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Dear Dr. Snyder:

**SUBMITTAL OF NATIONAL HISTORIC PRESERVATION ACT SECTION 110
SURVEY OF ARCHITECTURAL PROPERTIES AT THE PORTSMOUTH GASEOUS
DIFFUSION PLANT IN SCIOTO AND SEAL TOWNSHIPS, PIKETON, OHIO
(DOE/PPPO/03-0147&D1)**

In accordance with Section 110 of the National Historic Preservation Act (NHPA), the Department of Energy (DOE) Portsmouth Paducah Project Office (PPPO) has prepared the enclosed *National Historic Preservation Act Section 110 Survey of Architectural Properties at the Portsmouth Gaseous Diffusion Plant, in Scioto and Seal Townships, Piketon, Ohio* (DOE/PPPO/03-0147&D1).

This document identifies the architectural properties at the Portsmouth Gaseous Diffusion Plant (PORTS). The information in this architectural survey will be used in the development of the NHPA mitigation planning for Portsmouth. The document is based upon the original survey information developed by Advanced Simulation and Computing and the Ohio Historic Inventory forms (on file at the Ohio Historic Preservation Office).

DOE is issuing this inventory for your information and for the information of our consulting parties and the public. DOE will be placing a public notice in newspapers of local circulation and placing information about the availability of the inventory on its website.

If you have any questions in reference to this submittal, or DOE's NHPA program activities, please contact Kristi Wiegle of my staff at (740) 897-5020.

Sincerely,

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Enclosure:

NHPA Section 110 Survey of Architectural Properties at PORTS

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DOE/PPPO/03-0147&D0

**National Historic Preservation Act Section 110 Survey
of Architectural Properties at the Portsmouth
Gaseous Diffusion Plant in Scioto and
Seal Townships, Piketon, Ohio**



This document is approved for public release per review by

Henry H. Thomas 08/03/10
PORTS Classification Officer Date

Restoration Services, Inc. (RSI)

**contributed to the preparation of this document and should not be
considered an eligible contractor for its review.**

National Historic Preservation Act Section 110 Survey
of Architectural Properties at the Portsmouth
Gaseous Diffusion Plant in Scioto and
Seal Townships, Piketon, Ohio

DOE/PPPO/03-0147&D0, Draft C

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ACRONYMS

AEC	Atomic Energy Commission
AL	architectural location
DoCC	<i>Description of Current Conditions at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio</i>
DOE	U.S. Department of Energy
EA	<i>Report for Environmental Audit Supporting Transition of the Gaseous Diffusion Plants to the United States Enrichment Corporation</i>
EM	Environmental Management
FD	Facility Directory
GCEP	Gas Centrifuge Enrichment Plant
HEU	highly enriched uranium
LEU	low enriched uranium
NHPA	National Historic Preservation Act of 1966
OHI	Ohio Historic Inventory
PORTS	Portsmouth Gaseous Diffusion Plant
USEC	United States Enrichment Corporation
USGS	U.S. Geologic Survey
UTM	Universal Transverse Mercator

1. INTRODUCTION

A National Historic Preservation Act (NHPA) Section 110 survey of the Portsmouth Gaseous Diffusion Plant (Portsmouth) in Scioto and Seal townships, Pike County, Ohio (Fig. 1), has been completed by the ASC Group, Inc. The purpose of this survey is to provide information for compliance with Section 110 of the NHPA of 1966, as amended, and to support the review of activities conducted under Section 106 of the NHPA. The fieldwork for this survey was also conducted by ASC Group.

The study area for both the literature review and the survey consisted of the entire federal reservation on which the facility is located. The total project area consisted of 3,777 acres. The literature review was completed between September 1996 and June 1997. The purpose of the survey was to conduct a structured review of the standing architectural properties [e.g., buildings, structures, and facilities of the Portsmouth site (Fig. 2)] and document on Ohio Historic Inventory (OHI) forms (on file with the Ohio Historic Preservation Office), and to prepare the data for future evaluation in terms of their eligibility for inclusion in the National Register of Historic Places. The survey fieldwork was conducted in September 1996 and April 1997. The Principal Investigator for the survey, Douglas Terpstra, M.S., also made a site visit to Portsmouth on April 19, 2006, to confirm the facility had undergone few physical alterations since the time of the original fieldwork. Demolition of miscellaneous buildings and structures began in 1997 and continues to the present time in association with Environmental Management (EM) program activities.

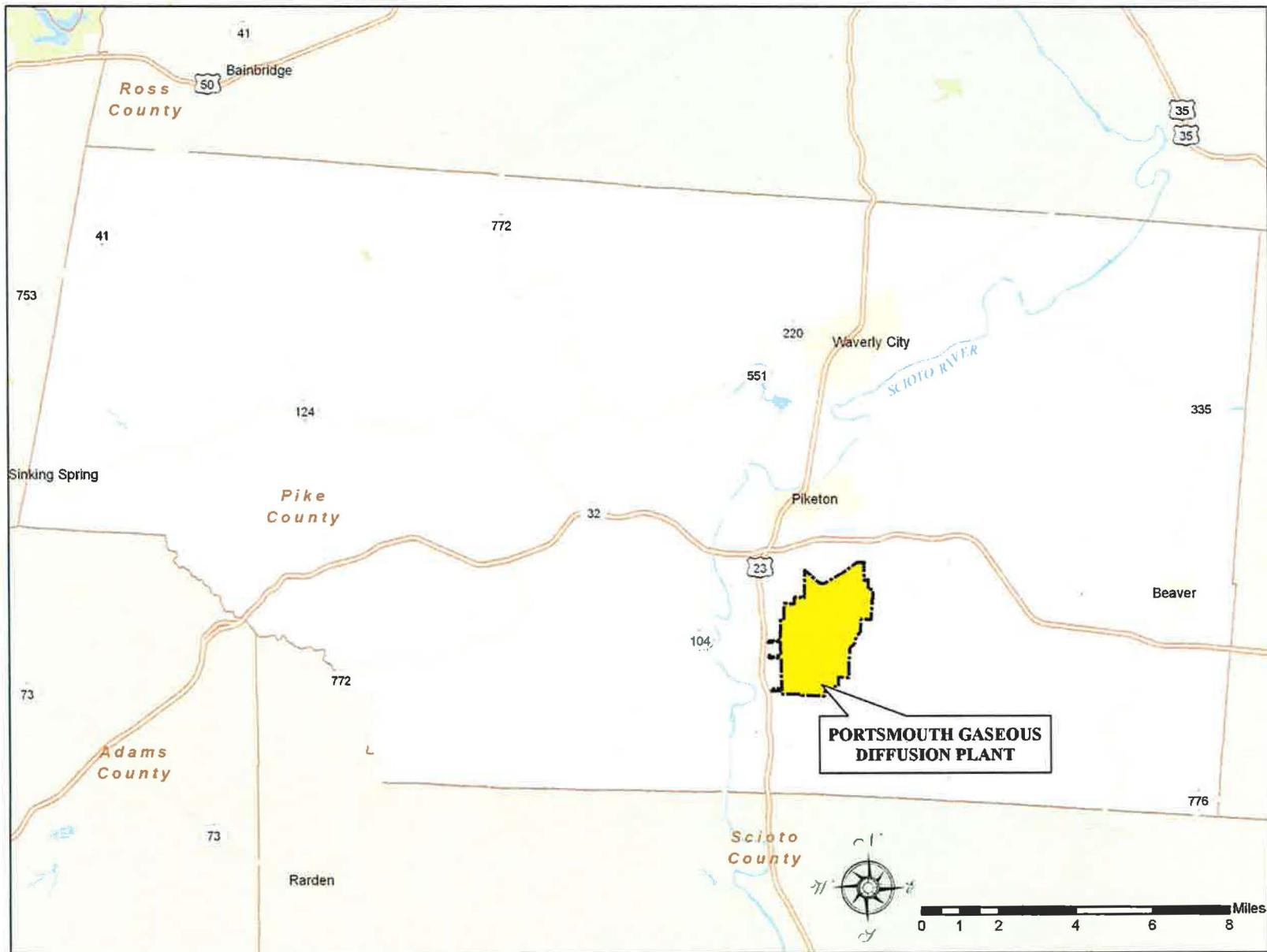


Fig. 1. Pike County highway map showing the location of the survey area.

**Fig. 2. Site plan of the Portsmouth site indicating the Ohio Historic Inventory and Architectural Location numbers documented during the architectural survey.
(Oversized figure in enclosed envelope)**

2. LITERATURE REVIEW

2.1 PREVIOUS DOCUMENTATION OF ARCHITECTURAL PROPERTIES

The literature review was conducted in 1996-1997. The OHI files were examined to locate any previously documented buildings, structures, and architectural sites within or immediately adjacent to the study area; none were found. Review of the Pike County and Ohio Department of Transportation bridge files identified no bridges within the project area.

No historic cartographic sources (i.e., atlases, county plat maps, U.S. Geologic Survey (USGS) 15-ft topographic maps) were consulted for the architectural survey because no intact buildings that predate construction of the Portsmouth facility survive on the federal reservation. Also, since the pre-Portsmouth facility bridges that survive are minor structures, they would not be indicated on any historic cartographic sources.

Three official documents that were reviewed as part of the environmental survey or site directory listed many Portsmouth facility buildings and structures. These documents include the *Description of Current Conditions at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DoCC) (Geraghty and Miller, Inc. 1990), *Report for Environmental Audit Supporting Transition of the Gaseous Diffusion Plants to the United States Enrichment Corporation* (EA) (U.S. Department of Energy 1993), and Portsmouth Facility Directory (FD) (Martin Marietta Utility Services 1995). These documents supplied information on the name, designation, design, date, size, and use of most of the architectural properties at PORTS.

After reviewing these documents, it was decided that the FD was the most up to date and complete source and it was used as the standard for names and designations in this report. Both the DoCC and EA lacked the descriptions of some buildings and structures. The FD also lacked some structures encountered in the field, although most were recently built or portable and, thus, probably not in their original location. Where the FD appeared to be in error or not updated, the EA was used as the standard.

2.2 HISTORIC CONTEXT

No intact buildings or architectural sites that predate construction of the Portsmouth facility survive on the federal reservation. Thus, an abbreviated history of the county and township is provided and the context for pre-World War II buildings is omitted. However, several pre-Portsmouth structures survive, namely four bridges. A history and context regarding these structures is included.

2.2.1 Pre-Portsmouth History

The land on the east side of the Scioto River was surveyed in the rectangular survey system in the 1790s-1800s. Piketon was founded in 1814, Pike County and Seal Township were organized in 1815, and Scioto Township was separated from Seal Township and organized in 1851 (Benjamin D. Rickey & Co. 1983; Pike County Chapter, Ohio Genealogical Society ca. 1992).

2.2.2 Transportation

Infrastructure played an important role in the historical economic development of Pike County, as it did in most of Ohio. The types of transportation included rivers, roads, and railroads, and the use, construction, and improvement of these transportation methods altered the pattern of settlement and farming. Settlers entered the area on the transportation routes that were available and the residents preferred to live near a

means of transportation. With easier access to markets, it benefited farmers to put more of their acreage under the plow, consequently increasing their income (Noble and Wilhelm 1995).

Throughout history, water travel has always been preferable to roads, as the latter were rarely in passable condition until recently. Although the Scioto River was a significant navigable natural waterway in Pike County, it was several miles from the project area and no other navigable waterways were nearby and, thus, had little impact on the settlement and development of the pre-Portsmouth Site. In the 1830s, the Ohio & Erie Canal was built on the west side of the Scioto River valley, which caused an economic revolution in the agricultural economy of Ohio, including the Scioto River valley.

As settlement and development progressed, a road system emerged. Transport among rural people was by foot, horseback, or wagon. Much of Pike County was heavily forested, which made road construction difficult, time consuming, and expensive. Most rural roads were little improved, poorly maintained, and often created by landowners who were also responsible for their maintenance. With the growing availability of the automobile, improved roads became important in the 1900s and 1910s. In 1911, state funds were made available for road maintenance (Aumann 1954). In the nineteenth century, the railroad also came to prominence, which gave industries and farmers access to larger, distant markets. The Scioto Valley Railroad (later the Norfolk & Western) and the Chesapeake & Ohio Railroad both passed near PORTS.

2.2.3 The United States Nuclear Program History

Concern over suspected German nuclear research during World War II led the U.S. government to develop its own nuclear program in 1942, dubbed the Manhattan Project. Scientists knew that splitting an atom, a process called fission, produced surplus energy and could be manipulated into a chain reaction producing great quantities of energy. Most early efforts at creating chain reactions focused on manipulating the element uranium. However, scientists found that fission in uranium primarily occurs in the isotope U-235, which is found naturally only in small amounts, and that they would have to enrich the concentration of U-235 in a given batch of uranium to make that uranium fissionable in a chain reaction (Carver and Slater 1994; Thomason and Associates 2003).

Through experiments conducted during World War II, Manhattan Project scientists found that gaseous diffusion was the most efficient means of enriching uranium among the several known methods. The gaseous diffusion process is based on the principle that molecules of a lighter isotope would pass through a porous barrier more easily than molecules of a heavier one if there were high pressure on one side and low pressure on the other (Carver and Slater 1994).

In 1946, Congress passed the Atomic Energy Act, which created the Atomic Energy Commission (AEC). Although the AEC initially intended to focus research efforts on both military and civilian applications of atomic energy, the emergence of hostilities with the Soviet Union and the Cold War led to the majority of resources and budget going to national defense programs. After World War II, the U.S. and Soviet Union entered a period of mutual distrust and eventually an arms race as each country sought to maintain a nuclear superiority over the other (Carver and Slater 1994; Thomason and Associates 2003).

This arms race spurred a massive expansion of the AEC nuclear infrastructure. The expansion of facilities had two purposes: 1) to increase the nation's production capacity for atomic weapons and 2) to create redundant sites in case a Soviet attack destroyed one. Beginning in 1950, this expansion program, estimated at a cost of \$3 billion, was one of the largest federal construction projects in peacetime history. Prior to the Korean War, the nation's entire gaseous diffusion capacity was located at the Manhattan Project-era Oak Ridge Gaseous Diffusion Plant (later known as the K-25 Site) in Oak Ridge, Tennessee. In addition to other new facilities, the AEC planned for new gaseous diffusion plants. In 1950, the

Kentucky Ordnance Works in Paducah, Kentucky, was chosen as the site of the first new plant and the AEC selected a site near Portsmouth, Ohio, for the second plant in 1952 (Carver and Slater 1994; Hewlett and Holl 1989).

Although the primary focus of the government's nuclear program during the post-World War II period was weapons production, interest in civilian uses grew as more information about nuclear power applications became available to the public. Beginning in the late 1940s, the public's imagination grew with dreams of atomic-powered houses, cars, ships, spaceships, and aircraft. President Dwight Eisenhower signed the Atomic Energy Act of 1954, which loosened government controls on nuclear research and eventually allowed the development of the private nuclear power industry. The first full-scale nuclear power plant in the U.S. became operational in December 1957 (Carver and Slater 1994).

2.2.4 The Choice of Portsmouth for a Gaseous Diffusion Plant

In October 1951, the AEC acting Director of Production authorized staff at Oak Ridge to begin the search for a site for the third gaseous diffusion facility. Stone & Webster Engineering Corporation was the survey contractor. Considerations for the first phase of the search were that the site be in the zone considered safe from enemy aircraft, that the site have enough low-cost power and water for the complex, and that there be a sufficient population base from which to draw employees. By December 1951, Stone & Webster had focused on seven areas: three in the Ohio River Valley, three in Oklahoma, and the Kansas City-St. Joseph, Missouri, area. The Ohio River Valley had the most advantages with relatively low fuel costs, ample water from the Ohio River, adequate housing and labor resources, and an industrial base that could absorb the excess power if the gaseous diffusion plant were shut down or its production lowered (History Associates Incorporated 1987).

In January 1952, the AEC authorized a more intensive examination of sites in the Ohio River Valley. The more detailed search criteria at the second phase of the search included an examination of local labor-management relations to avoid work stoppages like those that had occurred during the construction of the Paducah facility. Stone & Webster identified three possible sites in the region: Louisville, Kentucky, and Cincinnati and Portsmouth, Ohio. Although Louisville and Cincinnati were the leading candidates, Louisville residents and civic groups were opposed to the facility being located in their city, and the demands of labor unions in the Cincinnati area discouraged the AEC from locating in that city. Although the Portsmouth site was relatively remote from a major population center and was considered to have a deficient highway system, it had the support of both area residents and the local labor unions. The site was approved by AEC in August 1952 (History Associates Incorporated 1987).

2.2.5 Portsmouth Facility History

The 3,777-acre Portsmouth site is located in south-central Ohio in rural Pike County, approximately 22 miles north of Portsmouth and 75 miles south of Columbus, the state capitol. In August 1952, the AEC selected a tract of land in the Ohio River Valley near the Scioto River in Pike County for the site of the new gaseous diffusion plant. Site selection was based on the availability of a vast expanse of relatively flat terrain (the original tract was 4,000 acres) as well as the availability of large amounts of electrical power, a dependable source of water, local labor, and suitable transportation routes.

Construction of the Portsmouth Site began in late 1952, and operations commenced in 1954. In March 1956, the plant was completed 6 months ahead of schedule by construction contractor Peter Kiewit and Sons of Nebraska at a cost of \$750 million, considerably less than the estimated \$1.2 billion construction cost. Construction required 69 million man-hours, more than 68,000 drawings, and as many as 22,500 construction workers at its peak in the summer of 1954. Workers cleared more than 1,200 acres and moved more than 4.5 million cubic yards of earth.

The Portsmouth plant was the last of three gaseous diffusion plants to be constructed, the first being in Oak Ridge, Tennessee, and the second in Paducah, Kentucky. The mission at Portsmouth was to increase the national production of enriched uranium and maintain the nation's superiority in the development and use of nuclear energy.

In the 1960s, Portsmouth mission changed from enriching uranium for nuclear weapons to one that included producing highly enriched uranium (HEU) fuel for naval reactors and other defense-related purposes. Highly enriched uranium is defined as uranium that has been enriched to a uranium-235 isotopic content of 20 percent or more. The production of HEU was suspended by the U.S. Department of Energy (DOE) in November 1991. At that point, the Portsmouth era of HEU production, which included the highest enrichment levels in the DOE complex (97.65 percent in the U235 isotope) and spanned the longest period (from 1956 until 1991), was over (DOE 2001).

The plant produced only low-enriched uranium (LEU) for commercial nuclear power plants from suspension of HEU operations in late 1991 until uranium enrichment production ceased in 2001. The Portsmouth Site and its sister facility, the Paducah Gaseous Diffusion Plant, Paducah, Kentucky , worked in tandem to produce LEU fuel. The Paducah plant enriched uranium up to 2.7 percent and then shipped it to the Portsmouth plant for further enrichment to approximately 4-5 percent. In 1993, uranium enrichment operations were turned over to the United States Enrichment Corporation (USEC) in accordance with the Energy Policy Act of 1992. USEC was privatized in July 1998, and a corporate business decision was made in January 2000 to terminate uranium enrichment at Portsmouth in May 2001, while maintaining operation of the Paducah, Kentucky, gaseous diffusion plant.

After USEC ceased uranium enrichment activities at PORTS, DOE placed the gaseous diffusion plant in cold standby through a contract with USEC to maintain the facilities for possible restart within 18-24 months in the event of a significant disruption in the nation's supply of enriched uranium. DOE continued the plant in cold standby through FY 2005 and has since transitioned the gaseous diffusion plant into cold shutdown in preparation for future decontamination and decommissioning of the facilities as a part of the DOE EM mission at PORTS.

In December 2002, USEC announced the Portsmouth facility's former centrifuge buildings, built in the early 1980s but never put into operation, would be used for a lead cascade centrifuge demonstration plant. In January 2004, USEC also announced that the Portsmouth site was selected over the Paducah, Kentucky, location for a new advanced commercial centrifuge plant. This advanced centrifuge plant is in development by USEC.

The DOE awarded a contract in August 2002 to Uranium Disposition Services LLC (UDS) to design, build and operate two depleted uranium hexafluoride conversion plants, one at the Portsmouth site and the other at the Paducah, Kentucky, site. Construction began in fiscal year 2004, and the Portsmouth plant is expected to be operational in the near future. The Portsmouth facility will also convert DUF6 shipped from the East Tennessee Technology Park in Oak Ridge, Tennessee.

DOE owns the Portsmouth plant and is presently carrying out its EM mission that began in 1989. The EM mission includes environmental restoration ("cleanup"), e.g., remediation of soil and groundwater, and the deactivation, decontamination, demolition, and decommissioning of facilities. A component of environmental restoration is the management of waste generated from the cleanup work. DOE also has legacy waste management responsibilities as well as responsibility for the management of materials associated with past operations and management of the contractors engaged in these various activities.

3. ARCHITECTURAL SURVEY FIELDWORK METHODOLOGY

It was known from USGS topographic quadrangle maps and Portsmouth site maps that the project area was predominantly level and rolling rural open land and rolling and hilly woodland, with many buildings and structures concentrated in the center, which created an industrial park. Unlike most architectural surveys, the 1996-1997 fieldwork documented all buildings and structures despite nearly all of them being less than 50 years of age at the time of the survey.

Architectural documentation for the survey included physical inspection, consultation of existing documents, and comparative study. The in-depth examination of each standing building, structure and architectural site included measurement and visual inspection. The ASC Group did not take photographs but made use of archival photos supplied by the facility due to DOE security requirements that prohibit bringing photographic equipment on site.

The English system of measurement was used for all measurements because it was the only system in use during construction of the Portsmouth facility, and because it provides a context to increase understanding of the buildings and their distribution.

Visual inspection identified the materials, techniques, ornament, alterations, design, and uses of each building, structure and architectural site. This was then compared with published analyses, field guides of architecture and engineering, and observations from past surveys to determine the architectural style (or lack thereof), building type, or other classification. During and after the survey, data was collected from the environmental surveys and site directory on each of the properties.

All architectural resources, regardless of age, were examined, recorded, and assigned an architectural location (AL) number in the order in which they were encountered and were documented on Ohio Historic Inventory (OHI) forms. Some properties were grouped together under the same architectural location number if they were of similar age, tightly grouped, and/or were closely interdependent, such as the numerous components found in a sewage treatment plant, water treatment plant, or switchyard. Underground structures were inventoried if there were visible aboveground elements, such as the X-220A Instrumentation Tunnels (PIK-144-12/AL 100).

Each reference to an AL or OHI form in the survey includes both the AL and OHI numbers assigned to it as well as the Portsmouth facility designation and name. The AL numbers were also included on the OHI forms. All architectural locations, Portsmouth facility numbers, and OHI numbers were plotted and are shown on Fig. 2.

Most structures were inventoried, except for minor structures such as ground-mounted electric transformers and small, open platforms. Significant and large architectural sites such as electric substations or switchyards were inventoried. Architectural sites not inventoried were those such as parking lots, storage yards, storage pads, and most basins and pits. One exception was the X-701C Neutralization Pit (PIK-61-12/AL17), which had a distinctive design and construction. This property was proposed for clean up by the EM Program at the time of surveying, as noted on the OHI form, but was demolished in 2001. If available information indicated that a building, structure, or site was scheduled for removal, it was recorded on the OHI forms.

Not all facilities listed in the EA were inventoried. Many were overall systems, such as the X-215 Exterior Lighting and X-220B2 Carrier Communications System, or were ordinary structures of little architectural value, such as the X-208 Security Fence and X-210 Sidewalks.

The Portsmouth facility is divided into four irregular quadrants for purposes of management by the EM Program. The standard method of referring to a Portsmouth facility building is "X-100 Administration Bldg. on 19th Street in Quadrant I."

Quadrants I and II were surveyed in September 1996. The survey began in the northeast corner of the inner facility in Quadrant II and the outer area was surveyed last. Quadrants III and IV were surveyed in April 1997, following the same method, with the survey beginning in Quadrant III.

Again, the survey included on-site examination of the facility and development of a historic context against which to evaluate the significance of the buildings and structures present. The survey also documents the inventory of resources on the OHI forms. The survey will be utilized in the development of a Cultural Resources Management Plan for the facility and to support DOE's requirements to comply with Sections 110 and 106 of the NHPA, as amended.

4. ARCHITECTURAL SURVEY RESULTS

The Portsmouth site area that was surveyed includes land in use as building sites, paved areas, mowed fields, roads, railroads, artificial ponds, and woods. A total of 160 architectural locations were identified and documented on OHI forms (Appendix A).

Five architectural locations that were surveyed are owned by the Ohio Valley Electric Corporation (OVEC): OVEC office building (PIK-178-12/AL134), OVEC storage shed (PIK-179-12/AL135), OVEC microwave tower and dish (PIK-180-12/AL136), and two Don Marquis substations (PIK-181-12/AL137 and PIK-182-12/AL138). During surveying, it was established that the OVEC office building was not on the Portsmouth site (it is off site, outside the DOE-owned property boundary). The storage shed is on property owned by OVEC and is not under the jurisdiction or control of DOE. The microwave tower and dish and two substations are not owned or under the jurisdiction of DOE, but are managed and controlled by OVEC. Although these facilities were inventoried during the survey, they should not have been as they are OVEC-owned. They are not a part of the DOE inventory report.

A list of the inventoried properties (e.g., buildings, structures, facilities) by Portsmouth facility designation number, name, and mission or mission support association is presented in Table 1. As listed in this format, a total of 196 properties were inventoried at PORTS. The inventoried properties listed in order of their architectural location number, including the OHI number, are presented in Table 2.

The OHI forms (on file at the Ohio Historic Preservation Office) contain all information, photographs, diagrams, and mapping recorded for each architectural location. Buildings grouped chronologically and by general function are shown in Tables 3 through 6.

The tables attached to this section (Tables 1-6) are for inventory/informational purposes only. No eligibility determination for inclusion of the National Register of Historic Places has been made with regard to the facilities surveyed as part of this report.

4.1 DISCUSSION OF DOCUMENTATION

Since a detailed site map and locational system is already established for PORTS, and because the facility has a large number of buildings in a small area, a center point on the X-300 building (PIK-84-12/AL40) was chosen as the Universal Transverse Mercator (UTM) point for most OHI forms. Four structures at

the Site that predate the Portsmouth facility were given their own UTM points, per agreement with Ohio Historic Preservation Office, because they were originally unassociated with the facility.

The thematic association for all inventoried architectural locations was determined to be “Manufacturing Industries - Utilities - Nuclear Energy” since this is a government installation that produced refined radioactive material for generating electricity (Gordon 1992).

The AEC is credited on most of the OHI forms as the design source. Although the contractors responsible for constructing and operating the Portsmouth site likely would have drawn up most designs, AEC would have had oversight.

The quadrant system was used in this report for the ease of reference to the current system used on site. Dates stated on the OHI forms represent information obtained from the EA and DoCC. Circa dates shown in the tables on the forms (“ca”) indicate the exact date is unclear, but the sources indicated it was probably in the span of dates given. When no date was given in the sources, a date was estimated from the material and design of similar structures.

A frequent material encountered at the Site was “transite.” This is a commercial brand name of asbestos-containing material used on the original Portsmouth buildings and structures, and is typically a large corrugated or flat panel similar to asbestos shingles used on houses in the mid-twentieth century (DOE 1993).

4.2 DESCRIPTION OF THE PORTSMOUTH FACILITY

The Portsmouth site is located just outside of the Scioto River Valley proper, separated by the low range of hills forming the valley wall. The reservation is on rolling and gently rolling upland terrain in a partly filled ancient valley and on the valley walls, surrounded by relatively undeveloped woodland. Due to this placement, the facility is screened from view from outside the reservation. Upon entering the reservation on the publicly accessible portions of the perimeter road, vistas open up to reveal the industrial facility.

The Portsmouth facility is concentrated in the southwest part of the federal reservation (Fig. 1). Most buildings, structures, and sites (a total of 131) are within the roughly oval perimeter road, which encloses about 1,265 acres of the reservation’s 3,777 acres. A total of 29 architectural locations are outside the perimeter road, mostly to the north and northeast. Five main access roads, located at the cardinal directions, connect the perimeter road to the road system outside of the reservation; however, not all roads provide public access.

Main access to the reservation is to the west from U.S. 23. From this highway, the “principal access road” runs uphill through the valley wall, where a vista opens up with a view of the heart of the facility. The main entrance into the gaseous diffusion plant facilities is on the eastern portion of the perimeter road, on the opposite side from the main access road to the west.

An irregular oval perimeter road separates the modified older pre-Portsmouth facility roads on the exterior from the irregular grid of streets on the interior. The east-west streets are numbered and the north-south streets are named after Ohio counties. A railroad siding connects the Norfolk Southern Railroad with the CSX Railroad in the northern part of the reservation, and a spur splinters into many smaller spurs serving the process buildings and storage areas in the facility.

4.3 PORTSMOUTH DEVELOPMENT PERIODS

This section is included to provide a greater basis for analyzing the results of the survey. It draws from the physical evidence of the buildings and structures themselves and, thus, augments and enhances the documentary information presented in the literature review. Four periods of development clearly evident when considering the span and distribution of dates and the facility history include the 1) pre-Portsmouth facility structures, 2) original Portsmouth facility, 3) Portsmouth facility additions, and 4) GCEP facility and later buildings. Each development period is discussed in the following sections. All the architectural locations are represented in the period of development tables and none are included in more than one period. The period of development indicated for the facilities in the tables reflects the facility's construction date although its use or operation may continue to the present time (see Tables 3 through 6). Properties are listed in order of architectural location number in each table. Only exemplary or important ALs are mentioned in the text; the tables and OHI forms contain additional information on the ALs discussed.

Not all buildings, structures, and architectural properties are represented in Tables 3 through 6 because some of the properties are interrelated and were grouped together into one AL, such as would be found in the many components in a switchyard (e.g., AL103 and 120). The date of only the largest and most dominant part of a facility was used.

4.3.1 Pre-Portsmouth Facility Structures: Period of Development 1 (1900-1951)

The first development period consists of structures that predate the facility, survived the site clearing, and were modified for use in the Portsmouth facility. These architectural properties (four bridges) are listed in Table 3. Apparently, the site clearing was thorough in removing all aboveground buildings and structures, except for the few bridges that were usable after modification. Only one building and two cemeteries survived the clearing (PIK-205-12, PIK-206-9, and PIK-207-12). These areas are discussed in the *Phase I Archaeological Survey for the Portsmouth Gaseous Diffusion Plant in Scioto and Seal Townships, Pike County, Ohio* (Schweikart et al. 1997).

The three surviving bridges (PIK-146-9/AL102, PIK-201-9/AL157, and PIK-202-12/AL158) all have evidence of widening, raising, and rebuilding of the deck at the time the Portsmouth facility was built. Two trusses of the other bridge, the X-204 Railroad Overpass (PIK-199-9/AL155), each have a date of approximately 30 years before facility construction.

4.3.2 Original Portsmouth Facility: Period of Development 2 (1952-1956)

The second development period consists of the original Portsmouth Gaseous Diffusion Plant built between 1952 and 1956. This represents most of the facility as built according to the original plans and before any buildings and structures were added. These buildings and structures fall into six general categories or groups and are listed in Table 4. The first group, most notable, and at the center of the facility, are the three huge process buildings, giant structures lacking color and windows, tied together by large overhead piping, framed in steel, and sheathed with transite panels (PIK-143-12/AL099, PIK-145-12/AL101, and PM-167-12/AL123).

The second group consists of the original cooling facilities with a large pump house (PIK-101-12/AL057 and PIK-151-12/AL107) at the center of an array of redwood cooling towers topped with conical flues (PIK-46-12/AL002). Operation of the cooling towers often created a characteristic local fog during plant operations.

The third group includes the headquarters buildings at the main (east) entrance. These buildings vary widely in design but their diversity enhances the almost campus-like setting. Most notable is the wood-framed, pinwheel-shaped X-100 Administration Building (PIK-94-12/AL050). Across from the Administration Building is the concrete X-104 Guard Headquarters (PIK-79-12/AL035) that has a minimal international styling in the cantilevered eaves and hoods. Anchoring one corner of the headquarters buildings group is the bunker-like domed concrete X-300 Plant Control Facility (PIK-84-12/AL040), which is designed to withstand a direct nuclear attack. The wood-framed X-100 Administration Building, X-102 Cafeteria (PIK-90-12/AL046) and X-101 Health Service Center (PIK-91-12/AL047) were intended to be temporary buildings.

The fourth group includes the two large electric switchyards (PIK-147-12/AL103, PIK-148-12/AL104, PIK-164-12/AL120, and PIK-165-12/AL121) that feed the process buildings. These switchyards are barren, graveled, fenced areas that contain many steel towers and wires. The switchyards are fed by the OVEC-owned two-tier electric substation on the hill on the west side of Portsmouth (PIK-181-12/AL137 and PIK-182-12/AL138).

The fifth group consists of the many warehouses at the Site. These warehouses are linear one-story steel structures with M-roofs scattered in various locations throughout the facility.

The sixth group includes a wide variety of support buildings such as mechanical buildings, portals, garages, storage facilities, and facilities related to site infrastructure, mostly steel framed and with transite siding.

4.3.3 Portsmouth Facility Additions: Period of Development 3 (1957-1978)

The third development period consists of a wide variety of support buildings and structures added between the end of the original phase of construction and the onset of construction of the GCEP plant in the late 1970s. Most of these architectural properties are of relatively minor significance and include structures related to water and sewage, warehouses, and process support buildings (see Table 5).

4.3.4 GCEP Facility and Later Buildings: Period of Development 4 (1979-Present)

The fourth development period consists of GCEP, a semi-self-sufficient facility added to Portsmouth from 1979 to 1985 and other miscellaneous support buildings added in recent years to support the operation of Portsmouth (see Table 6). Many of the support buildings are EM Program environmental monitoring stations and other buildings constructed in the 1980s and 1990s to meet environmental requirements. These properties are usually located on the fringes of the industrial area at a waterway (PIK-51-12/AL007, PIK-53-12/AL009, and PIK-196-12/AL152).

The GCEP project was canceled in June 1985 before the project was completed, and the facility was never placed into operations. Many of the GCEP buildings have been reused and are clearly set apart by their newer architectural appearance, their concentration in the southwestern portion of the Site, and the elements of contemporary styling in the administration buildings (X-1000 and PIK-109-12/AL065).

The GCEP facilities dominate the buildings and structures of this period, with their large, irregular massing, steel sheathing, and physical ties of corridors and attached buildings (PIK-114-12/AL070, PIK-115-12/AL071, PIK-116-12/AL072, PIK-117-12/AL073, PIK-123-12/AL079, and PIK-140-12/AL096). The styling of the administration buildings is best characterized as “Late International” with their dark brick veneer, bands of single-pane windows, flat roofs, and cantilevered eaves and hoods (e.g., PIK-105-12/AL061, PIK-106-12/AL062, and PIK-107-12/AL063). Vehicular and pedestrian portals surround the GCEP facility, each a clone of the same design. These portals have bands

of bulletproof windows, low concrete block walls, and a wide, flat roof supported by steel posts (e.g., PIK-203-12/AL159). Other buildings and structures were constructed to serve as GCEP support facilities.

Additional roads (X-2202) and railroad spurs (X-2204) were added for the GCEP facility.

Table 1. List of all inventoried DOE architectural properties and their Portsmouth mission associations

Portsmouth no.	Portsmouth name	Portsmouth Quad	AL#/OHI#	Year constructed	PRE-DOE Pre- Portsmouth structure	Missions			Mission support		Comments
						Cold War mission (weapons and other defense related)	Other/non-Cold War related	EM mission related	Cold War mission related support facility	Other/EM/non-Cold War-related support facility	
X-100	Administration Bldg.	I	050/PIK-94-12	1954					X		
X-100B	Air Conditioning Equipment Bldg.	I	049/PIK-93-12	1958					X		Addition to X-100
X-101	Health Services Center	I	047/PIK-91-12	1954					X		
X-102	Cafeteria	I	046/PIK-90-12	1954					X		
X-103	Auxiliary Office Bldg.	I	039/PIK-83-12	1954					X		Retains integrity as one of the few examples of warehouse-style buildings on its original site
X-104	Guard Headquarters	I	035/PIK-79-12	1954, 1991					X		
X-104A	Indoor Firing Range	I	034/PIK-78-12	ca. 1980-1985						X	
X-105	Maintenance Bldg.	II	014/PIK-58-12	1957					X		Demolished
X-106	Tactical Response Station	I	036/PIK-80-12	1955					X		Original site fire station
X-106B	New Fire Training Bldg.	III	126/PIK-170-12	ca. 1993						X	
X-108A	South Portal and Shelter	I	030/PIK-74-12	1955					X		
X-108B	North Portal and Shelter	I	029/PIK-73-12	1955					X		
X-108E	Construction Entrance Bldg.	III	124/PIK-168-12	1975					X		Associated with X-748
X-108H	Pike Avenue Portal	IV	119/PIK-163-12	1976					X		
X-109A	Personnel Monitoring Bldg.	III	106/PIK-150-12	1955					X		
X-109B	Personnel Monitoring Bldg.	II	013/PIK-57-12	1955					X		

Table 1. List of all inventoried DOE architectural properties and their Portsmouth mission associations (continued)

Portsmouth no.	Portsmouth name	Portsmouth Quad	AL#/OHI#	Year constructed	PRE-DOE	Missions			Mission support		Comments
					Pre-Portsmouth structure	Cold War mission (weapons and other defense related)	Other/non-Cold War related	EM mission related	Cold War mission related support facility	Other/EM/non-Cold War-related support facility	
X-109C	Personnel Monitoring Trailer	I	051/PIK-95-12	1980-1990				X			
X-111A	SNM Monitoring Portal	III	099/PIK-143-12	1981						X	Part of X-326
X-111B	SNM Monitoring Portal	III	099/PIK-143-12	1981						X	Part of X-326
X-112	Data Processing Bldg.	I	063/PIK 107-12	1984						X	
X-114A (new)	Firing Range (new)	IV	153/PIK-197-9	ca. 1990						X	
X-114A (old)	Former Firing Range	IV	150/PIK-194-12	ca. 1979						X	
X-120	South Weather Station	I	091/PIK-135-12	ca. 1979, ca. 1993-1996					X		Demolished
X-204*	Undocumented railroad overpass over North Access Road	IV	155/PIK-199-9	1923, ca. 1952	X						*X-204 is the designation for the railroad system as a whole. However, this information refers only the railroad overpass.
X-215D	Electric Power Tunnels	IV	120/PIK-164-12	1955					X		
X-220A	Instrumentation Tunnels (beside X-326, X-330 and X-333)	I and III	100/PIK-144-12	1954		X					
X-230J2	South Environmental Sampling Bldg.	I	089/PIK-133-12	1968					X		
X-230J3	West Environmental Sampling Bldg.	III	132/PIK-176-12	1968					X		
X-230J5	West Environmental Monitoring Station	III	133/PIK-177-12	1981				X			

Table 1. List of all inventoried DOE architectural properties and their Portsmouth mission associations (continued)

Portsmouth no.	Portsmouth name	Portsmouth Quad	AL#/OHI#	Year constructed	PRE-DOE		Missions			Mission support		Comments
					Pre-Portsmouth structure	Cold War mission (weapons and other defense related)	Other/non-Cold War related	EM mission related	Cold War mission related support facility	Other/EM/non-Cold War-related support facility		
X-230J6	Northeast Environmental Monitoring Station	IV	149/PIK-193-12	1981				X				
X-230J7	East Environmental Monitoring Station (Liquid Effluent System)	II	092/PIK-136-12	1981				X				
X-230J9	North Environmental Storage Bldg.	IV	143/PIK-187-12	ca. 1986				X				
X-300	Plant Control Facility	I	040/PIK-84-12	ca. 1952-1955					X			Control center for the gaseous diffusion process
X-300A	Process Monitoring Bldg.	I	041/PIK-85-12	ca. 1954					X			
X-300C	Emergency Communications Antenna	I	040/PIK-84-12	ca. 1952-1955					X			Part of X-300
X-326	Process Bldg.	III	099/PIK-143-12	1956		X						Main process building
X-330	Process Bldg.	III	101/PIK-145-12	1955		X						Main process building
X-333	Process Bldg.	IV	123/PIK-167-12	1955		X						Main process building
X-334	Transformer Storage and Cleaning Bldg.	IV	118/PIK-162-12	1985						X		
X-342A	Feed Vaporization and Fluorine Generation Facility	IV	113/PIK-157-12	1954, 1982-83		X						Used to prepare uranium for the diffusion process
X-342B	Fluorine Storage Bldg.	IV	114/PIK-158-12	1954					X			
X-343	Feed Vaporization and Sampling Facility	II	006/PIK-50-12	1981						X		
X-344A	Toll Enrichment Facility	IV	112/PIK-156-12	1958, 1971-75		X						Originally constructed to convert UF4 to UF6 for the gaseous diffusion process

Table 1. List of all inventoried DOE architectural properties and their Portsmouth mission associations (continued)

Portsmouth no.	Portsmouth name	Portsmouth Quad	AL#/OHI#	Year constructed	PRE-DOE	Missions			Mission support		Comments
					Pre-Portsmouth structure	Cold War mission (weapons and other defense related)	Other/ non-Cold War related	EM mission related	Cold War mission related support facility	Other/EM/ non-Cold War-related support facility	
X-344B	Maintenance Storage Bldg.	IV	115/PIK-159-12	1958					X		Retains integrity as one of the few examples of warehouse-style buildings on its original site
X-344C	Hydrofluoric Acid Storage Bldg	IV	117/PIK-161-12	1958					X		Demolished
X-344E	Gas Ventilation Stack	IV	117/PIK-161-12	1958					X		Demolished
X-344F	Safety Bldg.	IV	117/PIK-161-12	1958					X		Demolished
X-345	Special Nuclear Materials Storage Bldg.	II	023/PIK-67-12	1980					X		
X-530A	Switchyard	III	103/PIK-147-12	1954					X		Provided electrical power to X-326 and X-330
X-530B	Switch House (includes Control House, North Switch House, South Switch House)	III	104/PIK-148-12	1954					X		Part of X-530A
X-530C	Test and Repair Bldg.	III	103/PIK-147-12	1954					X		Part of X-530A
X-530D	Oil House	III	103/PIK-147-12	1954					X		Part of X-530A
X-530E	Valve House	III	103/PIK-147-12	1954					X		Part of X-530A
X-530F	Valve House	III	103/PIK-147-12	1954					X		Part of X-530A
X-530G	GCEP Oil Pumping Station	III	103/PIK-147-12	1980						X	Although part of X-530-A, a newer addition built to support GCEP
X-533A	Switchyard	IV	120/PIK-164-12	1954					X		Demolished

Table 1. List of all inventoried DOE architectural properties and their Portsmouth mission associations (continued)

Portsmouth no.	Portsmouth name	Portsmouth Quad	AL#/OHI#	Year constructed	PRE-DOE Pre- Portsmouth structure	Missions			Mission support		Comments
						Cold War mission (weapons and other defense related)	Other/ non-Cold War related	EM mission related	Cold War mission related support facility	Other/EM/ non-Cold War-related support facility	
X-533B	Switch House (includes Control House, East Switch House, West Switch House)	IV	121/PIK-165-12	1955					X		Demolished
X-533C	Test and Repair Facility	IV	120/PIK-164-12	1955					X		Demolished
X-533D	Oil House	IV	120/PIK-164-12	1955					X		Demolished
X-533E	Valve House	IV	120/PIK-164-12	1955					X		Demolished
X-533F	Valve House	IV	120/PIK-164-12	1955					X		Demolished
X-533H	Gas Reclaiming Cart Garage	IV	120/PIK-164-12	1985						X	Although part of X-533-A, a newer addition built to support GCEP
X-540	Exchange Telephone Bldg.	I	048/PIK-92-12	1954					X		
X-600	Steam Plant	I	054/PIK-98-12	1954, 1996					X		
X-600B	Steam Plant Shop Bldg.	I	055/PIK-99-12	1981						X	
X-605-H	Booster Pump House and Appurtenances	IV	144/PIK-188-12	1954					X		
X-605I	Chlorinator Bldg.	IV	144/PIK-188-12	1954					X		
X-605J	Diesel Generator Bldg.	IV	144/PIK-188-12	1954					X		
X-611	Water Treatment Plant Chemical Bldg. and Mixing and Settling Basins	IV	147/PIK-191-12	1954					X		
X-611C	Water Treatment Plant Filter Bldg.	IV	148/PIK-192-12	1954					X		
X-611D	Recarbonation Instrumentation Bldg.	IV	148/PIK-192-12	1979						X	

Table 1. List of all inventoried DOE architectural properties and their Portsmouth mission associations (continued)

Portsmouth no.	Portsmouth name	Portsmouth Quad	AL#/OHI#	Year constructed	PRE-DOE Pre- Portsmouth structure	Missions			Mission support		Comments
						Cold War mission (weapons and other defense related)	Other/non-Cold War related	EM mission related	Cold War mission related support facility	Other/EM/non-Cold War-related support facility	
X-612	Elevated Water Tank	III	146/PIK-190-12	ca. 1960					X		
X-614D	Sewage Lift Station	I	082/PIK-126-12	ca. 1970-78						X	
X-615	Sanitary Sewage Treatment Facility	III	128/PIK-172-12	ca. 1954-1955					X		Demolished
X-616	Liquid Effluent Control Facility	III	127/PIK-171-12	1976					X		Demolished
X-617	South pH Adjustment Facility	I	088/PIK-132-12	1979						X	
X-618	North Holding Pond Storage Bldg.	IV	142/PIK-186-12	1981						X	
X-621	Coal Pile Runoff Treatment Facility	I	056/PIK-100-12	1984						X	
X-622	South Groundwater Treatment Facility	I	085/PIK-129-12	ca. 1994				X			
X-623	East Groundwater Treatment Facility	II	007/PIK-51-12	1994-95				X			
X-624-1	Recirculating Water Pump House	II	093/PIK-137-12	ca. 1993-96						X	
X-624	Little Beaver Groundwater Treatment Facility	II	094/PIK-138-12	ca. 1993-95				X			
X-625	Groundwater Treatment Facility	I	095/PIK-139-12	ca. 1995				X			
X-626-1	Recirculating Water Pump House	I	057/PIK-101-12	1954					X		
X-626-2	Cooling Tower	I	058/PIK-102-12	1954					X		
X-630-1	Recirculating Water Pump House	IV	107/PIK-151-12	ca. 1954-55					X		

Table 1. List of all inventoried DOE architectural properties and their Portsmouth mission associations (continued)

Portsmouth no.	Portsmouth name	Portsmouth Quad	AL#/OHI#	Year constructed	PRE-DOE Pre- Portsmouth structure	Missions			Mission support		Comments
						Cold War mission (weapons and other defense related)	Other/ non-Cold War related	EM mission related	Cold War mission related support facility	Other/EM/ non-Cold War-related support facility	
X-630-2A	Cooling Tower	IV	108/PIK-152-12	ca. 1954-55					X		
X-630-2B	Cooling Tower	IV	109/PIK-153-12	ca. 1954-55					X		
X-633-1	Recirculating Water Pump House	II	003/PIK-47-12	1954-55					X		Demolished
X-633-2A	Cooling Tower and Uncovered Extension Basin	II	002/PIK-46-12	1954-55					X		Demolished
X-633-2B	Cooling Tower and Uncovered Extension Basin	II	004/PIK-48-12	1954-55					X		Demolished
X-633-2C	Cooling Tower	II	001/PIK-45-12	1976						X	Demolished
X-633-2D	Cooling Tower	II	005/PIK-49-12	1978						X	Demolished
X-640-1	Recirculating Water Pump House	II	122/PIK-166-12	1960					X		
X-640-2	Elevated Water Tank	II	025/PIK-69-12	1960					X		
X-700	Converter Shop and Cleaning Facility	II	018/PIK-62-12	1955					X		
X-700A	Air Conditioning Equipment Bldg.	II	020/PIK-64-12	1975						X	
X-701A	Lime House	II	016/PIK-60-12	1955					X		Demolished
X-701C	Neutralizing Pit	II	017/PIK-53-12	1973					X		Demolished
X-701D	Water Deionization Facility	II	019/PIK-63-12	1955					X		Demolished
X-701E	Neutralizing Bldg.	II	009/PIK-53-12	1973					X		
X-705	Decontamination Bldg.	II	002/PIK-65-12	1955					X		
X-705D	Heating Booster Pump Bldg.	II	022/PIK-66-12	1983						X	

Table 1. List of all inventoried DOE architectural properties and their Portsmouth mission associations (continued)

Portsmouth no.	Portsmouth name	Portsmouth Quad	AL#/OHI#	Year constructed	PRE-DOE	Missions			Mission support	Comments
					Pre-Portsmouth structure	Cold War mission (weapons and other defense related)	Other/ non-Cold War related	EM mission related	Cold War mission related support facility	Other/EM/ non-Cold War-related support facility
X-710	Technical Service Bldg.	I	043/PIK-87-12	1953, 1975					X	
X-710A	Technical Service Gas Manifold Shed	I	045/PIK-89-12	ca. 1955					X	Associated with the operation of X-710 (related to scientific operations of PORTS)
X-710B	Explosion Test Facility	I	044/PIK-88-12	1956					X	Related to scientific operations at PORTS
X-720	Maintenance and Stores Bldg.	II	027/PIK-71-12	1954					X	
X-720A	Maintenance and Stores Gas Manifold Shed	II	028/PIK-72-12	1954					X	Demolished
X-720B	Radio Base Station Bldg.	II	024/PIK-68-12	1978					X	
X-720C	Paint and Oil Storage Bldg.	II	026/PIK-70-12	1980					X	
X-735A	Landfill Utility Bldg.	IV	145/PIK-189-9	1982					X	Demolished
X-740	Waste Oil Storage Bldg.	III	105/PIK-149-12	1982					X	Demolished
X-741	Oil Drum Storage Facility	I	031/PIK-75-12	1954					X	
X-742	Gas Cylinder Storage Facility	I	032/PIK-76-12	1954					X	
X-743	Lumber Storage Facility	I	042/PIK-86-12	ca. 1953-56					X	This facility is in its original location
X-744B	Salt Storage Bldg.	IV	140/PIK-184-12	1979					X	
X-744G	Bulk Storage Building - Non-UEA	II	008/PIK-52-12	1956					X	
X-744H	Bulk Storage Bldg.	II	010/PIK-54-12	1953					X	This facility is in its original location
X-744J	Bulk Storage Bldg.	II	011/PIK-55-12	1953					X	This facility is in its original location
X-744K	Warehouse K - Non-UEA	I	084/PIK-128-12	1953-54, 1978					X	

Table 1. List of all inventoried DOE architectural properties and their Portsmouth mission associations (continued)

Portsmouth no.	Portsmouth name	Portsmouth Quad	AL#/OHI#	Year constructed	PRE-DOE Pre- Portsmouth structure	Missions			Mission support		Comments
						Cold War mission (weapons and other defense related)	Other/ non-Cold War related	EM mission related	Cold War mission related support facility	Other/EM/ non-Cold War-related support facility	
X-744L	Maintenance and Stores Warehouse	II	015/PIK-59-12	1983						X	
X-744-N	Warehouse	III	131/PIK-175-12	1988						X	
X-744-P	Warehouse	III	131/PIK-175-12	1988						X	
X-744-Q	Warehouse	III	131/PIK-175-12	1988						X	
X-744S	Warehouse	III	129/PIK-173-12	1957, 1978					X		
X-744T	Warehouse	III	129/PIK-173-12	1957, 1978					X		Demolished
X-744U	Warehouse	III	129/PIK-173-12	1957, 1978					X		Demolished
X-744W	Surplus and Salvage Warehouse	IV	141/PIK-185-12	1957, 1983					X		
X-746	Materials Receiving and Inspection	I	033/PIK-77-12	1954					X		Demolished
X-748	Truck Scale Facility	III	124/PIK-168-12	1975					X		Associated with X-108E
X-750	Mobile Equipment Maintenance Shop	I	037/PIK-81-12	1953					X		
X-750A	Garage Storage Bldg.	I	038/PIK-82-12	ca. 1953					X		Associated with X-750
X-751	Mobile Equipment Garage	I	083/PIK-127-12	1979						X	
X-752	Warehouse	IV	139/PIK-183-12	1978					X		This may be an original Portsmouth warehouse, but it is not in its original location
X-760	Chemical Engineering Bldg.	I	052/PIK-96-12	1954					X		Demolished
X-770	Mechanical Test Bldg.	I	053/PIK-97-12	1954					X		Demolished
XT-801	South Office Bldg.	I	090/PIK-134-12	1977-78						X	

Table 1. List of all inventoried DOE architectural properties and their Portsmouth mission associations (continued)

Portsmouth no.	Portsmouth name	Portsmouth Quad	AL#/OHI#	Year constructed	PRE-DOE Pre- Portsmouth structure	Missions			Mission support		Comments
						Cold War mission (weapons and other defense related)	Other/non-Cold War related	EM mission related	Cold War mission related support facility	Other/EM/non-Cold War-related support facility	
XT-847	GCEP Construction Warehouse	I	087/PIK-131-12	ca. 1980-85						X	
X-1000	Administration Bldg.	I	065/PIK-109-12	1981						X	
X-1007	Fire Station	I	062/PIK-106-12	1981						X	
X-1020	Plant Emergency Operations Center	I	061/PIK-105-12	ca. 1980-85						X	
X-1107AV	Administrative Portal-Vehicular	I	086/PIK-130-12	1983						X	
X-1107BP	Administrative Portal-Pedestrian	I	064/PIK-108-12	1985						X	
X-1107BV	Interplant Portal	I	059/PIK-103-12	1985						X	
X-1107DV and X-1107DP	Northeast Portal - Vehicular and Northeast Portal - Pedestrian	III	125/PIK-169-12	1985						X	
X-1107EV and X-1107EP	Northwest Portal - Vehicular and Northwest Portal - Pedestrian	III	159/PIK-203-12	1985						X	
X-1107FP	South Portal - Pedestrian	I	080/PIK-124-12	1985						X	
X-1107FV	South Portal - Vehicular	I	081/PIK-125-12	1985						X	
X-3000	Electronic Maintenance Facility	I	066/PIK-110-12	ca. 1980-85						X	
X-3001	GCEP Process Building #1	I	072/PIK-116-12	1979-83			X				

Table 1. List of all inventoried DOE architectural properties and their Portsmouth mission associations (continued)

Portsmouth no.	Portsmouth name	Portsmouth Quad	AL#/OHI#	Year constructed	PRE-DOE Pre- Portsmouth structure	Missions			Mission support		Comments
						Cold War mission (weapons and other defense related)	Other/non-Cold War related	EM mission related	Cold War mission related support facility	Other/EM/non-Cold War-related support facility	
X-3002	GCEP Process Building #2	I	070/PIK-114-12	1979-83			X				
X-3012	GCEP Process Support Bldg.	I	071/PIK-115-12	1983			X				
X-3346	Waste Handling and Storage Facility (GCEP Feed and Withdrawal Facility)	I	079/PIK-123-12	ca. 1980-85			X				
X-5000	GCEP Switch House	I	078/PIK-122-12	1982						X	
X-5001	Switchyard	I	078/PIK-122-12	1982						X	
X-5001A	Valve House	I	078/PIK-122-12	1982						X	
X-5001B	Oil Pumping Station	I	078/PIK-122-12	1982						X	
X-6000	Cooling Tower Pump House	I	067/PIK-111-12	1984						X	
X-6001	Cooling Tower	I	068/PIK-112-12	1984						X	
X-6001A	Valve House	I	068/PIK-112-12	1984						X	
X-6613	Sanitary Water Storage Tank	I	075/PIK-119-12	ca. 1980-85						X	
X-6614-E	Sewage Lift Station	III	082/PIK-126-12	ca. 1970-78					X		
X-6614G	Sewage Lift Station	I	082/PIK-126-12	ca. 1970-78					X		
X-6614H	Sewage Lift Station	I	082/PIK-126-12	ca. 1970-78					X		
X-6614J	Sewage Lift Station	III	082/PIK-126-12	ca. 1970-78					X		
X-6619	Sewage Treatment Facility	III	130/PIK-174-12	1980						X	
X-6643-I	Fire Water Storage Tank 1	I	076/PIK-120-12	ca. 1980-85						X	
X-6643-II	Fire Water Storage Tank 2	I	077/PIK-121-12	ca. 1980-85						X	

Table 1. List of all inventoried DOE architectural properties and their Portsmouth mission associations (continued)

Portsmouth no.	Portsmouth name	Portsmouth Quad	AL#/OHI#	Year constructed	PRE-DOE Pre- Portsmouth structure	Missions			Mission support		Comments
						Cold War mission (weapons and other defense related)	Other/non-Cold War related	EM mission related	Cold War mission related support facility	Other/EM/non-Cold War-related support facility	
X-6644	Fire Water Pump House	I	074/PIK-118-12	ca. 1980-85						X	
X-7721	Maintenance, Stores and Training Facility	I	060/PIK-104-12	1985			X				
X-7725 and X-7726	Hazardous Waste Storage Bldg. (GCEP Recycle/Assembly Bldg. and GCEP Training and Test Facility)	III	096/PIK-140-12	1983			X				
X-7725A	GCEP Waste Accountability Facility	III	097/PIK-141-12	1984						X	
X-7727H	GCEP Transfer Corridor	I and III	073/PIK-117-12	1983			X				
---	Undocumented Guard Post	II	012/PIK-56-12	ca. 1952-1960					X		Original construction date and location are unknown
---	Undocumented Guard Booth	I	069/PIK-113-12	ca. 1960-1980					X		Original construction date and location are unknown
---	Undocumented temporary warehouse in X-7445 R Yard	III	098/PIK-142-12	ca. 1996-97						X	
---	Undocumented bridge over tributary to Little Beaver Creek	IV	102/PIK-146-9	ca. 1930-50, ca. 1954	X						Heavily altered roadway bridge lacking integrity
---	Undocumented shed in X-530A switchyard	III	103/PIK-147-12	unknown							Although associated with X-530A switchyard, the age and original function are unknown
---	Undocumented mobile office in X-530A switchyard	III	103/PIK-147-12	unknown							Although associated with X-530A switchyard, the age and original function are unknown
---	Two undocumented booths in X-745E Yard	IV	110/PIK-154-12	ca. 1970-80					X		
---	Undocumented shed in X-745C Yard	III	111/PIK-155-12	ca. 1996-97						X	

Table 1. List of all inventoried DOE architectural properties and their Portsmouth mission associations (continued)

Portsmouth no.	Portsmouth name	Portsmouth Quad	AL#/OHI#	Year constructed	PRE-DOE Pre- Portsmouth structure	Missions			Mission support		Comments
						Cold War mission (weapons and other defense related)	Other/ non-Cold War related	EM mission related	Cold War mission related support facility	Other/EM/ non-Cold War-related support facility	
---	Undocumented mobile office behind X-344A	IV	116/PIK-160-12	ca. 1990-97						X	
---	Undocumented mobile office in X-533A switchyard	IV	120/PIK-164-12	ca. 1997						X	Although associated with X-533A switchyard, it is a modern utilitarian structure
---	Chlorine Bldg.	IV	148/PIK-192-12	ca. 1993-1997						X	Although associated with the X-611 water treatment complex, it is a modern utilitarian structure
---	Undocumented Pipeline from Water Treatment Plant to X-611 B Sludge Lagoon	IV	151/PIK-195-12	1978-1980					X		
---	Undocumented Sludge Lagoon Environmental Monitoring Station	IV	152/PIK-196-12	ca. 1980				X			
---	Undocumented Water Pipeline Bldg. near Little Beaver Creek	IV	154/PIK-198-9	ca. 1954					X		
---	Undocumented earthen barricade	IV	156/PIK-200-9	ca. 1980-90						X	
---	Undocumented Bridge over Tributary to Little Beaver Creek	IV	157/PIK-201-9	ca. 1880-1920, ca. 1954	X						Heavily altered roadway bridge lacking integrity
---	Undocumented Bridge over Tributary to Little Beaver Creek	IV	158/PIK-202-12	ca. 1880-1920, ca. 1954	X						Heavily altered roadway bridge lacking integrity
---	Undocumented Temporary Warehouse Beside X-3346	I	160/PIK-204-12	ca. 1996-97						X	

Table 1. List of all inventoried DOE architectural properties and their Portsmouth mission associations (continued)

Portsmouth no.	Portsmouth name	Portsmouth Quad	AL#/OHI#	Year constructed	PRE-DOE Pre- Portsmouth structure	Missions			Mission support		Comments
						Cold War mission (weapons and other defense related)	Other/ non-Cold War related	EM mission related	Cold War mission related support facility	Other/EM/ non-Cold War-related support facility	

AL = architectural location

DOE = U.S. Department of Energy

EM = Environmental Management

GCEP = Gas Centrifuge Enrichment Plant

OHI = Ohio Historic Inventory

SNM = special nuclear material

The following non-DOE owned facilities were inventoried at the time of the 1996-1997 architectural survey. They are listed for informational purposes only and are not under the jurisdiction, ownership or control of DOE. 134/PIK-178-12 Ohio Valley Electric Corporation Administration Building; 135/PIK-179-12 Ohio Valley Electric Corporation storage shed; 136/PIK-180-12 Ohio Valley Electric Corporation microwave tower and dish; 137/PIK-181-12 Ohio Valley Electric Corporation Don Marquis Substation (upper tier yard); and 138/PIK-182-12 Ohio Valley Electric Corporation Don Marquis Substation (lower tier yard).

Table 2. List of all inventoried DOE architectural properties in the architectural survey of Portsmouth

AL #	OHI #	Portsmouth #	Portsmouth name	Portsmouth Quad	Date constructed	Development period	Facility type
001	PIK-45-12	X-633-2C	Cooling Tower	II	1976	3	Heat Exchanging Structure
002	PIK-46-12	X-633-2A	Cooling Tower and Uncovered Extension Basin	II	1954-55	2	Heat Exchanging Structure
003	PIK-47-12	X-633-1	Recirculating Water Pump House	II	1954-55	2	Mechanical Bldg.
004	PIK-48-12	X-633-2B	Cooling Tower and Uncovered Extension Basin	II	1954-55	2	Heat Exchanging Structure
005	PIK-49-12	X-633-2D	Cooling Tower	II	1978	3	Heat Exchanging Structure
006	PIK-50-12	X-343	Feed Vaporization and Sampling Facility	II	1981	4	Process Bldg.
007	PIK-51-12	X-623	East Groundwater Treatment Facility	II	1994-95	4	Mechanical Bldg.
008	PIK-52-12	X-744G	Bulk Storage Bldg.-Non-UEA	II	1956	2	Warehouse
009	PIK-53-12	X-701E	Neutralizing Bldg.	II	1973	3	Mechanical Bldg.
010	PIK-54-12	X-744H	Bulk Storage Bldg.	II	1953	2	Warehouse
011	PIK-55-12	X-744J	Bulk Storage Bldg.	II	1953	2	Warehouse
012	PIK-56-12	---	Undocumented Guard Post	II	ca. 1952-1960	2	Booth
013	PIK-57-12	X-109B	Personnel Monitoring Bldg.	II	1955	2	Booth
014	PIK-58-12	X-105	Maintenance Bldg.	II	1957	3	Warehouse
015	PIK-59-12	X-744L	Maintenance and Stores Warehouse	II	ca. 1983	4	Warehouse
016	PIK-60-12	X-701A	Lime House	II	1955	2	Mechanical Bldg.
017	PIK-61-12	X-701C	Neutralizing Pit	II	1973	2	Basin
018	PIK-62-12	X-700	Converter Shop and Cleaning Facility	II	1955	2	Work Bldg.
019	PIK-63-12	X-701D	Water Deionization Facility	II	1955	2	Mechanical Bldg.
020	PIK-64-12	X-700A	Air Conditioning Equipment Bldg.	II	1975	3	Mechanical Bldg.
021	PIK-65-12	X-705	Decontamination Bldg.	II	1955	2	Work Bldg.
022	PIK-66-12	X-705D	Heating Booster Pump Bldg.	II	1983	4	Mechanical Bldg.
023	PIK-67-12	X-345	Special Nuclear Materials Storage Bldg.	II	1980	4	Bunker Warehouse
024	PIK-68-12	X-720B	Radio Base Station Bldg.	II	1978	3	Mechanical Bldg.
025	PIK-69-12	X-640-2	Elevated Water Tank	II	1960	3	Elevated Cylinder Tank

Table 2. List of all inventoried DOE architectural properties in the architectural survey of Portsmouth (continued)

AL #	OHI #	Portsmouth #	Portsmouth name	Portsmouth Quad	Date constructed	Development period	Facility type
026	PIK-70-12	X-720C	Paint and Oil Storage Bldg.	II	1980	4	Warehouse
027	PIK-71-12	X-720	Maintenance and Stores Bldg.	II	1954	2	Work Bldg.
028	PIK-72-12	X-720A	Maintenance and Stores Gas Manifold Shed	II	1954	2	Covered Platform
029	PIK-73-12	X-108B	North Portal and Shelter	I	1955	2	Booth
030	PIK-74-12	X-108A	South Portal and Shelter	I	1955	2	Booth
031	PIK-75-12	X-741	Oil Drum Storage Facility	I	1954	2	Covered Platform
032	PIK-76-12	X-742	Gas Cylinder Storage Facility	I	1954	2	Covered Platform
033	PIK-77-12	X-746	Materials Receiving and Inspection	I	1954	2	Warehouse
034	PIK-78-12	X-104A	Indoor Firing Range	I	ca. 1980-1985	4	Enclosed Firing Range Bldg.
035	PIK-79-12	X-104	Guard Headquarters	I	1954, 1991	2	Office Bldg.
036	PIK-80-12	X-106	Tactical Response Station	I	1955	2	Garage
037	PIK-81-12	X-750	Mobile Equipment Maintenance Shop	I	1953	2	Garage
038	PIK-82-12	X-750A	Garage Storage Bldg.	I	ca. 1953	2	Storage Shed
039	PIK-83-12	X-103	Auxiliary Office Bldg.	I	1954	2	Warehouse
040	PIK-84-12	X-300 and X-300C	Plant Control Facility ands Emergency Communications Antenna	I	ca. 1952-1955	2	Bunker Office Bldg.
041	PIK-85-12	X-300A	Process Monitoring Bldg.	I	ca. 1954	2	Mechanical Bldg.
042	PIK-86-12	X-743	Lumber Storage Facility	I	ca. 1953-56	2	Covered Platform
043	PIK-87-12	X-710	Technical Service Bldg.	I	1953, 1975	2	Laboratory Bldg.
044	PIK-88-12	X-710B	Explosion Test Facility	I	1956	2	Mechanical Bldg.
045	PIK-89-12	X-710A	Technical Service Gas Manifold Shed	I	ca. 1955	2	Covered Platform
046	PIK-90-12	X-102	Cafeteria	I	1954	2	Cafeteria
047	PIK-91-12	X-101	Health Services Center	I	1954	2	Medical Bldg.
048	PIK-92-12	X-540	Exchange Telephone Bldg.	I	1954	2	Office Bldg.
049	PIK-93-12	X-100B	Air Conditioning Equipment Bldg.	I	1958	3	Mechanical Bldg.
050	PIK-94-12	X-100	Administration Bldg.	I	1954	2	Office Bldg.
051	PIK-95-12	X-109C	Personnel Monitoring Trailer	I	1980-1990	4	Mobile Home
052	PIK-96-12	X-760	Chemical Engineering Bldg.	I	1954	2	Laboratory Bldg.

Table 2. List of all inventoried DOE architectural properties in the architectural survey of Portsmouth (continued)

AL #	OHI #	Portsmouth #	Portsmouth name	Portsmouth Quad	Date constructed	Development period	Facility type
053	PIK-97-12	X-770	Mechanical Test Bldg.	I	1954	2	Mechanical Bldg.
054	PIK-98-12	X-600	Steam Plant	I	1954, 1996	2	Heating Plant Structure
055	PIK-99-12	X-600B	Steam Plant Shop Bldg.	I	1981	4	Garage
056	PIK-100-12	X-621	Coal Pile Runoff Treatment Facility	I	1984	4	Mechanical Bldg.
057	PIK-101-12	X-626-1	Recirculating Water Pump House	I	1954	2	Mechanical Bldg.
058	PIK-102-12	X-626-2	Cooling Tower	I	1954	2	Heat Exchanging Structure
059	PIK-103-12	X-1107BV	Interplant Portal	I	1985	4	Booth
060	PIK-104-12	X-7721	Maintenance, Stores and Training Facility	I	1985	4	Office Bldg., Multi-level
061	PIK-105-12	X-1020	Plant Emergency Operations Center	I	ca. 1980-85	4	Office Bldg.
062	PIK-106-12	X-1007	Fire Station	I	1981	4	Emergency Vehicle Garage
063	PIK-107-12	X-112	Data Processing Bldg.	I	1984	4	Office Bldg.
064	PIK-108-12	X-1107BP	Administrative Portal-Pedestrian	I	1985	4	Booth
065	PIK-109-12	X-1000	Administration Bldg.	I	1981	4	Office Bldg.
066	PIK-110-12	X-3000	Electronic Maintenance Facility	I	ca. 1980-85	4	Office Bldg.
067	PIK-111-12	X-6000	Cooling Tower Pump House	I	1984	4	Mechanical Bldg.
068	PIK-112-12	X-6001 and X-6001A	Cooling Tower and Valve House	I	1984	4	Heat Exchanging Structure
069	PIK-113-12	---	Undocumented Guard Booth	I	ca. 1960-1980	3	Booth
070	PIK-114-12	X-3002	GCEP Process Bldg. #2	I	1979-83	4	Process Bldg.
071	PIK-115-12	X-3012	GCEP Process Support Bldg	I	1983	4	Office Bldg.
072	PIK-116-12	X-3001	GCEP Process Bldg. #1	I	1979-83	4	Process Bldg.
073	PIK-117-12	X-7727H	GCEP Transfer Corridor	I and III	1983	4	Mechanical Corridor
074	PIK-118-12	X-6644	Fire Water Pump House	I	ca. 1980-85	4	Mechanical Bldg
075	PIK-119-12	X-6613	Sanitary Water Storage Tank	I	ca. 1980-85	4	Large Cylinder Tank
076	PIK-120-12	X-6643-I	Fire Water Storage Tank I	I	ca. 1980-85	4	Large Cylinder Tank
077	PIK-121-12	X-6643-II	Fire Water Storage Tank II	I	ca. 1980-85	4	Large Cylinder Tank
078	PIK-122-12	X-5000, X-5001, X-5001A, X-5001B	GCEP Switch House, Switchyard, Valve House and Oil Pumping Station	I	1982	4	Utility Yard

Table 2. List of all inventoried DOE architectural properties in the architectural survey of Portsmouth (continued)

AL #	OHI #	Portsmouth #	Portsmouth name	Portsmouth Quad	Date constructed	Development period	Facility type
079	PIK-123-12	X-3346	Waste Handling and Storage Facility (GCEP Feed and Withdrawal Facility)	I	ca. 1980-85	4	Process Bldg.
080	PIK-124-12	X-1107FP	South Portal - Pedestrian	I	1985	4	Booth
081	PIK-125-12	X-1107FV	South Portal - Vehicular	I	1985	4	Booth
082	PIK-126-12	X-614D, X-6614G, X-6614E, X-6614H (two), X- 6614J	Sewage Lift Stations	I and III	ca. 1970-78	3	Mechanical Bldg.
083	PIK-127-12	X-751	Mobile Equipment Garage	I	1979	4	Linear Garage
084	PIK-128-12	X-744K	Warehouse K - Non-UEA	I	1953-54, 1978	2	Warehouse
085	PIK-129-12	X-622	South Groundwater Treatment Facility	I	ca. 1994	4	Mechanical Bldg.
086	PIK-130-12	X-1107AV	Administrative Portal - Vehicular	I	1983	4	Booth
087	PIK-131-12	XT-847	GCEP Construction Warehouse	I	ca. 1980-85	4	Warehouse
088	PIK-132-12	X-617	South pH Adjustment Facility	I	1979	4	Mechanical Bldg.
089	PIK-133-12	X-230J2	South Environmental Sampling Bldg.	I	1968	3	Mechanical Bldg.
090	PIK-134-12	XT-801	South Office Bldg.	I	1977-78	3	Office Bldg.
091	PIK-135-12	X-120	South Weather Station	I	ca. 1979, ca. 1993-1996	4	Communications Antenna
092	PIK-136-12	X-230J7	East Environmental Monitoring Station (Liquid Effluent System)	II	1981	4	Mechanical Bldg.
093	PIK-137-12	X-624-1	Recirculating Water Pump House	II	ca. 1993-96	4	Weatherport
094	PIK-138-12	X-624	Little Beaver Groundwater Treatment Facility	II	ca. 1993-95	4	Mechanical Bldg.
095	PIK-139-12	X-625	Groundwater Treatment Facility	I	ca. 1995	4	Mechanical Bldg.
096	PIK-140-12	X-7725 and X-7726	Hazardous Waste Storage Bldg. (GCEP Recycle/Assembly Bldg. and GCEP Training and Test Facility)	III	1983	4	Process Bldg.
097	PIK-141-12	X-7725A	GCEP Waste Accountability Facility	III	1984	4	Warehouse

Table 2. List of all inventoried DOE architectural properties in the architectural survey of Portsmouth (continued)

AL #	OHI #	Portsmouth #	Portsmouth name	Portsmouth Quad	Date constructed	Development period	Facility type
098	PIK-142-12	---	Undocumented Temporary Warehouse in X-7445 R Yard	III	ca. 1996-97	4	Weatherport
099	PIK-143-12	X-326, X-111A, X-111B	Process Bldg. and SNM Monitoring Portals	III	1956, 1981	2, 4	Process Bldg.
100	PIK-144-12	X-220A	Instrumentation Tunnels (beside X-326, X-330 and X-333)	I and III	1954	2	Utility Tunnel
101	PIK-145-12	X-330	Process Bldg.	III	1955	2	Process Bldg.
102	PIK-146-9	---	Undocumented Bridge over Tributary to Little Beaver Creek	IV	ca. 1930-50, ca. 1954	1	Bridge
103	PIK-147-12	X-530C	Switchyard, Test and Repair Bldg., Oil House, Valve Houses, GCEP Oil Pumping Station, Undocumented Bldg., and Undocumented Mobile Office	III	1954, 1980 (X-530G)	2, 4	Mechanical Bldg.
104	PIK-148-12	X-530B	Switch House (includes Control House, North Switch House, South Switch House)	III	1954	2	Utility Yard
105	PIK-149-12	X-740	Waste Oil Storage Bldg.	III	1982	4	Weatherport
106	PIK-150-12	X-109A	Personnel Monitoring Bldg.	III	1955	2	Office Bldg.
107	PIK-151-12	X-630-1	Recirculating Water Pump House	IV	ca. 1954-55	2	Mechanical Bldg.
108	PIK-152-12	X-630-2A	Cooling Tower	IV	ca. 1954-55	2	Heat Exchanging Structure
109	PIK-153-12	X-630-2B	Cooling Tower	IV	ca. 1954-55	2	Heat Exchanging Structure
110	PIK-154-12	---	Two undocumented booths in X-745E Yard	IV	ca. 1970-80	3	Booth
111	PIK-155-12	---	Undocumented shed in X-745C Yard	III	ca. 1996-97	4	Storage Shed
112	PIK-156-12	X-344A	Toll Enrichment Facility	IV	1958, 1971-75	3	Process Bldg.
113	PIK-157-12	X-342A	Feed Vaporization and Fluorine Generation Facility	IV	1954, 1982-83	2	Process Bldg.
114	PIK-158-12	X-342B	Fluorine Storage Bldg.	IV	1954	2	Mechanical Bldg.
115	PIK-159-12	X-344B	Maintenance Storage Bldg.	IV	1958	3	Warehouse
116	PIK-160-12	---	Undocumented Mobile Office behind X-344A	IV	ca. 1990-97	4	Mobile Home

Table 2. List of all inventoried DOE architectural properties in the architectural survey of Portsmouth (continued)

AL #	OHI #	Portsmouth #	Portsmouth name	Portsmouth Quad	Date constructed	Development period	Facility type
117	PIK-161-12	X-344C, X-344E, X-344F	Hydrofluoric Acid Storage Bldg., Gas Ventilation Stack, and Safety Bldg.	IV	1958	3	Weatherport
118	PIK-162-12	X-334	Transformer Storage and Cleaning Bldg.	IV	1985	4	Storage Garage
119	PIK-163-12	X-108H	Pike Avenue Portal	IV	1976	3	Booth
120	PIK-164-12	X-215D, X-533A, X-533C, X-533D, X-533E, X-533F, X-533H, and undocumented	Electric Power Tunnels, Switchyard, Test and Repair Facility, Oil House, Valve Houses, Gas Reclaiming Cart Garage, and Undocumented Mobile Office	IV	1954, 1955, 1985 (X-533H), ca. 1997	2, 4	Utility Yard
121	PIK-165-12	X-533B	Switch House (includes Control House, East Switch House, West Switch House)	IV	1955	2	Mechanical Bldg.
122	PIK-166-12	X-640-1	Recirculating Water Pump House	II	1960	3	Mechanical Bldg.
123	PIK-167-12	X-333	Process Bldg.	IV	1955	2	Process Bldg.
124	PIK-168-12	X-108E, X-748	Construction Entrance Bldg. and Truck Scale Facility	III	1975	3	Booth
125	PIK-169-12	X-1107DV and X-1107DP	Northeast Portal - Vehicular and Northeast Portal - Pedestrian	III	1985	4	Booth
126	PIK-170-12	X-106B (new)	New Fire Training Bldg.	III	ca. 1993	4	Emergency Training Bldg.
127	PIK-171-12	X-616	Liquid Effluent Control Facility	III	1976	3	Mechanical Bldg.
128	PIK-172-12	X-615	Sanitary Sewage Treatment Facility	III	ca. 1954-1955	2	Mechanical Bldg.
129	PIK-173-12	X-744S, X-744T, X-744U	Warehouses	III	1957, 1978	3	Warehouse
130	PIK-174-12	X-6619	Sewage Treatment Facility	III	1980	4	Mechanical Bldg.
131	PIK-175-12	X-744-N, X-744P, X-744Q	Warehouses	III	1988	4	Warehouse
132	PIK-176-12	X-230J3	West Environmental Sampling Bldg.	III	1968	3	Mechanical Bldg.
133	PIK-177-12	X-230J5	West Environmental Monitoring Station	III	1981	4	Mechanical Bldg.

Table 2. List of all inventoried DOE architectural properties in the architectural survey of Portsmouth (continued)

AL #	OHI #	Portsmouth #	Portsmouth name	Portsmouth Quad	Date constructed	Development period	Facility type
139	PIK-183-12	X-752	Warehouse	IV	1978	3	Warehouse
140	PIK-184-12	X-744B	Salt Storage Bldg.	IV	1979	4	Bin
141	PIK-185-12	X-744W	Surplus and Salvage Warehouse	IV	1957, 1983	3	Warehouse
142	PIK-186-12	X-618	North Holding Pond Storage Bldg.	IV	1981	4	Mechanical Bldg.
143	PIK-187-12	X-230J9	North Environmental Storage Bldg.	IV	ca. 1986	4	Booth
144	PIK-188-12	X-605-H, X-605I, X-605J	Booster Pump House and Appurtenances, Chlorinator Bldg., Diesel Generator Bldg.	IV	1954	2	Mechanical Bldg.
145	PIK-189-9	X-735A	Landfill Utility Bldg.	IV	1982	4	Storage Garage
146	PIK-190-12	X-612	Elevated Water Tank	III	ca. 1960	3	Elevated Cylinder Tank
147	PIK-191-12	X-611	Water Treatment Plant Chemical Bldg. and Mixing and Settling Basins	IV	1954	2	Mechanical Bldg.
148	PIK-192-12	X-611C, unnumbered, X-611D	Water Treatment Plant Filter Bldg., Chlorine Bldg. and Recarbonation Instrumentation Bldg	IV	1954 (X-611C), 1979 (X-611D), ca. 1993-1997	2, 4	Mechanical Bldg.
149	PIK-193-12	X-230J6	Northeast Environmental Monitoring Station	IV	1981	4	Mechanical Bldg.
150	PIK-194-12	X-114A (old)	Former Firing Range	IV	ca. 1979	4	Weatherport
151	PIK-195-12	---	Undocumented Pipeline from Water Treatment Plant to X-611 B Sludge Lagoon	IV	1978-1980	3	Pipeline
152	PIK-196-12	---	Undocumented Sludge Lagoon Environmental Monitoring Station	IV	ca. 1980	4	Mechanical Bldg.
153	PIK-197-9	X-114A (new)	Firing Range (new)	IV	ca. 1990	4	Open Firing Range
154	PIK-198-9	---	Undocumented Water Pipeline Building near Little Beaver Creek	IV	ca. 1954	2	Mechanical Bldg.
155	PIK-199-9	X-204 (2)	Undocumented Railroad Overpass over North Access Road	IV	1923, ca. 1952	1	Railroad Overpass
156	PIK-200-9	---	Undocumented earthen barricade	IV	ca. 1980-1990	4	Earthen Barricade

Table 2. List of all inventoried DOE architectural properties in the architectural survey of Portsmouth (continued)

AL #	OHI #	Portsmouth #	Portsmouth name	Portsmouth Quad	Date constructed	Development period	Facility type
157	PIK-201-9	---	Undocumented Bridge over Tributary to Little Beaver Creek	IV	ca. 1880-1920, ca. 1954	1	Bridge
158	PIK-202-12	---	Undocumented Bridge over Little Beaver Creek	IV	ca. 1880-1920, ca. 1954	1	Bridge
159	PIK-203-12	X-1107EV and X-1107EP	Northwest Portal - Vehicular and Northwest Portal - Pedestrian	III	1985	4	Booth
160	PIK-204-12	---	Undocumented Temporary Warehouse Beside X-3346	I	ca. 1996-97	4	Weatherport

AL = architectural location

GCEP = Gas Centrifuge Enrichment Plant

OHI = Ohio Historic Inventory

The following non-DOE owned facilities were inventoried at the time of the 1996-1997 architectural survey. They are listed for informational purposes only and are not under the jurisdiction, ownership or control of DOE. 134/PIK-178-12 Ohio Valley Electric Corporation Administration Building; 135/PIK-179-12 Ohio Valley Electric Corporation storage shed; 136/PIK-180-12 Ohio Valley Electric Corporation microwave tower and dish; 137/PIK-181-12 Ohio Valley Electric Corporation Don Marquis Substation (upper tier yard); and 138/PIK-182-12 Ohio Valley Electric Corporation Don Marquis Substation (lower tier yard).

Table 3. Pre-Portsmouth structures: period of development 1 (1900–1951)

AL no.	OHI no.	Portsmouth no.	Portsmouth name
102	PIK-146-9	Undocumented	Undocumented Bridge over tributary to Little Beaver Creek
155	PIK-199-9	X-204	Undocumented Railroad overpass over North Access Road
157	PIK-201-9	Undocumented	Undocumented Bridge over tributary to Little Beaver Creek
158	PIK-202-12	Undocumented	Undocumented Bridge over Little Beaver Creek

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Table 4. Original Portsmouth facility: period of development 2 (1952–1956)

Key: (numbers and names in parenthesis date to a later period of development than the primary resource under which it is listed.)

AL no.	OHI no.	Portsmouth no.	Portsmouth name
Portsmouth Gaseous Diffusion Process Buildings			
099	PIK-143-12	X-326 (X-111A, X-111B)	Process Bldg. (SNM monitoring portals)
100	PIK-144-12	X-220A	Instrumentation Tunnels (beside X-326, X-330, and X-333)
101	PIK-145-12	X-330	Process Bldg.
123	PIK-167-12	X-333	Process Bldg.
Original Cooling Complexes			
002	PIK-46-12	X-633-2A	Cooling tower and Uncovered Extension Basin
003	PIK-47-12	X-633-1	Recirculating Water Pump House
004	PIK-48-12	X-633-2B	Cooling Tower and Uncovered Extension Basin
057	PIK-101-12	X-626-1	Recirculating Water Pump House
058	PIK-102-12	X-626-2	Cooling Tower
107	PIK-151-12	X-630-1	Recirculating Water Pump House
108	PIK-152-12	X-630-2A	Cooling Tower
109	PIK-153-12	X-630-2B	Cooling Tower
Headquarters Group			
035	PIK-79-12	X-104	Guard Headquarters
036	PIK-80-12	X-106	Tactical Response Station
037	PIK-81-12	X-750	Mobile Equipment Maintenance Shop
040	PIK-84-12	X-300 and X-300C	Plant Control Facility and Emergency Communications Antenna
046	PIK-90-12	X-102	Cafeteria
047	PIK-91-12	X-101	Health Service Center
050	PIK-94-12	X-100	Administration Bldg.
Electric Switchyards			
103	PIK-147-12	X-530A, X-530C, X-530D, X-530E, X-530F (X-530G, and undocumented [two]))	Switchyard, Test and Repair Bldg., Oil House, Valve Houses, (GCEP Oil Pumping Station, Undocumented Bldg., and Undocumented Mobile Office)
104	PIK-148-12	X-530B	Switch House (includes Control House, North Switch House, and South Switch House)
120	PIK-164-12	X-533A, X-533C, X-533D, X-533E, X-533F, (X-533H), X-215D and (undocumented)	Switchyard, Test and Repair Bldg., Oil House, Valve Houses, (Gas Reclaiming Cart Garage), Electric Power Tunnels, and Undocumented Mobile Office
121	PIK-165-12	X-533B	Switch House (includes Control House, East Switch House, and West Switch House)
Original Warehouses			
010	PIK-54-12	X-744H	Bulk Storage Bldg.
011	PIK-55-12	X-744J	Bulk Storage Bldg.
039	PIK-83-12	X-103	Auxiliary Office Bldg.
084	PIK-128-12	X-744K	Warehouse K – non-UEA
Support Buildings			
008	PIK-52-12	X-744G	Bulk Storage Bldg – non-UEA
012	PIK-56-12	Undocumented	Undocumented Guard Post
013	PIK-57-12	X-109B	Personnel Monitoring Bldg.
016	PIK-60-12	X-701A	Lime House
017	PIK-61-12	X-701C	Neutralizing Pit
018	PIK-62-12	X-700	Converter Shop and Cleaning Facility
019	PIK-63-12	X-701D	Water Deionization Facility
021	PIK-65-12	X-705	Decontamination Bldg.

Table 4. Original Portsmouth facility: period of development 2 (1952–1956) (continued)

Key: (numbers and names in parenthesis date to a later period of development than the primary resource under which it is listed.)

AL no.	OHI no.	Portsmouth no.	Portsmouth name
027	PIK-71-12	X-720	Maintenance and Stores Bldg.
028	PIK-72-12	X-720A	Maintenance and Stores Gas Manifold Shed
029	PIK-73-12	X-108B	North Portal and Shelter
030	PIK-74-12	X-108A	South Portal and Shelter
031	PIK-75-12	X-741	Oil Drum Storage Facility
032	PIK-76-12	X-742	Gas Cylinder Storage Facility
033	PIK-77-12	X-746	Materials Receiving and Inspection
038	PIK-82-12	X-750A	Garage Storage Bldg.
041	PIK-85-12	X-300A	Process Monitoring Bldg.
042	PIK-86-12	X-743	Lumber Storage Facility
043	PIK-87-12	X-710	Technical Service Bldg.
044	PIK-88-12	X-710B	Explosion Test Facility
045	PIK-89-12	X-710A	Technical Service Gas Manifold Shed
048	PIK-92-12	X-540	Exchange Telephone Bldg.
052	PIK-96-12	X-760	Chemical Engineering Bldg.
053	PIK-97-12	X-770	Mechanical Test Bldg.
054	PIK-98-12	X-600	Steam Plant
106	PIK-150-12	X-109A	Personnel Monitoring Bldg.
113	PIK-157-12	X-342A	Feed Vaporization and Fluorine Generation Facility
114	PIK-158-12	X-342B	Fluorine Storage Bldg.
128	PIK-172-12	X-615	Sanitary Sewage Treatment Facility
144	PIK-188-12	X-605H, X-605I, and X-605J	Booster Pump House and appurtenances, Chlorinator Bldg., and Diesel Generator Bldg.
147	PIK-191-12	X-611	Water Treatment Plant Chemical Bldg. and Mixing and Settling Basins
148	PIK-192-12	X-611C, (unnumbered, and X-611D)	Water Treatment Plant Filter Bldg. (Chlorine Bldg. and Recarbonation Bldg.)
154	PIK-198-9	Undocumented	Undocumented Water Pipeline Bldg. near Little Beaver Creek

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OHI = Ohio Historic Inventory

SNM = special nuclear material

Table 5. Portsmouth facility additions: period of development 3 (1957–1978)

AL no.	OHI no.	Portsmouth no.	Portsmouth name
Environmental Monitoring Buildings			
009	PIK-53-12	X-701E	Neutralizing Bldg.
089	PIK-133-12	X-230J2	South Environmental Sampling Bldg.
132	PIK-176-12	X-230J3	West Environmental Sampling Bldg.
Warehouses and Process Support Buildings			
001	PIK-45-12	X-633-2C	Cooling Tower
005	PIK-45-12	X-633-2D	Cooling Tower
014	PIK-58-12	X-105	Maintenance Bldg.
020	PIK-64-12	X-700A	Air Conditioning Equipment Bldg.
024	PIK-68-12	X-720B	Radio Base Station Bldg.
025	PIK-69-12	X-640-2	Elevated Water Tank
049	PIK-93-12	X-100B	Air Conditioning Equipment Bldg.
069	PIK-113-12	Undocumented	Undocumented Guard Booth
082	PIK-126-12	X-614D, X-6614E, X-6614G, X-6614H (two) and X-6614J	Sewage Lift Stations
090	PIK-134-12	XT-801	South Office Bldg.
110	PIK-154-12	Undocumented	Two undocumented booths in X-745E Yard
112	PIK-156-12	X-344A	Toll Enrichment Facility
115	PIK-159-12	X-344B	Maintenance Storage Bldg.
117	PIK-161-12	X-344C, X-344E, and X-344F	Hydrofluoric Acid Storage Bldg., Gas Ventilation Stack, and Safety Bldg
119	PIK-163-12	X-108H	Pike Avenue Portal
122	PIK-166-12	X-640-1	Recirculating Water Pump House
124	PIK-168-12	X-108E and X-748	Construction Entrance Bldg. and Truck Scale Facility
127	PIK-171-12	X-616	Liquid Effluent Control Facility
129	PIK-173-12	X-744S, X-744T, and X-744U	Warehouses
139	PIK-183-12	X-752	Warehouse
141	PIK-185-12	X-744W	Surplus and Salvage Warehouse
146	PIK-190-12	X-612	Elevated Water Tank
151	PIK-195-12	Undocumented	Undocumented Pipeline from Water Treatment Plant to X-611B Sludge Lagoon
156	PIK-200-9	Undocumented	Undocumented Earthen Barricade

AL = architectural location

OHI = Ohio Historic Inventory

Table 6. GCEP facility and later buildings: period of development 4 (1979–present)

AL no.	OHI no.	Portsmouth no.	Portsmouth name
070	PIK-114-12	X-3002	GCEP Process Bldg. #2
071	PIK-115-12	X-3012	GCEP Process Support Bldg
072	PIK-116-12	X-3001	GCEP Process Bldg. #1
073	PIK-117-12	X-7727H	GCEP Transfer Corridor
079	PIK-123-12	X-3346	Waste Handling and Storage Facility (GCEP Feed and Withdrawal Facility)
096	PIK-140-12	X-7725 and X-7726	Hazardous Waste Storage Bldg. (GCEP Recycle/Assembly Bldg. and GCEP Training and Test Facility)
GCEP Administration Complex			
060	PIK-104-12	X-7721	Maintenance, Stores, and Training Facility
061	PIK-105-12	X-1020	Plant Emergency Operations Center
062	PIK-106-12	X-1007	Fire Station
063	PIK-107-12	X-112	Data Processing Bldg.
065	PIK-109-12	X-1000	Administration Bldg.
066	PIK-110-12	X-3000	Electronic Maintenance Facility
GCEP Vehicular and Pedestrian Portals			
059	PIK-103-12	X-1107BV	Interplant Portal
064	PIK-108-12	X-1107BP	Administrative Portal – Pedestrian
080	PIK-124-12	X-1107FP	South Portal – Pedestrian
081	PIK-125-12	X-1107FV	South Portal – Vehicular
086	PIK-130-12	X-1107AV	Administration Portal – Vehicular
125	PIK-169-12	X-1107DV, X-1107DP	Northeast Portal – Vehicular and Northeast Portal – Pedestrian
159	PIK-203-12	X-1107EV, X-1107EP	Northwest Portal – Vehicular and Northwest Portal – Pedestrian
Other Buildings and Structures Intended as GCEP Support			
074	PIK-118-12	X-6644	Fire Water Pump House
075	PIK-119-12	X-6613	Sanitary Water Storage Tank
076	PIK-120-12	X-6643-I	Fire Water Storage Tank 1
077	PIK-121-12	X-6643-II	Fire Water Storage Tank 2
078	PIK-122-12	X-5000, X-5001, X-5001A, X-5001B	GCEP Switch House, Switchyard, Valve House and Oil Pumping Station
083	PIK-127-12	X-751	Mobile Equipment Garage
087	PIK-131-12	XT-847	GCEP Construction Warehouse
097	PIK-141-12	X-7725A	GCEP Waste Accountability Facility
130	PIK-174-12	X-6619	Sewage Treatment Facility
Environmental Monitoring Buildings			
007	PIK-51-12	X-623	East Groundwater Treatment Facility
056	PIK-100-12	X-621	Coal Pile Runoff Treatment Facility
085	PIK-129-12	X-622	South Groundwater Treatment Facility
088	PIK-132-12	X-617	South pH Adjustment Facility
092	PIK-136-12	X-230J-7	East Environmental Monitoring Station (Liquid Effluent System)
094	PIK-138-12	X-624	Little Beaver Groundwater Treatment Facility
095	PIK-139-12	X-625	Groundwater Treatment Facility
133	PIK-177-12	X-230J5	West Environmental Monitoring Station
142	PIK-186-12	X-618	North Holding Pond Storage Bldg.
149	PIK-193-12	X-230J6	Northeast Environmental Monitoring Station
152	PIK-196-12	Undocumented	Undocumented Sludge Lagoon Environmental Monitoring Station
Warehouses and Process Support Buildings			
006	PIK-50-12	X-343	Feed Vaporization and Sampling Facility
015	PIK-59-12	X-744L	Maintenance and Stores Warehouse
022	PIK-66-12	X-705D	Heating Booster Pump Bldg.

Table 6. GCEP facility and later buildings: period of development 4 (1979–present) (continued)

AL no.	OHI no.	Portsmouth no.	Portsmouth name
023	PIK-67-12	X-345	Special Nuclear Material Storage Bldg.
026	PIK-70-12	X-720C	Paint and Oil Storage Bldg.
034	PIK-78-12	X-104A	Indoor Firing Range
051	PIK-95-12	X-109C	Personnel Monitoring Trailer
055	PIK-99-12	X-600B	Steam Plant Shop Bldg.
091	PIK-135-12	X-120	South Weather Station
093	PIK-137-12	X-624-1	Recirculating Water Pump House
105	PIK-149-12	X-740	Waste Oil Storage Bldg.
111	PIK-155-12	Undocumented	Undocumented Shed in X-745C Yard
116	PIK-160-12	Undocumented	Undocumented Mobile Office behind X-344A
118	PIK-162-12	X-334	Transformer Storage and Cleaning Bldg.
126	PIK-170-12	X-106B (new)	New Fire Training Bldg.
131	PIK-175-12	X-744N, X-744P, and X-744Q	Warehouses
140	PIK-184-12	X-744B	Salt Storage Bldg.
143	PIK-187-12	X-230J9	North Environmental Storage Bldg.
145	PIK-189-9	X-735A	Landfill Utility Bldg.
150	PIK-194-12	X-114A (old)	Former Firing Range
153	PIK-197-9	X-114A (new)	Firing Range (new)

AL = architectural location

OHI = Ohio Historic Inventory

GCEP = Gas Centrifuge Enrichment Plant

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