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# Approach and Plan for Cleanup Actions in the 100-IU-2 and 100-IU-6 Operable Units of the Hanford Site



United States  
Department of Energy  
Richland, Washington

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# **Approach and Plan for Cleanup Actions in the 100-IU-2 and 100-IU-6 Operable Units of the Hanford Site**

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**United States  
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P.O. Box 550  
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**Focus**

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**APPROACH AND PLAN FOR CLEANUP ACTIONS IN THE  
100-IU-2 AND 100-IU-6 OPERABLE UNITS  
OF THE HANFORD SITE****1.0 INTRODUCTION**

The purposes of this document are to summarize waste site information gathered to date relating to the 100-IU-2 and 100-IU-6 Operable Units and to plan the extent of evaluation necessary to make cleanup decisions for identified waste sites under the *Comprehensive Environmental Response, Compensation, and Liability Act of 1981* (CERCLA). This is a streamlined approach to the decision-making process, reducing the time and costs for document preparation and review. A similar approach has been recently used for the 100-KR-2 Operable Unit (DOE-RL 1995).

The previous approach used for 100 Area operable units included preparation of a work plan, a limited field investigation (LFI) report, a qualitative risk assessment (QRA), a focused feasibility study (FFS) report, a proposed plan, and a record of decision (ROD). The approach being used for the 100-IU-2 and 100-IU-6 Operable Units streamlines the previous process, as follows:

- An abbreviated work plan, called a “focus package” (this document), is prepared. The focus package presents plans and a schedule for addressing waste sites under CERCLA and fulfills scoping activity requirements per Section 7.2.2 of the *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement).
- The LFI, QRA, and FFS reports (to be prepared) will be combined into a single document. The document will present the results of characterization efforts (if any) and risk evaluations, and analyze methods and costs for remediation of waste sites.
- The proposed plan, which will be based on the above documentation, will be produced by the U.S. Department of Energy (DOE) and will recommend for public review and comment a preferred alternative for addressing waste sites. A ROD will reflect public comments and will present the selected alternative to be implemented by the DOE.

The streamlined approach for the 100-IU-2 and 100-IU-6 Operable Units is favored by DOE and the U.S. Environmental Protection Agency (EPA) as the most efficient manner in which to address waste sites in these operable units.

## 2.0 100-IU-2 AND 100-IU-6 AREA INFORMATION

### 2.1 HISTORY

The 100-IU-2 Operable Unit includes the site of the former town of White Bluffs and vicinity (Figure 1). White Bluffs was an agriculture-based community of about 500 people that existed before the Manhattan Engineering District (MED) project began in 1943. Many of the sites within the 100-IU-2 Operable Unit are remnants of that town and the surrounding farms. When government operations began, many of the houses were demolished and new temporary buildings such as blacksmith shops, receiving and storage warehouses, and offices were erected. While most government activities in the 100-IU-2 Operable Unit ceased early in the 1950's, it was not until the 1970's that virtually all the remaining facilities were removed (Carpenter 1995). The 100-IU-5 Operable Unit, called the Pickling Acid Cribs, is contained within the borders of the 100-IU-2 Operable Unit. However, cleanup actions for the Pickling Acid Cribs, as a separate operable unit, have been addressed under separate documentation (e.g., DOE-RL 1993 and the February 1996 ROD for the 100-IU-1, 100-IU-3, 100-IU-4, and 100-IU-5 Operable Units [EPA 1996]).

The 100-IU-6 Operable Unit is located at the site of another former agriculture-based town, called Hanford, that existed before government operations began (Figure 1). By 1942, Hanford had grown to a few hundred farm families. Starting in 1943, the area was used for several years as a housing camp for more than 45,000 construction workers. In general, the sites within the 100-IU-6 Operable Unit include surface debris, oil spills, trash dumps, building foundations, surface depressions, and ash piles from the pre-MED town or MED-era activities (DeFord 1995). Except for graphite machining, which continued until the early 1950's, government operations at the Hanford townsite had ceased by 1945.

Figure 1 shows the approximate proposed boundaries of the 100-IU-2 and 100-IU-6 Operable Units. Because of the large number of reported sites in each operable unit, maps showing precise locations of the individual sites within these operable units are not included. More detailed information on the locations, history, and descriptions of the sites can be found in the technical baseline reports for the 100-IU-2 area (Carpenter 1994, 1995) and for the 100-IU-6 area (DeFord 1995). Background information on geology used to evaluate the sites can be found in the 100-FR-1 and 100-FR-3 Work Plans (DOE-RL 1992a, 1992b, respectively).

### 2.2 NATURAL AND CULTURAL RESOURCES

The ecological and cultural resource concerns for these areas have been shaped by their past uses. Most of the houses and facilities were removed, and the sites have had almost 50 years to naturally revegetate. In many places, the sites have returned to shrub-steppe vegetation. Other areas, such as the old cultivated fields, have remained in cheatgrass and tumbled mustard with varying amounts of other weeds or bunchgrasses. The return of native shrub-steppe appears to

depend on the soil quality, amount of previous disturbance, proximity of native seed sources, and depth of the water table. Many trees remaining from the early townsites provide shelter for mule deer, birds, and other wildlife. For example, bald eagles roost in trees along the river in winter.

The 100-IU-2 and 100-IU-6 Operable Units are located in a prehistorically and historically rich area of the Hanford Site. Native American Tribes in the Mid-Columbia region frequented this area as early as 7,000 years ago during seasonal hunting, gathering, and fishing rounds, establishing camp and village locations. During the late 1800's, the area was inhabited by Euro-American settlers who established ranches, farms, and the towns of Hanford and White Bluffs. Thus, many prehistoric and historic archeological sites have been identified in these operable units.

## 2.3 GROUNDWATER

The 100-IU-2 and 100-IU-6 Operable Units are both source operable units, to be evaluated for hazardous substances that have been released, or have the potential to be released, to the environment. As a result of discussions with the EPA, it was concluded that hydrocarbon contamination and lead are the most likely indicators of potential groundwater contamination from sites in these operable units. December 1995 searches of the Hanford Environmental Information System database in 100-IU-2 and 100-IU-6 vicinity wells for benzene, ethyl benzene, xylene, and toluene (gasoline constituents and indicators of hydrocarbon contamination) showed no levels above detection limits. The locations of groundwater monitoring wells evaluated for hydrocarbon contamination are shown in Figure 2. Searches of 100-IU-2 and 100-IU-6 vicinity well data for lead contamination showed no occurrences for lead above detection limits in any well in or near the 100-IU-2 or 100-IU-6 Operable Units.

Characterization of groundwater quality beneath the 100-IU-2 Operable Unit has also been evaluated through the monitoring of wells near the operable unit, including wells 699-77-36, 699-81-38, 699-83-36, and 199-F1-2 (Figure 2), and through characterization work completed for the 100-FR-3 Groundwater Operable Unit (DOE-RL 1996), which underlies the 100-IU-2 Source Operable Unit. DOE-RL (1996) reported trichloroethylene groundwater contamination up to 29 ppb under the 100-IU-2 Operable Unit (see Table 1). Groundwater contamination attributed to waste sites within the 100-IU-2 and 100-IU-5 Operable Units will be monitored through the 100-FR-3 Groundwater Operable Unit (100-IU-5 is contained within the 100-IU-2 Operable Unit).

Groundwater quality beneath the 100-IU-6 Operable Unit is monitored partly through 100-FR-3 surveillance (the north end), but mostly through the site-wide surveillance program at various wells including 699-62-31, 699-63-25A, 699-64-27, 699-65-22, 699-66-23, 699-69-38, and 699-71-30 (Figure 2). No sources for groundwater contamination from within the 100-IU-6 Operable Unit have been identified to date. Groundwater contamination underlying the 100-IU-6 Operable Unit has its origin from liquid waste disposal that formerly occurred in the 200 East and 100-F Areas. Maps showing the distribution of radionuclides and hazardous chemicals,

presented in the sitewide groundwater surveillance report for 1994, provide evidence of this (Dresel et al. 1995, Figures S.1 and S.2). Additional descriptions of hydrogeologic conditions near the operable unit can be found in Luttrell et al. (1992). If sites within the 100-IU-6 Operable Unit are subsequently identified that do have potential to contaminate groundwater, additional characterization activities and groundwater monitoring may be warranted.

### 3.0 WASTE SITES

After government operations began at the White Bluffs and Hanford townsites in 1943, the use of these operable units was virtually all residential and light industrial, such as warehouses, ice plants, graphite milling, and pipe fabrication. The exception to this is the P-11 site where criticality experiments were conducted in a converted farmhouse. The site was remediated and aboveground facilities were removed after a fire in 1951. Most activities at these operable units were concluded before the 1950's. Thus, the types of sites and expected hazards are substantially different from those associated with operable units at nuclear reactors, where significant amounts of liquid and solid radioactive wastes were disposed to the soil.

The 100-IU-2 and 100-IU-6 sites are identified in the Environmental Sites Database (ESD) and the technical baseline reports for these areas (Carpenter 1994, 1995; DeFord 1995). Many of these sites have been evaluated as "accepted" sites for inclusion as waste sites. Tables 1 and 2 list these sites by name, along with their site code numbers, section in each technical baseline report where additional information can be found, the scoping category assigned (defined below in Section 4.0), and a brief comment. Other sites were evaluated for inclusion as waste sites but were rejected because of the lack of potential for hazardous release (Scoping Category 1 sites). These sites remain in ESD as "rejected" sites and are listed in Appendix A for completeness.

### 4.0 SITE SCOPING

#### 4.1 SYSTEM FOR CATEGORIZING SITES

To establish the scope of work necessary to reach cleanup decisions, the sites in the 100-IU-2 and 100-IU-6 Operable Units have been grouped into scoping categories. These categories are based on the likelihood of the existence of a CERCLA release and the extent of evaluation required for a site-specific cleanup decision. This categorization activity is consistent with the scoping activity provisions of Section 7.2.2 of the Tri-Party Agreement and with the *Hanford Past-Practice Strategy* (DOE-RL 1991). The *Hanford Past-Practice Strategy* encourages a "bias for action" that helps to initiate and complete cleanup actions earlier than usual for Superfund

projects and makes maximum use of existing data, rather than acquisition of new data, in arriving at cleanup decisions.

The approach for categorizing the potential for hazardous substance releases and risk for each site was developed through field visits and discussions involving the DOE, Richland Operations Office and the U.S. Environmental Protection Agency, so that the numerous sites in the two operable units could be categorized logically and consistently.

Definitions for the scoping categories are as follows.

- **Scoping Category 1:** Sites whose existence has been documented in the technical baseline reports (Carpenter 1994, 1995; DeFord 1995), but for which there is no evidence of a CERCLA release, and for which there is no evidence of any substantial use or storage of a hazardous substance that could have been released.

Sites in this category include nonhazardous human-generated sites such as holes, depressions, building foundations, and individual household debris dumps. These sites are not subject to CERCLA or *Resource Conservation and Recovery Act of 1976* (RCRA) action, and further evaluation is not required. The existence of potential physical hazards will be addressed through non-Tri-Party Agreement programs as appropriate.

- **Scoping Category 2:** Sites for which evidence of a prior CERCLA release or potential release exists, but which have either been cleaned up or characterization data show to be below cleanup action levels. No further action under CERCLA is required. These sites will be designated in the ESD as already remediated and, based on a risk evaluation, will be proposed for no further action in the proposed plan and ROD.
- **Scoping Category 3:** Sites where a CERCLA release or potential release poses a potential threat to human health or the environment under current land use. These sites would be interim remedial measure candidates.
- **Scoping Category 4:** Sites where evidence of a CERCLA release or potential release exists, but where there is no apparent threat to human health or the environment under current land use, although such a threat might exist under a different future land use, where public access is not restricted.
- **Scoping Category 5:** Sites for which there is no specific evidence of a CERCLA release, but at which there may have been a CERCLA release resulting from use, storage, or potential disposal of a hazardous substance. These are sites at which the likelihood of a CERCLA release appears to be low, and no action under CERCLA is likely to be required. However, based on the current evaluation, these sites are likely to be proposed for no action in the proposed plan and ROD. Some of these sites may require confirmatory sampling to support a no-action ROD.

The sites have been evaluated and assigned to a scoping category as shown in Table 1 for sites in 100-IU-2 and Table 2 for sites in 100-IU-6. Some sites have been determined to show no potential for past release of hazardous substances (e.g., sites listed because of surface trash or physical hazards). These sites, considered Scoping Category 1, are not shown in the tables. Because of the nature of the past activities at these operable units, no interim remedial measure sites (Scoping Category 3) have been identified. The logic used to categorize the sites into these scoping categories is summarized in Table 3.

## 5.0 SCOPE AND SCHEDULE

The LFI report and FFS are scheduled for completion in fiscal year 1999 in support of Tri-Party Agreement Milestone M-15-00A, which calls for completion of all pre-ROD site investigations by December 31, 1999. The proposed plan and ROD will follow. The reason for delaying the LFI/FFS report until fiscal year 1999 is to support the goal of addressing cleanup of higher priority waste sites in the reactor areas first. Until then, these sites will be examined for possible status change in ESD in fiscal year 1998. As part of this examination, process knowledge, historical data, limited field screening, and site evaluations may be used to further limit uncertainty as to site contaminants. The results of this examination will be reported in an LFI scoping report and sampling and analysis plan. Only those sites with significant uncertainty as to risk would be evaluated further in the LFI/FFS.

Schedule for 100-IU-2 and 100-IU-6	
Fiscal Year 1998	<ul style="list-style-type: none"> <li>• Determine the cleanup standards that will apply at 100-IU-2 and 100-IU-6.</li> <li>• Scoping Category 2, 4, and 5 Sites<sup>a</sup>: Gather additional data to determine if these sites are above cleanup standards. Sources of data will include historical documents and field analysis as appropriate.</li> <li>• For those sites determined to be below cleanup standards, recommend site be excluded from CERCLA remedial action.<sup>b</sup></li> <li>• For those sites that have been determined to be above cleanup standards, recommend inclusion in a LFI/QRA/FFS report.</li> </ul> <p><sup>a</sup>No remedial actions applicable for Scoping Category 1 sites, and no Scoping Category 3 sites identified  <sup>b</sup>As appropriate, such sites may require attention under a non-CERCLA program.</p>
Fiscal Year 1999	<ul style="list-style-type: none"> <li>• Complete a LFI/QRA/FFS report for all Scoping Category 2, 4, and 5 sites retained after analysis during FY 1998.</li> <li>• Complete a proposed plan, with public review cycle.</li> </ul>
After Fiscal Year 1999	<ul style="list-style-type: none"> <li>• Complete a Record of Decision for the 100-IU-2 and 100-IU-6 Operable Units.</li> </ul>

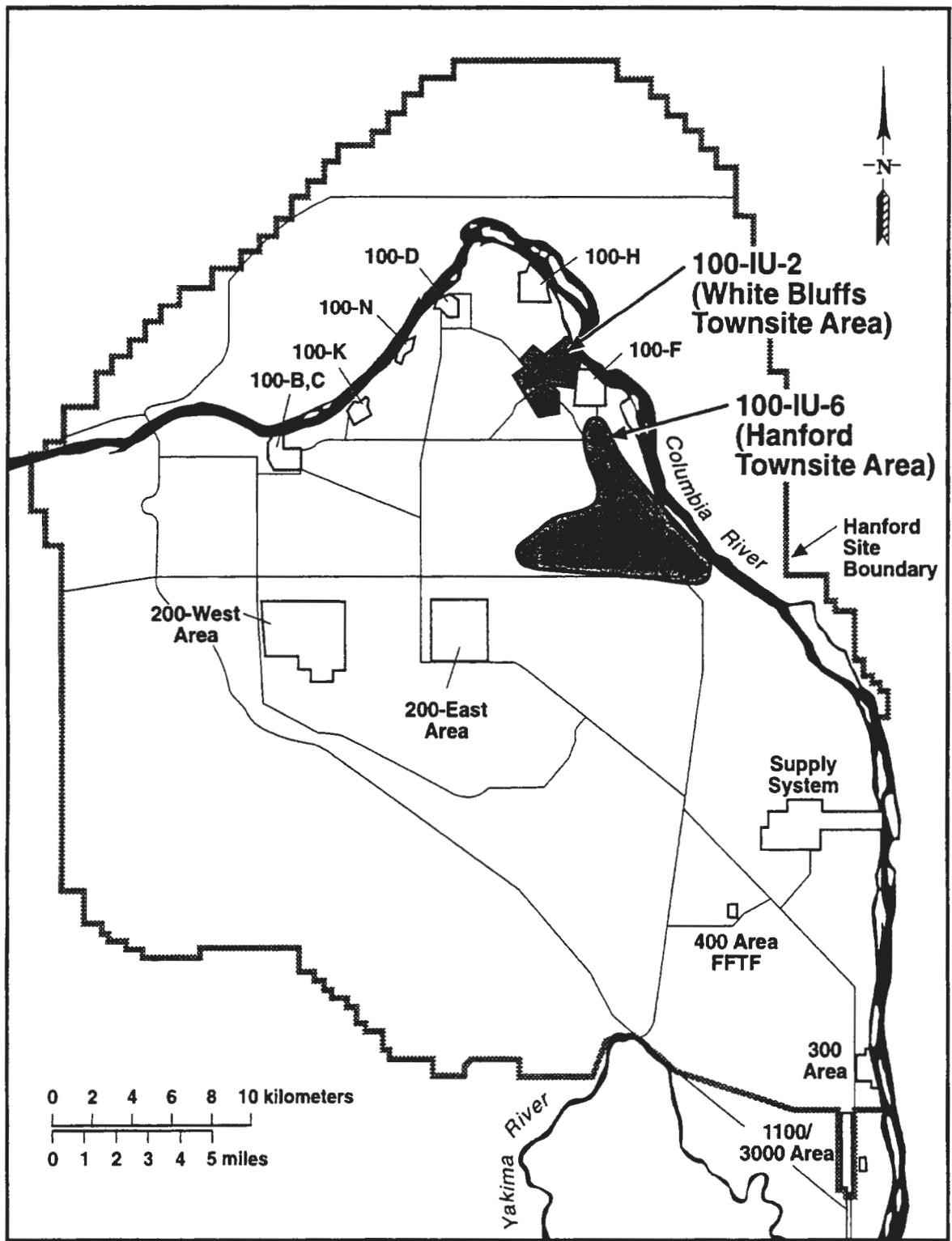
Until a remedy is selected, DOE shall continue to exercise control of and limit access to the 100-IU-2 and 100-IU-6 areas. Any activities that would alter access restrictions or interfere with potential remedial activities, including leasing or otherwise relinquishing control of the 100-IU-2 and 100-IU-6 areas, will occur only with EPA and Washington State Department of Ecology concurrence. Any field activities will be completed with protection of natural and cultural resources. Ecological concerns during cleanup activities will depend in large part on what habitat is present at a site and will be addressed at the time of cleanup actions. Because vegetation succession is under way at many of these sites, mitigation actions to protect or replace shrub-steppe during cleanup activities may become more significant as time elapses and the sites eventually return to mature sagebrush. Potential cultural resource concerns during any environmental remediation activities include effects to historic archeological artifacts and features, disturbing archeological site integrity, following state requirements for properly recording archeological sites, determining site eligibility for listing on the National Register of Historic Places, and determining mitigation requirements. Such issues will be addressed through involvement with the cultural resources staff and tribal representatives.

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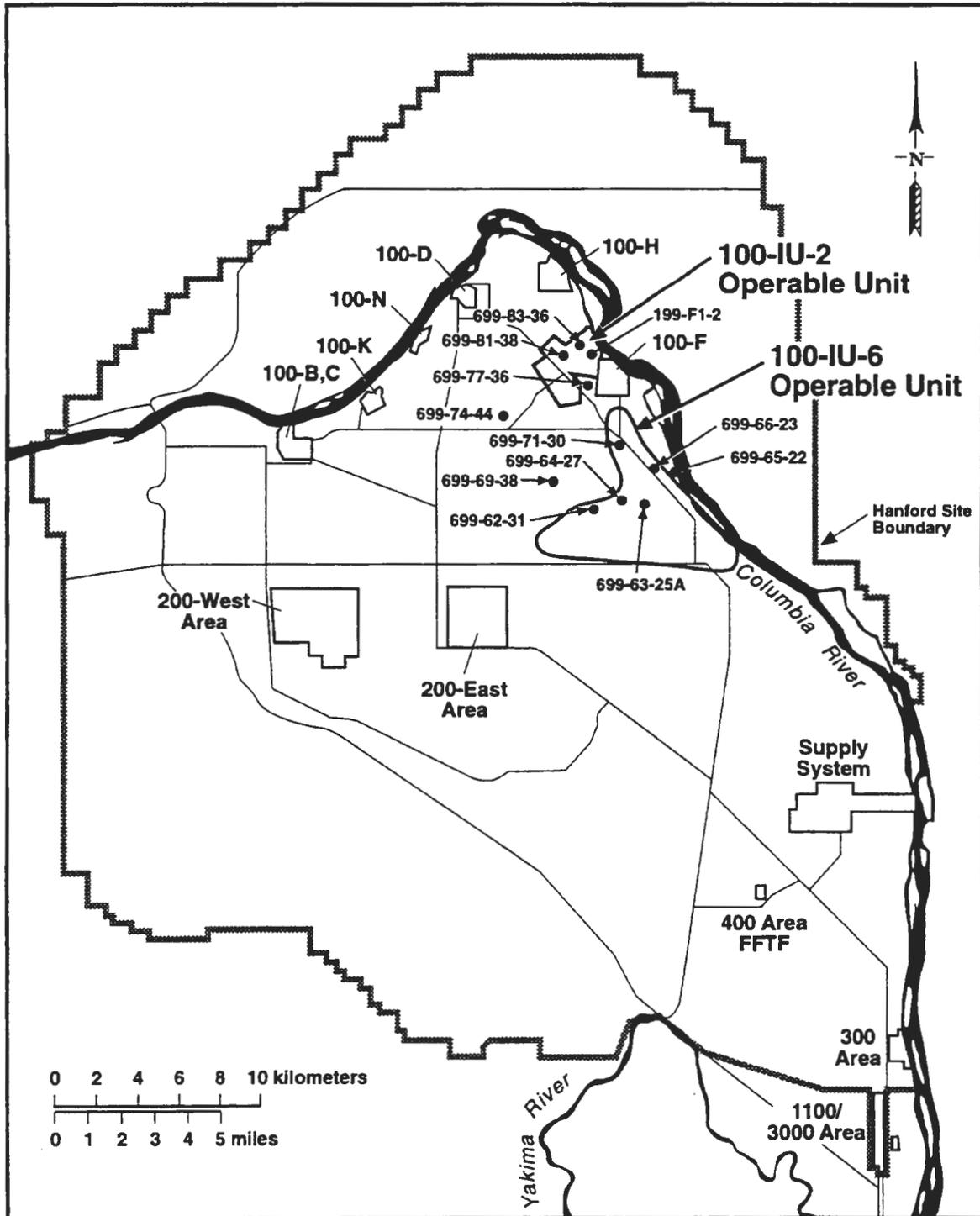
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Figure 1. Approximate Proposed Boundaries of the 100-IU-2 and 100-IU-6 Operable Units.



E9512009.1

Figure 2. Approximate Locations and Number of Groundwater Monitoring Wells Searched for Hydrocarbon Contamination.



E9601088.1

Table 1. Summary of Scoping Category 2, 4, and 5 Sites in the 100-IU-2 Operable Unit. (sheet 1 of 3)

Site Code <sup>a</sup>	Site Name	Technical Baseline Report Section <sup>b</sup>	Scoping Category	Comments
600-129	White Bluffs Pre-MED Community Dump Site 1	4.1	4	This several-acre area is scattered with debris from the White Bluffs town and Manhattan Engineering District activities (e.g., barrels, oil cans, electrical parts) and barrels, one marked "Carbon Tet." In a July 13, 1995, meeting, the 100-FR-3 team (ERC/DOE/EPA/Ecology) concluded that low, widespread levels of trichloroethylene posed no risk and an interim remedial measure was not justified. Source of trichloroethylene not positively identified; report appears to indicate barrels (now empty) at trash dump were one possible cause (DOE-RL 1996).
600-191	White Bluffs Pre-MED Community Dump Site 2	4.1	4	This several-acre area is scattered with debris from the White Bluffs town and Manhattan Engineering District activities (e.g., barrels, oil cans, electrical parts).
600-182	Suspected Asbestos Pipe Lagging and Excess Piping	4.2.2	4	Asbestos pipe insulation remains in area.
600-188	Waste Disposal Trench 2 (Note: Two trenches were included in 600-125; this trench will be separated)	4.2.5	4	Across the operable unit are many burn pits and sites where oil cans were drained or spilled, or where waste solvents and paint were drained. Because of the age of these sites (about 50 years), there is little potential for volatile or semivolatile petroleum products to remain. Petroleum and petroleum refinery products may be excluded from CERCLA under the Petroleum Exclusion.
600-127	Loading Docks and Fuel Storage Area	4.2.10	4	
600-177	Pipe Bender and Equipment Dumping Area	4.2.12	4	
600-128	Oil and Oil Filter Dump Site	4.2.13	4	
Pending	Oil Dump	4.3	4	
600-183	Burn Pile and Debris	4.4	4	
600-124	Burn Site and Paint Disposal Area	4.9	4	
600-180	Suspect Automotive Repair Shop	4.10	4	
600-120	Spare Parts Burn Pit	4.12	4	
600-139	Automotive Repair Shop and Associated Waste Sites	5.3	4	
600-176	Paint Disposal Area	5.4	4	
Pending	French Drains	5.7	4	
600-5	Waste Oil Dump (Asphalt Heliport)	6.2	4	
600-135	Spare Parts Machine Shop Landfill and Pit	6.4	4	
628-1	White Bluffs Burn Pit	6.6	4	
Pending	Paint and Solid Waste Disposal Site	6.7	4	

Table 1. Summary of Scoping Category 2, 4, and 5 Sites in the 100-IU-2 Operable Unit. (sheet 2 of 3)

Site Code <sup>a</sup>	Site Name	Technical Baseline Report Section <sup>b</sup>	Scoping Category	Comments
600-132	Construction Contractor Shop Landfill	6.8	4	Across the operable unit are many burn pits and sites where oil cans were drained or spilled, or where waste solvents and paint were drained. Because of the age of these sites (about 50 years), there is little potential for volatile or semivolatile petroleum products to remain. Petroleum and petroleum refinery products may be excluded from CERCLA under the Petroleum Exclusion.
600-189	Warehouse Facility and French Drains	6.9	4	
600-173	Domestic Debris Dump and Building Foundation	4.2.1	4	
600-190	Warehouse Facility and Tar/Paint	6.9	4	
600-131	Water Station and Special Fabrication Shops and Warehouses	6.10	4	
600-99	J.A. Jones #2 Burial Ground	6.11	4	
600-121	Coal Ash Piles	4.7	4	
Pending	Ash Covered Concrete Pad	5.2	4	
600-194	Main Pipe Fabrication Shop	4.15	5	No spills or hazardous materials are known to be at these sites. More information required on potential for wastes to exist before site can be accepted as waste sites in ESD.
600-195	White Bluffs Townsite Electrical Substation	4.17	5	
600-193	White Bluffs Gas Station	4.18	5	
600-138	Fumigation Building	5.6	5	
Pending	Septic Tank- Ice House	4.13	5	Nonresidential septic system.
600-184	White Bluffs Townsite Septic System	6.1	5	
600-179	Priest Rapids Ice House	4.14	5	Site contains buried demolition debris, but no evidence exists of a release of hazardous materials.
600-172	French Drain or Dry Well	5.1	5	French drains near steam-generating stations may have received steam condensate.
600-174	French Drain	5.9	5	
600-175	Original Priest Rapids Ice House Drain Field	4.11	5	Site received waste water from ice house, but also may have received unknown wastes from floor drains.
600-125	Waste Disposal Trench I	4.2.3	5	Former townsite and MED-era landfills and trash dumps. Historical information on pre-MED activities and site surveys of debris (e.g., nonhazardous plumbing fixtures, wooden and metallic debris) indicate little likelihood of a CERCLA release.
Pending	Excess Railroad Tie Materials	4.2.4	5	
600-196	Farm Dump Site and Partially Backfilled Pit	6.13	5	
600-100	White Bluffs City Landfill	4.8	5	
600-98	East White Bluffs City Landfills	6.14	5	
600-119	White Bluffs City Dump	3.3 <sup>c</sup>	5	

Table 1. Summary of Scoping Category 2, 4, and 5 Sites in the 100-IU-2 Operable Unit. (sheet 3 of 3)

Site Code <sup>a</sup>	Site Name	Technical Baseline Report Section <sup>b</sup>	Scoping Category	Comments
600-52	White Bluffs Surface Basin	4.5	5	Site received waste water from the ice house facilities and overflow from the adjacent Pickling Acid Crib (100-IU-5), which had a no-action interim record of decision.
<p><sup>a</sup>Some Environmental Site Database code identifiers are in the process of being assigned.  <sup>b</sup>Carpenter (1995) (unless otherwise noted).  <sup>c</sup>Carpenter (1994).</p> <p>DOE = U.S. Department of Energy  CERCLA = <i>Comprehensive Environmental Response, Compensation, and Liability Act</i>  Ecology = Washington State Department of Ecology  ERC = Environmental Restoration Contractor  EPA = U.S. Environmental Protection Agency  MED = Manhattan Engineering District</p>				

Table 2. Summary of Scoping Category 2, 4, and 5 Sites in the 100-IU-6 Operable Unit. (sheet 1 of 3)

Site Code <sup>a</sup>	Site Name	Technical Baseline Report Section <sup>b</sup>	Scoping Category	Comments
UPR-600-18	Tank Truck Gasoline Spill	3.12	2	In 1987 a fuel tanker truck overturned 1/2 mile south of 100-F Reactor site, spilling an estimated 1,344 L (355 gal) of gasoline, diesel, and ethylene glycol. Site cleanup was planned in 1987, involving excavation of 20 yd <sup>3</sup> of soil. However, no record discovered if accomplished. Site unable to be located; no evidence of accident or spill remains in area.
600-107	213-J and K Cribs	3.2	2 with appropriate documentation; if not, 5	1944-? Drained loading docks; no evidence of drains to the cribs from inside the vaults. Were located on each side of the 213 Storage Vault entrance. Cribs have been surveyed and removed.
600-3	Hanford Townsite Excess Material Storage Yard/Paint Pit	3.3	4	Large area (about 34 acres) of overlapping dump and burial sites; received various classes of refuse. Site contains metal scrap, paint cans, electrical parts, transite, and other debris. Some areas with stained soil and no vegetation. Possibly subsurface debris. Radiation survey in 1992 detected no contamination.
600-26	Hanford Townsite Burn Pile	3.9	4	Historical records indicate that this was a dumping area for Hanford Townsite; reportedly contains construction refuse burn pile and possibly asbestos and barrels. 8-ft-deep pit near tank cleaning site (see above), west of Hanford Townsite. Reported to be nonhazardous and nonradioactive (DeFord 1995).
Pending	Four Burn and Burial Pits	4.13	4	Landfills (Trash Dumps) and burn pits mostly received some pre-1944 household trash, but as burn pits may have received oils, solvents, or paints; may also contain industrial trash
Pending	Burn and Burial Trench	4.2	4	
600-20	Tank Cleaning Site	3.8	4	Two 3,000-gal tanks held asphalt. Site is adjacent to railroad tracks 300 m west of Route 2. Tanks above ground on concrete cradles. Site is nonhazardous and nonradioactive (DeFord 1995). Nearby pit (3 x 3 x 1 m deep) has waste asphalt. Petroleum and petroleum refinery products may be excluded from CERCLA under the Petroleum Exclusion.
Pending	Hanford Construction Camp Power House Ash Piles	4.6	4	Ash pile about 250 x 60 x 10 ft deep, characteristic of power house ash and probably from coal-fired power houses used at Hanford Construction Camp from 1943 to 1945. Smaller ash pile northwest of large pile.
600-27	Well DC-6 (Inactive Monitoring Wells)	3.5	4	Inactive monitoring wells (one in which volatile organics were detected). Small amounts of transite and debris in general area.
600-111	P-11 Critical Mass Laboratory	3.10, 4.14	2 with appropriate documentation; if not, 4	Site of Hanford's first Critical Mass Laboratory and liquid waste crib. Criticality event and fire damaged building and spread plutonium (see below). Building was demolished and removed, as was associated crib. Crib had up to 30,000 disintegrations per minute (plutonium) in soil on bottom. No contamination found below 3 in. Laboratory location marked with concrete benchmark. Site released from radiation zone status. Two septic tanks and a drain field were used at the Critical Mass Laboratory, and probably have not been removed. One tank is of pre-Manhattan-era origin. The replacement tank is 500 gal, with a 60-ft-long drain field.

Table 2. Summary of Scoping Category 2, 4, and 5 Sites in the 100-IU-6 Operable Unit. (sheet 2 of 3)

Site Code <sup>a</sup>	Site Name	Technical Baseline Report Section <sup>b</sup>	Scoping Category	Comments
UPR-600-16	P-11 Fire and Contamination Spread	3.11	2 with appropriate documentation; if not, 4	Unplanned release 600-16. A 1951 fire at Critical Mass Laboratory spread contamination through building and to 180- x 100-ft area around building. Area stabilized with 2 ft of clean soil, which was later removed along with contaminated soil, in 1974. Removed from radiation zone status. Unplanned release UPR-600-16 received a CERCLA Hazardous Ranking system score of 16.25
600-149	Small Arms Range	4.12	4	A small-arms target range, about 2 miles from the Construction Camp, operated from mid-1940's through 1950's. Used for handguns, rifles, shotguns, machine guns, hand grenades, etc. Hillside behind target areas laden with expended rounds, mostly lead, with steel, brass, and other metals. Potential risk from unexploded ordnance that might remain.
600-50	101 Building	(not in documents)	4	Burning pit and coal ash piles east of high school building.
600-192	Hanford Construction Camp Fumigation Chamber	4.5	5	Originally a small wooden building protected by barbed-wire security fence. DeFord (1995) hypothesizes that fumigation, which may have involved methyl bromide and sulfuryl fluoride, was used on bedding materials for construction camp. Building and foundation have been removed; site is now grass field. More information required on potential for wastes to exist before the site can be accepted as a waste site.
600-178	213-J and 213-K Guard House Toilet Pit	4.1	5	Nonresidential septic systems but no evidence of hazardous materials based on use.
600-186	Septic Tanks and Sewage Treatment Plants	4.4	5	
600-185	Honey Dump Station	4.10	5	
600-110	Hanford Townsite Landfill	3.6	5	Trash dumps from the Hanford Townsite; contain domestic and light industrial wastes (concrete scraps, rebar). Historical information and site surveys of debris (e.g., nonhazardous glass, metal fragments, fabric, rubber, concrete) indicate a low likelihood of a release or presence of CERCLA hazardous materials.
Pending	Hanford Townsite Domestic Landfill 2	4.8	5	
600-109	Hanford Trailer Camp Landfill	3.7	5	
Pending	101 Building Graphite Dump Site	4.3	5	
600-108	Plutonium Storage Vaults	3.1	5	Concrete vaults, each 12 ft wide, 40 ft deep under Gable Mountain, 8-ft ceiling. Steel door, concrete loading dock, four ventilation ducts above each vault. Used 1944 to present; initially built to store plutonium, but used only briefly (if at all) for that purpose. Used for storage of explosives and radioactive-sodium-contaminated hardware. Now used for seismic testing and soil sample storage.

Table 2. Summary of Scoping Category 2, 4, and 5 Sites in the 100-IU-6 Operable Unit. (sheet 3 of 3)

Site Code <sup>a</sup>	Site Name	Technical Baseline Report Section <sup>b</sup>	Scoping Category	Comments
600-24	West P-11 (Anti-Aircraft Artillery Compound)	3.4	5	Inactive dumping site; foundations, well sites, and surface debris visible. Some decontamination and decommissioning has been done, and unexploded ammunition detonated.
Pending	Hanford Construction Camp Boiler House Ponds	4.7	5	Eighteen power plants generated steam for construction camp; some had liquid waste disposal ponds for waste water and most likely water softener brine (salt). Ponds are about 60 x 20 x 5 ft deep, filled in with tumbleweeds.
UPR-600-19	Lime Sulfur Barrel	3.13	5	Wooden barrel of insecticide, abandoned in 1943, rotted and spilled about 100 lb of lime sulfur on ground. Lime sulfur is a topical antiseptic, insecticide, and used to treat mange and scabies. Location is about 1/4 mile west of Route 2 north, between Hanford Townsite and 100-F Area, in front of house foundation.
<p><sup>a</sup>Some Environmental Site Database code identifiers are in the process of being identified.  <sup>b</sup>DeFord (1995).</p> <p>CERCLA = <i>Comprehensive Environmental Response, Compensation, and Liability Act</i></p>				

Table 3. Decision Matrix Summarizing Site Assignments to Scoping Categories.

Scoping Category	Evidence of Release of CERCLA Hazardous Substance		Expected to Need Remediation (Above Cleanup Goals)	
	Potential	Actual	Current Land Use	Any Future Land Use
1	No	No	No	No
2	Yes	Yes	No	No
3	Yes	Yes	Yes	Yes
4	Yes	Yes	No	Unknown
5	Yes	Not Expected	No	Unknown

CERCLA = *Comprehensive Environmental Response, Compensation, and Liability Act*

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**APPENDIX A**

**SITES LISTED IN THE TECHNICAL BASELINE REPORTS FOR  
100-IU-2 AND 100-IU-6 OPERABLE UNITS THAT WERE  
REJECTED AS WASTE SITES**

## APPENDIX A

SITES LISTED IN THE TECHNICAL BASELINE REPORTS FOR 100-IU-2 AND  
100-IU-6 OPERABLE UNITS THAT WERE REJECTED AS WASTE SITES

Site Code	Site Name	Section in Technical Baseline Report Providing Additional Description
100-IU-2 Operable Unit		
600-160	White Bluffs Irrigation Debris	4.2.6 <sup>a</sup>
600-161	White Bluffs Plumbing Debris	4.2.7 <sup>a</sup>
600-162	White Bluffs Pipe Debris/ Bucket of Lead	4.2.9 <sup>a</sup>
600-163	White Bluffs Pipe Testing Shop	4.16 <sup>a</sup>
600-157	White Bluffs Concrete Foundation Pads	5.8 <sup>a</sup>
600-159	White Bluffs Bank Well	6.3 <sup>a</sup>
600-130	American Pipe Company Facilities	6.5 <sup>a</sup>
600-122	White Bluffs Large Fenced Depression	4.2.8 <sup>a</sup>
600-164	White Bluffs Earth Berm and Trench	6.12 <sup>a</sup>
600-167	White Bluffs Cistern	4.2.11 <sup>a</sup>
600-126	Small Subsidence	3.11 <sup>c</sup>
600-166	White Bluffs Subsidence	5.5 <sup>a</sup>
600-165	White Bluffs Valve Box/Subsidence	5.10 <sup>a</sup>
600-158	White Bluffs Ground Storage Tank and Booster Station	6.1 <sup>a</sup>
600-136	Insulation Warehouses	4.10 <sup>b</sup>
600-123	Farm Site	3.8 <sup>b</sup>
600-170	White Bluffs Subsurface Concrete Structure	(Not in Technical Baseline Report)
600-171	White Bluffs Townsite	6.1 <sup>a,d</sup>
100-IU-6 Operable Unit		
600-169	Hanford Construction Camp Trenches	4.11 <sup>c</sup>
600-168	Buckholdt Ranch Toilet Pits, Merriford Ranch Toilet Pits	3.13 <sup>c</sup>
<sup>a</sup> Carpenter, R. W., 1995, <i>White Bluffs, 100-IU-2 Operable Unit Technical Baseline Report</i> , BHI-00448, Rev. 00, Bechtel Hanford, Inc., Richland, Washington. <sup>b</sup> Carpenter, R. W., 1994, <i>Historical Background Information of the White Bluffs Pickling Acid Crib Area</i> , BHI-00049, Rev. 01, Bechtel Hanford, Inc., Richland, Washington <sup>c</sup> DeFord, D. H., 1995, <i>100-IU-6 Operable Unit Technical Baseline Report</i> , BHI-00146, Rev. 00, Bechtel Hanford, Inc., Richland, Washington. <sup>d</sup> 600-171 now includes former rejected sites 600-133, 600-134, and 600-137.		

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