

8.3 Cultural Resources

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The U.S. Department of Energy (DOE), Richland Operations Office, established a cultural resources program in 1987 that is managed by the Hanford Cultural Resources Laboratory as part of Pacific Northwest National Laboratory (PNL-6942). Pacific Northwest National Laboratory, Bechtel Hanford, Inc., and CH2M HILL Hanford, Inc. provided support to DOE for the cultural resources program on the Hanford Site throughout 2000. The U.S. Fish and Wildlife Service and DOE Richland Operations Office have managed cultural resources on the Fitzner/Eberhardt Arid Land Ecology Reserve Unit and North Slope Unit

of the Hanford Site since October 1999. Thus, management of archaeological, historical, and traditional cultural resources at the Hanford Site was provided in compliance with the *American Indian Religious Freedom Act*; *Antiquities Act*; *Archaeological and Historic Preservation Act*; *Archaeological Resources Protection Act*; Executive Order 11593, *Protection and Enhancement of the Cultural Environment* (36 FR 8921); *Historic Sites, Buildings, and Antiquities Act*; *National Historic Preservation Act*, as amended; and *Native American Graves Protection and Repatriation Act*.

8.3.1 Monitoring Cultural Resources

The DOE Richland Operations Office provides the stewardship of all onsite archaeological resources, traditional-use areas, cultural landscapes, Native American cemeteries and places with human remains, paleontological deposits, and historic period properties as manager of the Hanford Site. The DOE Richland Operations Office, therefore, has the responsibility for determining whether management and protection policies for the Hanford Site are effective and when they are inadequate. The Hanford Cultural Resources Laboratory has maintained a monitoring program since 1987 to determine the impact of DOE Richland Operations Office policies and to safeguard cultural resources from adverse effects associated with natural processes or unauthorized excavation and collection that violate the *Archaeological Resources Protection Act* or the *Native American Graves Protection and Repatriation Act*.

Monitoring conducted during 2000 focused on four site or place categories: Locke Island's erosion

transects, archaeological sites with natural and visitor impacts, historic buildings, and places with Native American burials.

Monitoring erosion at Locke Island has been ongoing since 1994. Locke Island, located in the Hanford Reach of the Columbia River, contains some of the best preserved evidence of prehistoric village sites extant in the Columbia Basin and is included within the Locke Island National Register Archaeological District. The island has sustained loss due to erosion along its eastern shoreline that has affected archaeological materials. Recent studies have shown that this is due to movement of a large landslide on the eastern side of the Columbia River.

In the 1960s and 1970s, intensive irrigation development began to occur east of Locke Island, above the White Bluffs, which form the eastern boundary of the Columbia River channel in this area. As a result, the White Bluffs began to show geological failures as excess irrigation water seeped



out along the bluffs. One of the largest such failures, known as the “Locke Island Landslide,” is located just east of Locke Island. By the early 1980s, this landslide had moved westward into the river channel toward the island and was diverting the current at the island’s eastern perimeter. Erosion of the eastern bank of the island accelerated, threatening the cultural resources. By the early 1990s, the erosion had exposed cultural features and artifacts along the bank, leading to the beginning of intermittent monitoring of the cutbank. In 1994, DOE initiated more scheduled, systematic monitoring of island erosion to better understand the physical processes involved as well as mitigate ongoing loss of the archaeological record (PNNL-11970).

Erosion monitoring continued at the Locke Island’s erosion transects during 2000. The greatest loss recorded at any one monitoring transect was a total of 2.1 meters (6.9 feet), as measured perpendicularly from the Columbia River (Figure 8.3.1). This amount of erosion was less than the 19.6 meters (64.3 feet) of horizontal cut bank lost to the river at a single transect in 1997 during a period of high water flow (PNNL-11970). The overall reduction in erosion observed from 1997 to 2000 was likely attributable to several factors including a slow and steady snowmelt following the 1998-1999 winter season, less dramatic river fluctuations during periods of high water, and a wider channel on the east side of Locke Island (Figure 8.3.2).

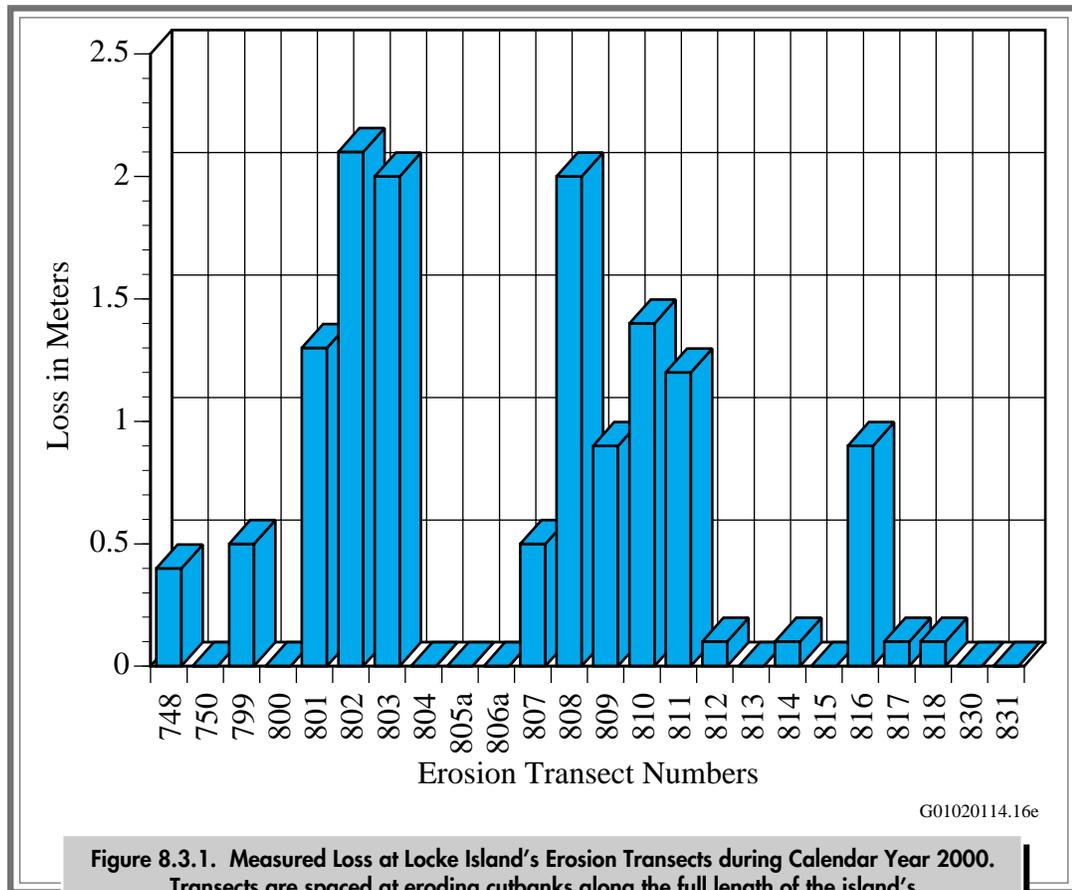
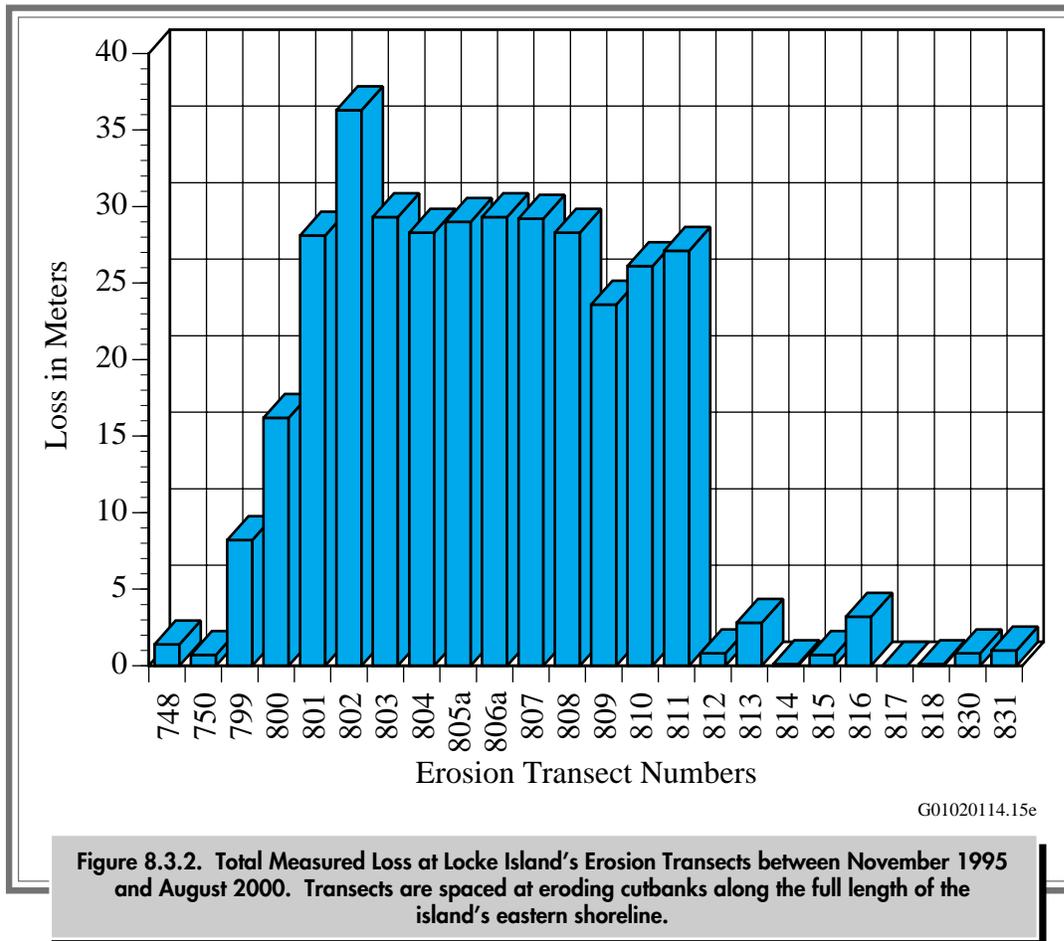


Figure 8.3.1. Measured Loss at Locke Island’s Erosion Transects during Calendar Year 2000. Transects are spaced at eroding cutbanks along the full length of the island’s eastern shoreline.



Monitoring associated with the second category, archaeological sites with natural and visitor impacts, was initiated in 1998 and continued in 2000. Ninety-six archaeological sites were monitored to gather empirical data about

- the natural characteristics of each site (i.e., landform, stratigraphy)
- the processes adversely impacting the site (such as riverbank erosion, wind erosion, or human visitation)
- the trends in change at the site (e.g., likelihood of increasing erosion or eventual stability).

Monitoring stations established at each archaeological site in this category facilitated the collection of standardized data unique to each site.

In 2000, effects observed and measured at these sites were due to recreational use, visitor impact, and/or natural weathering processes. The data collected at these archaeological sites will be used to monitor changes that may impact the site, predict outcomes, and proactively manage other similar archaeological sites across the Hanford Site.

The third category, monitoring of historic buildings, focused on Bruggemann's Warehouse, the only cobblestone structure remaining on the Hanford Site, and the White Bluffs Bank. Both buildings' structural integrity was photographed and locations of potential failure were identified. Future monitoring inspections will continue to gather data about any crack widening and structural leaning that may occur.





The final category, places with cemeteries or known human remains, are sacred to the Wanapum People, Yakama Nation, Confederated Tribes of the Umatilla Indian Reservation, and the Nez Perce Tribe. These places were monitored to document baseline conditions, determine whether wind or water erosion had caused exposures of human remains, and ensure that violations of the *Native American Graves Protection and Repatriation Act* and/or *Archaeological Resources Protection Act* were not present or ongoing at these important places. During 2000, all of the places were monitored. Overall, places with human remains were found to be stable in 2000. However, one *Archaeological Resources Protection Act* violation (collector digging) was noted at one cemetery or place with human remains.

A total of 96 archaeological sites, a building, and cemetery or burial locations were monitored during 2000. Of the incidents recorded at these monitored places, 31 of 119 were related to natural causes such as animal trailing and digging, wind-caused deflation or aggradation, and water erosion. Sixteen percent of the incidents were determined to be human-related causes such as vehicle traffic where sites were exposed in roads, or recreational activities such as fishing or duck hunting. Two percent of the incidents were found to be associated with recent collector digging within archaeological site boundaries and/or surface collection of artifacts. Such collector digging and artifact collection on Federal lands is in violation of the *Archaeological Resources Protection Act*.

8.3.2 Native American Involvement

Members of the Confederated Tribes of the Umatilla Indian Reservation, Yakama Nation, Nez Perce Tribe, and Wanapum People were actively involved in the cultural resources program during 2000. Each tribe was involved in deciding DOE's cultural resource program work scope, budget, and schedule. Monthly meetings on cultural resource issues provided a venue for the exchange of information between DOE, tribal staff members, and site contractors about projects and work on the Hanford Site. These meetings included discussions of sitewide projects dealing with a wide range of topics: the groundwater/vadose zone, sagebrush mitigation, survey of Hanford's large dune fields, elk relocation and trapping efforts, and Hanford's

native plants. Tribal staff and site contractors worked together during the completion of several field surveys to identify and record cultural features, sites, and landscapes in advance of new construction and archaeological test excavations and to monitor numerous projects requiring excavation during the year.

Two Wanapum People members continued assisting with cultural resource surveys, site form preparation, records management, and equipment use in 2000. In addition, interviews were conducted with Wanapum elders concerning traditional cultural properties on the Hanford Site.

8.3.3 Public Involvement

Public involvement is an important component of a cultural resources management program. To accomplish this, DOE developed mechanisms that allow the public access to cultural resources information and the ability to comment and make

recommendations concerning the management of cultural resources on the Hanford Site. These mechanisms were woven into a draft involvement plan that includes input provided by the public and Hanford Site staff over the past several years.

Workshops were organized and conducted to seek public comment on a variety of cultural resource initiatives and projects undertaken by DOE. Comments were sought on an update on the draft Hanford Cultural Resources Management Plan and a review of the draft Public Involvement Plan. The purpose of the Public Involvement Plan was to determine the process that the Hanford Cultural Resources Program will follow to interact with interested groups. Major interest groups involved in assisting DOE with cultural resource initiatives included the B Reactor Museum Association, White Bluffs - Hanford Pioneer Association, the Washington State Railroad Historical Society, and local historical societies and museums.

At public issues exchange workshops, there were discussions pertaining to a White Bluffs Memorial on the Hanford Site. The memorial is planned to commemorate the veterans of World War II from the Priest Rapids Valley and the former Euro-American and Native American residents who were resettled following government acquisition of the Hanford Site in 1943. There was also a presentation on studies conducted for the Bruggemann Warehouse and the White Bluffs Bank.

Additional discussions at the workshop focused on the ongoing curation of Manhattan Project and Cold War era artifacts into the Hanford collection, and an update on the draft *History of the Plutonium Production Facilities at the Hanford Site Historic*

District, 1943-1990, which was completed and distributed for public review. Comments were sought on mitigation plans for the Hanford Generating Plant (Building 185-N) Project.

These workshop discussions indicated strong support for the use of B Reactor as a publicly accessible museum. A millennium grant proposal to fund renovation of B Reactor was discussed as were the preservation of B Reactor artifacts and a proposal for a boat dock on the Columbia River at 100-B to serve the B Reactor museum.

Discussions also centered on the ongoing effort to document the oral histories of early residents of the Hanford Site. In 2000, an Oral History Pilot Project was completed. The purpose of the pilot project was to identify pre-1943 Euro-American settlement themes for oral history interviews of former residents of areas now part of the Hanford Site. An initial outcome of the pilot project was the oral history interview of Judge Lloyd Wiehl, former resident of East White Bluffs and the Wiehl Ranch.

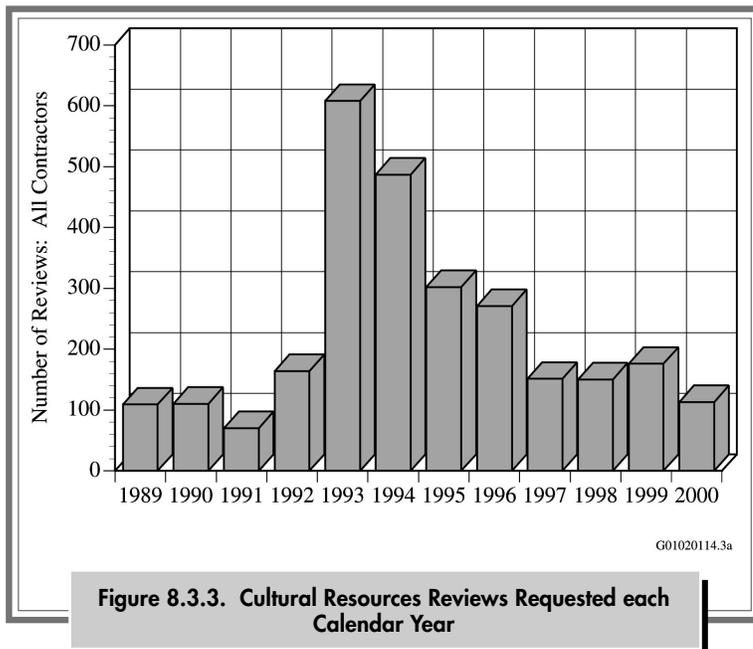
Updates were given in July on the effects of the 2000 Hanford Site wildfire on the site's cultural resources. Discussions focused on the damage to the anti-aircraft artillery sites and the former Nike installation on the Fitzner/Eberhardt Arid Lands Ecology Reserve Unit (see Section 5.0).

8.3.4 Section 106 Activities

Pursuant to Section 106 of the *National Historic Preservation Act*, cultural resources reviews must be conducted before each proposed ground disturbance or building alteration/demolition project can take place. Although cultural resource reviews are required to identify properties within the proposed project area that may be eligible for, or listed in, the National Register of Historic Places and evaluate the project's potential to effect any

such property, the recently modified cultural resource review process includes two review options. The first option allows DOE to determine that proposed projects have no potential to effect historic properties and the review process is considered complete. A second option is used if a project has potential to effect a historic property. The latter involves notification of the State Historic Preservation Officer, tribes, and interested parties.





During 2000, 113 cultural resource reviews were requested (Figure 8.3.3). A majority of the reviews involved project areas that had been previously surveyed or were located in previously disturbed ground. Of the projects reviewed, 13 were also monitored during the construction phase, 5 required archaeological surveys, and 37 involved proposed building modifications, demolitions, and programmatic agreement exemptions. The surveys covered a total of 185 hectares (456 acres) and resulted in the discovery of two isolated finds and three archaeological sites (Figure 8.3.4).



The largest survey conducted for Section 106 activities during 2000 was for the Export Waterline Replacement in the Atmospheric Dispersion Test Facility near the 200-West Area. Covering 117 hectares (290 acres), the survey recorded the dispersion grids, a Cold War era atmospheric monitoring facility.

8.3.5 Section 110 Activities

Section 110 of the *National Historic Preservation Act* requires that federal agencies undertake a program to identify, evaluate, and nominate historic properties and consider the use and reuse of historic buildings or structures. Agencies are further required to maintain and manage historic properties in a way that considers preservation of their value and ensures that preservation-related activities are

completed in consultation with other agencies, the tribes, and the general public.

During 2000, DOE was in the process of evaluating the feasibility of retaining various historic structures on the Hanford Site, including the Bruggemann Warehouse and White Bluffs Bank, two pre-Manhattan Project era buildings. An assessment of the structural condition of both

buildings was completed. The studies detailed existing conditions, interim actions, conservation needs, and immediate stabilization requirements. Both studies developed cost estimates for stabilization. A follow-up study was conducted of the White Bluffs Bank that outlined emergency stabilization options and costs, and the design and installation of a fabric roof structure to protect the White Bluffs Bank from further weather infiltration. A committee comprised of members of the interested public and staff of DOE, Bechtel Hanford, Inc., and Pacific Northwest National Laboratory has been established to explore stabilization and restoration alternatives. The Bruggemann Warehouse study made recommendations concerning the feasibility of converting the former fruit warehouse into a visitor's center.

In 2000, management activities conducted to fulfill Section 110 requirements included continual implementation of the programmatic agreement for the built environment (DOE/RL-96-77) and application of the Hanford Site curation strategy to identify, evaluate, and preserve Manhattan Project

and Cold War era artifacts (DOE/RL-97-71). Since Section 110 activities began on the Hanford Site, 531 buildings/structures have been documented on historic property inventory forms and are on file at the Hanford Cultural Resources Laboratory (Figure 8.3.5).

Four surveys comprised the 2000 Section 110 effort: the Gable Mountain Block Survey, the West Vernita Bridge Cultural Resources and Current Impacts Survey, the White Bluffs Road Archaeological Block Survey, and the Bruggemann Agricultural Complex/Riverlands Ranch survey.

The Gable Mountain Block Survey was conducted by the Hanford Cultural Resources Laboratory and the Confederated Tribes of the Umatilla Indian Reservation during April and May 2000. The survey covered 4.63 square kilometers or 463 hectares (1.67 square miles or 1,144 acres). Eighteen archaeological sites and four isolated finds were recorded; almost all of the sites were Native American rock cairns or rock alignments, with few prehistoric artifacts. Historic artifacts were limited to two isolated finds and one ranch site. Impacts noted

to sites included use of Gable Mountain as a recreational walking area and non-recent dismantling of Native American cairns.

The West Vernita Cultural Resources and Current Impacts Survey was conducted in March 2000 by Hanford Cultural Resources Laboratory personnel; members of the Wanapum People, Yakama and Nez Perce tribes; and Central Washington University students. The 269-hectare (665-acre) survey area yielded four previously recorded archaeological sites, four new prehistoric sites, three new historic sites, and two sites combining both prehistoric and historic artifacts. Recreational impacts identified

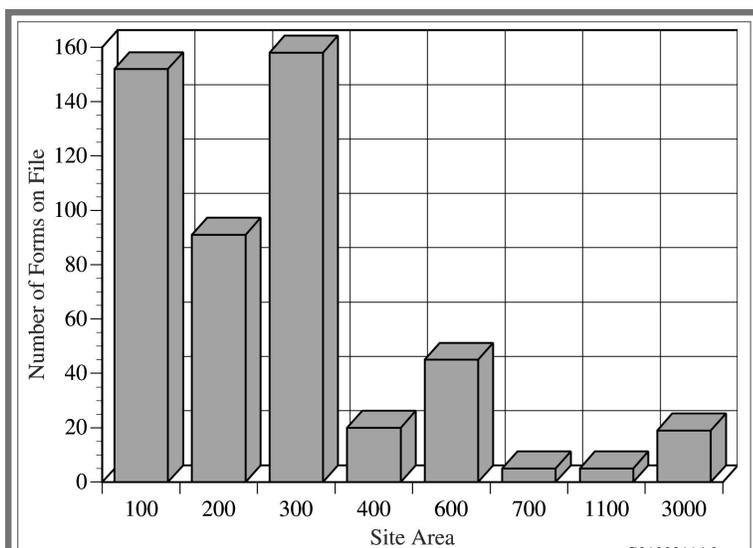
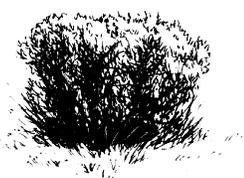


Figure 8.3.5. Former and Current Hanford Buildings and Structures Documented with a Washington State Historic Property Inventory Form. The 1100 and 3000 Areas are former site areas.





include vehicle traffic, refuse, riverbank erosion, and possible damage to recorded cultural resources including rock cairns.

The White Bluffs Road Archaeological Block Survey was conducted in May 2000 and covered 3.56 square kilometers or 356 hectares (1.37 square miles or 880.5 acres) in a 200-meter (656-foot) wide strip along the historic White Bluffs Road from State Highway 240 to a point north of Gable Mountain. During the survey, 6 artifact concentrations and 56 isolated finds were recorded as part of the White Bluffs Road. Almost all of the artifact concentrations were historic trash dumps and the isolated finds were generally cans. Prehistoric artifacts were limited to one cryptocrystalline silica flake and one projectile point. All other artifacts recorded were historic. Later impacts noted to the road included wind erosion exacerbated by loss of vegetation caused by the Hanford Site wildfire in late June 2000 (see Section 5.0).

The Bruggemann Agricultural Complex/Riverlands Ranch Survey was conducted in January and February 2000 to provide data necessary for a Determination of Eligibility for listing in the National Register of Historic Places. On the 227-hectare (562-acre) site, Hanford Cultural Resources Laboratory personnel located and recorded ten foundation features, one domestic dump, one equipment debris scatter near the main building complex, three large rock piles, and over 23,000 linear feet of irrigation line consisting of tile pipe, wire-wrapped wood pipe, and wire-wrapped wood pipe lined with tile and tin. The State Historic Preservation Officer concurred with DOE that the site was eligible for listing in the National Register of Historic Places.

One archaeological site was determined eligible for listing in the National Register during 2000. Test excavations were conducted at 45 BN 606, which documented that this site held the potential to contribute information important to understanding the prehistory of the Hanford Reach.

8.3.5.1 Historic District

During 2000, implementation of the building mitigation project continued to carry out the programmatic agreement (DOE/RL-96-77) and the sitewide treatment plan (DOE/RL-97-56). The treatment plan is stipulated in the programmatic agreement and directs a mitigation document be provided that chronicles the history of the Hanford Site during the Manhattan Project and Cold War periods. The draft, *History of the Plutonium Production Facilities at the Hanford Site Historic District, 1943-1990*, has been completed and distributed for public review, regulatory review by the State Historic Preservation Officer and the Federal Advisory Council on Historic Preservation, and peer review by Cold War scholars and technical experts.

The Hanford Site Manhattan Project and Cold War Era Historic District was established in 1996, and 185 buildings, structures, and complexes were recommended for mitigation. Subsequent public meetings and staff evaluations identified additional properties in the 600, 700, and former 1100 Areas, including the Hanford Site railroad and the Hanford Atmospheric Dispersion Test Facility, as contributing properties within the historic district and recommended for mitigation, bringing the total to 190 (Figure 8.3.6). All of the buildings, structures, and complexes recommended for mitigation have been documented according to mitigation standards identified in the sitewide treatment plan (DOE/RL-97-56). Six historic properties, including B Reactor, have been documented at the Historic American Engineering Record level, 46 have been documented with Expanded Historic Property Inventory Forms, while standard Historic Property Inventory Forms have been prepared for the remaining 138 buildings and structures.

Approximately 900 buildings and structures have been identified as either contributing properties with no individual documentation requirement (not selected for mitigation) or as non-contributing/exempt buildings and structures. These buildings

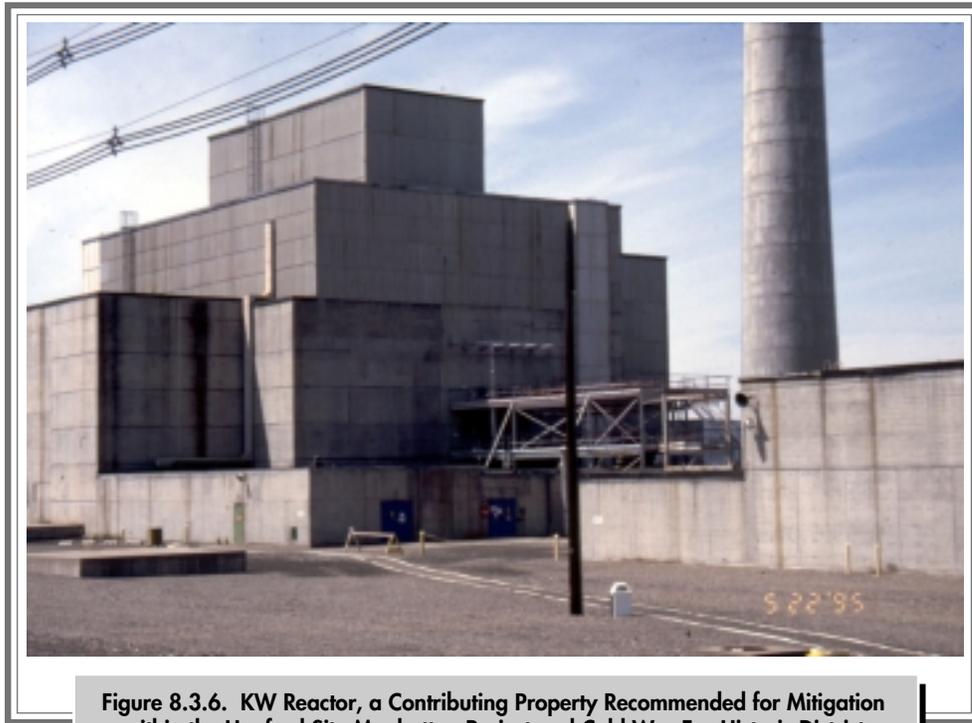


Figure 8.3.6. KW Reactor, a Contributing Property Recommended for Mitigation within the Hanford Site Manhattan Project and Cold War Era Historic District

will be documented in a database maintained by DOE. According to the programmatic agreement (DOE/RL-96-77), certain property types such as mobile trailers, modular buildings, storage tanks, towers, wells, and structures with minimal or no visible surface manifestations are exempt from the identification and evaluation requirement.

8.3.5.2 Hanford Curation Strategy

The application of the curation strategy for artifacts and records associated with the Hanford Site Manhattan Project and Cold War Era Historic District continued in 2000. The strategy is stipulated in the programmatic agreement (DOE/RL-96-77), which directs DOE to assess the contents of Hanford's historic buildings and structures prior to the commencement of deactivation, decontamination, or decommissioning activities. The purpose of these assessments is to identify and preserve any artifacts (e.g., control panels, signs, scale models,

machinery) that may have interpretive or educational value as exhibits within national, state, or local museums. The assessments are accomplished by conducting walkthroughs of the contributing properties within the historic district by teams of cultural resources specialists, historians, archivists/curators, and facility experts. Ten assessments/walkthroughs were conducted in 2000, including one facility in the 300 Area, one in the 600 Area, one in the 400 Area, and seven in the 100 Areas, including the 105-KE, 105-KW, 105-D, 105-H, and 105-B reactors. Industrial artifacts associated with the Manhattan Project and Cold War are curated with the Columbia River Exhibition of History, Science and Technology museum.

DOE's archaeological collections and associated records continued to be housed in Pacific Northwest National Laboratory's repositories during 2000. A draft management plan that deals specifically with archaeological collections, developed in 1998, was used during 2000 to guide access to, and uses of, the





collections and to provide guidelines for acquisition and deaccessioning processes. A pest management and monitoring effort for archaeological

collections conducted during 2000 resulted in no indications of pest infestations.

8.3.6 Education and Research

Educational activities associated with the cultural resources program in 2000 included lectures on a variety of topics including preservation and protection legislation to groups, ranging from public school classrooms to civic groups, colleges, and professional societies. Several symposia were organized throughout the Pacific Northwest region to present DOE's cultural resources management techniques to professional groups and societies. Washington's Archaeology Month provided educational opportunities in the form of lectures and social gatherings for residents of the Tri-Cities' area through the efforts of staff and professionals from Washington State University, DOE, and Pacific Northwest National Laboratory.

Several cultural resources newsletters were written by Pacific Northwest National Laboratory,

DOE, and Bechtel Hanford, Inc. staff that focused on the Section 106 process, B Reactor history, White Bluffs townsites, how to identify archeological sites, and a summary of the history of the Manhattan Project and Cold War era at Hanford.

Pacific Northwest National Laboratory participated in the Associated Western Universities, Inc., program by hosting several student interns involved in field and laboratory work with Hanford Cultural Resources Laboratory staff.

Research activities continued as part of compliance work. Research in the field of archaeology and history focused on archaeological site preservation and protection and documentation of the built environment of the Manhattan Project and Cold War periods.