



7.3 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 1999. The U.S. Department of Fish and Wildlife Service and DOE Richland Operations Office, have managed cultural resources on the Fitzner/Eberhardt Arid

Land Ecology Reserve and North Slope areas 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 Antiquities Preservation Act*, *Historic Sites Buildings and Antiquities Act*, *National Historic Preservation Act*, as amended, *Archeological and Historic Preservation Act*, *Archaeological Resources Protection Act*, *Native American Graves Protection and Repatriation Act*, and *American Indian Religious Freedom Act*.

7.3.1 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 its management and protection policies 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 1999 focused on four site or place categories: Locke Island's erosion

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

The first monitoring category, monitoring erosion impacts 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 opposite 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 bank in the center 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 1999. 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 7.3.1). 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 during 1997 (PNNL-11970). The overall reduction in erosion observed from 1997 to 1999 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 7.3.2).

Monitoring associated with the second category, archaeological sites with natural and visitor impacts, was initiated in 1998 and expanded in 1999. Four 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, eolian, 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 that were unique to each site. In 1999, 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 detect changes that may impact the site, predict outcomes, and proactively manage other similar archaeological sites across the Hanford Site.

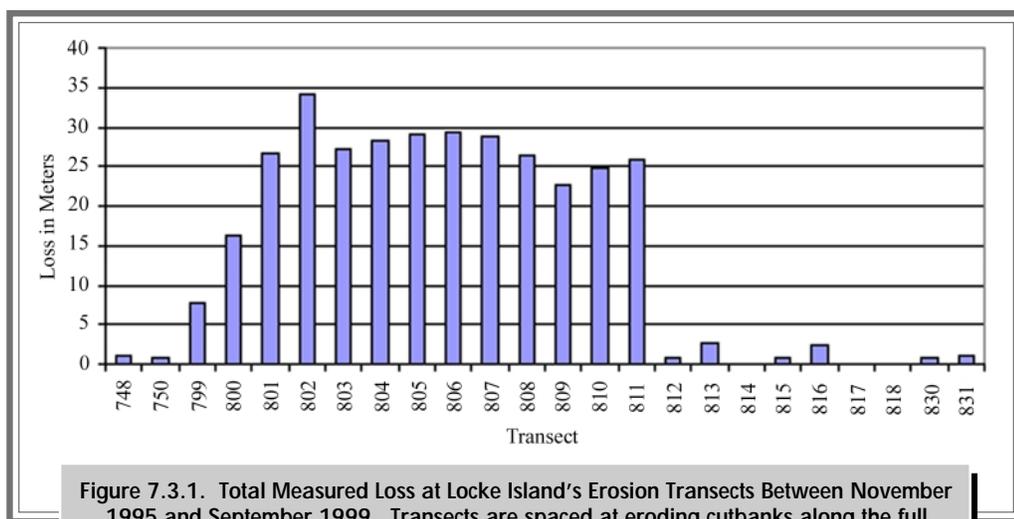
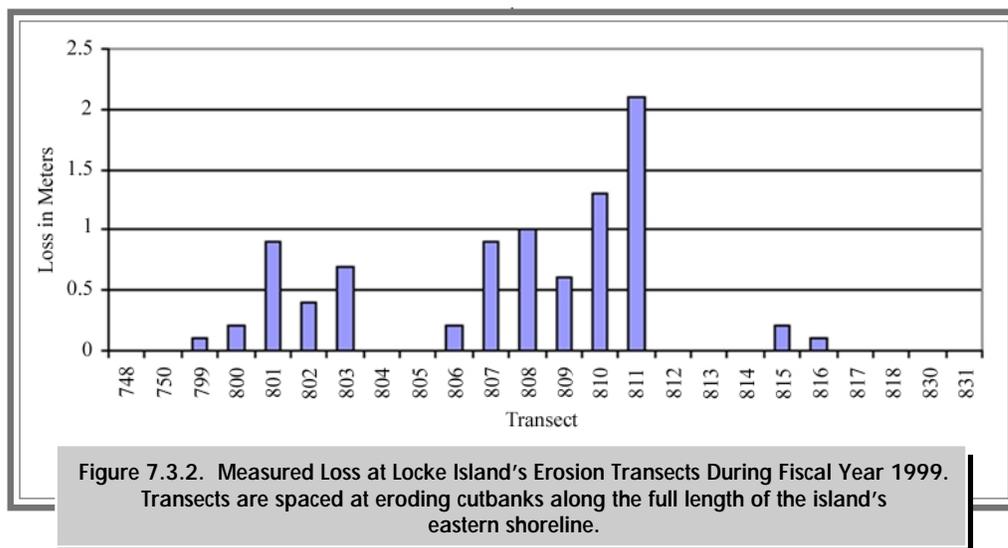


Figure 7.3.1. Total Measured Loss at Locke Island’s Erosion Transects Between November 1995 and September 1999. Transects are spaced at eroding cutbanks along the full length of the island’s eastern shoreline.



The third category, monitoring of buildings, focused on the Bruggeman's Warehouse, the only cobblestone structure remaining on the Hanford Site. The building's 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 1999, all but two such places were monitored due to access restrictions imposed by Hanford Site requirements to protect and reduce harassment of nesting birds. Overall, places with human remains were found to be stable in 1999

with no evidence of recent *Archaeological Resources Protection Act* violations such as collector digging or surface collection at cemeteries or places with human remains. However, the impact from natural processes such as wind and water erosion and recreational uses was documented. Wind and water erosion were responsible for exposure of faunal remains at one place with human remains during 1999.

A total of 26 archaeological sites, a building, and cemetery or burial locations were monitored during 1999. Of the incidents recorded at these monitored places (n=71), 69% were related to natural causes such as animal trailing and digging, wind-caused deflation or aggradation, and water erosion. Twenty-one 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. Ten 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 is in violation of the *Archaeological Resources Protection Act*.



7.3.2 Native American Involvement

Members of the Confederated Tribes of the Umatilla Indian Reservation, Yakama Indian Nation, Nez Perce Tribe, and Wanapum People were actively involved in the cultural resources program during 1999. Each tribe was involved in deciding DOE's cultural resource program work scope, budget, and schedule. Monthly cultural resource issues meetings 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, the Office of River Protection's Project W-519, 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 monitor numerous projects requiring excavation during the year. The Confederated Tribe of the Umatilla Indian Reservation taught a law enforcement training workshop on the *Archaeological Resources Protection Act* at Hanford's Hazardous Materials Management Emergency Resources. The purpose of the workshop was to train participants in reporting and documenting violations of the *Archaeological Resources Protection Act*.

One Wanapum Band member, hired by Pacific Northwest National Laboratory in 1998, continued working as an archaeological technician assisting with cultural resource surveys, site form preparation, records management, and equipment use. In addition, a Wanapum Traditional Cultural Properties Report was completed with Wanapum elders under contract to Pacific Northwest National Laboratory.

7.3.3 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. In 1999, 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.

The cultural resources staff of the Pacific Northwest National Laboratory, Bechtel Hanford, Inc., and CH2M HILL Hanford, Inc. assisted DOE in organizing and conducting workshops 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 the public workshops, there were discussions pertaining to a White Bluffs Memorial on the Hanford Site. The memorial is planned to commemorate the veterans of the Second World War 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 Bruggeman Warehouse and the White Bluffs Bank, two pre-Manhattan Project era structures still standing on the site. The feasibility studies were conducted to assess the buildings' structural condition and the work required to stabilize and



restore them. Recommendations concerning the feasibility of converting the Bruggeman Warehouse into a visitor's center were sent to DOE.

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 independent peer review of the draft *History of the Plutonium Production Facilities at the Hanford Site Historic District, 1943-1990*. Comments were sought on the Tower Removal Project, located near the 200 Areas, including the addition of

the Atmospheric Dispersion Test Facility, located near the 200-East Area, to the Historic District Treatment Plan. Finally, there was a discussion of local historic preservation issues by Dr. Allyson Brooks, State Historic Preservation Officer.

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 at 100-B to serve the B Reactor museum.

7.3.4 Section 106 Activities

Changes in the Section 106 of the *National Historic Preservation Act* and the Code of Federal Regulations resulted in several modifications to the DOE cultural resource review process in 1999. 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 resources reviews have always been 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 after which all parties are notified 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 other

interested parties of the proposed project and a 30-day response period.

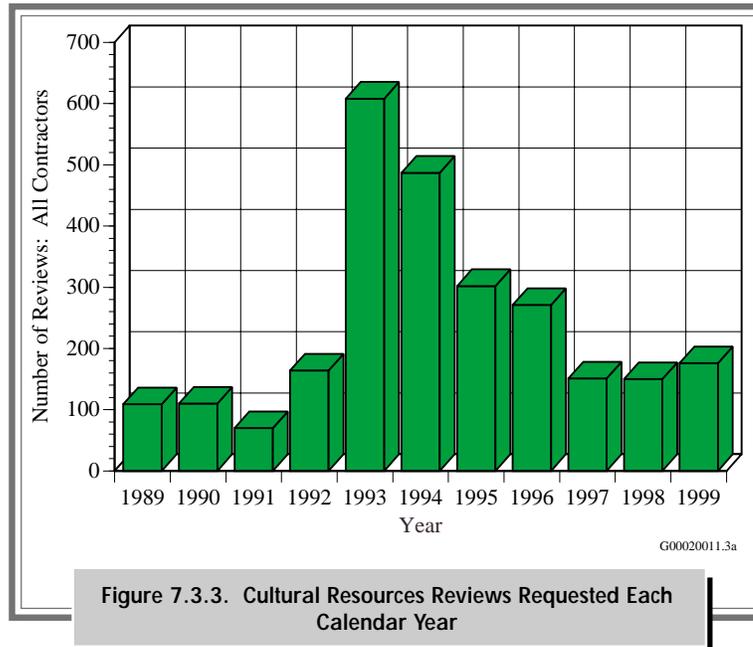
During 1999, 176 cultural resources reviews were requested (Figure 7.3.3). A majority of the reviews involved project areas that had been previously surveyed or were located in previously disturbed ground. Of the projects reviewed, 10 were also monitored during the construction phase, 4 required archaeological surveys, and 18 involved building modification or demolition. The surveys covered a total of 37.2 hectares (99 acres) and resulted in the discovery of one isolated find and three archaeological sites (Figure 7.3.4).

A survey done for the Sagebrush Mitigation Planting project covered 155 hectares (385 acres) on the Fitzner/Eberhardt Arid Lands Ecology Reserve and recorded five archaeological sites and three isolated finds. The sites recorded were mostly prehistoric lithic concentrations. This survey was the largest conducted for Section 106 activities during 1999.

7.3.5 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. Staff of DOE, Bechtel Hanford, Inc., and Pacific Northwest National Laboratory applied for a “Save America’s Treasures” millennium grant to fund renovation of the historic B Reactor as a publicly accessible museum and the historic Bruggeman Warehouse as an interpretive center. While the nomination was not approved, DOE’s proposal rated very high and they were urged to re-submit the nomination next year.

During 1999, DOE was in the process of evaluating the feasibility of retaining various historic structures on the Hanford Site, including the Bruggeman 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. The Bruggeman Warehouse study made recommendations concerning the feasibility of converting the former fruit warehouse into a visitor’s center.

In 1999, 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, 525 buildings/structures have been documented on



Figure 7.3.4. Historic Sites are Commonly Found During Surveys Conducted at the Hanford Site



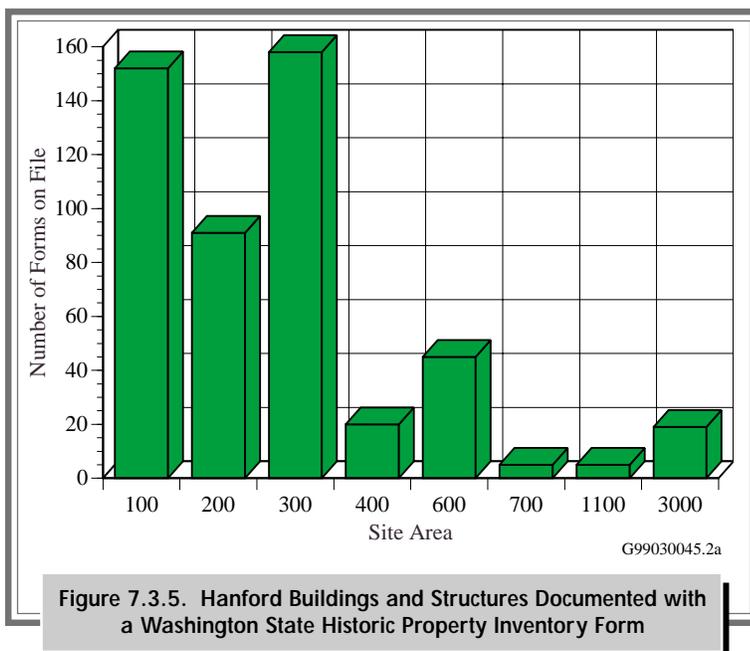
historic property inventory forms and are on file at the Hanford Cultural Resources Laboratory (Figure 7.3.5).

The Dunes Archaeological Block Survey was an intensive survey performed intermittently from March to July, 1999. Approximately 1,405 hectares (3,473 acres) were surveyed along the river from the 300 Area to the northern end of the large active dune area south of the Hanford Townsite. Forty-four newly recorded archaeological sites and 36 newly recorded isolated finds were documented during the survey. Twenty-four previously recorded sites were re-recorded and amended. Of all the sites recorded, six of the previously recorded sites were already listed as part of the Wooded Island Archaeological District on the National Register of Historic Places. This survey represented a cooperative approach to investigate previously unsurveyed lands on the site. The Nez Perce Tribe, DOE, Pacific Northwest National Laboratory and one volunteer from the general public participated in the survey.

7.3.5.1 Historic District

During 1999, 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, Rev. 1). 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 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, as contributing properties within the historic district and recommended mitigation, bringing the total to 190 (Figure 7.3.6). Of the buildings, structures, and complexes



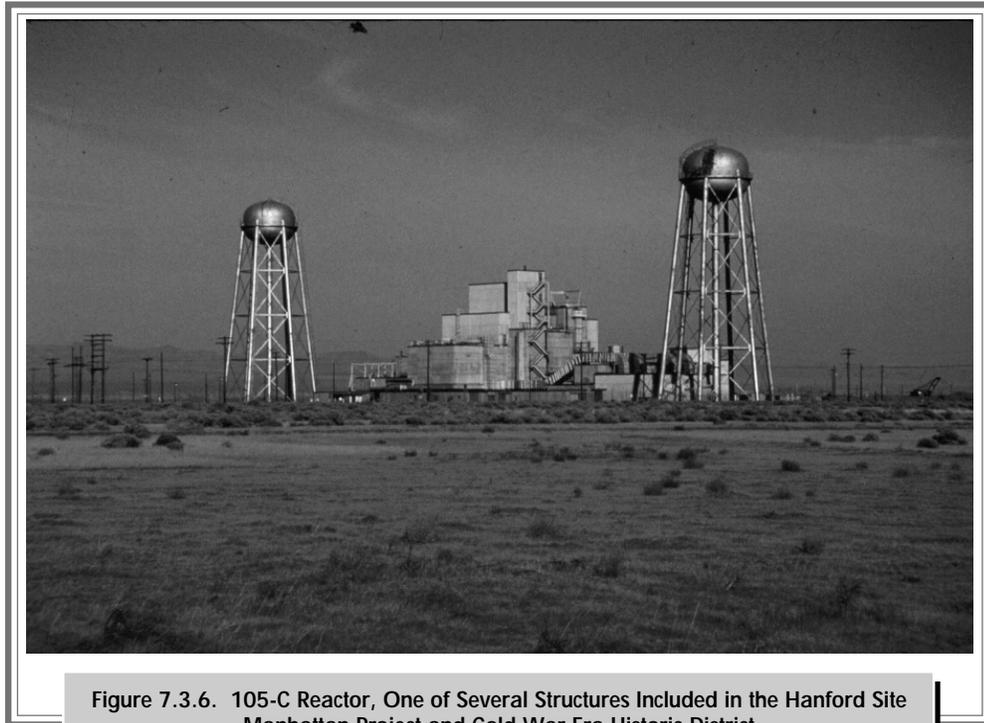


Figure 7.3.6. 105-C Reactor, One of Several Structures Included in the Hanford Site Manhattan Project and Cold War Era Historic District

recommended for mitigation, 173 have been documented according to mitigation standards identified in the sitewide treatment plan (DOE/RL-97-56, Rev. 1). Six historic properties, including B Reactor, have been documented at the Historic American Engineering Record level, 38 have been documented with Expanded Historic Property Inventory Forms, while standard Historic Property Inventory Forms have been prepared for the remaining 124 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 noncontributing/exempt buildings and structures. These buildings 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.

7.3.5.2 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 1999. 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 purposes of these assessments are 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 made up of cultural resources specialists, historians, archivists/curators, and facility experts. Eleven assessments/walkthroughs were conducted in 1999, at two facilities in the



300 Area, KE Reactor, and eight structures in the 200 Areas including T Plant, U Plant, Reduction-Oxidation Plant, and Plutonium-Uranium Extraction Plant. 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 repository during 1999. A draft management plan that deals specifically with archaeological collections, developed in 1998, was used during 1999 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 1999 resulted in no indications of pest infestations.

7.3.6 Education and Research

Educational activities associated with the cultural resources program in 1999 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.

Pacific Northwest National Laboratory participated in the Associated Western Universities, Inc., Northwest program by hosting three 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.