Mission Support Alliance, LLC, Richland, Washington.
- DOE/RL-2001-47, 2002, *Remedial Design Report/Remedial Action Work Plan for the 300 Area*, Rev. 0, 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-2006-21, 2008, *Remedial Design/Remedial Action Work Plan for the 221-U Facility*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2006-69, 2007, *Remedial Design/Remedial Action Work Plan for Select 200 North Area Waste Sites (216-N-2, -3, -5, and -7) in the 200-CW-3 Operable Unit*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2007-41, 2007, *Redial Design Report and Remedial Action Work Plan for the K Basins Interim Remedial Action: 105-K East Basin Deactivation*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2007-48, 2007, *Remedial Design Report and Remedial Action Work Plan for the 100 Area Remaining Sites Interim Remedial Action: 105-K East Basin Demolition*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2007-55, 2008, *Remedial Design/Remedial Action Work Plan for 200 North Area Waste Sites Located in the 200-CW-3 Operable Unit*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2008-78, 2009, *200 West Area 200-ZP-1 Pump-and-Treat Remedial Design Remedial Action Work Plan*, Rev. 0, REISSUE, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2009-124, 2010, *200 West Area Groundwater Pump-and-Treat Facility Operations and Maintenance Plan*, Rev. 5, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2010-52, 2011, *Remedial Design and Remedial Action Work Plan for the K Basins Interim Remedial Action: 105-K West Basin Deactivation*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2010-53, 2011, *Remedial Design/Remedial Action Work Plan for the 100 Area Remaining Sites Interim Remedial Action: 105-K West Basin Demolition and Removal*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2010-63, 2011, *Remedial Design/Remedial Action Work Plan for Interim Remedial Action: Removal of K Basins Sludge from the River Corridor to the Central Plateau; and Removal of Knock Out Pot Contents from K Basins*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2011-15, 2011, *Remedial Design/Remedial Action Work Plan for the K Basins Interim Remedial Action: Treatment and Packaging of K Basins Sludge*, Draft A, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2013-07, 2013, *200-UP-1 Groundwater Operable Unit Remedial Design/Remedial Action Work Plan*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

- DOE/RL-2013-31, 2016, *100-HR-3 Groundwater Operable Unit Remedial Design/Remedial Action Work Plan*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2013-33, 2016, *Remedial Design/ Remedial Action Work Plan for the 100-KR-4 Groundwater Operable Unit Interim Action*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2013-48, 2018, *Operation and Maintenance Plan for the 100-KR-4 Pump and Treat Systems*, Rev. 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2013-49, 2018, *100-HR-3 Pump and Treat System Operations and Maintenance Plan*, Rev. 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE-RL-2014-13, 2015, *Integrated Remedial Design Report/Remedial Action Work Plan for the 300 Area (300-FF-1, 300-FF-2, & 300-FF-5 Operable Units)*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2014-13 ADD 1, 2015, *Remedial Design Report/Remedial Action Work Plan for 300-FF-2 Soils*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2014-13 ADD 2, 2015, *Remedial Design Report/Remedial Action Work Plan Addendum for the 300 Area Groundwater*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2014-34, 2014, *Action Memorandum for 200-DV-1 Operable Unit Perched Water Pumping/Pore Water Extraction*, Rev. 0, CH2M Hill Plateau Remediation Company, Richland, Washington.
- DOE/RL-2014-37, 2015, *Removal Action Work Plan for 200-DV-1 Operable Unit Perched Water Pumping/Pore Water Extraction*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2014-44, 2015, *Integrated Remedial Design Report/Remedial Action Work Plan for 100-F/IU*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2014-44 ADD 1, 2015, *Remedial Design Report/Remedial Action Work Plan Addendum for 100-FR-1, 100-FR-2, 100-IU-2, and 100-IU-6 Soils*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2014-44 ADD 2, 2015, *Remedial Design Report/Remedial Action Work Plan Addendum for the 100-F/IU Groundwater*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2015-23, 2016, *Remedial Design/Remedial Action Work Plan for the 200-CW-5, 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Ecology, EPA, and DOE, 1989a, *Hanford Federal Facility Agreement and Consent Order Action Plan*, Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington, as amended.

- Endangered Species Act of 1973*, 16 USC 1531, et seq.
- EPA, 1999, *Region 10 Final Policy on the Use of Institutional Controls at Federal Facilities, Memorandum*, U.S. Environmental Protection Agency, Office of Environmental Cleanup Region 10, Seattle, Washington.
- EPA, 2000, *Explanation of Significant Difference for the 300-FF-5 Record of Decision*, U.S. Environmental Protection Agency, Office of Environmental Cleanup Region 10, Seattle, Washington.
- EPA, 2001a, *USDOE Hanford Site – First Five-year Review Report*, U.S. Environmental Protection Agency, Office of Environmental Cleanup Region 10, Seattle, Washington.
- EPA, 2001b, *Record of Decision 300-FF-2 Interim Action ROD*, U.S. Environmental Protection Agency, Office of Environmental Cleanup Region 10, Seattle, Washington.
- EPA, 2004a, *Explanation of Significant Differences for the USDOE Hanford 100 Area Remaining Sites Interim Remedial Action Record of Decision for 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*, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 2004b, *Explanation of Significant Differences for the 300-FF-2 Record of Decision*, U.S. Environmental Protection Agency, Office of Environmental Cleanup Region 10, Seattle, Washington.
- EPA, 2005a, *Interim Remedial Action Record of Decision Amendment, U.S. Department of Energy, 100 K Area K Basins, Hanford Site - 100 Area, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2005b, *Record of Decision 221-U Facility (Canyon Disposition Initiative) Hanford Site, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2007a, *Explanation of Significant Differences 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, 100-IR-2 Operable Units, (100 Area Burial Grounds)*, U.S. Environmental Protection Agency, Office of Environmental Cleanup Region 10, Seattle, Washington.
- EPA, 2007b, *U.S. Department of Energy Environmental Restoration Disposal Facility (ERDF) Amended Record of Decision Summary and Responsiveness Summary May 2007*, U.S. Environmental Protection Agency, Office of Environmental Cleanup Region 10, Seattle, Washington.
- EPA, 2008, *Record of Decision, Hanford 200 Area 200-ZP-1 Superfund Site Benton County, Washington*, U.S. Environmental Protection Agency, Office of Environmental Cleanup Region 10, Seattle, Washington.
- EPA, 2009a, *Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision, Hanford Site, Benton County, Washington*, U.S. Environmental Protection Agency, Office of Environmental Cleanup Region 10, Seattle, Washington.

- EPA, 2009b, *Explanation of Significant Differences for the 100-HR-3 and 100-KR-4 Operable Units Interim Action Record of Decision Hanford Site Benton County, Washington*, U.S. Environmental Protection Agency, Office of Environmental Cleanup Region 10, Seattle, Washington.
- EPA, 2009c, *Explanation of Significant Differences for the Interim Action Record of Decision for the 200-UP-1 Groundwater Operable Unit, Hanford Site, Benton County, Washington, February 2009*,” U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2009d, *Record of Decision Amendment and Explanation of Significant Differences, U.S. Department of Energy, Environmental Restoration Disposal Facility, Hanford Site – 200 Area, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2009e, *Explanation of Significant Differences Hanford 300 Area 300-FF-2 Operable Unit 618-10 Burial Ground*, U.S. Environmental Protection Agency, Office of Environmental Cleanup Region 10, Seattle, Washington.
- EPA, 2010a, *U.S. Department of Energy 100-NR-1 and NR-2 Operable Units Hanford Site – 100-Area Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2010b, *Explanation of Significant Differences, USDOE, Hanford 1100 Area, Benton County, Washington, September 27, 2010*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2011a, *Explanation of Significant Differences for the 100-NR-1 and 100-NR-2 Operable Units Interim Record of Decision*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2011b, *Record of Decision, Hanford 200 Area Superfund Site, 200-CW-5 and 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2011c, *Explanation of Significant Differences Hanford 300 Area 300-FF-2 Operable Unit 618-10 Burial Ground*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2012, *Record of Decision for Interim Remedial Action, Hanford 200 Area, Superfund Site, 200-UP-1 Operable Unit, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2013a, *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*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2013b, *Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1*, U.S. Environmental Protection Agency, Region 10 and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- EPA, 2014, *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*, U.S. Environmental Protection

- Agency, Region 10, Seattle, Washington and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- EPA, 2015a, *Explanation of Significant Differences for the U.S. Department of Energy Environmental Restoration Disposal Facility. Hanford Site-200 Area, Benton County, WA EPA ID: WA1890090078*, U.S. Environmental Protection Agency, Office of Environmental Cleanup Region 10, Seattle, Washington.
- EPA, 2015b, *Explanation of Significant Differences for the U.S. Department of Energy Environmental Restoration Disposal Facility. Hanford Site-200 Area, Benton County, WA EPA ID: WA1890090078, October 2015*, U.S. Environmental Protection Agency, Office of Environmental Cleanup Region 10, Seattle, Washington.
- EPA, 2015c, *Amended Record of Decision and Responsiveness Summary ERDF, Benton County Washington*, U.S. Environmental Protection Agency, Office of Environmental Cleanup Region 10, Seattle, Washington.
- EPA, 2015d, *Explanation of Significant Differences for 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*. EPA ID: WA2890090077.
- EPA, 2016a, *Explanation of Significant Differences for the Hanford Site 100-K Area K Basin Interim Remedial Action Record of Decision*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington .
- EPA, 2016b, *Explanation of Significant Differences #2 for 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*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2018, *Record of Decision for 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 Operable Units*, U.S. Environmental Protection Agency, Region 10 and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- EPA-540-F-00-005, 2000, *A Site Manager’s Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanup*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.
- EPA-540-R-09-001, 2012, *Institutional Controls: A Guide to Planning Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.
- EPA-540-R-09-002, 2012, *Institutional Controls: A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.
- EPA/AMD/R10-97/044, 1997, *EPA Superfund Record of Decision Amendment for 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.

- EPA/AMD/R10-97/101, 1997, *EPA Superfund Record of Decision Amendment for Environmental Restoration Disposal Facility*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/AMD/R10-99/038, 1999, *EPA Superfund Record of Decision Amendment for Environmental Restoration Disposal Facility*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/AMD/R10-00/122, 2000, *EPA Superfund Record of Decision Amendment for 100-HR-3 Operable Unit*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/AMD/R10-02/030, *EPA Superfund Record of Decision Amendment for Environmental Restoration Disposal Facility*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ESD/R10-96/145, 1996, *Explanation of Significant Differences for the USDOE Hanford, Environmental Restoration Disposal Facility*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ESD/R10-00/045, 2000, *Explanation of Significant Differences USDOE Hanford 100 Area, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ESD/R10-00/505, 2000, *Explanation of Significant Differences for the USDOE Hanford 300 Area, 300-FF-1 Operable Unit*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ESD/R10-03/605, 2003, *Explanation of Significant Differences for the 100-NR-1 Operable Units, Treatment Storage and Disposal Interim Action Record of Decision and 100-NR-1 and 100-NR-2 Operable Unit Interim Action Record of Decision*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ESD/R10-03/606, 2003, *Explanation of Significant Differences for the 100-HR-3 Operable Unit*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-93/063, 1993, *Record of Decision for the USDOE Hanford 1100 Area Final Remedial Action for the 1100-EM-1, 1100-EM-2, 1100-EM-3, and 1100-IU-1*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-95/100, 1995, *Record of Decision for the USDOE Hanford Environmental Restoration Disposal Facility, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-95/114, 1995, *Record of Decision for the USDOE Hanford 200 Area, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-95/126, 1995, *Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-96/134, 1996, *Record of Decision for the 100-HR-3 and 100-KR-4 Operable Units*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.

- EPA/ROD/R10-96/143, 1996, *Record of Decision for the 300-FF-1 and 300-FF-5 Operable Units*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-96/151, 1996, *Record of Decision for the USDOE Hanford 100 Area: 100-IU-1, 100-IU-3, 100-IU-4, and 100-IU-5 Operable Units*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-97/048, 1997, *Record of Decision for the USDOE Hanford 200 Area, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-99/039, 1999, *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*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-99/059, 1999, *Record of Decision for the 100-KR-2 Operable Unit*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-99/112, 1999, *Interim Remedial Action Record of Decision for 100-NR-1 and 100-NR-2 Operable Units*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-00/120, 2000, *Interim Record of Decision for the 100-NR-1 Operable Unit*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-00/121, 2000, *Record of Decision for the USDOE Hanford 100 Area Burial Grounds (100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, 100-KR-2 Operable Units)*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-01/119, 2001, *Record of Decision for the USDOE Hanford 300 Area, 300-FF-2 Operable Unit, Hanford Site, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- HNF-35051, 2018, *Small Water Systems Management Program*, Rev 12, Mission Support Alliance, LLC, Richland, Washington.
- National Environmental Policy Act of 1969*, 42 USC 4321, et seq.
- National Historic Preservation Act of 1966*, 16 USC 470, et seq.
- RCW 70.105, “Hazardous Waste Management,” Title 70, Chapter 105, *Revised Code of Washington*, as amended, Washington State Legislature, Olympia, Washington.
- Resource Conservation and Recovery Act of 1976*, 42 USC 6901, et seq.
- RL TPA-90-0001, 1998, *Tri-Party Agreement Handbook Management Procedures*, Guideline Number TPA MP-14, “Maintenance of the Waste Information Data System (WIDS),” U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Superfund Amendments and Reauthorization Act of 1986*, 42 USC 11001, et seq.
- WA7890008967, 2013, *Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of*

Dangerous Waste, Washington State Department of Ecology, Nuclear Waste Program, Richland, Washington, September 30.

WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.

WAC 173-303-310, "Security," *Washington Administrative Code*, as amended.

WAC 173-303-64620, "Requirements," *Washington Administrative Code*, as amended.

WAC 173-340, "Model Toxics Control Act—Cleanup," *Washington Administrative Code*, as amended.

WAC 173-340-440, "Institutional Controls."

WAC 173-303-610(10), "Closure and post-closure."

Wastren, 1995, *Hanford Site Watershed Control Plan*, Wastren, Inc., Richland, Washington.

APPENDIX A
INSTITUTIONAL CONTROLS REQUIRED BY EXISTING CERCLA DECISION
DOCUMENTS AND IMPLEMENTING DOCUMENTS

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**APPENDIX A
INSTITUTIONAL CONTROLS REQUIRED BY EXISTING CERCLA DECISION
DOCUMENTS AND IMPLEMENTING DOCUMENTS**

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APPENDIX A
INSTITUTIONAL CONTROLS REQUIRED BY EXISTING CERCLA DECISION
DOCUMENTS AND IMPLEMENTING DOCUMENTS

This appendix lists the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) decision documents and implementing documents such as remedial design reports/remedial action work plans (RDR/RAWP) that have institutional controls (IC) requirements. The tables show decision and implementing documents and the operable unit (OU) or units for which they are written. The tables are listed by “National Priorities List” (NPL) (Title 40 *Code of Federal Regulations* [CFR] Part 300, Appendix B) area, along with the IC category, IC requirements, and corresponding section of DOE/RL-2001-41, *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions* (the Plan) that addresses the IC categories.

Subsections are organized, as applicable, by OU, then decision document, followed by implementing document, and finally site-specific ICs. When an OU has more than one associated decision document, the decision documents are arranged chronologically. When an OU has more than one associated implementing document, the implementing documents are arranged chronologically.

Some decision-document tables have related boundary maps that show land-use ICs. These maps, where included, are located after the tables describing the OU-specific ICs. Decision document and implementing document tables include individual IC requirements from the decision documents.

A1.0 INSTITUTIONAL CONTROLS REQUIRED FOR THE 100 AREA

This section presents the ICs required by each of the 100 Area CERCLA decision documents and implementing documents. The ICs are presented in Tables A1-1 through A1-32. The tables include the text of the individual IC requirements contained in the decision documents, implementing documents, and waste-site-specific ICs. Figures A1-1 through A1-4 show the IC (land-use) boundaries.

Table A1-1. Institutional Controls Requirements Listed in EPA/ROD/R10-95/126, *Record of Decision for 100-BC-1, 100-DR-1¹, and 100-HR-1¹ Operable Units*.

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Controls/Entry Restrictions	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.	2.3.1/2.3.1.2
Land-Use Management		2.3.2
Groundwater Use Management		2.3.3

¹Institutional controls requirements for these operable units have been superseded by the ROD for 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 Operable Units. See Table A1-10.

ROD = record of decision.

Table A1-2. Institutional Controls Requirements Listed in DOE/RL-96-17, *Remedial Design Report/Remedial Action Work Plan for the 100 Area* (2 sheets).

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Controls/Entry Restrictions	Site access is restricted and security badges must be worn by employees, contractors, and visitors. Before receiving a badge, all must receive the level of training required to access the site or perform work.	2.3.1/2.3.1.2
Land-Use Management/Excavation Permits	Excavation permits are required for excavations in the areas to prevent unplanned disturbances, spread of contamination, or infiltration. RL is responsible for establishing and maintaining land-use and access restrictions until the RAOs are achieved.	2.3.2/2.3.2.3
Information Controls/Notifications	RL will notify EPA and Ecology upon discovering any trespassing incident and will report the incident to the Benton County Sheriff's Office.	2.3.5/2.3.5.2
Land-Use Management/Land-Use and Real Property Controls Information Controls/Notice in Deed	Where deed restrictions or other institutional controls are used in accordance with this RDR/RAWP and the RODs (EPA 1995, 1997a, 1999, 2000a, 2000b), RL will not allow any activities that would interfere with the remedial action prior to EPA and Ecology approval. Additionally, RL will take necessary measures, such as filing the deed restrictions in appropriate county offices, to ensure the continuation of these restrictions prior to any transfer or lease of the property. A copy of a notification of any restrictions will be given to any prospective purchaser/transferee before any transfer or lease by RL. RL will provide EPA and Ecology with written verification that these restrictions have been put in place.	2.3.2/2.3.2.1 2.3.5/2.3.5.3

Table A1-2. Institutional Controls Requirements Listed in DOE/RL-96-17, *Remedial Design Report/Remedial Action Work Plan for the 100 Area* (2 sheets).

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Controls/Warning Notices	<p>Appropriate signage is posted at various locations around the perimeter of the Hanford Site. Additionally: One sign is located along the Columbia River at each reactor area (100-B/C, 100-K, 100-N, 100-D/DR, 100-H, and 100-F). The signs will consist of one each in Spanish and English. The signs will be located so that the distance for viewing from the Columbia River will be approximately 150 m (500 ft). No signs will be placed between reactor areas. Another sign will be placed at the major road entrance to the areas (100-B/C, 100-K, 100-N, 100-D/DR, 100-H, and 100-F). Location of the signs have been coordinated with the regulators. The English sign along the river reads as follows:</p> <p style="text-align: center;">WARNING: HAZARDOUS AREA DO NOT ENTER Area May Contain Hazardous Soil and Water Seeps For Information Call: 509-376-7501</p> <p>The Spanish sign reads as follows:</p> <p style="text-align: center;">ADVERTENCIA: AREA DE PELIGRO NO ENTRES Esta area puede contener tierra y fuentes de agua que son peligrosas. Para Informacion Usted Puede Llamar a (509) 376-7501</p> <p>Along access roads, one large sign is located at the entrance to the active remediation area. The sign reads as follows:</p> <p style="text-align: center;">WARNING: HAZARDOUS AREA Area May Contain Hazardous Soil Only Authorized Personnel Allowed For Information Call: 509-376-7501</p>	2.3.1/2.3.1.1
Groundwater Use Management	Groundwater use is restricted, except for the purpose of monitoring and treatment, as approved by EPA or Ecology or as authorized in EPA-approved documents. Groundwater use is also controlled through excavation permits.	2.3.3
Information Controls/Administrative Support, Archives and Libraries	The site-specific institutional control requirements and information on the location and nature of any remaining contamination documented in the CVP (in Section 8.0, "Statement of Protectiveness") is maintained in WIDS.	2.3.5/2.3.5.1

CVP = cleanup verification package.
Ecology = Washington State Department of Ecology.
EPA = U.S. Environmental Protection Agency.
RAO = remedial action objective.
RDR/RAWP = remedial design report/remedial action work plan.
RL = U.S. Department of Energy, Richland Operations Office.
ROD = record of decision.
WIDS = Waste Information Data System (database).

Table A1-3. Institutional Controls Requirements Listed in EPA/AMD/R10-97/044, *Record of Decision Amendment for 100-BC-1, 100-DR-1¹, and 100-HR-1¹ Operable Units.*

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Information Controls/Miscellaneous	Institutional controls and long-term monitoring will be required for sites where wastes are left in place.	2.3.5/2.3.6

¹Institutional controls requirements for these operable units have been superseded by the ROD for 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 operable units. See Table A1-10.

Table A1-4. Institutional Controls Requirements Listed in, EPA/ROD/R10-99/039, *Record of Decision for (100 Area Remaining Sites) 100-BC-1, 100-BC-2, 100-DR-1¹, 100-DR-2¹, 100-FR-1², 100-FR-2², 100-HR-1¹, 100-HR-2¹, 100-KR-1, 100-KR-2, 100-IU-2², 100-IU-6², and 200-CW-3 Operable Units.* (2 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Controls/Entry Restrictions	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.	2.3.1/2.3.1.2
Land-Use Management/Excavation Permits	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.	2.3.2/2.3.2.3
Access Controls/Warning Notices	DOE will maintain existing signs prohibiting public access.	2.3.1/2.3.1.1
Information Controls/Notifications	DOE will provide notification to EPA and Ecology upon discovery of any trespass incidents.	2.3.5/2.3.5.2
Information Controls/Notifications	Trespass incidents will be reported to the Benton County Sheriff's Office for investigation and evaluation for possible prosecution.	2.3.5/2.3.5.2
Land-Use Management/Land-Use and Real Property Controls	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.	2.3.2/2.3.2.1
Information Controls/Administrative Support, Archives and Library	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.	2.3.5/2.3.5.1

Table A1-4. Institutional Controls Requirements Listed in, EPA/ROD/R10-99/039, *Record of Decision for (100 Area Remaining Sites) 100-BC-1, 100-BC-2, 100-DR-1¹, 100-DR-2¹, 100-FR-1², 100-FR-2², 100-HR-1¹, 100-HR-2¹, 100-KR-1, 100-KR-2, 100-IU-2², 100-IU-6², and 200-CW-3 Operable Units.* (2 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Miscellaneous	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.	2.3.6

¹ Institutional controls requirements for these operable units have been superseded by the ROD for 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 operable units. See Table A1-10.

² Institutional controls requirements for these operable units have been superseded by the ROD for 100-FR-1, 100-FR-2, 100-IU-2, and 100-IU-6 operable units. See Tables A1-15.

DOE = U.S. Department of Energy.

Ecology = Washington State Department of Ecology.

EPA = U.S. Environmental Protection Agency.

IC = institutional control.

ROD = record of decision.

Table A1-5. Institutional Controls Requirements Listed in EPA/ROD/R10-00/121, *100 Area Burial Ground Record of Decision (100-BC-1, 100-BC-2, 100-DR-1¹, 100-DR-2¹, 100-FR-2², 100-HR-2¹, 100-KR-2 Operable Units)* (4 sheets).

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
100 Area Burial Ground Institutional Controls Requirements		
Access Controls/Entry Restrictions	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.	2.3.1/2.3.1.2
Groundwater-Use Management	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.	2.3.3
Land-Use Management/Excavation Permits	No intrusive work is allowed on or near the waste sites covered in this ROD without prior approval of EPA or Ecology.	2.3.2/2.3.2.3
Access Controls/Warning Notices	DOE shall maintain signs that warn river users of potential hazards along the shoreline from 100 Area waste sites.	2.3.1/2.3.1.1

Table A1-5. Institutional Controls Requirements Listed in EPA/ROD/R10-00/121, *100 Area Burial Ground Record of Decision (100-BC-1, 100-BC-2, 100-DR-1¹, 100-DR-2¹, 100-FR-2², 100-HR-2¹, 100-KR-2 Operable Units)* (4 sheets).

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Controls/ Warning Notices	DOE shall post and maintain in good condition "No Trespassing" signs along the 100 Area shoreline.	2.3.1/2.3.1.1
Access Controls/ Warning Notices	DOE shall maintain signs along access roads that warn Site visitors and workers of potential hazards from 100 Area waste sites.	2.3.1/2.3.1.1
Information Controls/Notifications	DOE shall report trespass incidents to the Benton County Sheriff's Office for investigation and evaluation for possible prosecution.	2.3.5/2.3.5.2
Sitewide Institutional Controls Requirements		
Land-Use Management Groundwater Use Management Information Controls Miscellaneous	<p>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:</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Include a tracking mechanism that identifies all land areas under restriction or control.</p> <p>Include a process to promptly notify EPA and Ecology before any making anticipated change in designation, restriction, land users, or activity for any ICs required by a decision document.</p>	2.3.2 2.3.3 2.3.5 2.3.6

Table A1-5. Institutional Controls Requirements Listed in EPA/ROD/R10-00/121, *100 Area Burial Ground Record of Decision (100-BC-1, 100-BC-2, 100-DR-1¹, 100-DR-2¹, 100-FR-2², 100-HR-2¹, 100-KR-2 Operable Units)* (4 sheets).

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Land-Use Management Information Controls Miscellaneous	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.	2.3.2 2.3.5 2.3.6
Miscellaneous	DOE will identify a point of contact for implementing, maintaining, and monitoring ICs for the 100 Area, as well as for the Hanford Site.	2.3.6
Miscellaneous	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.	2.3.6
Information Controls/Notice in Deed	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.	2.3.5/2.3.5.3
Information Controls/Administrative Support, Archives and Libraries	DOE will not delete or terminate any ICs unless EPA and Ecology have concurred in the deletion or termination.	2.3.5/2.3.5.1

Table A1-5. Institutional Controls Requirements Listed in EPA/ROD/R10-00/121, *100 Area Burial Ground Record of Decision (100-BC-1, 100-BC-2, 100-DR-1¹, 100-DR-2¹, 100-FR-2², 100-HR-2¹, 100-KR-2 Operable Units)* (4 sheets).

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Miscellaneous	<p>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:</p> <p>A description of how DOE is meeting the Sitewide IC requirements.</p> <p>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.</p>	2.3.6
Miscellaneous	EPA and Ecology review of the IC monitoring report will follow existing procedures for agency review of primary documents.	2.3.6

¹Institutional controls requirements for these operable units have been superseded by the ROD for 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 operable units. See Table A1-10.

²Institutional controls requirements for these operable units have been superseded by the ROD for 100-FR-1, 100-FR-2, 100-IU-2, and 100-IU-6 operable units. See Tables A1-15.

CERCLA = *Comprehensive Environmental Response, Compensation, and Liability Act of 1980.*
 DOE = U.S. Department of Energy.
 Ecology = Washington State Department of Ecology.
 EPA = U.S. Environmental Protection Agency.
 IC = institutional control.
 OU = operable unit.
 ROD = record of decision.
 TPA = Tri-Party Agreement.

Table A1-6. Institutional Controls Requirements Listed in *Explanation of Significant Differences for the 100 Area Remaining Sites Interim Action Record of Decision for 100-BC-1, 100-BC-2, 100-DR-1¹, 100-DR-2¹, 100-FR-1², 100-FR-2², 100-HR-1¹, 100-HR-2¹, 100-KR-1, 100-KR-2, 100-IU-2², 100-IU-6², and 200-CW-3 Operable Units* (EPA 2004a).

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Miscellaneous	<p>Revised the reporting date for the annual institutional controls assessment report from March 30 to September 30.</p> <p>(NOTE: Subsequently, the annual reporting requirement was changed to occur as part of the <i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i> 5-year review effort, as discussed in Section 1.2 of this Plan. An update of the results of the annual institutional assessment results is to be provided to the U.S. Environmental Protection Agency and Washington State Department of Ecology at the Area Unit Managers Meetings every September.)</p>	2.3.6

¹Institutional controls requirements for these operable units have been superseded by the ROD for 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 operable units. See Table A1-10.

²Institutional controls requirements for these operable units have been superseded by the ROD for 100-FR-1, 100-FR-2, 100-IU-2, and 100-IU-6 operable units. See Tables A1-15.

Table A1-7. Institutional Controls Requirements Listed in *Explanation of Significant Differences for the 100 Area Interim Action Record of Decision for 100-BC-1, 100-BC-2, 100-DR-1¹, 100-DR-2¹, 100-FR-2², 100-HR-2¹, and 100-KR-2 Operable Units* (EPA 2007a).
(2 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Miscellaneous	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.	2.3.6
Miscellaneous	Institutional controls are required to be maintained in accordance with both the Burial Ground Record of Decision and the <i>Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions</i> (DOE/RL-2001-41, as amended).	2.3.6
Land-Use Management	Irrigation of 118-B-1 burial ground is prohibited. The duration of institutional controls required is 140 years (Year 2147).	2.3.2

Table A1-7. Institutional Controls Requirements Listed in Explanation of Significant Differences for the 100 Area Interim Action Record of Decision for 100-BC-1, 100-BC-2, 100-DR-1¹, 100-DR-2¹, 100-FR-2², 100-HR-2¹, and 100-KR-2 Operable Units (EPA 2007a).
(2 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Land-Use Management/Excavation Permits	Institutional Controls to prevent drilling or excavation into the deep zone are required (CVP-2007-00006).	2.3.2/2.3.2.3

¹Institutional controls requirements for these operable units have been superseded by the ROD for 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 operable units. See Table A1-10.

²Institutional controls requirements for these operable units have been superseded by the ROD for 100-FR-1, 100-FR-2, 100-IU-2, and 100-IU-6 operable units. See Tables A1-15.

Table A1-8. Institutional Controls for Waste Sites in the 100-BC-1 Operable Unit. (2 sheets)

Institutional Control	Waste Site	Source Document
Prevent uncontrolled drilling or excavation below 4.6 m/15 feet bgs (deep zone)	100-B-5	WSRF 2003-030
	100-B-8:1	WSRF 2004-020
	100-B-8:2	WSRF 2003-050
	100-B-14:1	WSRF 2004-005
	100-B-21:4	WSRF 2009-041
	116-B-1	Letter 05-AMRC-0078
	116-B-2	Letter 05-AMRC-0078
	116-B-3	Letter 05-AMRC-0078
	116-B-4	Letter 05-AMRC-0078
	116-B-6A	CVP-99-00011
	116-B-7	Letter 05-AMRC-0078
	116-B-11	Letter 05-AMRC-0078
	116-B-12	Letter 05-AMRC-0078
	116-B-16	CVP-99-00011
	116-C-1	Letter 05-AMRC-0078
	116-C-5	Letter 05-AMRC-0078
	132-B-6	Letter 05-AMRC-0078
132-C-2	Letter 05-AMRC-0078	
Prevent activities that would mobilize residual contaminants to travel to groundwater or the river Prevent uncontrolled drilling or excavation into the shallow zone (above 4.6/15 ft)	128-B-3	WSRF 2006-058

Table A1-8. Institutional Controls for Waste Sites in the 100-BC-1 Operable Unit. (2 sheets)

Institutional Control	Waste Site	Source Document
Prevent activities that would mobilize residual contaminants to travel to groundwater or the river. No irrigation	128-B-3	WSRF 2006-058

Table A1-9. Institutional Controls for Waste Sites in the 100-BC-2 Operable Unit.

Institutional Control	Waste Site	Source Document
Prevent uncontrolled drilling or excavation below 4.6 m/15 feet bgs (deep zone)	100-C-6:1	WSRF 2004-020
	100-C-6:2	WSRF 2003-050
	100-C-6:3	WSRF 2003-050
	100-C-6:4	WSRF 2003-050
	100-C-9:1	WSRF 2004-012
	100-C-9:3	WSRF 2004-014
	116-C-2A	CVP-99-00019
	116-C-2B	CVP-99-00019
	116-C-2C	CVP-99-00019
	116-C-3	WSRF 2008-002
	118-B-1	WSRF 2007-032
	118-B-6	WSRF 2006-005
	118-C-1	WSRF 2006-063
118-C-3:2	Letter 05-AMRC-0078	
Prevent an inhalation exposure pathway	100-C-9:4	WSRF 2004-015
Prohibit irrigation	118-B-1	WSRF 2007-032

Table A1-10. Institutional Controls Requirements Listed in Record of Decision for 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 Operable Units (EPA 2018) (4 sheets).

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Institutional Controls Common to 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3		
Information Controls Miscellaneous	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.	2.3.5 2.3.6

Table A1-10. Institutional Controls Requirements Listed in Record of Decision for 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 Operable Units (EPA 2018) (4 sheets).

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Land-Use Management Information Controls	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.	2.3.2 2.3.5
Information Controls/Notice in Deed	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.	2.3.5/2.3.5.3
Information Controls/Notifications	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.	2.3.5/2.3.5.2
Land-Use Management	Activities that would disrupt or lessen the performance of any component of the remedies are prohibited.	2.3.2
Access Control	Signage and access control to waste sites with contamination above cleanup levels will be provided.	2.3.1
Land-Use Management/Land-Use and Real Property Controls	Maintain the integrity of any current or future remedial or monitoring system such as monitoring wells.	2.3.2/2.3.2.1
Land-Use Management/Land-Use and Real Property Controls	Prohibit the development and use of property for residential housing, elementary and secondary schools, child care facilities and playgrounds until cleanup levels are met.	2.3.2/2.3.2.1
Land-Use Management/Excavation Permits	DOE shall employ and maintain an excavation permit program for protection of human health against unacceptable exposure, and protection of environmental and cultural resources.	2.3.2/2.3.2.3
Miscellaneous	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.	2.3.6
Information Controls/Notice in Deed	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	2.3.5/2.3.5.3

Table A1-10. Institutional Controls Requirements Listed in Record of Decision for 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 Operable Units (EPA 2018) (4 sheets).

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
	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.	
Information Controls/Notifications	DOE shall notify EPA and Ecology immediately upon discovery of any activity inconsistent with the specific ICs.	2.3.5/2.3.5.2
Institutional Controls Component Unique to 100-HR-3		
Land-Use Management/Excavation Permits Groundwater-Use Management	DOE shall employ and maintain an excavation permit program limiting 100-HR-3 groundwater access and use to research purposes and for monitoring and treatment in areas where groundwater is above cleanup levels. ¹	2.3.2/2.3.2.3 2.3.3
Access Control Groundwater-Use Management	Prevent access or use of the groundwater for drinking water purposes until cleanup levels are met.	2.3.1 2.3.3
Institutional Controls (deep zone) at Waste Sites in 100-DR-1, 100-DR-2, and 100-HR-1		
Access Control Land-Use Management/Excavation Permits	ICs in the form of excavation restrictions are required for the 35 ICs (deep zone) waste sites to control access to residual contamination in soil below 4.6 m (15 ft) bgs that is above standards for UU/UE. ² Exposure to contamination deeper than 4.6 m (15 ft) bgs is not anticipated, however, ICs restricting excavation are required to ensure future activities do not bring contamination to the surface or otherwise result in exposure to contaminant concentrations that are above standards for UU/UE. These ICs will be maintained until the concentrations of hazardous substances are at such levels to allow for UU/UE and EPA or Ecology authorizes the removal of restrictions.	2.3.1 2.3.2/2.3.2.3
Institutional Controls (shallow zone) at waste sites in 100-DR-1, 100-DR-2, 100-HR-1, and 100-HR-2		
Land-Use Management/Excavation Permits	ICs to control access, use, and to restrict excavation are required for the 8 shallow zone radiologically contaminated waste sites that exceed cleanup levels. ² The ICs to control access to residual contamination in soil above 4.6 m (15 ft) bgs and restricting excavation are required to ensure future activities do not bring contamination to the surface or otherwise result in exposure to contaminant concentrations	2.3.2/2.3.2.3

Table A1-10. Institutional Controls Requirements Listed in Record of Decision for 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 Operable Units (EPA 2018) (4 sheets).

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
	that exceed the cleanup levels identified in Table 4 [of the <i>Record of Decision for 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 Operable Units</i>]. These ICs will be maintained until cleanup levels are achieved and the concentrations of hazardous substances are at such levels to allow for UU/UE and EPA or Ecology authorizes the removal of restrictions.	

¹ Institutional controls unique to 100-HR-3 are shown in Figure A1-3.

²The excavation restrictions for waste sites in 100-DR-1, 100-DR-2, 100-HR-1, and 100-HR-2 are identified in Table A1-11 through A1-14 and shown on Figures A1-1 and A1-2.

bgs = below ground surface

DOE = U.S. Department of Energy.

EPA = U.S. Environmental Protection Agency.

IC = institutional control.

ROD = record of decision

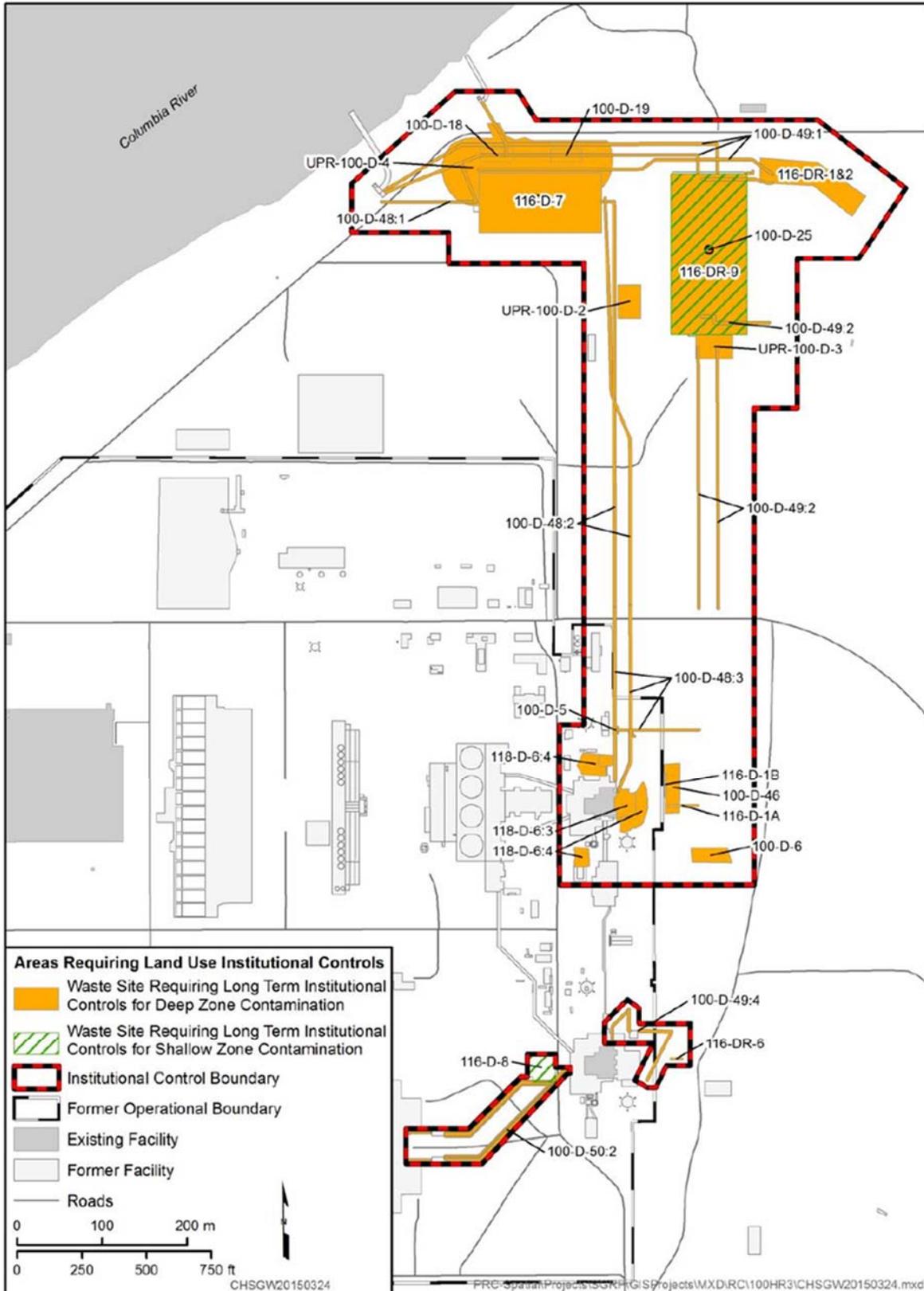


Figure A1-1. Land-Use Control Boundary for the 100-DR-1 and 100-DR-2 Operable Units.

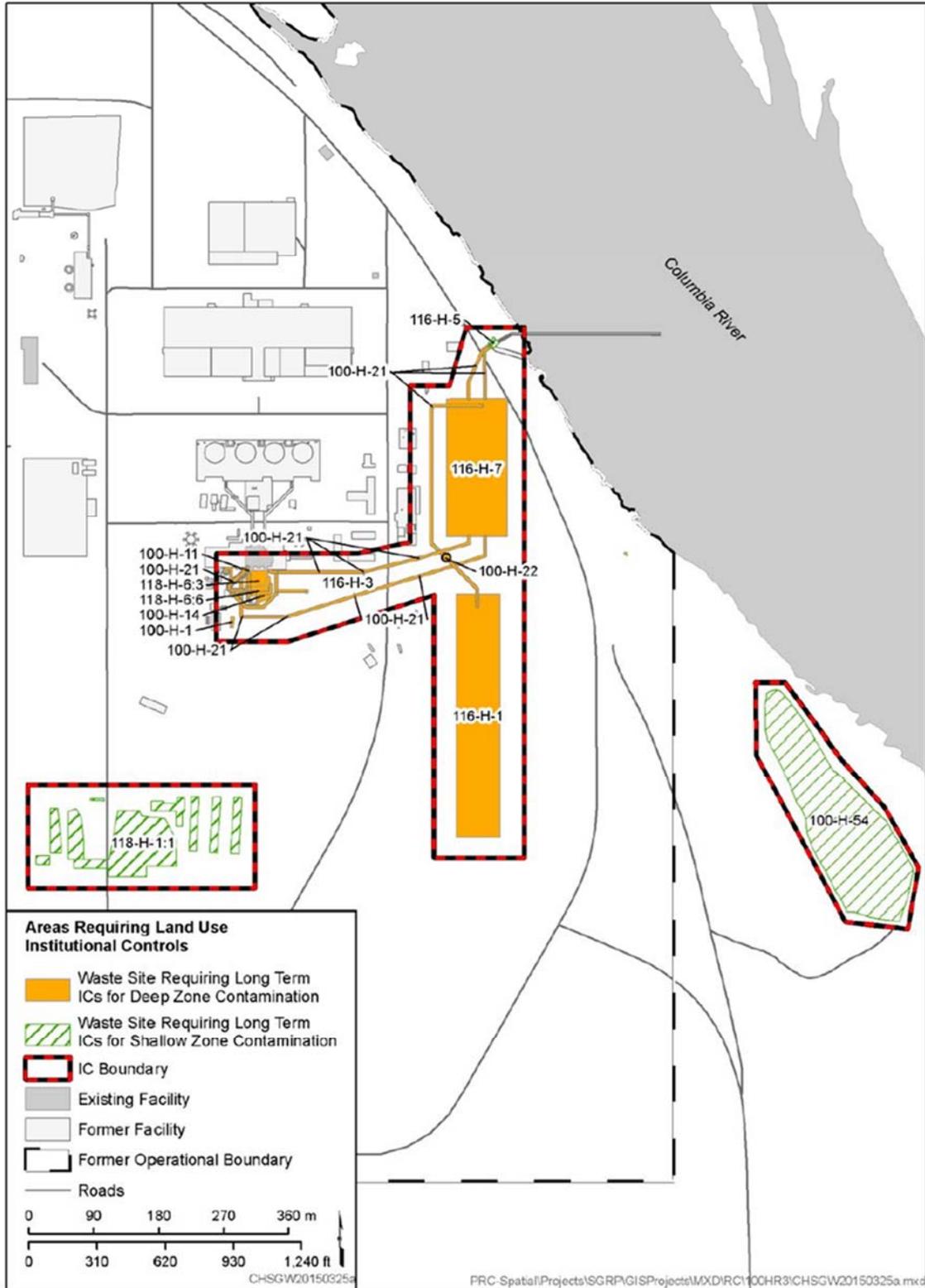
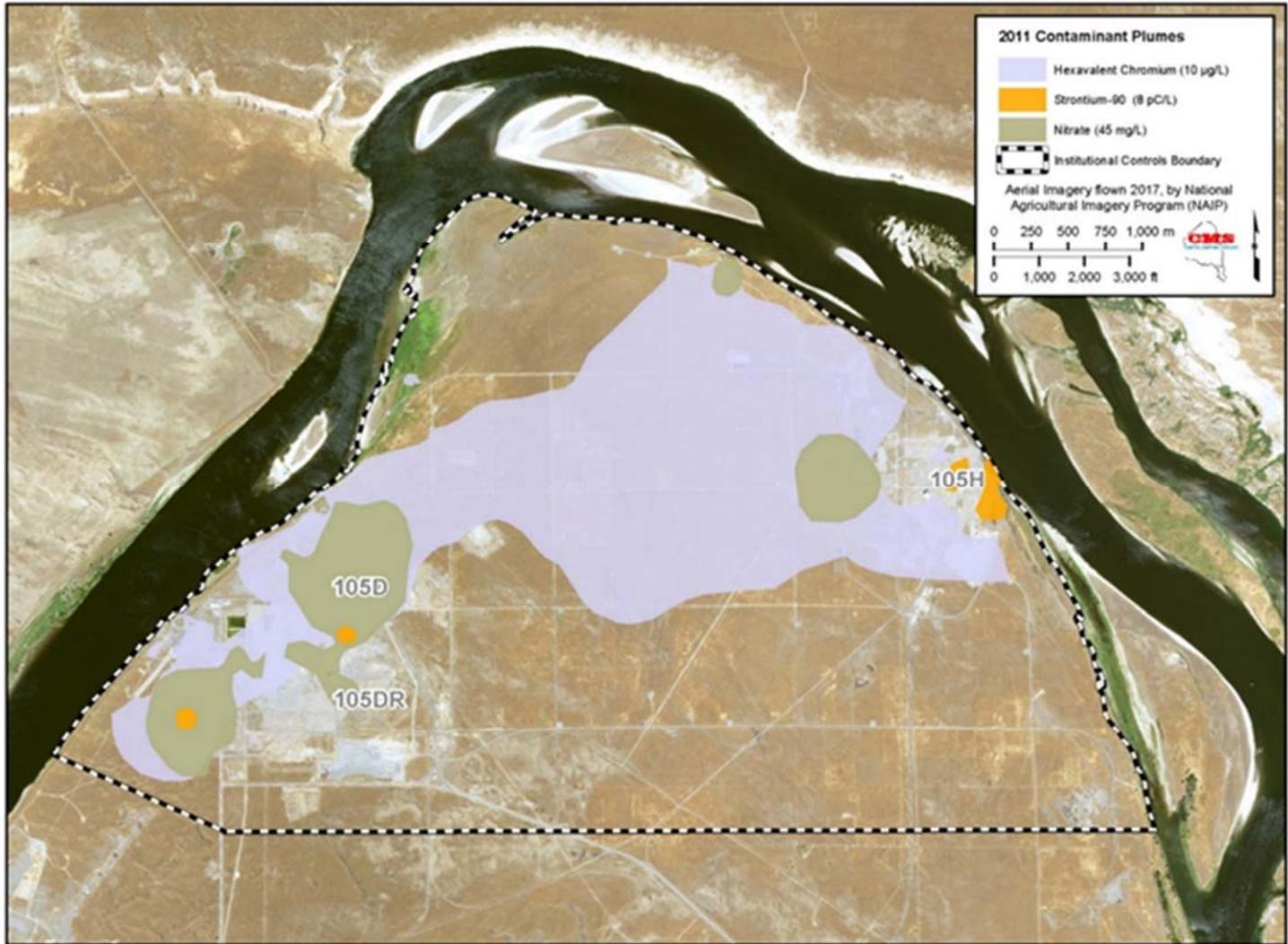


Figure A1-2. Land-Use Control Boundary for the 100-HR-1 and 100-HR-2 Operable Units.



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Note: The groundwater plume shapes and location change over time. For the most recent groundwater plume shapes and locations, see the latest annual groundwater monitoring report at <https://www.hanford.gov/page.cfm/SoilGroundwaterAnnualReports>.

Figure A1-3. 100-HR-3 Operable Unit Institutional Control Boundary.

Table A1-11. Institutional Controls for Waste Sites in the 100-DR-1 Operable Unit.

Institutional Control	Waste Site	Source Document
Entry and excavation restrictions	100-D-50:2	EPA (2018)
Prevent uncontrolled drilling or excavation below 4.6 m/15 feet bgs (deep zone)	100-D-5 (2028) ¹	EPA (2018)
	100-D-6 (2028)	EPA (2018)
	100-D-18 (2066)	EPA (2018)
	100-D-19 (2042)	EPA (2018)
	100-D-48:1 (2093)	EPA (2018)
	100-D-48:2 (2034)	EPA (2018)
	100-D-48:3 (2028)	EPA (2018)
	100-D-49:1 (2093)	EPA (2018)
	100-D-49:2 (2117)	EPA (2018)
	100-D-49:4 (2027)	EPA (2018)
	116-D-1A (2203)	EPA (2018)
	116-D-1B (2203)	EPA (2018)
	116-D-7 (2125)	EPA (2018)
	116-DR-1&2 (2148)	EPA (2018)
	116-DR-9/100-D-25 (2064)	EPA (2018)
	118-D-6:3 (2120)	EPA (2018)
	118-D-6:4 (2143)	EPA (2018)
	UPR-100-D-2 (2034)	EPA (2018)
	UPR-100-D-3 (2034)	EPA (2018)
UPR-100-D-4 (2064)	EPA (2018)	
Prevent uncontrolled drilling or excavation above 4.6 m/15 feet bgs (shallow zone)	116-DR-9/100-D-25 (2038)	EPA (2018)
	118-D-6:4 (2022)	EPA (2018)

¹ Dates in parentheses are the year that the radioactive decay of elements decreases to concentrations less than cleanup levels and indicate when the IC is no longer needed. End dates are only provided when specified in source document(s). These ICs will remain in place until the concentrations of hazardous substances are at such levels to allow for unlimited use and unrestricted exposure (UU/UE) and the lead regulatory agency (EPA or Ecology) authorizes the removal of restrictions.

EPA = U.S. Environmental Protection Agency

Table A1-12. Institutional Controls for Waste Sites in the 100-DR-2 Operable Unit.

Institutional Control	Waste Site	Source Document
Prevent uncontrolled drilling or excavation below 4.6 m/15 feet bgs (deep zone)	100-D-46 (2203) ¹	EPA (2018)
	116-DR-6 (2048)	EPA (2018)
	118-D-3:1 (2025)	EPA (2018)
Prevent uncontrolled drilling or excavation above 4.6 m/15 feet bgs (shallow zone)	116-D-8 (2035)	EPA (2018)
	118-D-2:1 (2019)	EPA (2018)

¹ Dates in parentheses are the year that the radioactive decay of elements decreases to concentrations less than cleanup levels and indicate when the IC is no longer needed. End dates are only provided when specified in source document(s). These ICs will remain in place until the concentrations of hazardous substances are at such levels to allow for unlimited use and unrestricted exposure (UU/UE) and the lead regulatory agency (EPA or Ecology) authorizes the removal of restrictions.

EPA = U.S. Environmental Protection Agency

Table A1-13. Institutional Controls for Waste Sites in the 100-HR-1 Operable Unit.

Institutional Control	Waste Site	Source Document
Prevent uncontrolled drilling or excavation below 4.6 m/15 feet bgs (deep zone)	100-H-1 (2019) ¹	EPA (2018)
	100-H-11 (2108)	EPA (2018)
	100-H-12 (2108)	EPA (2018)
	100-H-14 (2108)	EPA (2018)
	100-H-21 (2019)	EPA (2018)
	100-H-22 (2019)	EPA (2018)
	116-H-1 (2110)	EPA (2018)
	116-H-3 (2056)	EPA (2018)
	116-H-7 (2098)	EPA (2018)
	118-H-6:3 (2108)	EPA (2018)
	118-H-6:6 (2108)	EPA (2018)
Prevent uncontrolled drilling or excavation above 4.6 m/15 feet bgs (shallow zone)	116-H-5 (2016)	EPA (2018)
	100-H-54 (2026)	EPA (2018)

¹ Dates in parentheses are the year that the radioactive decay of elements decreases to concentrations less than cleanup levels and indicate when the IC is no longer needed. End dates are only provided when specified in source document(s). These ICs will remain in place until the concentrations of hazardous substances are at such levels to allow for unlimited use and unrestricted exposure (UU/UE) and the lead regulatory agency (EPA or Ecology) authorizes the removal of restrictions.

EPA = U.S. Environmental Protection Agency

Table A1-14. Institutional Controls for Waste Sites in the 100-HR-2 Operable Unit.

Institutional Control	Waste Site	Source Document
Prevent uncontrolled drilling or excavation above 4.6 m/15 feet bgs (shallow zone)	118-H-1:1 (2016) ¹	EPA (2018)

¹ Date in parentheses is the year that the radioactive decay of elements decreases to concentrations less than cleanup levels and indicate when the IC is no longer needed. End dates are only provided when specified in source document(s). This IC will remain in place until the concentrations of hazardous substances are at such levels to allow for unlimited use and unrestricted exposure (UU/UE) and the lead regulatory agency (EPA or Ecology) authorizes the removal of restrictions.

EPA = U.S. Environmental Protection Agency

Table A1-15. Institutional Controls Requirements Listed in *Record of Decision, Hanford 100 Area Superfund Site for 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6* (EPA 2014) and Associated Implementing Documents (8 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2014) ¹	Integrated Remedial Design Report / Remedial Action Work Plan (DOE/RL-2014-44, Rev. 0) ²	Remedial Design Report / Remedial Action Work Plan Addenda – Soils and Groundwater (DOE/RL-2014-44-ADD1, Rev. 0, and DOE/RL-2014-44-ADD2, Rev. 0) ^{3,4}
Institutional Controls Common to 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6			
Information Controls (Section 2.3.5) Miscellaneous (Section 2.3.6)	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.	Text same as ROD	-- ^{5,6}
Information Controls (Section 2.3.5) Miscellaneous (Section 2.3.6)	DOE shall be responsible for implementing, maintaining, reporting on and enforcing ICs. Although the DOE may later transfer these procedural responsibilities to another party by contract, property transfer agreement or	Text same as ROD	-- ^{5,6}

Table A1-15. Institutional Controls Requirements Listed in *Record of Decision, Hanford 100 Area Superfund Site for 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6* (EPA 2014) and Associated Implementing Documents (8 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2014) ¹	Integrated Remedial Design Report / Remedial Action Work Plan (DOE/RL-2014-44, Rev. 0) ²	Remedial Design Report / Remedial Action Work Plan Addenda – Soils and Groundwater (DOE/RL-2014-44-ADD1, Rev. 0, and DOE/RL-2014-44-ADD2, Rev. 0) ^{3,4}
	through other means, the DOE shall retain ultimate responsibility for remedy integrity and ICs.		
Land-Use Management (Section 2.3.2) Information Controls (Section 2.3.5)	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 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.	Text same as ROD	-- ^{5,6}
Land-Use Management (Section 2.3.2)	Land-use controls will be maintained until cleanup levels are achieved and the concentrations of hazardous substances are at such levels to allow for unlimited use and unrestricted exposure and EPA	Text same as ROD	-- ^{5,6}

Table A1-15. Institutional Controls Requirements Listed in *Record of Decision, Hanford 100 Area Superfund Site for 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6* (EPA 2014) and Associated Implementing Documents (8 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2014) ¹	Integrated Remedial Design Report / Remedial Action Work Plan (DOE/RL-2014-44, Rev. 0) ²	Remedial Design Report / Remedial Action Work Plan Addenda – Soils and Groundwater (DOE/RL-2014-44-ADD1, Rev. 0, and DOE/RL-2014-44-ADD2, Rev. 0) ^{3,4}
	authorizes the removal of restrictions.		
Information Controls/Notice in Deed (Section 2.3.5/2.3.5.3)	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.	Text same as ROD	-- ^{5,6}
Information Controls/Notifications (Sections 2.3.5/2.3.5.2)	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.	Text same as ROD	-- ^{5,6}
Land-Use Management (Section 2.3.2)	Activities that would disrupt or lessen the performance of any component of the remedies are prohibited.	Text same as ROD	-- ^{5,6}
Access Control (Section 2.3.1)	Signage and access control to waste sites with contamination above cleanup levels will be provided.	Text same as ROD	Implementation of the ROD requirement to provide signage and access control for waste sites with contamination above cleanup levels is described below. Signage is posted and will be maintained at various locations around the perimeter of the Hanford Site, and one additional sign is located along the Columbia River at the 100-F Reactor Area. The sign set consists of one each in English and Spanish. The sign posted along the

Table A1-15. Institutional Controls Requirements Listed in *Record of Decision, Hanford 100 Area Superfund Site for 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6* (EPA 2014) and Associated Implementing Documents (8 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2014) ¹	Integrated Remedial Design Report / Remedial Action Work Plan (DOE/RL-2014-44, Rev. 0) ²	Remedial Design Report / Remedial Action Work Plan Addenda – Soils and Groundwater (DOE/RL-2014-44-ADD1, Rev. 0, and DOE/RL-2014-44-ADD2, Rev. 0) ^{3,4}
			<p>river is located so that the distance for viewing from the river is approximately 150 m (500 ft). The English language sign reads as follows:</p> <p>WARNING: HAZARDOUS AREA DO NOT ENTER Area May Contain Hazardous Soil and Water For Information Call: 509-376-7501 The Spanish language sign reads as follows:</p> <p>ADVERTENCIA: AREA DE PELIGRO NO ENTRES Esta area puede contener tierra y fuentes de agua que son peligrosas. Para Informacion Llame al (509) 376-7501</p> <p>General site access to the Hanford Site is restricted, and security badges must be worn by employees, contractors, and visitors. Before receiving a badge, personnel must receive the level of training required to access the site or perform work or be appropriately escorted.</p>
Land-Use Management (Section 2.3.2)	Maintain the integrity of any current or future remedial or monitoring system such as monitoring wells.	Text same as ROD	-- ^{5,6}
Land-Use Management/Industrial Use (Section 2.3.2/2.3.2.4)	Prohibit the development and use of property for residential housing, elementary and secondary schools, child care facilities and playgrounds until cleanup levels are met.	Text same as ROD	-- ^{5,6}

Table A1-15. Institutional Controls Requirements Listed in *Record of Decision, Hanford 100 Area Superfund Site for 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6* (EPA 2014) and Associated Implementing Documents (8 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2014) ¹	Integrated Remedial Design Report / Remedial Action Work Plan (DOE/RL-2014-44, Rev. 0) ²	Remedial Design Report / Remedial Action Work Plan Addenda – Soils and Groundwater (DOE/RL-2014-44-ADD1, Rev. 0, and DOE/RL-2014-44-ADD2, Rev. 0) ^{3,4}
Land-Use Management/Excavation Permits (Section 2.3.2/2.3.2.3)	DOE shall employ and maintain an excavation permit program for protection of human health against unacceptable exposure, and protection of environmental and cultural resources.	Text same as ROD	--5.6
Miscellaneous (Section 2.3.6)	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.	Text same as ROD	--5.6
Information Controls/Notice in Deed (Section 2.3.5/2.3.5.3)	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	Text same as ROD	--5.6

Table A1-15. Institutional Controls Requirements Listed in *Record of Decision, Hanford 100 Area Superfund Site for 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6* (EPA 2014) and Associated Implementing Documents (8 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2014) ¹	Integrated Remedial Design Report / Remedial Action Work Plan (DOE/RL-2014-44, Rev. 0) ²	Remedial Design Report / Remedial Action Work Plan Addenda – Soils and Groundwater (DOE/RL-2014-44-ADD1, Rev. 0, and DOE/RL-2014-44-ADD2, Rev. 0) ^{3,4}
	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.		
Information Controls/Notifications (Sections 2.3.5/2.3.5.2)	DOE shall notify EPA and Ecology immediately upon discovery of any activity inconsistent with the specific ICs.	Text same as ROD	-- ^{5,6}
Institutional Controls Component Unique to 100-FR-1 and 100-FR-2			
Land-Use Management (Section 2.3.2)	Exposure to contamination deeper than 4.6 m (15 ft) bgs is not anticipated. Where contamination at depth exceeds the residential use cleanup	Exposure to contamination deeper than 4.6 m (15 ft) bgs is not anticipated. Where contamination at depth exceeds the	Under the 100-F/IU Area ROD, 15 previously remediated 100-FR-1 and 100-FR-2 sites were identified that require ICs to prevent inadvertent exposure to residual contamination in the deep zone. While not anticipated, additional 100-IU-2 and 100-IU-6

Table A1-15. Institutional Controls Requirements Listed in *Record of Decision, Hanford 100 Area Superfund Site for 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6* (EPA 2014) and Associated Implementing Documents (8 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2014) ¹	Integrated Remedial Design Report / Remedial Action Work Plan (DOE/RL-2014-44, Rev. 0) ²	Remedial Design Report / Remedial Action Work Plan Addenda – Soils and Groundwater (DOE/RL-2014-44-ADD1, Rev. 0, and DOE/RL-2014-44-ADD2, Rev. 0) ^{3,4}
	levels, 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 cleanup levels.	cleanup levels attained for the waste site, 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 cleanup levels that were attained at the waste site. A total of 15 100-FR-1 and 100-FR-2 OU waste sites require drilling and excavation ICs for specified time periods due to radionuclide contamination exceeding human health direct contact cleanup levels. The waste sites are presented in Table 2-1 [of DOE/RL-2014-44]. The expected year that ICs can be removed is indicated after the site number.	sites requiring similar post-remediation ICs may be identified through the course of remediation. Such ICs may be conservatively applied where deep zone areas cannot be demonstrated to be protective of shallow zone criteria, as described in Chapter 2 [of DOE/RL-2014-44-ADD1].
Land-Use Management/Irrigation Controls (Section 2.3.2/2.3.2.6)	Prohibit irrigation over or near waste site 116-F-14 that represents an	Prohibit irrigation over or near waste site 116-F-14 (100-FR-1) that	The 100-F/IU Area ROD also identifies one 100-FR-1 waste site where ICs are required to prohibit irrigation. This type of IC is not

Table A1-15. Institutional Controls Requirements Listed in *Record of Decision, Hanford 100 Area Superfund Site for 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6* (EPA 2014) and Associated Implementing Documents (8 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2014) ¹	Integrated Remedial Design Report / Remedial Action Work Plan (DOE/RL-2014-44, Rev. 0) ²	Remedial Design Report / Remedial Action Work Plan Addenda – Soils and Groundwater (DOE/RL-2014-44-ADD1, Rev. 0, and DOE/RL-2014-44-ADD2, Rev. 0) ^{3,4}
	unacceptable surface water protection risk.	represents an unacceptable surface water protection risk.	anticipated for any remaining 100-IU-2 or 100-IU-6 waste sites under the scope of this addendum.
Institutional Controls Component Unique to 100-FR-3			
Land-Use Management/Excavation Permits (Section 2.3.2/2.3.2.3) Groundwater-Use Management (Section 2.3.3)	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.	Text same as ROD	-- ⁶
Groundwater-Use Management (Section 2.3.3)	Prevent access or use of the groundwater for drinking water purposes until cleanup levels are met.	Text same as ROD	-- ⁶

¹ EPA, 2014, *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*, Sections 12.2.3, 12.2.4, and 12.2.5

² DOE/RL-2014-44, *Integrated Remedial Design Report/Remedial Action Work Plan for 100-F/IU*, Rev. 0, Sections 2.1.2.1, 2.1.2.2, and 2.1.2.3

³ 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*, Rev. 0, Section 4.3.3

⁴ DOE/RL-2014-44-ADD2, *Remedial Design Report/Remedial Action Work Plan Addendum for 100-F/IU Groundwater*, Rev. 0, Sections 4.1.3 and 6.2.7

⁵ The soil addendum (DOE/RL-2014-44-ADD1) refers back to the integrated RDR/RAWP (DOE/RL-2014-44) for the descriptions of the institutional controls, unless otherwise noted.

⁶ The groundwater addendum (DOE/RL-2014-44-ADD2) refers back to the integrated RDR/RAWP (DOE/RL-2014-44) for descriptions of the institutional controls.

DOE = U.S. Department of Energy.

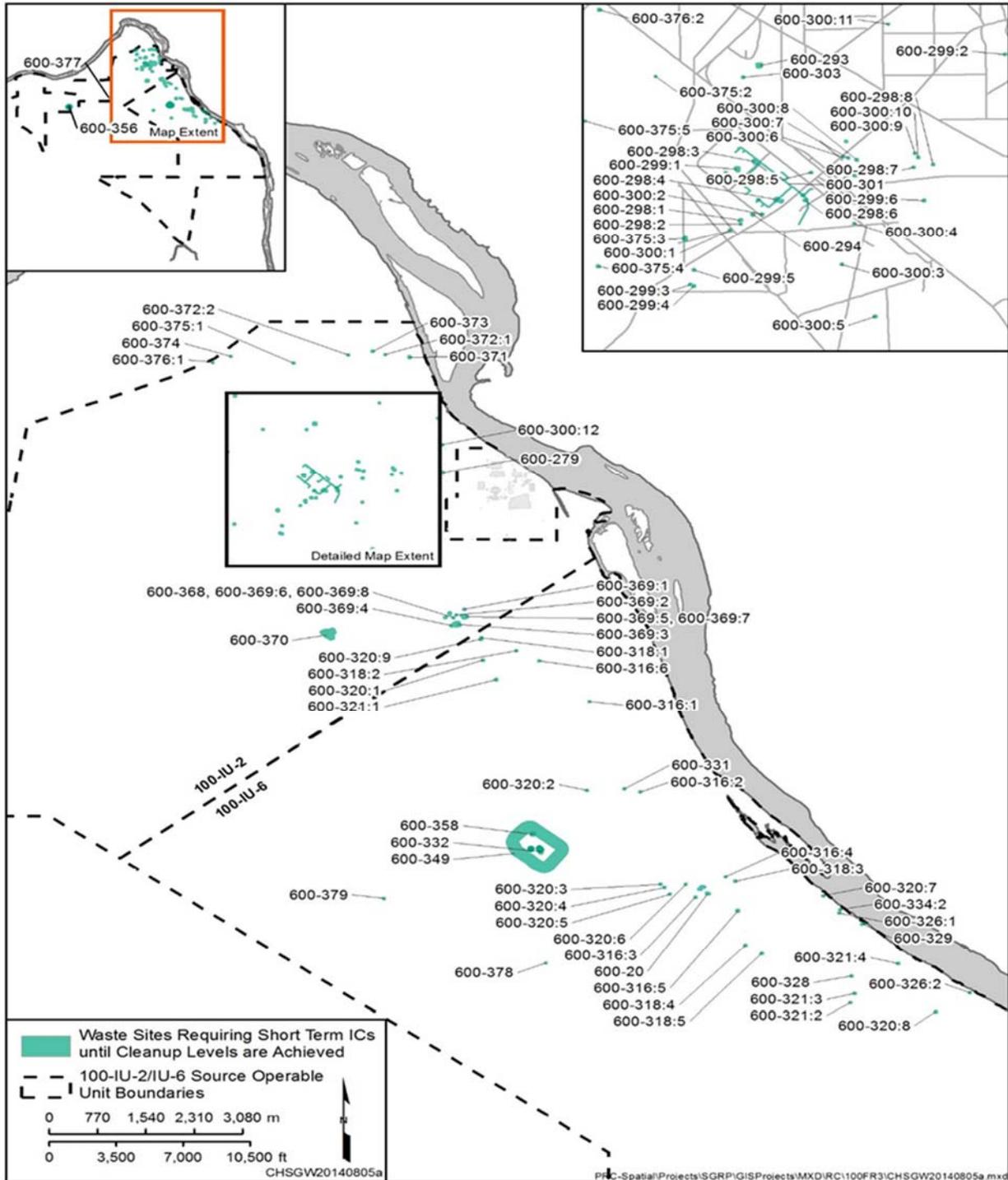
EPA = U.S. Environmental Protection Agency.

IC = institutional control.

MNA = monitored natural attenuation.

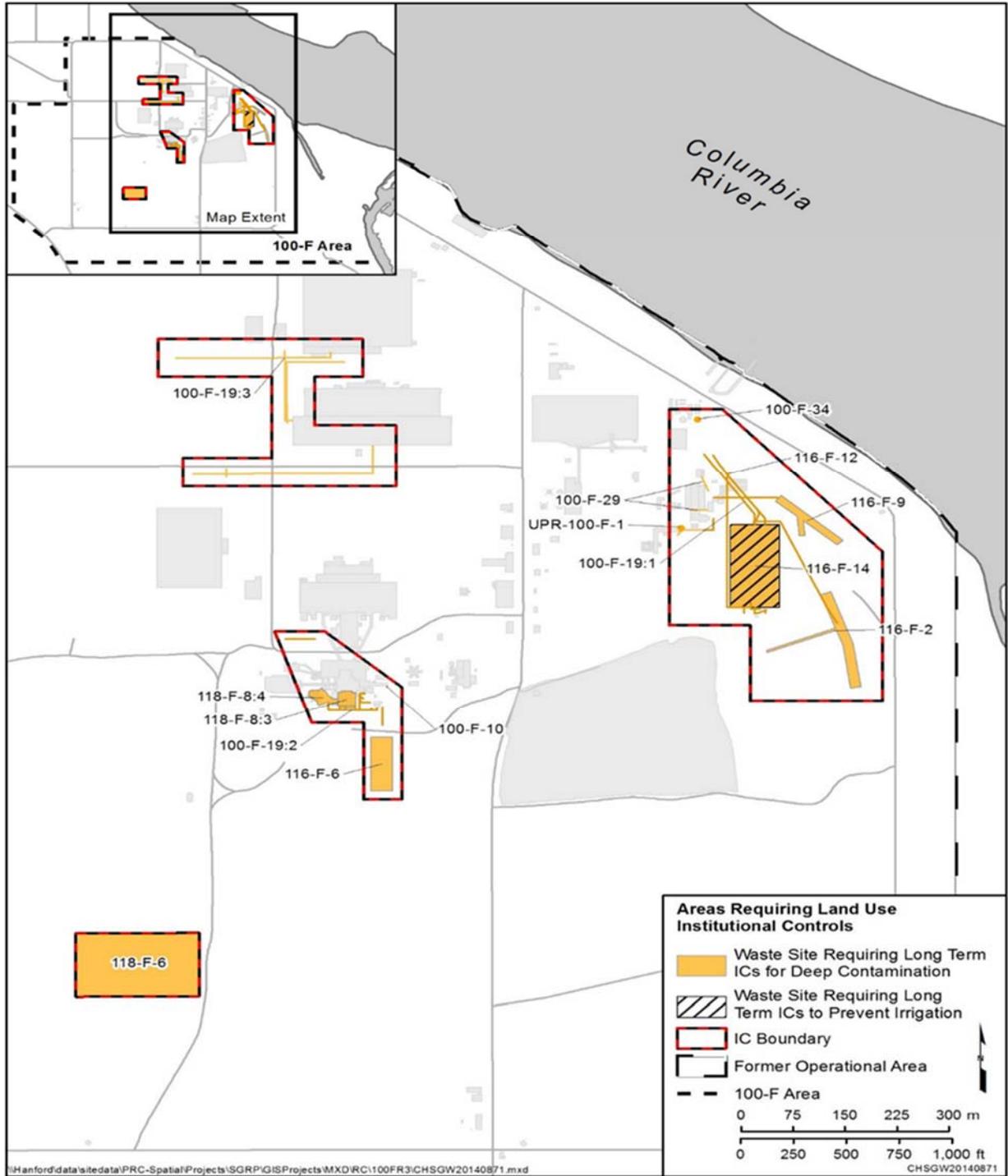
OU = operable unit.

ROD = record of decision.



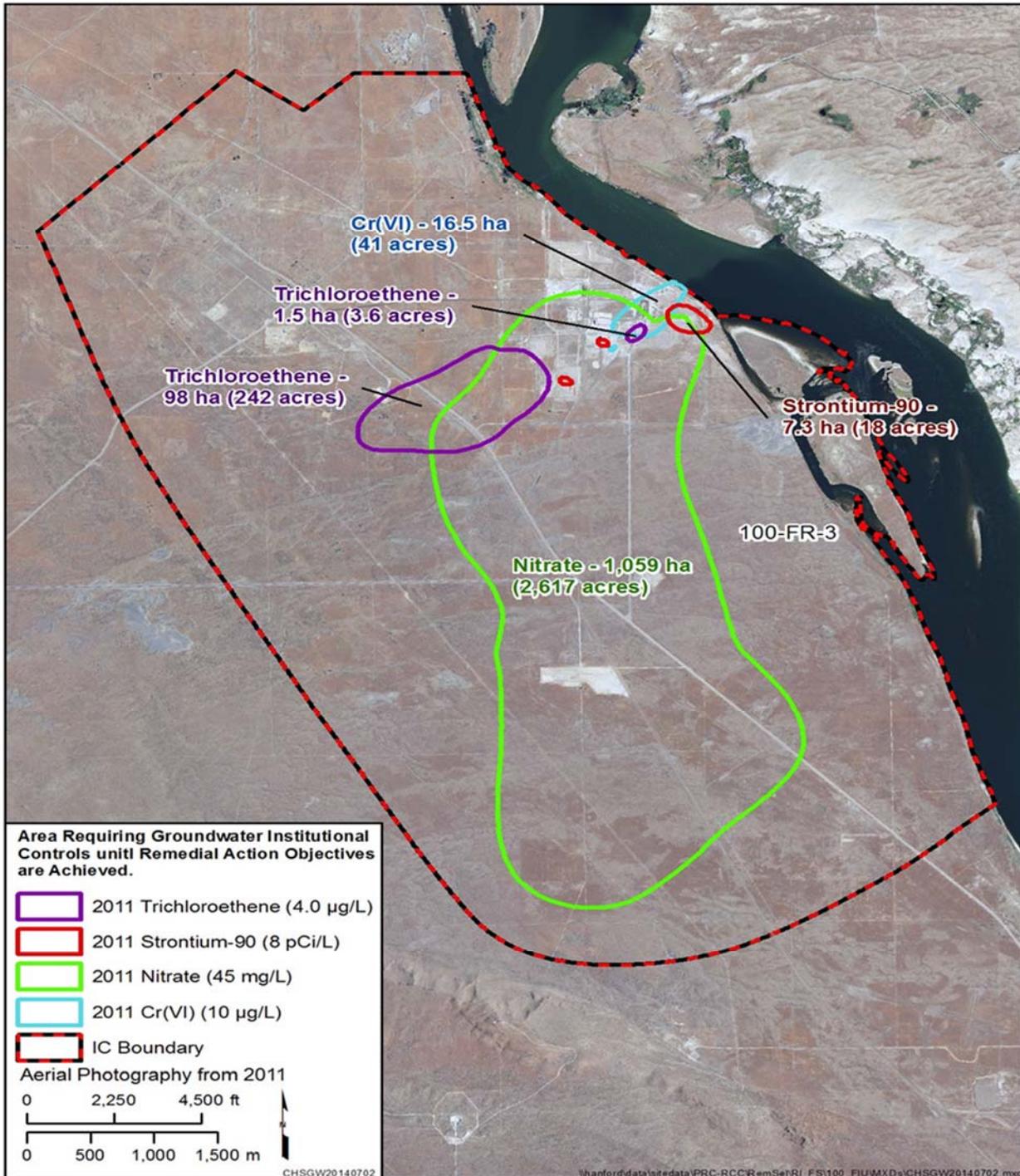
Source: Record of Decision for 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6 Operable Units.

Figure A1-4. Land-Use Control Boundary for the 100-IU-2 and 100-IU-6 Operable Units.



Source: Record of Decision for 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6 Operable Units.

Figure A1-5. Land-Use Control Boundary for the 100-FR-1 and 100-FR-2 Operable Units.



Source: Record of Decision for 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6 Operable Units.

Note: The groundwater plume shapes and location change over time. For the most recent groundwater plume shapes and locations, see the latest annual groundwater monitoring report at <https://www.hanford.gov/page.cfm/SoilGroundwaterAnnualReports>.

Figure A1-6. Land-Use Control Boundary for the 100-FR-3 Operable Unit.

Table A1-16. Institutional Controls for Waste Sites in the 100-FR-1 Operable Unit.

Institutional Control	Waste Site	Source Document
Prevent uncontrolled drilling or excavation below 4.6 m/15 feet bgs (deep zone)	100-F-10 (2057) ¹	WSRF 2015-078 EPA (2014)
	100-F-19:1 (2113)	WSRF 2015-078 EPA (2014)
	100-F-19:2 (2057)	WSRF 2015-078 EPA (2014)
	100-F-19:3 (2113)	WSRF 2015-078 EPA (2014)
	100-F-29 (2057)	WSRF 2015-078 EPA (2014)
	100-F-34 (2113)	WSRF 2015-078 EPA (2014)
	116-F-2 (2108)	WSRF 2015-078 EPA (2014)
	116-F-6 (2122)	WSRF 2015-078 EPA (2014)
	116-F-9 (2074)	WSRF 2015-078 EPA (2014)
	116-F-12 (2113)	WSRF 2015-078 EPA (2014)
	116-F-14 (2110)	WSRF 2015-078 EPA (2014)
	118-F-8:3 (2278)	WSRF 2015-078 EPA (2014)
	UPR-100-F-1 (2057)	WSRF 2015-078 EPA (2014)
Prohibit irrigation	116-F-14	WSRF 2015-078 EPA (2014)

¹ Dates in parentheses are the year that the radioactive decay of elements decreases to concentrations less than cleanup levels and indicate when the IC is no longer needed. End dates are only provided when specified in source document(s). These ICs will remain in place until the concentrations of hazardous substances are at such levels to allow for unlimited use and unrestricted exposure (UU/UE) and EPA or Ecology authorizes the removal of restrictions.

EPA = U.S. Environmental Protection Agency
WSRF = Waste Site Reclassification Forms

Table A1-17. Institutional Controls for Waste Sites in the 100-FR-2 Operable Unit.

Institutional Control	Waste Site	Source Document
Prevent uncontrolled drilling or excavation below 4.6 m/15 feet bgs (deep zone)	118-F-6 (2033) ¹	WSRF 2015-079 (EPA 2014)

¹ Dates in parentheses are the year that the radioactive decay of elements decreases to concentrations less than cleanup levels and indicate when the IC is no longer needed. End dates are only provided when specified in source document(s). These ICs will remain in place until the concentrations of hazardous substances are at such levels to allow for unlimited use and unrestricted exposure (UU/UE) and the lead regulatory agency (EPA or Ecology) authorizes the removal of restrictions.

EPA = U.S. Environmental Protection Agency

WSRF = Waste Site Reclassification Forms

Table A1-18. Institutional Controls Requirements Listed in EPA/ROD/R10-99/059, *Record of Decision for 100-KR-2 Operable Unit* and the Associated Implementing Document (2 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents
	Record of Decision (EPA/ROD/R10-99/059) ¹	Remedial Design Report and Remedial Action Work Plan (DOE/RL-99-89, Rev. 1) ²
Access Control (Section 2.3.1)	After deactivation, air and groundwater monitoring and controls to prevent public access will be established or maintained by DOE as appropriate until such time as final remedial action is completed. Current access controls include signs along the river, an 8-foot fence, locked access to buildings containing the primary hazards, and routine patrols. Institutional controls will be included in the RDR/RAWP subject to EPA approval.	Current access controls include signs along the river, non-continuous fencing, locked access to buildings containing the primary hazards, and routine security patrols. These security measures will continue at least until fuel and sludge are removed from the basins. After removal of the fuel and sludge, many of the security measures (such as security patrols) intended to protect the fuel in the basins may be eliminated. However, there will still be a need to prevent public access until the final remedial action is complete. Physical controls (such as fences, warning signs, etc.) will be established or maintained, as appropriate, until such time as final remedial action is completed. Air and groundwater monitoring will also be performed until the final remedial action is completed. ³
Access Control/Entry Restrictions (Section 2.3.1/2.3.1.2)	-- ⁴	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.
Land-Use Management/Excavation Permits (Section 2.3.2/2.3.2.3)	-- ⁴	Utilize the onsite excavation permit process to control intrusive activities such as well drilling and excavation of soil.
Access Control/Warning Notices	-- ⁴	Maintain existing signs prohibiting public access.

(Section 2.3.1/2.3.1.1)		
Information Controls/Notifications (Sections 2.3.5/2.3.5.2)	-- ⁴	Provide notification to the lead regulator upon discovery of any trespass incidents.
Information Controls/Notifications (Sections 2.3.5/2.3.5.2)	-- ⁴	Report trespass incidents to the Benton County Sheriff's Office for investigation and evaluation for possible prosecution.
Land-Use Management/Land-Use and Real Property Controls (Section 2.3.2/2.3.2.1)	-- ⁴	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.
Information Controls/Administrative Support, Archives and Libraries (Sections 2.3.5/2.3.5.1)	-- ⁴	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.
Miscellaneous (Section 2.3.6)	-- ⁴	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. ³

¹ EPA/ROD/R10-99/059, Record of Decision for 100-KR-2 Operable Unit, Section 11.6

² DOE/RL-99-89, Remedial Design Report and Remedial Action Work Plan for the K Basins Interim Removal Action, Rev. 1, Section 2.6

³ Text has been modified from the original document in accordance with TPA Change Notice TPA-CN-604.

⁴ Institutional controls for this interim remedial action were specified in the RDR/RAWP, and were not listed in the ROD itself

DOE = U.S. Department of Energy

EPA = U.S. Environmental Protection Agency

IC = Institutional Control

MNA = Monitored Natural Attenuation

OU = Operable Unit

ROD = Record of Decision

Table A1-19. Institutional Controls Requirements Listed in EPA/ROD/R10-96/134, *Record of Decision for 100-HR-3¹ and 100-KR-4 Operable Units*. (2 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Controls/Entry Restrictions Land-Use Management	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	2.3.1/2.3.1.2 2.3.2

Table A1-19. Institutional Controls Requirements Listed in EPA/ROD/R10-96/134, *Record of Decision for 100-HR-3¹ and 100-KR-4 Operable Units*. (2 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
	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.	

¹Institutional controls requirements for these operable units have been superseded by the ROD for 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 operable units. See Table A1-10.

Table A1-20. Institutional Controls Requirements Listed in DOE/RL-2007-41, *Remedial Design Report and Remedial Action Work Plan for the K Basins Interim Remedial Action: 105-K East Basin Deactivation*. (2 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Control	<p>Institutional controls for 100-K Area also include requirements for the OU 100-KR-2 to provide security until the final remedial action is completed (EPA/ROD/R10-99/059). As specified in the ROD, institutional controls for the K Basins were described in the 2001 RDR/RAWP for the K Basins Interim Remedial Action which included signs along the river, an 8-foot fence, locked access to buildings containing the primary hazards, and routine security patrol. The RDR/RAWP indicated that these security measures will continue at least until fuel and sludge are removed from the basins.</p> <p>Since fuel and sludge have been removed from the KE Basin, security fencing around the KE Basin and Reactor is no longer necessary and will be removed to accommodate deactivation and demolition of the KE Basin and new security</p>	2.3.1

Table A1-20. Institutional Controls Requirements Listed in DOE/RL-2007-41, *Remedial Design Report and Remedial Action Work Plan for the K Basins Interim Remedial Action: 105-K East Basin Deactivation*. (2 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
	<p>fencing will be installed between KE and KW to provide security for materials at KW (Figure 4-1 [in DOR/RL-2007-41]). The fence also serves as a physical barrier to prevent personnel working in the 100-K Area from inadvertently accessing the KE Basin remediation area and restricts vehicular traffic to the remediation area. Warning notices and signs prohibiting public access are established along the Columbia River and perimeter fencing is established along much of the perimeter of the 100-K Area. These controls will be maintained to restrict public access per the Sitewide Institutional Controls Plan.</p> <p>The Sitewide Institutional Control Plan specifies that "DOE will not delete or terminate any institutional controls unless EPA and Ecology have concurred in the deletion or termination." Approval of this RDR/RAWP represents EPA concurrence for the changes to the institutional controls for the KE area of OU 100-KR-2 as identified in Figure 4-1 [of DOE/RL-2007-41].</p> <p>Access controls for personnel working within the 100-K Area to the KE Basin and areas affected by this remedial action are described in [DOE/RL-2007-41,] Section 4.2.1, Access Controls.</p>	

DOE = U.S. Department of Energy.

Ecology = Washington State Department of Ecology.

EPA = U.S. Environmental Protection Agency.

IC = Institutional Control

RAWP = remedial action work plan

RDR = remedial design report.

ROD = Record of Decision

Table A1-21. Institutional Controls Requirements Listed in DOE/RL-2007-48, *Remedial Design and Remedial Action Work Plan for the 100 Area Remaining Sites Interim Remedial Action: 105-K East Basin Demolition*. (2 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Control	The 100-K Area is located on the Hanford Site, which is a controlled access site. The 100-K Area has existing fencing that establishes an access control boundary to the entire area. 105-KE Area basin access controls used during operations will	2.3.1

Table A1-21. Institutional Controls Requirements Listed in DOE/RL-2007-48, *Remedial Design and Remedial Action Work Plan for the 100 Area Remaining Sites Interim Remedial Action: 105-K East Basin Demolition*. (2 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
	<p>be modified during this remedial action. Temporary access control measures will be used to restrict access into work areas as necessary. Contamination control and radiation boundaries will be established and marked by the radiological control personnel, as necessary in accordance with the radiation control program. Ingress and egress control of contaminated areas will be defined in radiological work permits.</p>	

Table A1-22. Institutional Controls Requirements Listed in DOE/RL-2010-52, *Remedial Design and Remedial Action Work Plan for the K Basins Interim Remedial Action: 105-K West Basin Deactivation*.

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Control	<p>The 100-K Area is located on the Hanford Site, which is a controlled access site. Current access controls and include signs along the river, non-continuous fencing, locked access to buildings containing the primary hazards, and routine security patrols. The 105-KW access controls to the building used during operations will be modified during this remedial action. Temporary access controls to the building during operations will be used to restrict access into work areas as necessary.¹</p>	2.3.1

¹ Text has been modified from the original document in accordance with TPA Change Notice TPA-CN-607
TPA = Tri-Party Agreement.

Table A1-23. Institutional Controls Requirements Listed in DOE/RL-2010-53, *Remedial Design/ Remedial Action Work Plan for the 100 Area Remaining Sites Interim Remedial Action: 105-K West Basin Demolition and Removal*.

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Control	The 100-K Area is located on the Hanford Site, which is a controlled access site. Access controls for the K Basins Interim Remedial Action are described in DOE/RL-99-89 and include signs along the river, non-continuous fencing, locked access to buildings containing the primary hazards, and routine security patrols. ¹	2.3.1

¹ Text has been modified from the original document in accordance with TPA Change Notice TPA-CN-605.
TPA = Tri-Party Agreement.

Table A1-24. Institutional Controls Requirements Listed in DOE/RL-2010-63, *Remedial Design/Remedial Action Work Plan for the K Basins Interim Remedial Action – Removal of K Basins Sludge from the River Corridor to the Central Plateau*.

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Control	The 100-K Area is located on the Hanford Site, which is a controlled access site. Access controls for the K Basins Interim Remedial Action are described in DOE/RL-99-89 and include signs along the river, non-continuous fencing, locked access to buildings containing the primary hazards, and routine security patrols. 105-KW Area basin access controls will be maintained throughout this remedial action. Temporary access controls to the building during operations will be used to restrict access into work areas as necessary. ¹	2.3.1

¹ Text has been modified from the original document in accordance with TPA Change Notice TPA-CN-606.
TPA = Tri-Party Agreement.

Table A1-25. Institutional Controls for Waste Sites in the 100-KR-1 Operable Unit.

Institutional Control	Waste Site	Source Document
Prevent uncontrolled drilling or excavation below 4.6 m/15 feet bgs (deep zone)	116-K-1	WSRF 2004-001
	116-K-2	WSRF 2006-002

Table A1-26. Institutional Controls for Waste Sites in the 100-KR-2 Operable Unit.

Institutional Control	Waste Site	Source Document
Prevent uncontrolled drilling or excavation below 4.6 m/15 feet bgs (deep zone)	100-K-55:1	WSRF 2005-029
	100-K-56:1	WSRF 2005-030
	100-K-68	WSRF 2012-090 DOE/RL-2012-46
	100-K-70	WSRF 2012-092 DOE/RL-2012-46
	116-KE-1	WSRF 2012-063 WSRF 2012-064 WSRF 2012-065 WSRF 2012-066
	118-K-1	WSRF 2013-094

Table A1-27. Institutional Controls Requirements Listed in EPA/ROD/R10-99/112, *Record of Decision for 100-NR-1 and 100-NR-2 Operable Units*. (2 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
100 Area Burial Ground Institutional Controls Requirements		
Access Controls/Entry Restrictions	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.	2.3.1/2.3.1.2
Land-Use Management/Excavation Permits	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.	2.3.2/2.3.2.3
Access Controls/Warning Notices	DOE will maintain existing signs prohibiting public access.	2.3.1/2.3.1.1
Information Controls/Notifications	DOE will provide notification to Ecology upon discovery of any trespass incidents.	2.3.5/2.3.5.2
Information Controls/Notifications	Trespass incidents will be reported to the Benton County Sheriff's Office for investigation and evaluation for possible prosecution.	2.3.5/2.3.5.2
Land-Use Management/Land-Use and Property Controls	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.	2.3.2/2.3.2.1
Information Controls/Administrative Support, Archives and Libraries	Until final remedy selection, DOE shall not delete or terminate any IC requirements established in this Interim Action ROD unless Ecology has provided	2.3.5/2.3.5.1

Table A1-27. Institutional Controls Requirements Listed in EPA/ROD/R10-99/112, *Record of Decision for 100-NR-1 and 100-NR-2 Operable Units*. (2 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
	written concurrence on the deletion or termination and appropriate documentation has been placed in the Administrative Record.	
Information Controls/Miscellaneous	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.	2.3.5/2.3.6

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

ROD = record of decision.

Table A1-28. Institutional Controls Requirements Listed in EPA/ROD/R10-00/120, *Record of Decision for 100-NR-1 Operable Unit*. (2 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Controls/Entry Restrictions	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.	2.3.1/2.3.1.2
Land-Use Management/Excavation Permits	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.	2.3.2/2.3.2.3
Access Controls/Warning Notices	DOE will maintain existing signs prohibiting public access.	2.3.1/2.3.1.1
Information Controls/Notifications	DOE will provide notification to Ecology upon discovery of any trespass incidents.	2.3.5/2.3.5.2
Information Controls/Notifications	Trespass incidents will be reported to the Benton County Sheriff's Office for investigation and evaluation for possible prosecution.	2.3.5/2.3.5.2
Land-Use Management/Land-Use and Real Property Controls	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	2.3.2/2.3.2.1

Table A1-28. Institutional Controls Requirements Listed in EPA/ROD/R10-00/120, *Record of Decision for 100-NR-1 Operable Unit*. (2 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
	to approve any access restrictions before transfer, sale, or lease.	
Information Controls/Administrative Support, Archives and Libraries	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.	2.3.5/2.3.5.1
Miscellaneous	DOE will evaluate the implementation and effectiveness of ICs for the 100-NR-1 Operable Unit 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.	2.3.6

DOE = U.S. Department of Energy.

IC = institutional control.

Ecology = Washington State Department of Ecology.

ROD = record of decision.

Table A1-29. Institutional Controls Requirements Listed in EPA/ESD/R10-03/605, *Explanation of Significant Differences for the 100-NR-1 Operable Unit Treatment, Storage, and Disposal Interim Action Record of Decision and 100-NR-1 and 100-NR-2 Operable Units*. (2 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Land-Use Management/Excavation Permits	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.	2.3.2/2.3.2.3
Miscellaneous	Revised the reporting date for the annual institutional controls assessment report from March 30 to September 30. (NOTE: Subsequently, the annual reporting requirement was changed to occur as part of the <i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i> five-year review effort, as discussed in Section 1.2 of this Plan. An update of the results of the annual institutional controls assessment results is to be provided to the U.S. Environmental Protection Agency and Washington State Department of Ecology at the Area Unit Managers Meetings every September.)	2.3.6

Table A1-29. Institutional Controls Requirements Listed in EPA/ESD/R10-03/605, *Explanation of Significant Differences for the 100-NR-1 Operable Unit Treatment, Storage, and Disposal Interim Action Record of Decision and 100-NR-1 and 100-NR-2 Operable Units.* (2 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
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DOE = U.S. Department of Energy.

Ecology = Washington State Department of Ecology.

OU = operable unit.

Table A1-30. Institutional Controls Requirements Listed in DOE/RL-2000-16, *Remedial Design Report/Remedial Action Work Plan for the 100-NR-1 Treatment, Storage, and Disposal Units.* (2 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Control/Entry Restrictions	DOE will continue to use a badging program and control access to the sites associated with the Interim Action 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.	2.3.1/2.3.1.2
Land-Use Management/Excavation Permits	DOE will use the onsite excavation permit process to control land use, well drilling, and excavation of soil within the 100 Area OUs to prohibit any drilling or excavation, except as approved by Ecology	2.3.2/2.3.2.3
Access Control/Warning Notices	DOE will maintain existing signs prohibiting public access.	2.3.1/2.3.1.1
Information Controls/Notifications	Trespass incidents will be reported to the Benton County Sheriff's Office for investigation and evaluation for possible prosecution.	2.3.5/2.3.5.2
Information Controls/Notifications	DOE will notify Ecology upon discovery of any trespass incidents.	2.3.5/2.3.5.2
Land-Use Management/Land-Use and Real Property Controls	DOE will 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 ICs are compulsory, and Ecology will have to approve any access restrictions before transfer, sale, or lease.	2.3.2/2.3.2.1
Information Controls/Administrative Support, Archives and Libraries	Until final remedy selection, DOE shall not delete or terminate any IC requirement established in the Interim Action ROD unless Ecology has provided written concurrence on the deletion or termination, and appropriate documentation has been placed in the Administrative Record.	2.3.5/2.3.5.1

Table A1-30. Institutional Controls Requirements Listed in DOE/RL-2000-16, *Remedial Design Report/Remedial Action Work Plan for the 100-NR-1 Treatment, Storage, and Disposal Units*. (2 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
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DOE = U.S. Department of Energy. IC = institutional control.
 Ecology = Washington State Department of Ecology. ROD = record of decision.

Table A1-31. Institutional Controls Requirements Listed in DOE/RL-2005-93, *Remedial Design Report/Remedial Action Work Plan for the 100-N Area*. (3 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Land-Use Management	Institutional controls and long-term monitoring will be required for sites where wastes are left in place and preclude any unrestricted land use. Institutional controls selected as part of this remedy are designed to be consistent with the interim action nature of the ROD. Additional measures may be necessary to ensure long-term viability of institutional controls if the final remedial actions selected for the 100 Area do not allow for unrestricted land use. Any additional controls will be specified as part of the final remedy.	2.3.2
Access Control/Entry Restrictions	DOE will continue to use a badging program and control access to the sites associated with the ROD for the duration of the interim action. Visitors (i.e., persons not employed on the Hanford Site who are granted access for discussions on project-related matters, employment interviews, or tours) entering any of the sites associated with the ROD are required to be escorted at all times.	2.3.1/2.3.1.2
Land-Use Management/Excavation Permits	DOE will utilize the onsite excavation permit process to control land use, well drilling, and excavation of soil within the 100 Area OUs to prohibit any drilling or excavation except as approved by Ecology.	2.3.2/2.3.2.3
Access Control/Warning Notices	DOE will maintain existing signs prohibiting public access.	2.3.1/2.3.1.1
Information Controls/Notifications	DOE will provide notification to Ecology upon discovery of any trespass incidents.	2.3.5/2.3.5.2
Information Controls/Notifications	Trespass incidents will be reported to the Benton County Sheriff's Office for investigation and evaluation for possible prosecution.	2.3.5/2.3.5.2
Land-Use Management/Land-Use and Real Property Controls	DOE will 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, and Ecology will	2.3.2/2.3.2.1

Table A1-31. Institutional Controls Requirements Listed in DOE/RL-2005-93, *Remedial Design Report/Remedial Action Work Plan for the 100-N Area*. (3 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
	have to approve any access restrictions prior to transfer, sale, or lease.	
Information Controls/Administrative Support, Archives and Libraries	Until final remedy selection, DOE shall not delete or terminate any institutional control requirement established in the ROD unless Ecology has provided written concurrence on the deletion or termination and appropriate documentation has been placed in the Administrative Record.	2.3.5/2.3.5.1
Miscellaneous	DOE will evaluate the implementation and effectiveness of institutional controls 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. As a minimum, the report shall contain an evaluation of whether or not the OU institutional control requirements continue to be met, a description of any deficiencies discovered, and what measures have been taken to correct problems.	2.3.6
Miscellaneous	Because this is an interim action and waste sites will continue to be present in the 100 Area until such a time as a final ROD is issued and final remediation objectives are achieved, a 5-year review will be required.	2.3.6
Access Control	Access control is ensured through Hanford Site badging requirements and the use of signs posted along the Columbia River shoreline for restricted uses.	2.3.1
Information Controls/Notice in Deed	Where deed restrictions or other institutional controls are used in accordance with this RDR/RAWP and the ROD (EPA/ROD/R10-99/112), RL will not allow any activities that would interfere with the remedial action prior to EPA and Ecology approval. Additionally, RL will take necessary measures, such as filing the deed restrictions in appropriate county offices, to ensure the continuation of these restrictions prior to any transfer or lease of the property. A copy of a notification of any restrictions will be given to any prospective purchaser/transferee before any transfer or lease by RL. RL will provide EPA and Ecology with written verification that these restrictions have been put in place.	2.3.5/2.3.5.3
Access Control/Warning Notices	Appropriate signage is posted at various locations around the perimeter of the Hanford Site. Additionally: One sign is located along the Columbia River at the 105-N Reactor area. The signs will consist of one each in Spanish and English. The signs will be located so that the distance for viewing from the Columbia River will be approximately 150 m (500 ft). No signs will be placed between reactor areas. Another sign will be placed at the major road entrance to the 100-N Area. The locations of the signs have been coordinated with the regulators. The English sign along the river reads as follows:	2.3.1/2.3.1.1

Table A1-31. Institutional Controls Requirements Listed in DOE/RL-2005-93, *Remedial Design Report/Remedial Action Work Plan for the 100-N Area*. (3 sheets)

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
	<p>WARNING: HAZARDOUS AREA DO NOT ENTER Area May Contain Hazardous Soil and Water Seeps For Information Call: 509-376-7501</p> <p>The Spanish sign reads as follows: ADVERTENCIA: AREA DE PELIGRO NO ENTRES Esta area puede contener tierra y fuentes de agua que son peligrosas. Para Informacion Usted Puede Llamar a (509) 376-7501</p> <p>Along access roads, one large sign is located at the entrance to the active remediation area. The sign reads as follows: WARNING: HAZARDOUS AREA Area May Contain Hazardous Soil Only Authorized Personnel Allowed For Information Call: 509-376-7501</p> <p>Along access roads, one large sign is located at the entrance to the active remediation area. The sign reads as follows: WARNING: HAZARDOUS AREA Area May Contain Hazardous Soil Only Authorized Personnel Allowed For Information Call: 509-376-7501</p>	
Access Control/Entry Restrictions	Site access is restricted and security badges must be worn by employees, contractors, and visitors. Before receiving a badge, all must receive the level of training required to access the site or perform work.	2.3.1/2.3.1.2
Groundwater-Use Management	Groundwater use is restricted, except for the purpose of monitoring and treatment, as approved by EPA or Ecology or as authorized in EPA-approved documents.	2.3.3

DOE = U.S. Department of Energy.

Ecology = Washington State Department of Ecology.

EPA = U.S. Environmental Protection Agency.

IC = institutional control.

RAWP= remedial action work plan.

RDR = remedial design report.

RL = U.S. Department of Energy, Richland Operations Office.

ROD = record of decision.

Table A1-32. Institutional Controls for Waste Sites in the 100-NR-1 Operable Unit.

Institutional Control	Waste Site	Source Document
Prevent uncontrolled drilling or excavation below 4.6 m/15 feet bgs (deep zone)	100-N-31	WSRF 2013-065
	100-N-32	WSRF 2013-066
	100-N-38	WSRF 2013-067
	100-N-61:3	WSRF 2013-068
	100-N-63:1	WSRF 2002-055
	100-N-64:3	WSRF 2013-069
	100-N-68	WSRF 2013-070
	100-N-84:2	WSRF 2014-088
	116-N-1	WSRF 2006-018
	116-N-2	WSRF 2013-015
	116-N-3	WSRF 2002-055
	118-N-1	WSRF 2013-076
	124-N-2	WSRF 2013-030
	UPR-100-N-3	WSRF 2013-071
	UPR-100-N-5	WSRF 2013-016
	UPR-100-N-7	WSRF 2013-072
	UPR-100-N-10	WSRF 2013-073
	UPR-100-N-12	WSRF 2013-074
UPR-100-N-25	WSRF 2013-017	
Prevent uncontrolled drilling or excavation below 7.6 m/25 feet bgs (deep zone)	100-N-50	WSRF 2004-059
	100-N-51	WSRF 2004-059
	100-N-51B	WSRF 2004-059
	UPR-100-N-37	WSRF 2004-059
Prohibit irrigation	116-N-1	WSRF 2006-018
Maintain existing signs prohibiting public access to the shoreline site	100-N-65	EPA/ROD/R10-99/112 TPA-CN-518
	100-N-108	EPA/ROD/R10-99/112

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A2.0 INSTITUTIONAL CONTROLS REQUIRED FOR 200 AREA

This section presents the ICs required by each of the 200 Area CERCLA decision documents and implementing documents. The ICs are presented in Tables A2-1 through A2-13. The tables include the text of the individual IC requirements contained in the decision documents, implementing documents, and waste site specific ICs. Figures A2-1 through A2-5 show the land-use (IC) control boundary maps.

Table A2-1. Institutional Controls Requirements Listed in EPA/ROD/R10-95/100, *Record of Decision for Environmental Restoration Disposal Facility*.

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Controls/Entry Restrictions	Institutional controls shall be imposed to restrict public access to the landfill.	2.3.1/2.3.1.2

Table A2-2. Institutional Controls Requirements Listed in EPA/AMD/R10-99/038, *Record of Decision Amendment for Environmental Restoration Disposal Facility*.

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Controls/Entry Restrictions	Institutional controls shall be imposed to restrict public access to the landfill.	2.3.1/2.3.1.2

Table A2-3. Institutional Controls Requirements Listed in EPA/AMD/R10-02/030, *Record of Decision Amendment for Environmental Restoration Disposal Facility*.

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Controls/Entry Restrictions	Institutional controls shall be imposed to restrict public access to the landfill.	2.3.1/2.3.1.2

Table A2-4. Institutional Controls Requirements Listed in *Record of Decision Amendment for Environmental Restoration Disposal Facility, Dated 5/24/2007 (EPA 2007b)*.

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Controls/Entry Restrictions	Institutional controls shall be imposed to restrict public access to the landfill.	2.3.1/2.3.1.2

Table A2-5. Institutional Controls Requirements Listed in *Record of Decision for the 200-CW-5 and 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units* (EPA 2011b) and the Associated Implementing Document (3 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents
	Record of Decision (EPA 2011b) ¹	Remedial Design Report and Remedial Action Work Plan (DOE/RL-2015-23) ²
Miscellaneous (Section 2.3.6)	The DOE is responsible for implementing, maintaining, reporting on, and enforcing the institutional and land-use controls required under this ROD. 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 institutional controls.	-- ³
Miscellaneous (Section 2.3.6)	No later than 180 days after the ROD is signed, DOE shall update the Sitewide Institutional Controls Plan to include the institutional controls 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 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.	-- ³
Access Control (Section 2.3.1)	The DOE shall control access to the waste sites to prevent unacceptable exposure of humans to contaminants in the 200-CW-5, 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 times.	Text is same as ROD
Access Control /Warning Notices (Section 2.3.1/2.3.1.1)	The 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.	Text is same as ROD
Information Controls/Notifications (Sections 2.3.5/2.3.5.2)	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.	Text is same as ROD.

Table A2-5. Institutional Controls Requirements Listed in *Record of Decision for the 200-CW-5 and 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units* (EPA 2011b) and the Associated Implementing Document (3 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents
	Record of Decision (EPA 2011b) ¹	Remedial Design Report and Remedial Action Work Plan (DOE/RL-2015-23) ²
Land-Use Management (Section 2.3.2)	The DOE shall prohibit activities that are not industrial in nature, and prohibit drilling, excavation, or use of soils at these waste sites.	Text is same as ROD
Groundwater-Use Management (Section 2.3.3)	The 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.	Text is same as ROD
Land-Use Management (Section 2.3.2)	DOE shall maintain the integrity of and prohibit activities that could damage or lessen the performance of required ET caps and soil covers.	Text is same as ROD
Miscellaneous (Section 2.3.6)	The DOE shall report annually on the effectiveness of institutional controls for the 200-CW-5, 200-PW-1, 200-PW-3, and 200-PW-6 OUs as specified in the Hanford Sitewide Institutional Controls Plan or an alternative reporting frequency specified by EPA.	Text is same as ROD
Information Controls/Notice in Deed (Section 2.3.5/2.3.5.3)	The DOE shall provide notice to EPA at least six months prior to any transfer or sale of the land in the 200-CW-5, 200-PW-1, 200-PW-3, and 200-PW-6 OUs 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 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 ICs. In addition to the land transfer notice and discussion provisions above, the DOE further agrees to provide 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.	Text is same as ROD

Table A2-5. Institutional Controls Requirements Listed in *Record of Decision for the 200-CW-5 and 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units* (EPA 2011b) and the Associated Implementing Document (3 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents
	Record of Decision (EPA 2011b) ¹	Remedial Design Report and Remedial Action Work Plan (DOE/RL-2015-23) ²
Land-Use Management/Industrial Use (Section 2.3.2/2.3.2.4)	The DOE shall 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.	Text is same as ROD
Land-Use Management (Section 2.3.2)	Land-use controls will be maintained as long as the contamination remains at levels that do not allow for unrestricted use and unlimited exposure and shall not be removed without the prior authorization of EPA.	Text is same as ROD

¹EPA, 2011b, *Record of Decision for the 200-CW-5 and 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units*, section 12.2.7

²DOE/RL-2015-23, *Remedial Design Report and Remedial Action Work Plan for the K Basins Interim Removal Action*, Rev. 0, Section 2.2.5

³The Institutional Controls Category/Type is not addressed in the document.

DOE = U.S. Department of Energy.

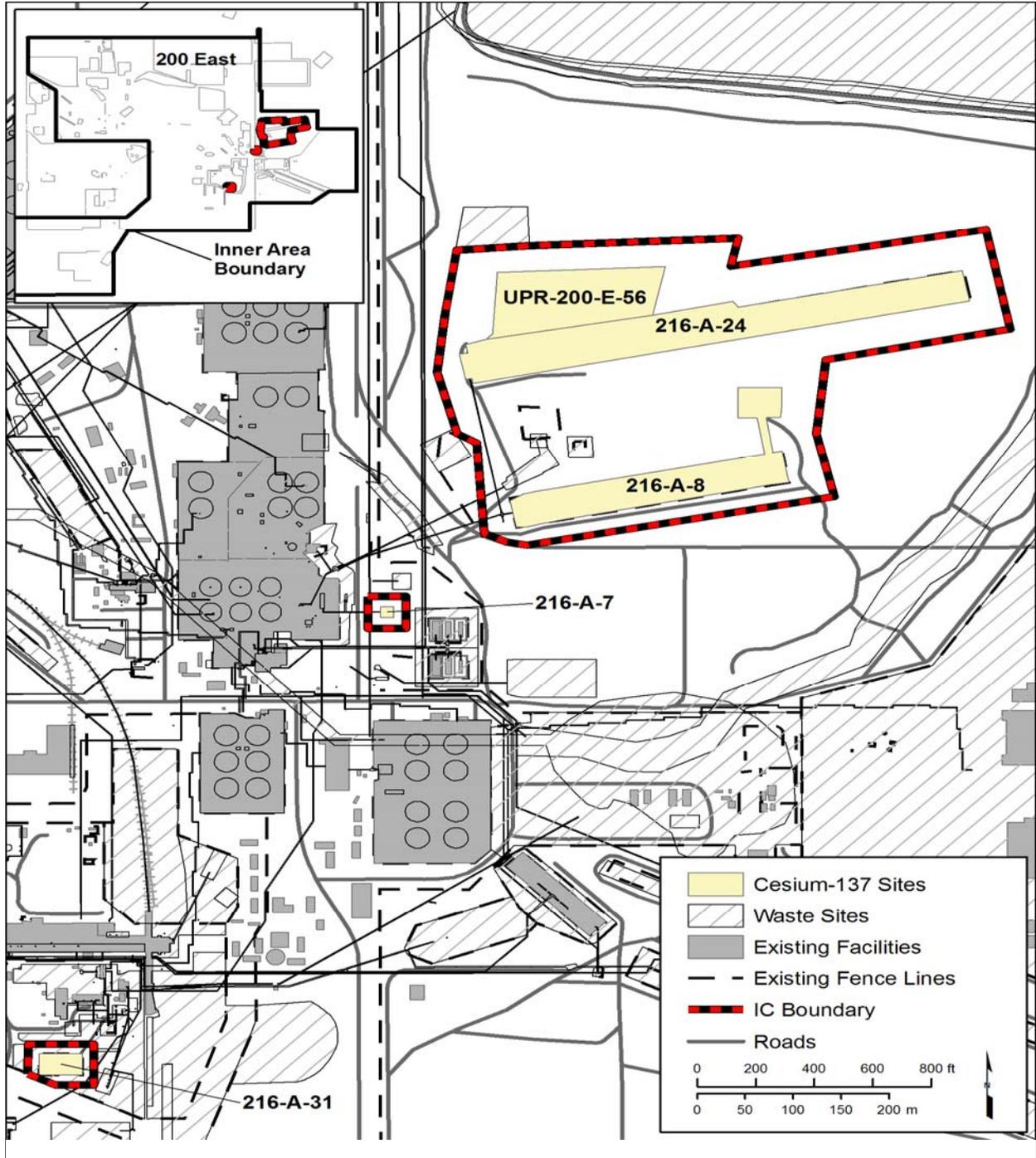
EPA = U.S. Environmental Protection Agency.

IC = institutional control.

MNA = monitored natural attenuation.

OU = operable unit.

ROD = record of decision.



Source: Record of Decision Hanford 200 Area 200-CW-5, 200-PW-3, and 200-PW-6 Operable Units (EPA, 2011b).

Figure A2-1. 200-PW-3 Operable Unit Waste Sites Institutional Control Boundaries.

Table A2-6. Institutional Controls for Waste Sites in the 200-CW-5 Operable Unit.

Institutional Control	Waste Site	Source Document
Maintain industrial land-use	200-W-207-PL-A ^{1,2}	EPA (2011b)
	200-W-207-PL-B ^{1,2}	EPA (2011b)
	216-Z-1D	EPA (2011b)
	216-Z-11	EPA (2011b)
	216-Z-19	EPA (2011b)
	216-Z-20	EPA (2011b)
	UPR-200-W-110	EPA (2011b)
Prevent uncontrolled drilling or excavation	200-W-207-PL-A ^{1,2}	EPA (2011b)
	200-W-207-PL-B ^{1,2}	EPA (2011b)
	216-Z-1D	EPA (2011b)
	216-Z-11	EPA (2011b)
	216-Z-19	EPA (2011b)
	216-Z-20	EPA (2011b)
	UPR-200-W-110	EPA (2011b)

¹ This site has not yet been formally assigned to the 200-CW-5 operable unit.

² Listed as 200-W-207-PL in the ROD. This site was administratively split into two separate WIDS sites because a portion was reused as a disposal line to the 200 Area TEDF system.

ROD = record of decision.

TEDF = Treated Effluent Disposal Facility.

Table A2-7. Institutional Controls for Waste Sites in the 200-PW-1 Operable Unit.

Institutional Control	Waste Site	Source Document
Maintain industrial land-use	200-W-174-PL ¹	EPA (2011b)
	200-W-206-PL ¹	EPA (2011b)
	216-Z-1&2	EPA (2011b)
	216-Z-1A	EPA (2011b)
	216-Z-3	EPA (2011b)
	216-Z-9	EPA (2011b)
	216-Z-12	EPA (2011b)
	216-Z-18	EPA (2011b)
	241-Z-361	EPA (2011b)
Prevent uncontrolled drilling or excavation	200-W-174-PL ¹	EPA (2011b)
	200-W-206-PL ¹	EPA (2011b)
	216-Z-1&2	EPA (2011b)
	216-Z-1A	EPA (2011b)
	216-Z-3	EPA (2011b)
	216-Z-9	EPA (2011b)
	216-Z-12	EPA (2011b)
	216-Z-18	EPA (2011b)
	241-Z-361	EPA (2011b)

¹ This site has not yet been formally assigned to the 200-PW-1 operable unit.

Table A2-8. Institutional Controls for Waste Sites in the 200-PW-3 Operable Unit.

Institutional Control	Waste Site	Source Document
Maintain industrial land-use	216-A-7	EPA (2011b)
	216-A-8	EPA (2011b)
	216-A-24	EPA (2011b)
	216-A-31	EPA (2011b)
	UPR-200-E-56	EPA (2011b)
Prevent uncontrolled drilling or excavation	216-A-7	EPA (2011b)
	216-A-8	EPA (2011b)
	216-A-24	EPA (2011b)
	216-A-31	EPA (2011b)
	UPR-200-E-56	EPA (2011b)

Table A2-9. Institutional Controls for Waste Sites in the 200-PW-6 Operable Unit.

Institutional Control	Waste Site	Source Document
Maintain industrial land-use	200-W-205-PL ¹	EPA (2011b)
	200-W-208-PL ¹	EPA (2011b)
	200-W-210-PL ¹	EPA (2011b)
	200-W-220-PL ¹	EPA (2011b)
	216-Z-5	EPA (2011b)
	216-Z-8	EPA (2011b)
	216-Z-10	EPA (2011b)
	241-Z-8	EPA (2011b)
Prevent uncontrolled drilling or excavation	200-W-205-PL ¹	EPA (2011b)
	200-W-208-PL ¹	EPA (2011b)
	200-W-210-PL ¹	EPA (2011b)
	200-W-220-PL ¹	EPA (2011b)
	216-Z-5	EPA (2011b)
	216-Z-8	EPA (2011b)
	216-Z-10	EPA (2011b)
	241-Z-8	EPA (2011b)

¹ This site has not yet been formally assigned to the 200-PW-6 operable unit.

Table A2-10. Institutional Controls Requirements Listed in *Action Memorandum for 200-DV-1 Operable Unit Perched Water Pumping/Pore Water Extraction (DOE/RL-2014-34)* and Associated Implementing Documents. (4 sheets)

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Action Memorandum (DOE/RL-2014-34) ¹	Removal Action Work Plan (DOE/RL-2014-37, Rev. 0) ²	Operations and Maintenance Plan (DOE/RL-2009-124, Rev. 5) ³
Access Control (Section 2.3.1) Groundwater-Use Management (Section 2.3.3)	For this removal action, ICs associated with denial of public access and the drilling of groundwater wells would apply.	Apply institutional controls (ICs) to protect human receptors from exposure to contaminants that exceed maximum contaminant levels (MCLs) in the underlying aquifer.	-- ⁴
Land-Use Management/Excavation Permits (Section 2.3.2/2.3.2.3)	-- ⁴	-- ⁴	No intrusive work shall be allowed in the 200-ZP-1, 200-UP-1, or 200-DV-1 OUs unless the EPA has approved the plan for such work and that plan is followed.

Table A2-10. Institutional Controls Requirements Listed in *Action Memorandum for 200-DV-1 Operable Unit Perched Water Pumping/Pore Water Extraction (DOE/RL-2014-34)* and Associated Implementing Documents. (4 sheets)

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Action Memorandum (DOE/RL-2014-34) ¹	Removal Action Work Plan (DOE/RL-2014-37, Rev. 0) ²	Operations and Maintenance Plan (DOE/RL-2009-124, Rev. 5) ³
Land-Use Management (Section 2.3.2)	-- ⁴	-- ⁴	DOE shall prohibit well drilling in the 200-ZP-1, 200-UP-1, or 200-DV-1 OUs, except for monitoring, characterization, or remediation wells authorized in EPA-approved documents.
Groundwater-Use Management (Section 2.3.3)	- ⁴	- ⁴	Groundwater use in the 200-ZP-1, 200-UP-1, or 200-DV-1 OUs is prohibited, except for limited research purposes, monitoring, and treatment authorized in EPA-approved documents. The Sitewide IC Plan (DOE/RL-2001-41) contains the ICs and implementing details prohibiting well drilling and groundwater use in the 200-ZP-1 OU, 200-UP-1, and 200-DV-1 OU, as defined in each respective ROD.
Access Control/Warning Notices (Section 2.3.1/2.3.1.1)	- ⁴	- ⁴	DOE shall post and maintain warning signs along pipelines conveying untreated groundwater that caution site visitors and workers of potential hazards from 200-ZP-1, 200-UP-1, and 200-DV-1 OU groundwater.
Information Controls/Notifications (Sections 2.3.5/2.3.5.2)	- ⁴	- ⁴	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 will consider administrative debarment of the trespasser as well as prosecution in State or Federal court as deemed appropriate.

Table A2-10. Institutional Controls Requirements Listed in *Action Memorandum for 200-DV-1 Operable Unit Perched Water Pumping/Pore Water Extraction* (DOE/RL-2014-34) and Associated Implementing Documents. (4 sheets)

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Action Memorandum (DOE/RL-2014-34) ¹	Removal Action Work Plan (DOE/RL-2014-37, Rev. 0) ²	Operations and Maintenance Plan (DOE/RL-2009-124, Rev. 5) ³
Land-Use Management (Section 2.3.2)	-- ⁴	-- ⁴	Activities that would disrupt or lessen the performance of the P&T, MNA, and flow-path control components of the remedy are to be prohibited.
Land-Use Management (Section 2.3.2)	-- ⁴	-- ⁴	DOE shall prohibit activities that would damage the P&T, MNA, and flow-path control components (e.g., extraction wells, injection wells, piping, treatment plant, and monitoring wells).
Information Controls/Miscellaneous (Sections 2.3.5/2.3.6)	- ⁴	- ⁴	DOE shall report on the effectiveness of ICs for the 200-ZP-1, 200-UP-1, and 200-DV-1 OU remedies in an annual report, or on an alternative reporting frequency specified by EPA. Such reporting may be for these OUs alone or may be part of a Hanford Sitewide annual report.
Land-Use Management/Industrial Use (Section 2.3.2/2.3.2.4)	-- ⁴	-- ⁴	DOE will prevent the development and use of property above the 200-ZP-1, 200-UP-1, and 200-DV-1 OUs for residential housing, elementary and secondary schools, childcare facilities, and playgrounds.
Land-Use Management (Section 2.3.2)	-- ⁴	-- ⁴	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.

Table A2-10. Institutional Controls Requirements Listed in *Action Memorandum for 200-DV-1 Operable Unit Perched Water Pumping/Pore Water Extraction* (DOE/RL-2014-34) and Associated Implementing Documents. (4 sheets)

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Action Memorandum (DOE/RL-2014-34) ¹	Removal Action Work Plan (DOE/RL-2014-37, Rev. 0) ²	Operations and Maintenance Plan (DOE/RL-2009-124, Rev. 5) ³
Information Controls/Notice in Deed (Section 2.3.5/2.3.5.3)	-- ⁴	-- ⁴	<p>DOE will provide notice to EPA at least 6 months prior to transfer or sale of the land within the 200-ZP-1, 200-UP-1, and 200-DV-1 OUs 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.</p> <p>If it is not possible for DOE to notify EPA at least 6 months prior to transfer or sale, then DOE will notify EPA as soon as possible, but no later than 60 days prior to the transfer or sale of property subject to ICs.</p> <p>In addition to the land transfer notice and discussion provisions above, DOE further agrees to provide 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 EPA.</p>

¹DOE/RL-2014-34, *Action Memorandum for 200-DV-1 Operable Unit Perched Water Pumping/Pore Water Extraction*, Section 5.1

²DOE/RL-2014-37, *Removal Action Work Plan for 200-DV-1 Operable Unit Perched Water Pumping / Pore Water Extraction*, Rev. 0, Section 1.1

³DOE/RL-2009-124, *200 West Pump and Treat Operations and Maintenance Plan*, Rev. 5, Section 1.3.2.4

⁴The Institutional Controls Category/Type is not addressed in the document.

DOE = U.S. Department of Energy.

EPA = U.S. Environmental Protection Agency.

IC = institutional control.

MNA = monitored natural attenuation.

OU = operable unit.

P&T = pump and treat.

ROD = record of decision.

Table A2-11. Institutional Controls Requirements Listed in *Record of Decision for Interim Remedial Action Hanford 200 Area Superfund Site 200-UP-1 Operable Unit* (EPA 2012) and Associated Implementing Documents. (5 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2012) ¹	Remedial Design Report / Remedial Action Work Plan (DOE/RL-2013-07, Rev. 0) ²	Operations and Maintenance Plan (DOE/RL-2009-124, Rev. 5) ³
Miscellaneous (Section 2.3.6)	The DOE is responsible for implementing, maintaining, reporting on, and enforcing the institutional and land-use controls required under this ROD. 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 institutional controls.	-- ⁴	-- ⁴
Miscellaneous (Section 2.3.6)	No later than 180 days after the ROD is signed, DOE shall update the Sitewide Institutional Controls Plan to include the institutional controls 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 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.	The Sitewide IC plan will be updated within 180 days following the approval of the 200-UP-1 OU ROD (which occurred on September 27, 2012) to include the above ICs required by the ROD and will specify the implementation and maintenance actions that will be taken, including periodic inspections. The revised Sitewide IC plan will be submitted to EPA and Ecology for review and approval as a Tri-Party Agreement primary document.	-- ⁴
Land-Use Management ⁵ (Section 2.3.2)	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 EPA	ICs will be required for the 200-UP-1 OU as long as groundwater contamination precludes its use as a potential source of drinking water.	-- ⁴

Table A2-11. Institutional Controls Requirements Listed in *Record of Decision for Interim Remedial Action Hanford 200 Area Superfund Site 200-UP-1 Operable Unit* (EPA 2012) and Associated Implementing Documents. (5 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2012) ¹	Remedial Design Report / Remedial Action Work Plan (DOE/RL-2013-07, Rev. 0) ²	Operations and Maintenance Plan (DOE/RL-2009-124, Rev. 5) ³
	authorizes the removal of restrictions.		
Access Control (Section 2.3.1)	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.	Text is same as ROD	-- ⁴
Access Control/Entry Restrictions (Section 2.3.1/2.3.1.2)	Visitors entering any site areas of the 200-UP-1 OU will be required to be badged and escorted at all times.	Text is same as ROD	-- ⁴
Land-Use Management ⁵ /Excavation Permits (Section 2.3.2/2.3.2.3)	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.	Text is same as ROD	Text is same as ROD
Land-Use Management ⁵ (Section 2.3.2)	The DOE shall prohibit well drilling in the 200-UP-1 OU, except for monitoring, characterization, or remediation wells authorized in EPA approved document	Text is same as ROD	Text is same as ROD
Groundwater-Use Management (Section 2.3.3)	Groundwater use in the 200-UP-1 OU is prohibited, except for limited research purposes, monitoring, and treatment authorized in EPA approved documents.	Text is same as ROD	Text is same as ROD
Access Control/Warning Notices (Section 2.3.1/2.3.1.1)	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.	Text is same as ROD	Text is same as ROD
Information Controls/Notifications (Sections 2.3.5/2.3.5.2)	In the event of any unauthorized access (e.g. trespassing), DOE shall report such incidents to the Benton County Sheriff's Office	Text is same as ROD	In the event of any unauthorized access to the site (e.g., trespassing), DOE shall report such

Table A2-11. Institutional Controls Requirements Listed in *Record of Decision for Interim Remedial Action Hanford 200 Area Superfund Site 200-UP-1 Operable Unit* (EPA 2012) and Associated Implementing Documents. (5 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2012) ¹	Remedial Design Report / Remedial Action Work Plan (DOE/RL-2013-07, Rev. 0) ²	Operations and Maintenance Plan (DOE/RL-2009-124, Rev. 5) ³
	for investigation and evaluation of possible prosecution.		incidents to the Benton County Sheriff's Office for investigation and will consider administrative debarment of the trespasser as well as prosecution in State or Federal court as deemed appropriate.
Land-Use Management ⁵ (Section 2.3.2)	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.	Text is same as ROD	Text is same as ROD
Land-Use Management ⁵ (Section 2.3.2)	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.	Text is same as ROD	Text is same as ROD
Land-Use Management ⁵ /Industrial Use (Section 2.3.2/2.3.2.4)	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.	Text is same as ROD	Text is same as ROD
Miscellaneous (Section 2.3.6)	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.	Text is same as ROD	Text is same as ROD

Table A2-11. Institutional Controls Requirements Listed in *Record of Decision for Interim Remedial Action Hanford 200 Area Superfund Site 200-UP-1 Operable Unit* (EPA 2012) and Associated Implementing Documents. (5 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2012) ¹	Remedial Design Report / Remedial Action Work Plan (DOE/RL-2013-07, Rev. 0) ²	Operations and Maintenance Plan (DOE/RL-2009-124, Rev. 5) ³
Land-Use Management (Section 2.3.2) Information Management/Notice in Deed (Section 2.3.5/2.3.5.3)	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.	Text is same as ROD	Text is same as ROD

Table A2-11. Institutional Controls Requirements Listed in *Record of Decision for Interim Remedial Action Hanford 200 Area Superfund Site 200-UP-1 Operable Unit* (EPA 2012) and Associated Implementing Documents. (5 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2012) ¹	Remedial Design Report / Remedial Action Work Plan (DOE/RL-2013-07, Rev. 0) ²	Operations and Maintenance Plan (DOE/RL-2009-124, Rev. 5) ³
Information Controls/Notifications (Sections 2.3.5/2.3.5.2)	DOE shall notify EPA and Ecology immediately upon discovery of any activity inconsistent with the OU-specific institutional control objectives for the Site.	Text is same as ROD	Text is same as ROD

¹EPA, 2012, *Record of Decision for Interim Remedial Action Hanford 200 Area Superfund Site 200-UP-1 Operable Unit*, Section 12.2.6

²DOE/RL-2013-07, *200-UP-1 Groundwater Operable Unit Remedial Design/Remedial Action Work Plan*, Rev. 0, Section 2.1.5

³DOE/RL-2009-124, *200 West Pump and Treat Operations and Maintenance Plan*, Rev. 5, Section 1.3.2.4

⁴ The Institutional Controls Category/Type is not addressed in the document.

⁵ The boundary of land-use ICs for the 200-UP-1 OU is shown in Figure A2-1

DOE = U.S. Department of Energy.

EPA = U.S. Environmental Protection Agency.

IC = institutional control.

MNA = monitored natural attenuation.

OU = operable unit.

ROD = record of decision.

Table A2-12. Institutional Controls Requirements Listed in *Record of Decision Hanford 200 Area 200-ZP-1 Superfund Site Benton County, Washington* (EPA 2008) and Associated Implementing Documents. (4 sheets)

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA, 2008) ¹	Remedial Design Report / Remedial Action Work Plan (DOE/RL-2008-78, Rev. 0) ²	Operations and Maintenance Plan (DOE/RL-2009-124, Rev. 5) ³
Access Control/Entry Restrictions (Section 2.3.1/2.3.1.2)	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.	Text is same as ROD	-- ⁴
Land-Use Management ⁵ /Excavation Permits (Section 2.3.2/2.3.2.3)	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.	Text is same as ROD	Text is same as ROD
Land-Use Management ⁵ (Section 2.3.2)	The DOE shall prohibit well drilling in the 200-ZP-1 OU, except for monitoring, characterization or remediation wells authorized in EPA approved documents.	Text is same as ROD	Text is same as ROD
Groundwater-Use Management (Section 2.3.3)	Groundwater use in the 200-ZP-1 OU is prohibited, except for limited research purposes, monitoring, and treatment authorized in EPA approved documents. The Sitewide Institutional Controls Plan 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	Text is same as ROD	Text is same as ROD

Table A2-12. Institutional Controls Requirements Listed in *Record of Decision Hanford 200 Area 200-ZP-1 Superfund Site Benton County, Washington* (EPA 2008) and Associated Implementing Documents. (4 sheets)

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA, 2008) ¹	Remedial Design Report / Remedial Action Work Plan (DOE/RL-2008-78, Rev. 0) ²	Operations and Maintenance Plan (DOE/RL-2009-124, Rev. 5) ³
	document for the 200-ZP-1 OU.		
Access Control/Warning Notices (Section 2.3.1/2.3.1.1)	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.	Text is same as ROD	Text is same as ROD
Information Controls/Notifications (Sections 2.3.5/2.3.5.2)	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.	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 will consider administrative debarment of the trespasser as well as prosecution in State or Federal court as deemed appropriate.	Text is same as RDR/RAWP
Land-Use Management ⁵ (Section 2.3.2)	Activities that would disrupt or lessen the performance of the pump-and-treat, MNA, and flow-path control components of the remedy are to be prohibited.	Text is same as ROD	Text is same as ROD
Land-Use Management ⁵ (Section 2.3.2)	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).	Text is same as ROD	Text is same as ROD
Miscellaneous (Section 2.3.6)	The DOE shall report on the effectiveness of institutional controls for	Text is same as ROD	Text is same as ROD

Table A2-12. Institutional Controls Requirements Listed in *Record of Decision Hanford 200 Area 200-ZP-1 Superfund Site Benton County, Washington* (EPA 2008) and Associated Implementing Documents. (4 sheets)

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA, 2008) ¹	Remedial Design Report / Remedial Action Work Plan (DOE/RL-2008-78, Rev. 0) ²	Operations and Maintenance Plan (DOE/RL-2009-124, Rev. 5) ³
	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.		
Information Controls/Notice in Deed (Section 2.3.5/2.3.5.3)	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 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.	Text is same as ROD	Text is same as ROD

Table A2-12. Institutional Controls Requirements Listed in *Record of Decision Hanford 200 Area 200-ZP-1 Superfund Site Benton County, Washington* (EPA 2008) and Associated Implementing Documents. (4 sheets)

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA, 2008) ¹	Remedial Design Report / Remedial Action Work Plan (DOE/RL-2008-78, Rev. 0) ²	Operations and Maintenance Plan (DOE/RL-2009-124, Rev. 5) ³
Land-Use Management/Industrial Use (Section 2.3.2/2.3.2.4)	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.	Text is same as ROD	Text is same as ROD
Land-Use Management (Section 2.3.2)	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.	Text is same as ROD	Text is same as ROD

¹EPA, 2008, *Record of Decision, Hanford 200 Area, 200-ZP-1 Superfund Site, Benton County, Washington*, Section 4.3.4

²DOE/RL-2008-78, *200 West Area 200-ZP-1 Pump-and-Treat Remedial Design/Remedial Action Work Plan*, Rev. 0, Section 2.1.4

³DOE/RL-2009-124, *200 West Pump and Treat Operations and Maintenance Plan*, Rev. 5, Section 1.3.2.4

⁴The Institutional Controls Category/Type is not addressed in the document.

⁵The boundary of land-use ICs for the 200-UP-1 OU is shown in Figure A2-1

DOE = U.S. Department of Energy.

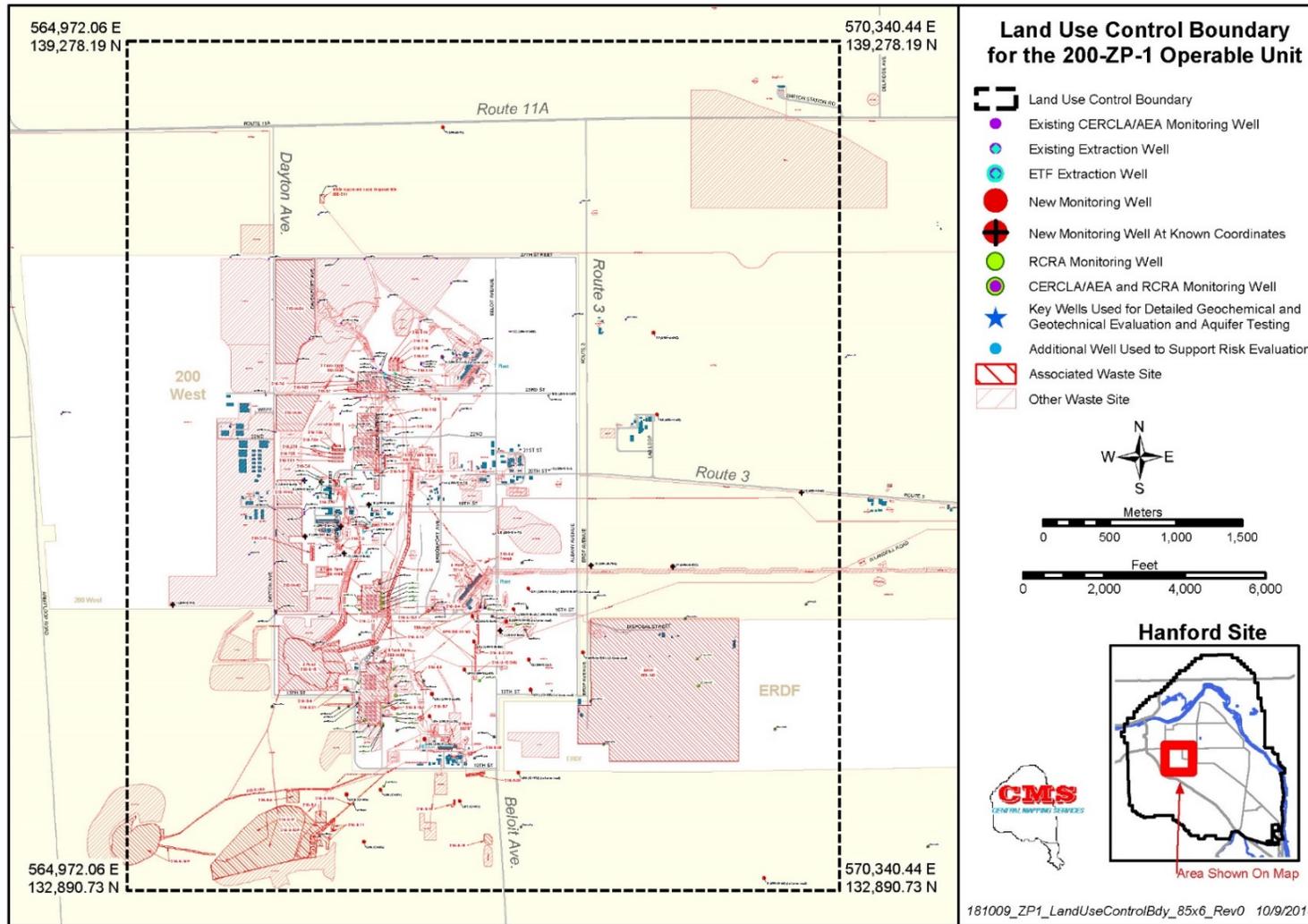
EPA = U.S. Environmental Protection Agency.

IC = institutional control.

MNA = monitored natural attenuation.

OU = operable unit.

ROD = record of decision.



Source: Record of Decision Hanford 200 Area Superfund Site 200-UP-1 Operable Unit (EPA, 2012).

Note: The groundwater plume shapes and location change over time. For the most recent groundwater plume shapes and locations, see the latest annual groundwater monitoring report at <https://www.hanford.gov/page.cfm/SoilGroundwaterAnnualReports>

Figure A2-4. Land-Use Control Boundary for the 200-ZP-1 Operable Unit.

Table A2-13. Institutional Controls Requirements Listed in *Record of Decision 221-U Facility (Canyon Disposition Initiative)* (EPA 2005b) and the Associated Implementing Document.
(5 sheets)

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents
	Record of Decision (EPA 2005b) ¹	Remedial Design Report/ Remedial Action Work Plan (DOE/RL-2006-21) ²
Miscellaneous (Section 2.3.6)	The DOE is responsible for implementing, maintaining, reporting on and enforcing the land-use controls required under this ROD. 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.	-- ⁴
Miscellaneous (Section 2.3.6)	No later than 180 days after the ROD is signed, DOE shall update the Site-wide Institutional Controls Plan to include the institutional controls required by this ROD and specify the implementation and maintenance actions that will be taken, including periodic inspections. The revised Hanford Site-wide Institutional Controls Plan shall be submitted to EPA and Ecology for review and approval as a TPA primary document. DOE shall comply with the Hanford Site-wide Institutional Controls Plan as updated and approved by EPA and Ecology.	-- ⁴
Institutional Controls Required through the Time of Completion of Remedy Construction		
Access Control/Entry Restrictions (Section 2.3.1/2.3.1.2)	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 A2-5 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 workplan to be approved by EPA and Ecology.	Control access to prevent unacceptable exposure of humans to contaminants at the 221-U Facility until remedy construction is complete. Visitors entering any site areas are required to be badged and escorted at all times. A detailed map showing the extent of the 221-U Facility boundaries for land use control is shown in Figure 3-6 [of DOE/RL-2006-21].
Land-Use Management ⁵ /Excavation Permits (Section 2.3.2/2.3.2.3)	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.	Text is same as ROD
Land-Use Management (Section 2.3.2)	DOE shall prohibit well drilling at the 221-U Facility site except for monitoring, characterization, or remediation wells	Text is same as ROD

Table A2-13. Institutional Controls Requirements Listed in *Record of Decision 221-U Facility (Canyon Disposition Initiative)* (EPA 2005b) and the Associated Implementing Document.
(5 sheets)

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents
	Record of Decision (EPA 2005b) ¹	Remedial Design Report/ Remedial Action Work Plan (DOE/RL-2006-21) ²
	authorized in EPA and Ecology approved documents.	
Groundwater-Use Management (Section 2.3.3)	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-14 source operable unit and 200-UP-1 groundwater operable unit as well as the Site-wide 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.	Text is same as ROD
Access Control/Warning Notices (Section 2.3.1/2.3.1.1)	DOE shall post and maintain warning signs along access roads which caution site visitors and workers of potential hazards from the 221-U Facility site.	Text is same as ROD
Information Controls/Notifications (Sections 2.3.5/ 2.3.5.2)	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.	Text is same as ROD
Institutional Controls Required After Construction of the Remedial Action		
Land-Use Management/Industrial Use (Section 2.3.2/2.3.2.4)	DOE shall ensure that use of the 221-U Facility site as well as any activities at the site are restricted to industrial use only, consistent with the exposure assumptions used in establishing risk-based cleanup levels for radionuclides and the use of MTCA Method C to calculate industrial cleanup levels for chemicals. A surveillance program shall be maintained to document that risk- and ARAR-based cleanup levels (and the exposure durations upon which they are based) are not exceeded. Furthermore, DOE shall prohibit the development and use of the 221-U Facility site for residential housing, elementary and secondary schools, child care facilities, and playgrounds. ⁴	Text is same as ROD

Table A2-13. Institutional Controls Requirements Listed in *Record of Decision 221-U Facility (Canyon Disposition Initiative)* (EPA 2005b) and the Associated Implementing Document.
(5 sheets)

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents
	Record of Decision (EPA 2005b)1	Remedial Design Report/ Remedial Action Work Plan (DOE/RL-2006-21)2
Land-Use Management (Section 2.3.2)	Activities that would disrupt or lessen the performance of the engineered surface barrier are to be prohibited. ⁵	Text is same as ROD
Land-Use Management (Section 2.3.2)	DOE shall maintain an effective vegetative soil layer to promote the succession of native plants as a feature of the evapotranspiration surface barrier and prohibit activities that would lessen the effectiveness of the vegetation, barrier, and run on/run off controls. These infiltration control measures shall be maintained unless (or until) DOE can demonstrate that the proposed activity or change in maintenance will result in no negative impact on groundwater or river water quality from any potential release of contamination from the site and EPA and Ecology approve the change.	Text is same as ROD
Land-Use Management/Irrigation Controls (Section 2.3.2/2.3.2.6)	No irrigation will be permitted for agriculture or landscaping on the 221-U Facility site. This infiltration restriction shall be maintained unless (or until) DOE can demonstrate that the proposed irrigation will have no negative impact on groundwater or river water quality from any potential release of contamination from the site and EPA and Ecology approve the change.	Text is same as ROD
Land-Use Management/Excavation Permits (Section 2.3.2/2.3.2.3)	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. ⁴	Text is same as ROD
Land-Use Management (Section 2.3.2)	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. ⁵	Text is same as ROD
Groundwater-Use Management (Section 2.3.3)	Groundwater use is prohibited at the 221-U Facility site, except for limited research purposes and monitoring and treatment authorized in EPA and/or Ecology approved documents. This prohibition applies until contaminant concentrations in the groundwater are at or below drinking water restrictions and EPA and Ecology authorize removal of restrictions. Decision documents	Text is same as ROD

Table A2-13. Institutional Controls Requirements Listed in *Record of Decision 221-U Facility (Canyon Disposition Initiative)* (EPA 2005b) and the Associated Implementing Document.
(5 sheets)

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents
	Record of Decision (EPA 2005b) ¹	Remedial Design Report/ Remedial Action Work Plan (DOE/RL-2006-21) ²
	for the 200-UW-13 source operable unit and 200-UP-1 groundwater operable unit as well as the Site-wide 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 document.	
Land-Use Management (Section 2.3.2)	DOE shall prohibit activities that would damage the monitoring system and its components (e.g., monitoring wells). ⁵	Text is same as ROD
Information Controls/Administrative Support, Archives and Libraries (Section 2.3.5/ 2.3.5.1)	DOE shall establish and maintain a records system or database that tracks locations and estimated quantities of residual contamination left in place. ⁴	Text is same as ROD
Land-Use Management (Section 2.3.2) Information Controls/Notice in Deed (Section 2.3.5/2.3.5.3)	DOE shall report the location of residual contamination in deed notices and other informational devices. In addition, a copy of any material documenting the location and quantity of residual contamination shall be given to any prospective purchaser/transferee before any transfer or lease. Measures that are necessary to ensure the continuation of restrictions or other institutional controls (e.g., proprietary controls such as property easements or covenants) shall be taken before any transfer or lease of the property. DOE shall notify EPA and Ecology at least 6 months before any transfer, sale or lease of any property subject to institutional controls 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 institutional controls. 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 institutional controls. ⁵	Text is same as ROD

Table A2-13. Institutional Controls Requirements Listed in *Record of Decision 221-U Facility (Canyon Disposition Initiative)* (EPA 2005b) and the Associated Implementing Document.
(5 sheets)

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents
	Record of Decision (EPA 2005b) ¹	Remedial Design Report/ Remedial Action Work Plan (DOE/RL-2006-21) ²
Miscellaneous (Section 2.3.6)	DOE shall report on the effectiveness of institutional controls for this remedy in an annual report, or on an alternative reporting frequency specified by EPA and Ecology. Such reporting may be for this site alone or may be part of a Hanford site-wide report. ⁵	Text is same as ROD
Access Control/Warning Notices (Section 2.3.1/2.3.1.1)	--	Warning and informational signs will be posted and maintained around the outside of the 221-U Facility site. ⁴

¹EPA, 2005a, *Record of Decision, 221-U Facility, (Canyon Disposition Initiative), Hanford Site, Washington*, Section 2.12.2.3

²DOE/RL-2006-21, *Remedial Design Report/Remedial Action Work Plan for the 221-U Facility*, Rev. 0, Section 3.8.1

³The Institutional Controls Category/Type is not addressed in the document.

⁴The 200-UW-1 operable unit is no longer used. The WIDS sites that were previously assigned to the 200-UW-1 operable unit have been reassigned to the 200-WA-1 and 200-OA-1 operable units as detailed in TPA Change Form C-09-07. Decision documents will be developed for the 200-WA-1 and 200-OA-1 operable units.

⁵Institutional control required to be maintained until the concentration of hazardous substances in the soil and groundwater are at such levels to allow for unrestricted use and exposure.

DOE = U.S. Department of Energy

EPA = U.S. Environmental Protection Agency

IC = institutional control.

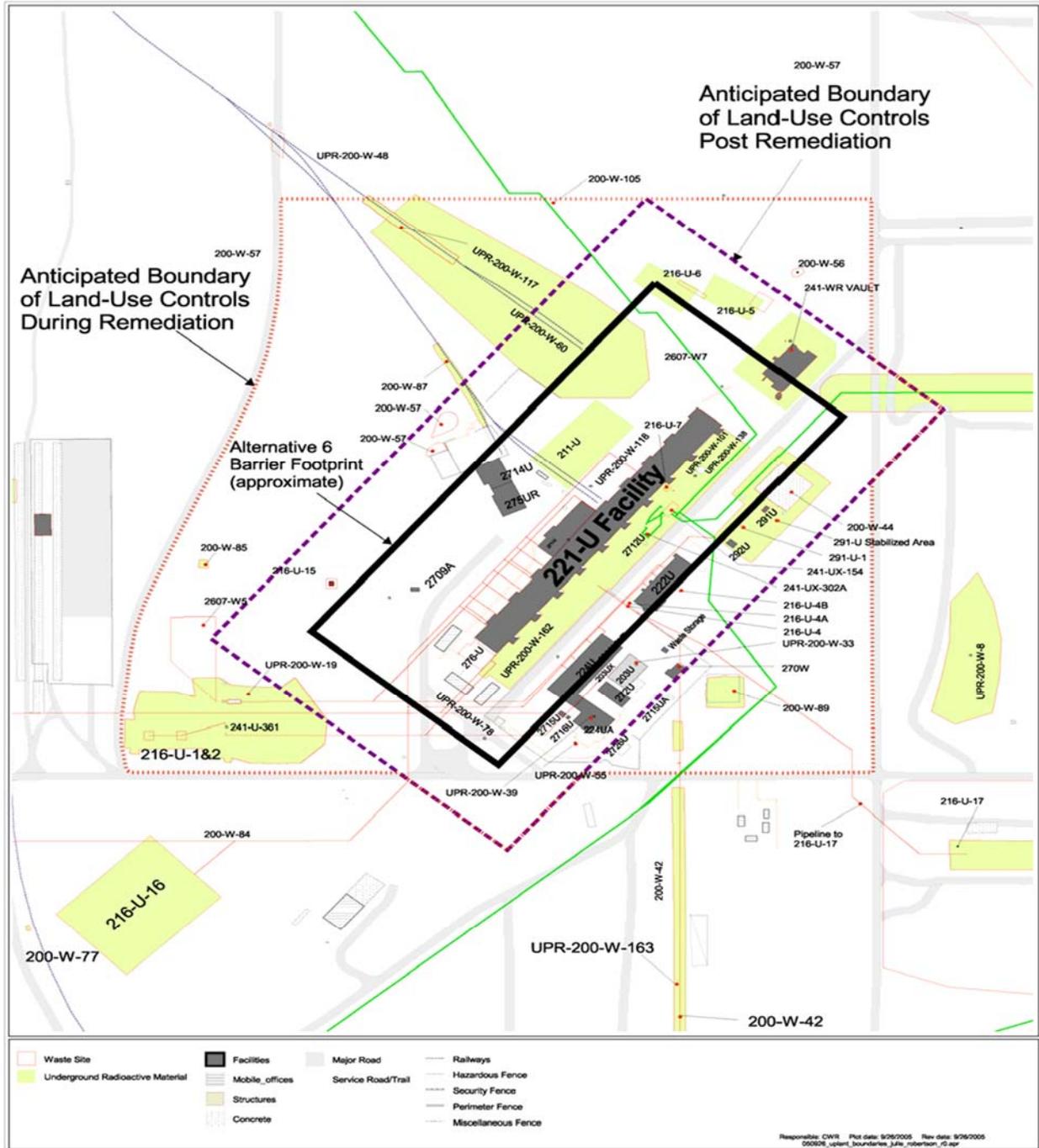
MNA = monitored natural attenuation.

OU = operable unit.

ROD = record of decision.

TPA = Tri-Party Agreement.

WIDS = Waste Information Data System.



Source: Record of Decision 221-U Facility (Canyon Disposition Initiative) (EPA, 2005a)

Figure A2-5. Anticipated 221-U Facility Boundaries of Land-Use Controls During and Post Remediation.

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A3.0 INSTITUTIONAL CONTROLS REQUIRED BY 300 AREA CERCLA DECISION DOCUMENTS

This section presents the ICs required by each of the 300 Area CERCLA decision documents and implementing documents. The ICs required are presented in Tables A3-1 through A3-4. The tables include the text of the individual IC requirements contained in the decision documents, implementing documents, and waste site specific ICs. Figure A3-1 shows Industrial Use Areas Subject to Industrial Use Institutional Control. Figure A3-2 shows the land-use controlled areas for 300-FF-5 OU.

Table A3-1. Institutional Controls Requirements Listed in EPA/ROD/R10-96/143, *Record of Decision for 300-FF-1 and 300-FF-5 Operable Units*.

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Control Land-Use Management Groundwater Use Management	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.	2.3.1 2.3.2 2.3.3
Access Controls/Warning Notices	ICs include placing written notification of the remedial action in the facility land use master plan.	2.3.1/2.3.1.1
Land-Use Management	DOE will prohibit any activities that would interfere with the remedial activity without EPA concurrence.	2.3.2
Land-Use Management/Land-Use and Real Property Controls	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.	2.3.2/2.3.2.1

DOE = U.S. Department of Energy.

EPA = U.S. Environmental Protection Agency.

Table A3-2. Institutional Controls Requirements Listed in *Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2013b) and Associated Implementing Documents. (9 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2013b) ¹	Integrated Remedial Design Report / Remedial Action Work Plan (DOE/RL-2014-13, Rev. 0) ²	Remedial Design Report / Remedial Action Work Plan Addenda – Soils and Groundwater (DOE/RL-2014-13-ADD1, Rev. 1, and DOE/RL-2014-13-ADD2, Rev. 0) ^{3,4}
Institutional Controls Common to 300-FF-2 OU and 300-FF-5 OU			
Information Controls (Section 2.3.5) Miscellaneous (Section 2.3.6)	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.	Text is same as ROD	-- ^{5,6}
Information Controls (Section 2.3.5) Miscellaneous (Section 2.3.6)	DOE shall be responsible for implementing, maintaining, reporting on and enforcing ICs. Although the DOE may later transfer these procedural responsibilities to another party by contract, property transfer agreement or through other means, the DOE shall retain ultimate responsibility for remedy integrity and ICs.	Text is same as ROD	-- ^{5,6}
Miscellaneous (Section 2.3.6)	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	Text is same as ROD	-- ^{5,6}

Table A3-2. Institutional Controls Requirements Listed in *Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2013b) and Associated Implementing Documents. (9 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2013b) ¹	Integrated Remedial Design Report / Remedial Action Work Plan (DOE/RL-2014-13, Rev. 0) ²	Remedial Design Report / Remedial Action Work Plan Addenda – Soils and Groundwater (DOE/RL-2014-13-ADD1, Rev. 1, and DOE/RL-2014-13-ADD2, Rev. 0) ^{3,4}
	Agreement primary document. The DOE shall comply with the Sitewide Institutional Controls Plan as updated and approved by EPA and Ecology.		
Land-Use Management ⁵ (Section 2.3.2)	Land-use controls will be maintained until CULs are achieved and the concentrations of hazardous substances are at such levels to allow for unlimited use and unrestricted exposure and EPA authorizes the removal of restrictions.	Text is same as ROD	-- ^{5,6}
Land-Use Management ⁵ (Section 2.3.2) Information Controls/Notice in Deed (Section 2.3.5/2.3.5.3)	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.	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 in accordance with Section 120(h) of CERCLA.	-- ^{5,6}
Information Controls/ Notifications (Sections 2.3.5/2.3.5.2)	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.	Text is same as ROD	-- ^{5,6}

Table A3-2. Institutional Controls Requirements Listed in *Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2013b) and Associated Implementing Documents. (9 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2013b) ¹	Integrated Remedial Design Report / Remedial Action Work Plan (DOE/RL-2014-13, Rev. 0) ²	Remedial Design Report / Remedial Action Work Plan Addenda – Soils and Groundwater (DOE/RL-2014-13-ADD1, Rev. 1, and DOE/RL-2014-13-ADD2, Rev. 0) ^{3,4}
Land-Use Management ⁵ (Section 2.3.2)	Activities that would disrupt or lessen the performance of any component of the remedies are prohibited.	Text is same as ROD	-- ^{5,6}
Miscellaneous (Section 2.3.6)	The DOE shall report on the effectiveness of ICs for 300-300-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.	DOE shall report on the effectiveness of ICs for 300-300-FF-2 OU and 300-FF-5 OU in an annual report, or on an alternative reporting frequency specified by EPA. This report will typically be provided in the form of an update on IC effectiveness presented at the September 300 Area Unit Managers' Meeting. Such reporting may be for 300-FF-2 OU and 300-FF-5 OU alone or may be part of the Hanford Sitewide IC plan (DOE/RL-2001-41).	-- ^{5,6}
Land-Use Management (Section 2.3.2) Information Controls/Notice in Deed (Section 2.3.5/2.3.5.3)	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	Text is same as ROD	-- ^{5,6}

Table A3-2. Institutional Controls Requirements Listed in *Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2013b) and Associated Implementing Documents. (9 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2013b) ¹	Integrated Remedial Design Report / Remedial Action Work Plan (DOE/RL-2014-13, Rev. 0) ²	Remedial Design Report / Remedial Action Work Plan Addenda – Soils and Groundwater (DOE/RL-2014-13-ADD1, Rev. 1, and DOE/RL-2014-13-ADD2, Rev. 0) ^{3,4}
	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.		
Information Controls/ Notifications (Sections 2.3.5/2.3.5.2)	DOE shall notify EPA and Ecology immediately upon discovery of any activity inconsistent with the specific ICs.	Text is same as ROD	--5,6
Institutional Controls Unique Elements for 300-FF-2			
Land-Use Management (Section 2.3.2)	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.	Exposure to contamination deeper than 4.6 m (15 ft) below ground surface (bgs) is not anticipated. Where contamination at depth exceeds the residential or industrial use CULs attained for the waste site, ICs are required to ensure future activities do not bring this contamination to the	Following remediation, institutional controls restricting land use to industrial uses or restricting excavation of deep zone soils with contaminants above shallow zone cleanup levels will be identified in the waste site closeout documentation, as necessary, and in accordance with the requirements of Section

Table A3-2. Institutional Controls Requirements Listed in *Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2013b) and Associated Implementing Documents. (9 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2013b) ¹	Integrated Remedial Design Report / Remedial Action Work Plan (DOE/RL-2014-13, Rev. 0) ²	Remedial Design Report / Remedial Action Work Plan Addenda – Soils and Groundwater (DOE/RL-2014-13-ADD1, Rev. 1, and DOE/RL-2014-13-ADD2, Rev. 0) ^{3,4}
		surface or otherwise result in exposure to contaminant concentrations that exceed the CULs that were attained at the waste site.	4.4.5 [of DOE/RL-2014-13- ADD1].
Land-Use Management/Industrial Use (Section 2.3.2/2.3.2.4)	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 for other than industrial uses, including use of property for residential housing, elementary and secondary schools, childcare facilities and playgrounds.	Text is same as ROD	-- ⁵
Access Control (Section 2.3.1)	Signage and access control to waste sites with contamination above CULs will be provided.	Signage and access control to unremediated waste sites with contamination above CULs will be provided as described in the Soil Addendum.	Implementation of the ROD requirement to provide signage and access control for waste sites with contamination above cleanup levels is described below. Along the Columbia River, a sign set has been placed at or above the high water line (at approximately the same line as the no trespassing signs). The sign set consists of one each in English and Spanish. The signs are located so that the distance for viewing from the river is approximately 152 m (500 ft). The English language sign reads as follows:

Table A3-2. Institutional Controls Requirements Listed in *Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2013b) and Associated Implementing Documents. (9 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2013b) ¹	Integrated Remedial Design Report / Remedial Action Work Plan (DOE/RL-2014-13, Rev. 0) ²	Remedial Design Report / Remedial Action Work Plan Addenda – Soils and Groundwater (DOE/RL-2014-13-ADD1, Rev. 1, and DOE/RL-2014-13-ADD2, Rev. 0) ^{3,4}
			<p>WARNING: HAZARDOUS AREA DO NOT ENTER Area May Contain Hazardous Soil and Water For Information Call: 509-376-7501</p> <p>The Spanish language sign reads as follows: ADVERTENCIA: AREA DE PELIGRO NO ENTRE Esta area puede contener tierra y fuentes de agua que son peligrosas. Para Informacion Llame al (509) 376-7501</p> <p>One large sign is located north of the 300 Area. Additional smaller signs are located at roads leading to the 618-10 and 618-11 Burial Ground areas. These signs read as follows:</p> <p>WARNING: HAZARDOUS AREA Area May Contain Hazardous Soil Only Authorized Personnel Allowed For Information Call: 509-376-7501</p> <p>Signs placed at key access roads into the 300 Area industrial zone read as follows:</p>

Table A3-2. Institutional Controls Requirements Listed in *Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2013b) and Associated Implementing Documents. (9 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2013b) ¹	Integrated Remedial Design Report / Remedial Action Work Plan (DOE/RL-2014-13, Rev. 0) ²	Remedial Design Report / Remedial Action Work Plan Addenda – Soils and Groundwater (DOE/RL-2014-13-ADD1, Rev. 1, and DOE/RL-2014-13-ADD2, Rev. 0) ^{3,4}
			<p>WARNING: HAZARDOUS AREA Area May Contain Hazardous Soil Observe All Signs and Hazard Postings Only Authorized Personnel Allowed For Information Call: 509-376-7501</p> <p>Signs may also be placed in temporary security fence openings when necessary to accommodate special shipments.</p>
Land-Use Management/Excavation Permits (Section 2.3.2/2.3.2.3)	DOE shall employ and maintain an excavation permit program for protection of human health against unacceptable exposure, and protection of environmental and cultural resources.		-- ⁵
Land-Use Management/Prevent Enhanced Recharge (Section 2.3.2/2.3.2.5)	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	Enhanced recharge over or near waste sites with soil concentration at any depth that exceeds irrigation-based groundwater and surface water protection CULs will be prevented until the CULs are achieved. Enhanced recharge controls are no irrigation or landscape watering, controlling drainage from low permeability areas including paved parking lots or	Remedial action planning, including siting of haul roads, SPAs, and support areas, shall consider the ROD requirement to prevent enhanced recharge at sites with soil concentrations exceeding residential (irrigation-based) groundwater and surface water protection cleanup levels. Dust-suppression water used during remediation will be limited to that necessary to prevent airborne emissions. Bare

Table A3-2. Institutional Controls Requirements Listed in *Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2013b) and Associated Implementing Documents. (9 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2013b) ¹	Integrated Remedial Design Report / Remedial Action Work Plan (DOE/RL-2014-13, Rev. 0) ²	Remedial Design Report / Remedial Action Work Plan Addenda – Soils and Groundwater (DOE/RL-2014-13-ADD1, Rev. 1, and DOE/RL-2014-13-ADD2, Rev. 0) ^{3,4}
	or buildings, and prevent bare gravel or bare sand covers.	buildings, and preventing bare gravel or bare sand covers over waste sites in the 300 Area Industrial Complex and 618-11 that exceed groundwater and surface water protection CULs.	gravel or bare sand covers will be prevented for the 618-11 Burial Ground and waste sites in the 300 Area Industrial Complex that exceed groundwater and surface water protection CULs, except during active remediation of such sites. Irrigation (including landscape watering) is prohibited at waste sites within the industrial zone. Active irrigation systems that may impact waste sites will be deactivated, and the installation of new systems is prohibited. Existing landscapes may be converted to dryscapes utilizing xeriscaping techniques, should operational facilities choose to do so. Drainage control and construction of surface barriers, as described in Section 4.3.3 [of DOE/RL-2014-13-ADD1], will also be used to restrict enhanced recharge at waste sites. Inspection and maintenance of such temporary surface barriers will be performed as appropriate to the construction of each barrier.

Table A3-2. Institutional Controls Requirements Listed in *Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (EPA 2013b) and Associated Implementing Documents. (9 sheets).

IC Category/Type (Section of Plan Where Addressed)	Decision Document	Implementing Documents	
	Record of Decision (EPA 2013b) ¹	Integrated Remedial Design Report / Remedial Action Work Plan (DOE/RL-2014-13, Rev. 0) ²	Remedial Design Report / Remedial Action Work Plan Addenda – Soils and Groundwater (DOE/RL-2014-13-ADD1, Rev. 1, and DOE/RL-2014-13-ADD2, Rev. 0) ^{3,4}
Institutional Controls Unique Elements for 300-FF-5			
Groundwater-Use Management (Section 2.3.3)	Administrative controls limiting 300-FF-5 groundwater access and use in a manner that is protective of human health where groundwater is above CULs.	ICs to be implemented by DOE to support achievement of the RAOs include administrative controls that limit 300-FF-5 OU groundwater access and use in a manner that is protective of human health where groundwater is above CULs.	-- ⁶

¹ EPA, 2013b, *Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1*, Sections 12.2.3, 12.2.4, and 12.2.5

² DOE/RL-2014-13, *Integrated Remedial Design Report/Remedial Action Work Plan for the 300 Area (300-FF-1, 300-FF-2 & 300-FF-5 Operable Units)*, Rev. 0, Sections 2.1.7, 2.1.8, and 2.1.9

³ DOE/RL-2014-13-ADD1, *Remedial Design Report/Remedial Action Work Plan for 300-FF-2 Soils*, Rev. 1, Section 4.3.4

⁴ DOE/RL-2014-13-ADD2, *Remedial Design Report/Remedial Action Work Plan Addendum for the 300 Area Groundwater*, Rev. 0, Section 1.2

⁵ The soil addendum (DOE/RL-2014-13-ADD1) refers back to the integrated RDR/RAWP for the descriptions of the institutional controls, unless otherwise noted.

⁶ The groundwater addendum (DOE/RL-2014-13-ADD2) refers back to the integrated RDR/RAWP for descriptions of the institutional controls.

DOE = U.S. Department of Energy.

CUL = cleanup level.

EPA = U.S. Environmental Protection Agency.

IC = institutional control.

MNA = monitored natural attenuation.

OU = operable unit.

RAO = remedial action objective.

ROD = record of decision.

Table A3-3. Institutional Controls for Waste Sites in the 300-FF-1 Operable Unit. (2 sheets)

Institutional Control	Waste Site	Source Document
Maintain industrial land-use	300 ASH PITS	Letter 05-AMRC-0078
	300 RFBP	WSRF 2000-112
	300-44	Letter 05-AMRC-0078
	300-50	WSRF 2000-110
	316-1	WSRF 2000-112
	316-2	Letter 05-AMRC-0078
	316-5	BHI-01164
	618-12	Letter 05-AMRC-0078
	628-4	WSRF 2000-111
	UPR-300-8	Letter 05-AMRC-0078
	UPR-300-9	Letter 05-AMRC-0078
	UPR-300-15	Letter 05-AMRC-0078
	UPR-300-19	Letter 05-AMRC-0078
	UPR-300-20	Letter 05-AMRC-0078
	UPR-300-21	Letter 05-AMRC-0078
	UPR-300-22	Letter 05-AMRC-0078
	UPR-300-23	Letter 05-AMRC-0078
	UPR-300-24	Letter 05-AMRC-0078
	UPR-300-25	Letter 05-AMRC-0078
	UPR-300-26	Letter 05-AMRC-0078
	UPR-300-27	Letter 05-AMRC-0078
	UPR-300-28	Letter 05-AMRC-0078
	UPR-300-29	Letter 05-AMRC-0078
	UPR-300-30	Letter 05-AMRC-0078
	UPR-300-32	WSRF 2003-001
	UPR-300-33	WSRF 2003-001
	UPR-300-34	WSRF 2003-001
	UPR-300-35	WSRF 2003-001
	UPR-300-36	WSRF 2003-001
	UPR-300-37	WSRF 2003-001
UPR-300-47	Letter 05-AMRC-0078	
UPR-300-FF-1	WSRF 2003-002	
Prevent uncontrolled drilling or excavation	300 ASH PITS	Letter 05-AMRC-0078
	300 RFBP	WSRF 2000-112
	300-44	Letter 05-AMRC-0078
	300-50	WSRF 2000-110
	316-1	WSRF 2000-112

Table A3-3. Institutional Controls for Waste Sites in the 300-FF-1 Operable Unit. (2 sheets)

Institutional Control	Waste Site	Source Document
	316-2	Letter 05-AMRC-0078
	618-12	Letter 05-AMRC-0078
	628-4	WSRF 2000-111
	UPR-300-8	Letter 05-AMRC-0078
	UPR-300-9	Letter 05-AMRC-0078
	UPR-300-15	Letter 05-AMRC-0078
	UPR-300-19	Letter 05-AMRC-0078
	UPR-300-20	Letter 05-AMRC-0078
	UPR-300-21	Letter 05-AMRC-0078
	UPR-300-22	Letter 05-AMRC-0078
	UPR-300-23	Letter 05-AMRC-0078
	UPR-300-24	Letter 05-AMRC-0078
	UPR-300-25	Letter 05-AMRC-0078
	UPR-300-26	Letter 05-AMRC-0078
	UPR-300-27	Letter 05-AMRC-0078
	UPR-300-28	Letter 05-AMRC-0078
	UPR-300-29	Letter 05-AMRC-0078
	UPR-300-30	Letter 05-AMRC-0078
	UPR-300-32	WSRF 2003-001
	UPR-300-33	WSRF 2003-001
	UPR-300-34	WSRF 2003-001
	UPR-300-35	WSRF 2003-001
	UPR-300-36	WSRF 2003-001
	UPR-300-37	WSRF 2003-001
	UPR-300-47	Letter 05-AMRC-0078
	UPR-300-FF-1	WSRF 2003-002

Table A3-4. Institutional Controls for Waste Sites in the 300-FF-2 Operable Unit. (3 sheets)

Institutional Control	Waste Site	Source Document
Maintain industrial land use	300 RLWS:1	WSRF 2015-031
	300 RLWS:2	WSRF 2015-032
	300 RRLWS:1	WSRF 2015-033
	300-9	WSRF 2015-010
	300-15:2	WSRF 2015-081
	300-15:3	WSRF 2015-047
	300-15:4	WSRF 2013-117
	300-15:6	WSRF 2015-054
	300-16:1	WSRF 2014-029
	300-16:2	WSRF 2014-030
	300-16:3	WSRF 2014-031
	300-24	WSRF 2014-030
	300-28	WSRF 2014-031
	300-33	WSRF 2014-017
	300-34	WSRF 2015-048
	300-41	WSRF 2014-017
	300-43	WSRF 2014-031
	300-46	WSRF 2014-034
	300-48	WSRF 2014-031
	300-53	WSRF 2014-011
	300-80	WSRF 2014-030
	300-110	WSRF 2014-017
	300-214:1	WSRF 2015-030
	300-218	WSRF 2014-030
	300-219	WSRF 2014-035
	300-224	WSRF 2014-035
	300-249	WSRF 2014-031
	300-251	WSRF 2014-036
	300-253	WSRF 2014-012
	300-256	WSRF 2014-017
	300-257	WSRF 2014-037
	300-262	WSRF 2014-020
	300-263	WSRF 2015-050
	300-270	WSRF 2014-039
300-274	WSRF 2014-040	
300-284	WSRF 2014-100	
300-286	WSRF 2014-045	

Table A3-4. Institutional Controls for Waste Sites in the 300-FF-2 Operable Unit. (3 sheets)

Institutional Control	Waste Site	Source Document
	303-M SA	WSRF 2014-018
	303-M UOF	WSRF 2014-018
	313 ESSP	WSRF 2014-039
	316-3	WSRF 2015-049
	331 LSLDF	WSRF 2014-019
	333 ESHWSA	WSRF 2014-018
	333 WSTF	WSRF 2014-035
	618-3	WSRF 2015-072
	UPR-300-4	WSRF 2014-049
	UPR-300-7	WSRF 99-050
	UPR-300-17	WSRF 2014-018
	UPR-300-38	WSRF 2014-039
	UPR-300-46	WSRF 2014-018
Prevent uncontrolled drilling or excavation below 4.6 m/15 feet bgs (deep zone)	618-1	WSRF 2015-069
	618-1:1	WSRF 2015-069
	618-1:2	WSRF 2015-069
	618-2	WSRF 2015-071
	618-10 (2099)*	WSRF 2017-028
Prevent enhanced recharge	300 RLWS:3	EPA (2013b) ^a
	300 RRLWS:2	EPA (2013b) ^a
	300-5	EPA (2013b) ^a
	300-15:1	EPA (2013b) ^a
	300-15:2	EPA (2013b) ^b
	300-15:3	EPA (2013b) ^b
	300-16:2	EPA (2013b) ^b
	300-24	EPA (2013b) ^b
	300-33	EPA (2013b) ^{b,c}
	300-41	EPA (2013b) ^{b,c}
	300-53	EPA (2013b) ^g
	300-80	EPA (2013b) ^b
	300-110	EPA (2013b) ^{d,c}
	300-121	EPA (2013b) ^a
	300-175	EPA (2013b) ^a
	300-214:2	EPA (2013b) ^a
	300-218	EPA (2013b) ^b
300-253	EPA (2013b) ^g	
300-256	EPA (2013b) ^{b,c}	

Table A3-4. Institutional Controls for Waste Sites in the 300-FF-2 Operable Unit. (3 sheets)

Institutional Control	Waste Site	Source Document
	300-262	EPA (2013b) ^b
	300-265	EPA (2013b) ^a
	300-269	EPA (2013b) ^a
	300-270	EPA (2013b) ^d
	300-296	EPA (2013b) ^a
	303-M SA	EPA (2013b) ^{d,e}
	303-M UOF	EPA (2013b) ^{d,e}
	313 ESSP	EPA (2013b) ^d
	331 LSLT1	EPA (2013b) ^a
	331 LSLT2	EPA (2013b) ^a
	333 ESHWSA	EPA (2013b) ^{d,e}
	618-1	EPA (2013b) ^{d,e}
	618-1:1	EPA (2013b) ^{d,e}
	618-1:2	EPA (2013b) ^{d,e}
	618-2	EPA (2013b) ^d
	618-3	EPA (2013b) ^d
	618-10	DOE/RL-2017-61 ^f
	618-11	EPA, (2013b) ^a
	UPR-300-10	EPA, (2013b) ^a
	UPR-300-12	EPA, (2013b) ^a
	UPR-300-17	EPA (2013b) ^b
	UPR-300-38	EPA (2013b) ^d
	UPR-300-48	EPA (2013b) ^a

^aAccepted site within the 300 Area Industrial Complex (or 618-11 Burial Ground) may have contamination above the residential groundwater and surface water protection CULs.

^bRemediated WIDS site within the 300 Area Industrial Complex where the cleanup verification sampling results for Aroclor-1248 exceeded the residential groundwater and surface water protection CUL of 0.13 mg/kg.

^cRemediated WIDS site within the 300 Area Industrial Complex where the cleanup verification sampling results for Aroclor-1242 exceeded the residential groundwater and surface water protection CUL of 0.14 mg/kg.

^dRemediated WIDS site within the 300 Area Industrial Complex where the cleanup verification sampling results for uranium exceeded the residential groundwater and surface water protection CUL of 102 mg/kg.

^eRemediated WIDS site within the 300 Area Industrial Complex where the cleanup verification sampling results for mercury exceeded the residential groundwater and surface water protection CUL of 8.5 mg/kg.

^fThe enhanced recharge institutional control is required for the 618-10 WIDS site as stated in DOE/RL-2017-61, even though this site is located outside of the 300 Area Industrial Complex and 618-11 Burial Ground.

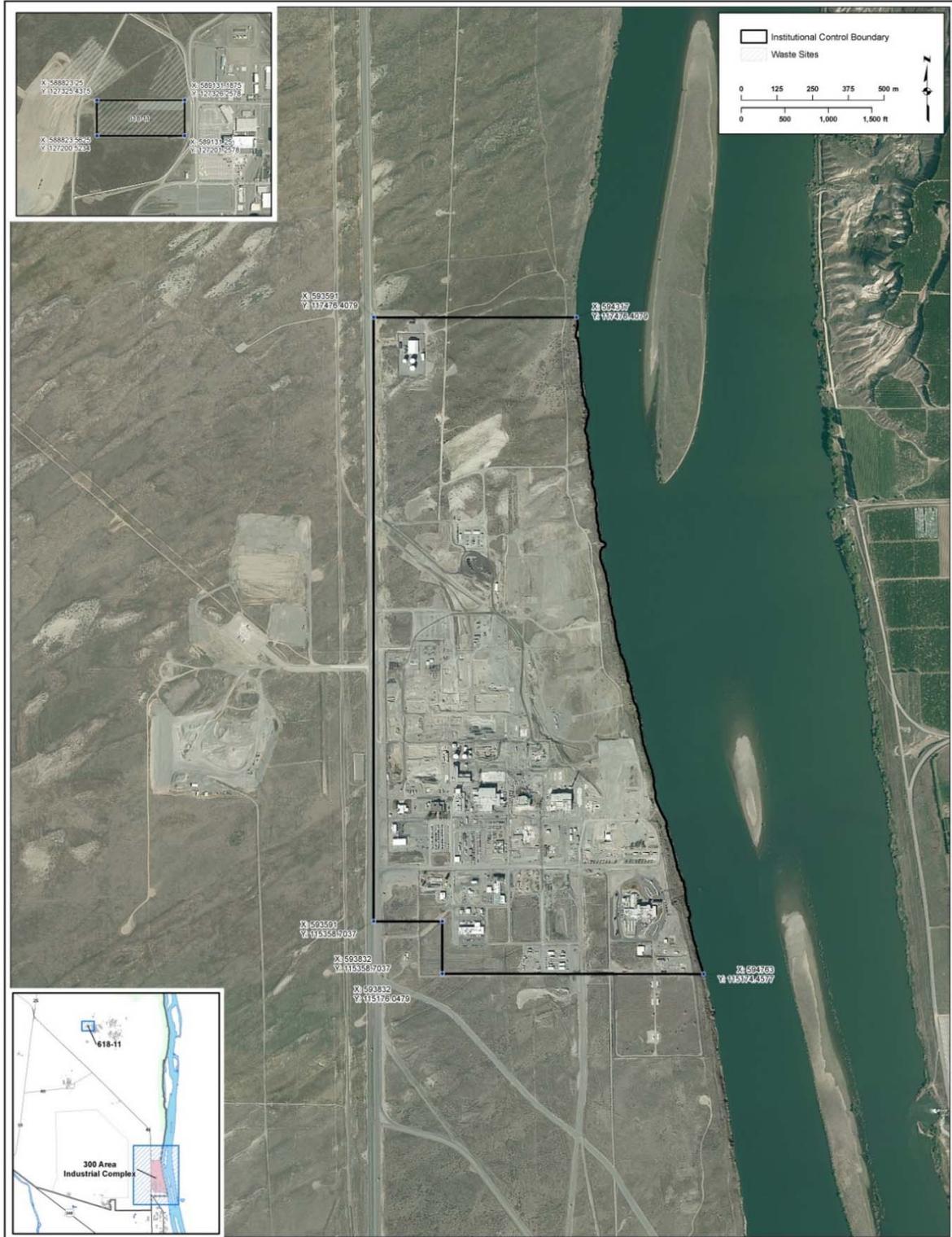
^gInstitutional controls are required for the 300-53 and 300-253 sites to maintain industrial land-use. However, no verification sampling data exists for these two sites, therefore contamination may be present above the residential groundwater and surface water protection CULs.

* Date in parentheses is the year that the radioactive decay of elements decreases to concentrations less than cleanup levels and indicate when the IC is no longer needed. An end date is only provided when specified in source document(s). This IC will remain in place until the concentrations of hazardous substances are at such levels to allow for unlimited use and unrestricted exposure (UU/UE) and the lead regulatory agency (EPA or Ecology) authorizes the removal of restrictions.

EPA = U.S. Environmental Protection Agency

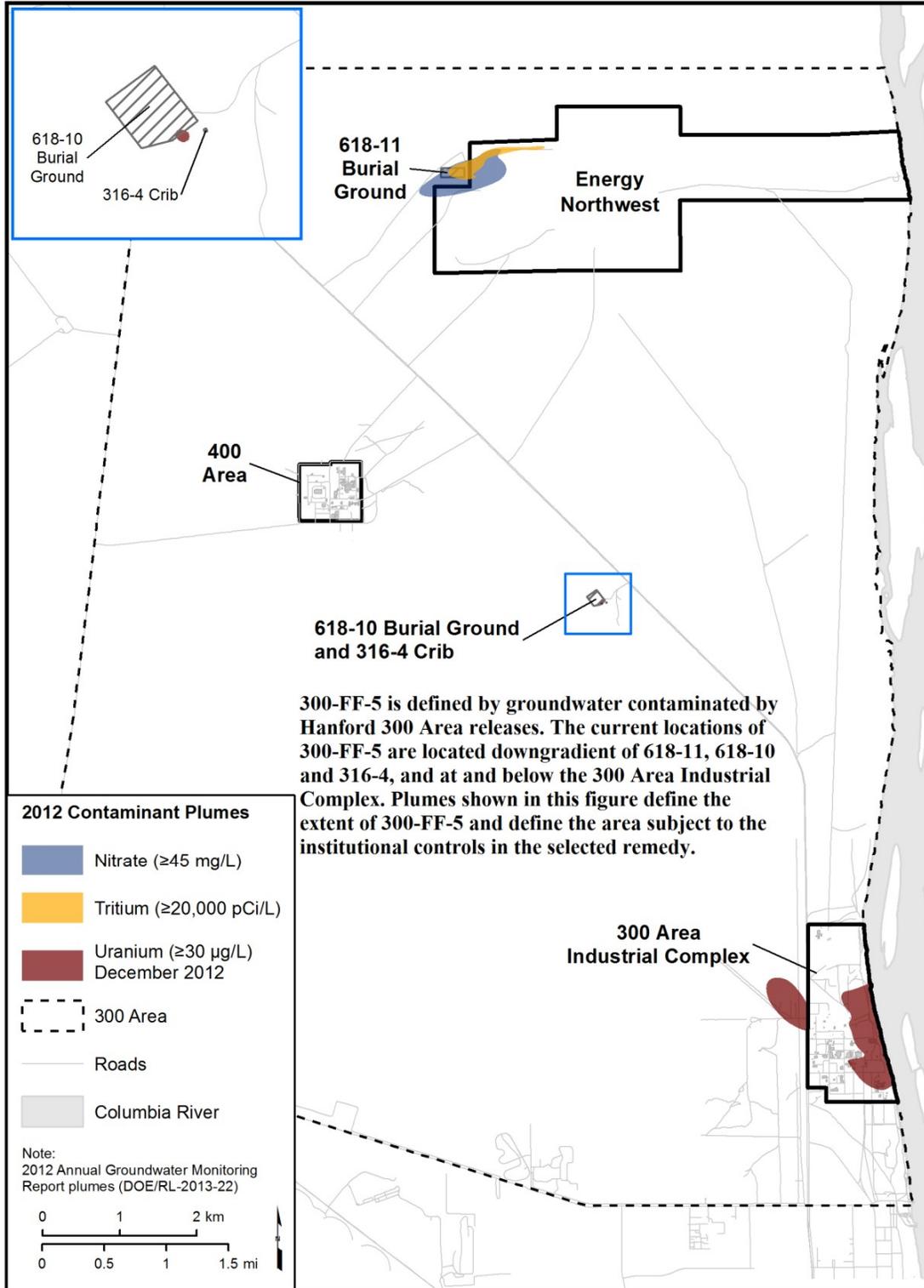
WIDS = Waste Information Data System

CUL = cleanup level



Source: 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).

Figure A3-1. 300-FF-2 Industrial Use Areas Subject to Industrial Use Institutional Control.



Source: Record of Decision for 300-FF-2 and 300-FF-5 and Record of Decision Amendment for 300-FF-1 (EPA 2013b)

Figure A3-2. Land-Use Control Areas for 300-FF-5 Operable Unit.

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A4.0 INSTITUTIONAL CONTROLS REQUIRED BY EXISTING 1100 AREA CERCLA DECISION DOCUMENTS

This section presents the ICs required by the 1100 Area CERCLA decision documents and the 1100 Area Superfund Site final closeout report. Tables A4-1 through A4-4 present the ICs, and include the individual IC requirements contained in decision and implementing documents. Figure A4-1 show the fences and cap at the Horn Rapids Landfill. The 1100 Area was deleted from the NPL in 1996.

Table A4-1. Institutional Controls Requirements Listed in EPA/ROD/R10-93/063, *Record of Decision for the USDOE Hanford 1100 Area Final Remedial Action for 1100-EM-1, 1100-EM-2, 1100-EM-3, and 1100-IU-1.*

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Controls/Entry Restrictions	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.	2.3.1/2.3.1.2
Information Controls/Notice in Deed	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.	2.3.5/2.3.5.3

Table A4-2. Institutional Controls Requirements Listed in the Superfund Site Final Closeout Report, U.S. Department of Energy 1100 Area (DOE 1996), July 25, 1996.

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Access Controls	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.	2.3.1
Groundwater-Use Management	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.	2.3.3

Table A4-3. Institutional Controls Requirements Listed in the Explanation of Significant Differences, USDOE Hanford 1100 Area (EPA 2010b), September 27, 2010.

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Land-Use Management/Land-Use and Real Property Controls	DOE is responsible for implementing, maintaining, reporting on, and enforcing the IC and 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.	2.3.2/2.3.2.1
Miscellaneous	DOE shall comply with the Sitewide Institutional Controls Plan as approved by EPA and Ecology.	2.3.6
Access Controls	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.	2.3.1
Land-Use Management/Industrial Use	DOE will prevent the development and use of the landfill property for residential housing, elementary and secondary schools, or childcare facilities.	2.3.2/2.3.2.4
Information Controls/Notice in Deed	DOE will provide notice to EPA and Ecology at least 6 months prior to any transfer, sale, or lease of the landfill property so that EPA and Ecology can be involved in discussions to ensure that appropriate provisions are included in the transfer terms or conveyance documents to maintain effective ICs. For example, if the landfill is transferred to a private entity, one such mechanism may be a restrictive covenant under the "Washington Uniform Environmental Covenant Act" (RCW 64.70). If it is not possible for DOE to notify EPA and Ecology at least 6 months prior to any transfer or sale, then the DOE will notify EPA and Ecology as soon as possible but no later than 60 days prior to the transfer or sale of any property subject to ICs. In addition to the land transfer notice and discussion provisions above, the DOE further agrees to provide EPA and Ecology with similar notice, within the same time frames, as to federal-to-federal transfer of property. DOE shall provide a copy of executed deed or transfer assembly to EPA and Ecology.	2.3.5/2.3.5.3

DOE = U.S. Department of Energy.
Ecology = Washington State Department of Ecology.

EPA = U.S. Environmental Protection Agency.
IC = institutional control.
RCW = *Revised Code of Washington*.

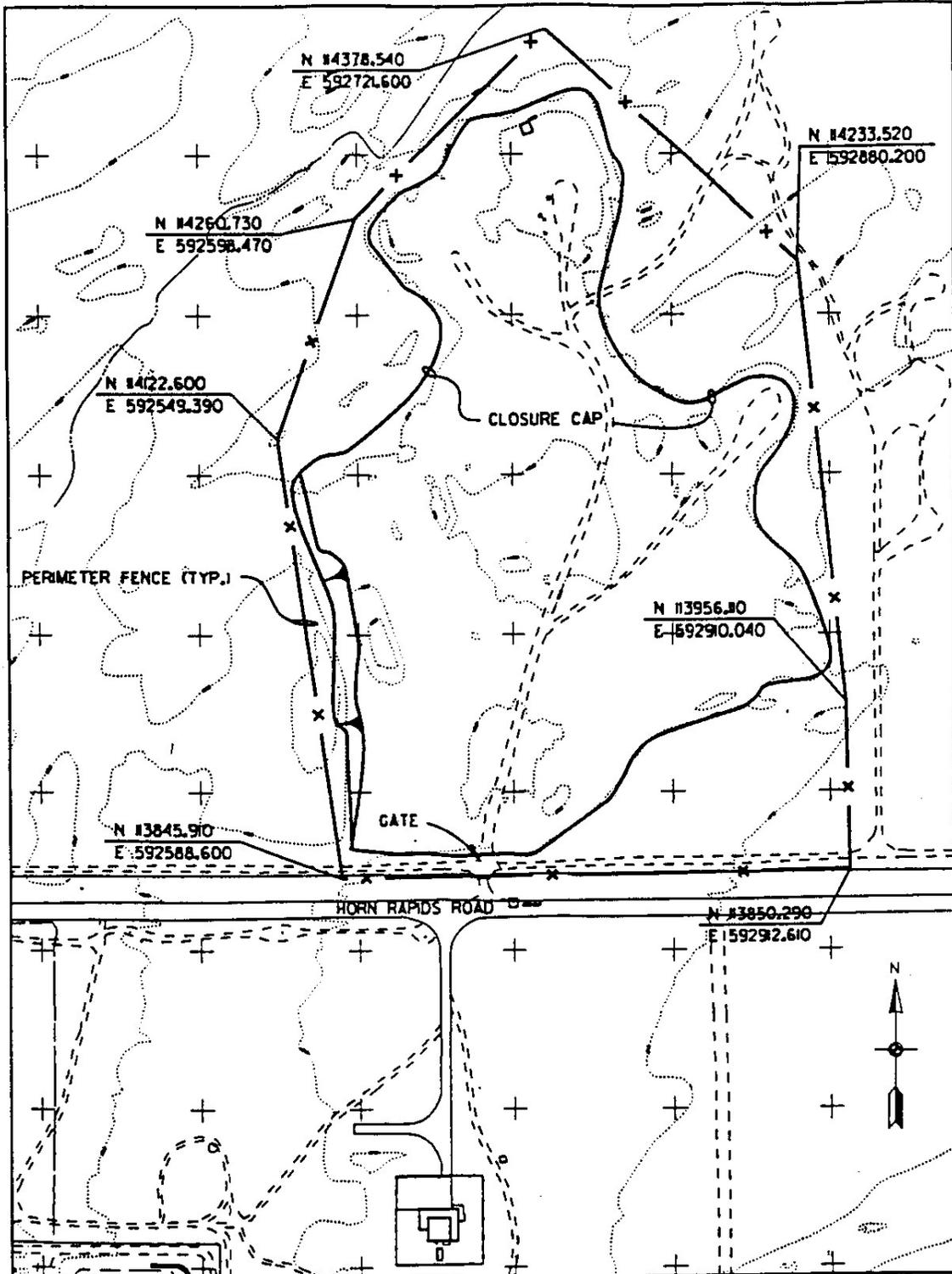
Table A4-4. Institutional Controls for Waste Sites in the 1100-EM-1 Operable Unit.¹

Institutional Controls	Waste Site	Source Document
Control access to the landfill property, including maintaining the fencing and signs, to prevent disturbance of the landfill contents. ²	HRD	EPA (2010)
Prevent the development and use of the landfill property for residential housing, elementary and secondary schools, or childcare facilities	HRD	EPA (2010)

¹Additional institutional controls relating to the HRD waste site are listed in Tables A4-1, A4-2, and A4-3.

²Requirements for the signage and fencing are provided in 40 CFR 61.151.

CFR = *Code of Federal Regulations*.



Source: Explanation of Significant Differences, USDOE Hanford 1100 Area (EPA, 2010b).

Figure A4-1. Fence and Cap at the Horn Rapids Landfill.

A5.0 REFERENCES

- 05-AMR-0078, 2005, "Data Revisions in Institutional Controls (IC) Field of Waste Information Data System (WIDS)," Letter, Leif Erickson, U.S. Department of Energy-Richland Operations Office to N. Ceto, U.S. Environmental Protection Agency, Region 10 and M. Wilson, Washington State Department of Ecology, dated January 04.
- 40 CFR 61, "National Emission Standards for Hazardous Air Pollutants," Title 40, *Code of Federal Regulations*, Part 61, as amended.
- 40 CFR 61.151, "National Emission Standards for Hazardous Air Pollutants."
- 40 CFR 300, Appendix B, "National Priorities List," Title 40, *Code of Federal Regulations*, Part 300, Appendix B, as amended.
- BHI-01164, 1998, *300 Area Process Trenches Verification Package*, Rev. 0, Bechtel Hanford, Richland, Washington.
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, 42 USC 9601, et seq.
- CVP-1999-00011, 2000, *Cleanup Verification Package for the 116-B-6A Crib and 116-B-16 Fuel Examination Tank*, Rev 0, Bechtel Hanford Inc., Richland, Washington.
- CVP-1999-00019, 2000, *Cleanup Verification Package for the 116-C-2A Pluto Crip, 116-C-2B Pump Station, 116-C-2C Sand Filter, and Overburden Soils from Group 3 Sites at the 100-B/C Area*, Rev. 0, Bechtel Hanford Inc., Richland, Washington.
- CVP-2007-00006, 2007, *Cleanup Verification Package for the 118-B-1, 105-B Solid Waste Burial Ground*, Rev, 0, Washington Closure Hanford, Richland, Washington.
- DOE, 1996, *Superfund Final Closeout Report, U.S. Department of Energy 1100 Area*, U.S. Department of Energy, Washington, D.C.
- 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-99-89, 2001, *Remedial Design Report and Remedial Action Work Plan for the K Basins Interim Remedial Action*, Rev. 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2000-16, 2001, *Remedial Design Report/Remedial Action Work Plan for the 100-NR-1 Treatment, Storage, and Disposal Units*, Rev. 2, 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, Mission Support Alliance, LLC, Richland, Washington.
- DOE/RL-2005-93, *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-2006-21, 2008, *Remedial Design/Remedial Action Work Plan for the 221-U Facility*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

- DOE/RL-2007-41, 2007, *Redial Design Report and Remedial Action Work Plan for the K Basins Interim Remedial Action: 105-K East Basin Deactivation*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2007-48, 2007, *Remedial Design Report and Remedial Action Work Plan for the 100 Area Remaining Sites Interim Remedial Action: 105-K East Basin Demolition*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2008-78, 2009, *200 West Area 200-ZP-1 Pump-and-Treat Remedial Design Remedial Action Work Plan*, Rev. 0, REISSUE, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2009-124, 2010, *200 West Area Groundwater Pump-and-Treat Facility Operations and Maintenance Plan*, Rev. 5, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2010-52, 2011, *Remedial Design and Remedial Action Work Plan for the K Basins Interim Remedial Action: 105-K West Basin Deactivation*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2010-53, 2011, *Remedial Design/Remedial Action Work Plan for the 100 Area Remaining Sites Interim Remedial Action: 105-K West Basin Demolition and Removal*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2010-63, 2011, *Remedial Design/Remedial Action Work Plan for Interim Remedial Action: Removal of K Basins Sludge from the River Corridor to the Central Plateau; and Removal of Knock Out Pot Contents from K Basins*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2012-46, 2012, *Remaining Sites Verification Package for the 100-KR-2 Operable Unit Waste Sites: 100-K-3 (Partial), 100-K-47 (Partial), 100-K-56 Subsite 2 (Partial), 100-K-68, 100-K-69, 100-K-70, 100-K-71, and Stockpile #3*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2013-07, 2013, *200-UP-1 Groundwater Operable Unit Remedial Design/Remedial Action Work Plan*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE-RL-2014-13, 2015, *Integrated Remedial Design Report/Remedial Action Work Plan for the 300 Area (300-FF-1, 300-FF-2, & 300-FF-5 Operable Units)*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2014-13 ADD 1, 2015, *Remedial Design Report/Remedial Action Work Plan for 300-FF-2 Soils*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2014-13 ADD 2, 2015, *Remedial Design Report/Remedial Action Work Plan Addendum for the 300 Area Groundwater*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2014-34, 2014, *Action Memorandum for 200-DV-1 Operable Unit Perched Water Pumping/Pore Water Extraction*, Rev. 0, CH2M Hill Plateau Remediation Company, Richland, Washington.

- DOE/RL-2014-37, 2015, *Removal Action Work Plan for 200-DV-1 Operable Unit Perched Water Pumping/Pore Water Extraction*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2014-44, 2015, *Integrated Remedial Design Report/Remedial Action Work Plan for 100-F/IU*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2014-44 ADD 1, 2015, *Remedial Design Report/Remedial Action Work Plan Addendum for 100-FR-1, 100-FR-2, 100-IU-2, and 100-IU-6 Soils*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2014-44 ADD 2, 2015, *Remedial Design Report/Remedial Action Work Plan Addendum for the 100-F/IU Groundwater*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2015-23, 2016, *Remedial Design/Remedial Action Work Plan for the 200-CW-5, 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units*, Rev 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-2017-61, 2018, *Cleanup Verification Package for the 618-10 Burial Ground*, Rev 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Ecology, EPA, and DOE, 1989a, *Hanford Federal Facility Agreement and Consent Order*, 2 vols., Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington, as amended.
- EPA, 2004a, *Explanation of Significant Differences for the USDOE Hanford 100 Area Remaining Sites Interim Remedial Action Record of Decision*, Hanford Site, Benton County, Washington, U.S. Environmental Protection Agency, Washington, D.C.
- EPA, 2005b, *Record of Decision 221-U Facility (Canyon Disposition Initiative) Hanford Site, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2007a, *Explanation of Significant Differences 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, 100-IR-2 Operable Units, (100 Area Burial Grounds)*, U.S. Environmental Protection Agency, Office of Environmental Cleanup Region 10, Seattle, Washington.
- EPA, 2007b, *U.S. Department of Energy Environmental Restoration Disposal Facility (ERDF) Amended Record of Decision Summary and Responsiveness Summary May 2007*, U.S. Environmental Protection Agency, Office of Environmental Cleanup Region 10, Seattle, Washington.
- EPA, 2008, *Record of Decision, Hanford 200 Area 200-ZP-1 Superfund Site Benton County, Washington*, U.S. Environmental Protection Agency, Office of Environmental Cleanup Region 10, Seattle, Washington.
- EPA, 2010b, *Explanation of Significant Differences, USDOE, Hanford 1100 Area, Benton County, Washington, September 27, 2010*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.

- EPA, 2011b, *Record of Decision, Hanford 200 Area Superfund Site, 200-CW-5 and 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2012, *Record of Decision for Interim Remedial Action, Hanford 200 Area, Superfund Site, 200-UP-1 Operable Unit, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2013b, *Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1*, U.S. Environmental Protection Agency, Region 10 and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- EPA, 2014, *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*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- EPA, 2018, *Record of Decision for 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 Operable Units*, U.S. Environmental Protection Agency, Region 10 and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- EPA/AMD/R10-97/044, 1997, *EPA Superfund Record of Decision Amendment for 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/AMD/R10-99/038, 1999, *EPA Superfund Record of Decision Amendment for Environmental Restoration Disposal Facility*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/AMD/R10-02/030, *EPA Superfund Record of Decision Amendment: Hanford 200-Area (USDOE) OU 14 Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ESD/R10-03/605, 2003, *Explanation of Significant Differences for the 100-NR-1 Operable Units, Treatment Storage and Disposal Interim Action Record of Decision and 100-NR-1 and 100-NR-2 Operable Unit Interim Action Record of Decision*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-93/063, 1993, *Record of Decision for the USDOE Hanford 1100 Area Final Remedial Action for the 1100-EM-1, 1100-EM-2, 1100-EM-3, and 1100-IU-1*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-95/100, 1995, *Record of Decision for the USDOE Hanford Environmental Restoration Disposal Facility, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington..
- EPA/ROD/R10-95/126, 1995, *Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-96/134, 1996, *Record of Decision for the 100-HR-3 and 100-KR-4 Operable Units*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-96/143, 1996, *Record of Decision for the 300-FF-1 and 300-FF-5 Operable Units*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.

- EPA/ROD/R10-99/039, 1999, *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*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-99/059, 1999, *Record of Decision for the 100-KR-2 Operable Unit*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-99/112, 1999, *Interim Remedial Action Record of Decision for 100-NR-1 and 100-NR-2 Operable Units*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-00/120, 2000, *Interim Record of Decision for the 100-NR-1 Operable Unit*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA/ROD/R10-00/121, 2000, *Record of Decision for the USDOE Hanford 100 Area Burial Ground (100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, 100-KR-2 Operable Units)*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- RCW 64.70, “*Washington Uniform Environmental Covenant Act*,” Title 64, Chapter 70, Revised Code of Washington, as amended, Washington State Legislature, Olympia, Washington.
- TPA-C-09-07, TPA Change Notice Form, dated September 8, 2010, *Revise Tri Party Agreement Appendix C to Align Operable Unit Assignments with Proposed Central Plateau Decisions*, Rev. 0.
- TPA-CN-604, TPA Change Notice Form, dated December 5, 2013, for DOE/RL-99-89, *Remedial Design Report and Remedial Action Work Plan for the K Basins Interim Remedial Action*, Rev. 1.
- TPA-CN-605, TPA Change Notice Form, dated December 5, 2013, for DOE/RL-2010-53, *Remedial Design Report/ Remedial Action Work Plan for the K Basins Interim Remedial Action: 105-K West Basin Demolition and Removal*, Rev. 0.
- TPA-CN-606, TPA Change Notice Form, dated December 5, 2013, for DOE/RL-2010-63, *Remedial Design / Remedial Action Work Plan for the K Basins Interim Remedial Action: Removal of K Basins Sludge from the River Corridor to the Central Plateau; and Removal of Knock Out Pot Contents from the K Basins*, Rev. 0.
- TPA-CN-607, TPA Change Notice Form, dated December 5, 2013, for DOE/RL-2010-52, *Remedial Design and Remedial Action Work Plan for the K Basins Interim Remedial Action: 105-K West Basin Deactivation*, Rev. 0. WA7890008967, *Hanford Facility Dangerous Waste Permit*, Washington State Department of Ecology, Olympia, Washington.
- TPA-CN-518, TPA Change Notice Form, dated August 1, 2013, for DOE/RL-2005-93, *Remedial Design Report/Remedial Action Work Plan for the 100-N Area*, Rev 0.
- Waste Site Reclassification Form 99-050, 316-2, 618-12, and UPR-300-7, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

- Waste Site Reclassification Form 2000-110, 300-50 (Landfill 1B), U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2000-111, 628-4 (Landfill 1D), U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2000-112, 316-1 South Process Pond, 300 RFBP Retired Filter Backwash Pond, and 300-262 Contaminated Soil West of South Process Pond, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2002-055, 116-N-3 and 100-N-63:1, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2003-001, UPR-300-32, UPR-300-33, UPR-300-34, UPR-300-35, UPR-300-36, and UPR-300-37, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2003-002, UPR-300-FF-1, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2003-030, 100-B-5, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2003-050, 100-B-8:2, 100-C-6:2, 100-C-6:3, and 100-C-6:4, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2004-001, 116-K-1 Crib, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2004-005, 100-B-14:1, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2004-012, 100-C-9:1, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2004-014, 100-C-9:3, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2004-015, 100-C-9:4, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2004-020, 100-B-8:1 and 100-C-6:1, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

- Waste Site Reclassification Form 2004-059, UPR-100-N-37, 100-N-51, 100-N-51B, 185-N, and 100-N-50, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2005-029, 100-K-55:1, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2005-30, 100-K-56:1, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2006-002, 116-K-2, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2006-005, 118-B-6, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2006-018, 116-N-1, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2006-058, 128-B-3, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2006-063, 118-C-1, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2007-032, 118-B-1, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2008-002, 116-C-3, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2009-041, 100-B-21:4, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2012-063, 100-K-6, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2012-064, 100-K-46, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2012-065, 100-K-62, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2012-066, 132-KE-1, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2012-090, 100-K-68, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2012-092, 100-K-70, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2013-015, 116-N-2 and 1310-N, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

- Waste Site Reclassification Form 2013-016, UPR-100-N-5, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2013-017, UPR-100-N-24, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2013-030, 124-N-2, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2013-065, 100-N-31, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2013-066, 100-N-32, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2013-067, 100-N-38, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2013-068, 100-N-61:3, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
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- Waste Site Reclassification Form 2013-094, 118-K-1, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2013-117, 300-15:4, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

- Waste Site Reclassification Form 2014-011, 300-53, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-012, 300-253, 384-W Original Brine Pit 300-260, Contaminated Soil West of 313 Building, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-017, 300-33, 300-41, 300-110, and 300-256, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-018, 303-M SA, 303-M OUF, UPR-300-17, UPR-300-46, and 333 ESHWSA, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-019, 331 LSLDF, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
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- Waste Site Reclassification Form 2014-034, 300-46, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
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- Waste Site Reclassification Form 2014-036, 300-251, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-037, 300-257, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-039, UPR-300-38, 313 ESSP, and 300-270, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-040, 300-274, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-045, 300-286, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

- Waste Site Reclassification Form 2014-049, UPR-300-4, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-088, 100-N-84:2, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2014-100, 300-284, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
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- Waste Site Reclassification Form 2015-031, 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, 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, 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, 300-15:3, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
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- Waste Site Reclassification Form 2015-050, 300-263, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2015-054, 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, 618-1, 618-1:1, 618-1:2, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2015-071, 618-2, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Waste Site Reclassification Form 2015-072, 618-3, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Waste Site Reclassification Form 2015-078, 100-F-10, 100-F-19:1, 100-F-19:2, 100-F-19:3, 100-F-29, 100-F-34, 116-F-2, 116-F-6, 116-F-9, 116-F-12, 118-F-8:3, 118-F-8:4, and UPR-100-F-1, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Waste Site Reclassification Form 2015-079, 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, 300-15:2, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Waste Site Reclassification Form 2017-028, 618-10, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

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APPENDIX B
INSTITUTIONAL CONTROLS REQUIRED BY RCRA CORRECTIVE ACTION
DOCUMENTS

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**APPENDIX B
INSTITUTIONAL CONTROLS REQUIRED BY RCRA CORRECTIVE
ACTION DOCUMENTS**

This appendix lists the *Resource Conservation and Recovery Act of 1976* (RCRA) closure unit or post-closure treatment, storage, and disposal (TSD) units that have requirements for institutional controls (IC). The TSD units, along with the IC category, IC requirements, and the corresponding section of DOE/RL-2001-41, *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions* (the Plan), where the IC categories are addressed.

**B1.0 INSTITUTIONAL CONTROLS REQUIRED BY RCRA TSD CLOSURE PLANS
IN 100 AREA AND 300 AREA**

This section presents the ICs required by RCRA closure plans for TSD units located in the 100 and 300 Areas as determined by the Hanford Site RCRA Permit. The ICs are presented in Tables B-1 and B-2.

Table B-1. Institutional Controls Requirements Listed in the Modified Post-Closure Institutional Controls and Periodic Assessments for 183-H Solar Evaporation Basin, Hanford Site RCRA Permit, Class 1 Modification, Quarter Ending 6/30/2002 (WA7890008967).

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Groundwater-Use Management	Institutional controls are required to be maintained in order to ensure that groundwater is not used as a drinking water or irrigation source.	2.3.3
Land-Use Management	Should groundwater-use restrictions be required after U.S. Department of Energy, Richland Operations Office relinquishment of the area, appropriate deed restrictions will be made.	2.3.2
Access Controls/Warning Signs	No direct exposure hazards remain at 183-H Solar Evaporation Basins. However, roadways to the unit and site access will remain administratively restricted to use by authorized personnel only. Posted federal warning signs restrict access to the 100-H Area from the Columbia River.	2.3.1/2.3.1.1

RCRA = *Resource Conservation and Recovery Act of 1976*.

Table B-2. Institutional Controls Requirements Listed in the Groundwater Monitoring Plan Controls Requirements for 300 Area Process Trenches, Hanford Site RCRA Permit, Rev.8 (WA7890008967).

Institutional Controls Category/Type	Institutional Controls Requirement	Section of the Plan Where Institutional Controls are Addressed
Groundwater – Use Management	Administrative controls limiting 300-FF-5 groundwater access and use in a manner that is protective of human health where groundwater is above CULs.	2.3.3

CUL = cleanup level.

RCRA = *Resource Conservation and Recovery Act of 1976.*

B2.0 REFERENCES

DOE/RL-2001-41, 2015, *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions*, Rev. 8, Mission Support Alliance, LLC, Richland, Washington.

Resource Conservation and Recovery Act of 1976, 42 USC 6901, et seq.

WA7890008967, 2013, *Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste*, Washington State Department of Ecology, Nuclear Waste Program, Richland, Washington, September 30.

WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended. WAC 173-303-610(10), "Closure and post-closure."

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APPENDIX C
FIVE-YEAR EVALUATION OF ANNUAL INSTITUTIONAL
CONTROL ASSESSMENTS

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APPENDIX C
FIVE-YEAR EVALUATION OF ANNUAL INSTITUTIONAL CONTROL
ASSESSMENTS

This appendix shows the results of the evaluation of the annual institutional control (IC) assessments conducted between 2006 and 2015 (Tables C-1 and C-2). Section 1.2 of this document mentions that the Sitewide IC assessment, in conjunction with the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) 5-year review, will be a “roll up” of these reviews and serve as a means to evaluate effectiveness of the ICs. The U.S. Department of Energy, Richland Operations Office (DOE-RL), conducted the CERCLA 5-year reviews for the years 2006 through 2015. The roll up of two 5-year reviews (2006 through 2015) presented in this appendix coincides with the CERCLA 5-year review. New Table C-3 has been added for reviews conducted in 2017 and 2018.

Table C-1. Institutional Control Assessment 5-Year Summary for 2006 – 2010.

Institutional Controls	2006	2007	2008	2009	2010
Warning Notices	No deficiencies noted	A Spanish language sign was replaced in 100 F Area	Signs reflecting remedial design report (RDR)/ remedial action work plan (RAWP) language at 618-10 and 618-11 were installed.	Correction of signage to 618-7 waste site complete. Required 100-D Area signage installed.	The northern and southern entrances to 100-IU-6 waste sites were installed as required by 100 Area RDR/RAWP. A blown-over English language sign at 100-F was reinstalled.
Entry Restrictions	Installed a fence with a locking gate in the northwest corner of the 300 Area	No deficiencies noted	No deficiencies noted	No deficiencies noted	No deficiencies noted.
Land-Use Management	No deficiencies noted	No deficiencies noted	No deficiencies noted	No deficiencies noted	No deficiencies noted.
Groundwater-Use Management	No deficiencies noted	No deficiencies noted	No deficiencies noted	No deficiencies noted	No deficiencies noted.
Waste Site Information	No deficiencies noted	No deficiencies noted	No deficiencies noted	No deficiencies noted	No deficiencies noted.

Table C-2. Institutional Control Assessment 5-Year Summary for 2011 to 2015.

IC	2011	2012	2013	2014	2015
Warning Notices	WCH replaced the signs at the former 181-KE and 181-KW locations at the 100-K Area on October 18, 2011. These signs appeared to have been removed during the 2011 RCC annual IC review. All the other required signs are in place	All the required signs are in place. Installed additional sign at new entrance on west side of 300 Area main complex Shoreline signs are in place	Warning signs are in place at roadway entrances Shoreline signs are in place	A Spanish-language warning sign along the river shoreline was down. Reinstalled the sign	Warning signs are in place at roadway entrances, Shoreline signs and DOE "No Trespassing signs are in place
Entry Restrictions	No reportable trespassing incidents	Two trespassing incidents reported to Benton County Sheriff's Office	Five trespassing incidents reported to Benton County Sheriff's Office	No reportable trespassing incidents. A section of fence was down along SR 240; fixed the fence	Two trespassing incidents reported to Benton County Sheriff's Office
Land-Use Management	Approved excavation permits are in place	Approved excavation permits are in place	Approved excavation permits are in place.	Approved excavation permits are in place	Approved excavation permits are in place
Groundwater-Use Management	No unauthorized groundwater use has occurred	No deficiencies noted	No deficiencies noted	No deficiencies noted	No deficiencies noted
Waste Site Information	No deficiencies noted	No deficiencies noted	No deficiencies noted	No deficiencies noted	No deficiencies noted

DOE = U.S. Department of Energy.

IC = institutional control.

RCC = River Corridor closure.

SR = state route.

WCH = Washington Closure Hanford.

•Table C-3. Institutional Control Assessment 5-Year Summary for 2016 to 2020.

Institutional Control	2016	2017	2018	2019	2020
Warning Notices	All of the required “Hazardous Area” signs are in place	All but three of the required “Hazardous Area” signs are in place. One of the damaged signs was repaired at the 300 Area. Sixty-nine “No Trespassing” signs along the Columbia River were replaced. Over one hundred “No Trespassing” signs along SR 240 were found to be illegible due to fire damage. All signs were replaced in FY18.	All of the required “Hazardous Area” signs are in place. The two damaged signs identified from the previous year at 100D and 100F Areas were repaired. Approximately fifty-four “No Trespassing” signs along the Columbia River were identified as needing replacement. Fewer than ten “No Trespassing” signs along SR 240 were found to be illegible and were replaced in FY18.	TBD ¹	TBD ¹
Entry Restrictions	Six trespassing incidents reported to Benton County Sheriff’s Office. The fence along SR 240 was found to have broken wire strands in four places. The fence was repaired.	Eight trespassing incidents reported to Benton County Sheriff’s Office. The fence along SR 240 was found to be damaged in four locations due to wildfires. The fence was repaired.	Three trespassing incidents reported to Benton County Sheriff’s Office. The fence along SR 240 was found to be damaged in eight locations due to wildfires. The fence was repaired.	TBD ¹	TBD ¹
Land-Use Management	No deficiencies noted	No deficiencies noted. However, assessment of the enhanced recharge institutional control is ongoing into FY 2018.	No deficiencies noted. Potential maintenance issues were identified and will be communicated to the responsible contractor(s).	TBD ¹	TBD ¹
Groundwater-Use Management	No deficiencies noted	No deficiencies noted	No deficiencies noted	TBD ¹	TBD ¹
Waste Site Information	No deficiencies noted	No deficiencies noted	No deficiencies noted	TBD ¹	TBD ¹

¹ Data will be added when it becomes available

IC = institutional control.
RCC = River Corridor closure.
WCH = Washington Closure Hanford.

SR = state route.
TBD = to be decided.

REFERENCES

Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 USC 9601, et seq.

DOE/RL-2001-41, 2015, *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions*, Rev. 8, Mission Support Alliance, LLC, Richland, Washington.

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