



## Department of Energy

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**OCT 11 2011**

Dr. David Snyder, Ph.D.  
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PPPO-03-1265954-11

Dear Dr. Snyder:

**SUBMITTAL OF A REPORT REGARDING PREHISTORIC NATIVE AMERICAN EARTHWORKS AND MOUND SITES IN THE AREA OF THE PORTSMOUTH GASEOUS DIFFUSION PLANT IN SCIOTO AND SEAL TOWNSHIPS, PIKETON, OHIO**

Enclosed please find a copy of the report *Prehistoric Native American Earthwork and Mound Sites in the Area of the Department of Energy Portsmouth Gaseous Diffusion Plant, Pike County, Ohio: An account of the published information and other sources*, which was prepared by Dr. Jarrod Burks of Ohio Valley Archaeology, Inc., a recognized archaeologist specializing in Native American mounds and earthworks in the Ohio Valley. The report is a resource document consolidating the extensive information that has been developed over time by a variety of archeologists and other subject matter experts on this topic of interest in the Scioto River Valley and to the larger archaeological community.

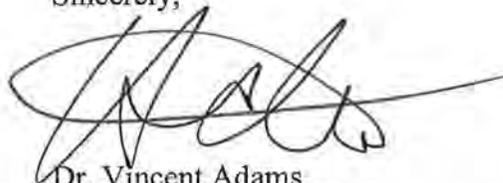
This document includes information on the investigations done in the Portsmouth Gaseous Diffusion Plant (PORTS) vicinity on mounds and earthworks and looks to previously published sources such as Atwater (1820), Squier and Davis (1848), Thomas (1889, 1891), Fowke (1894), and Mills (1914), as well as unpublished materials in archives such as those of William Sassaman's 1952 report of his visit to the area. Catalog records from the University of Pennsylvania Museum of Archaeology and Anthropology, the Smithsonian Institution, and the Academy of Natural Sciences (Philadelphia) were also researched. In addition, numerous aerial photographs were examined in an effort to identify the location of new and previously undocumented sites, including photos taken by Dache Reeves in 1934, Ohio Department of Transportation photographs from the 1940s and 1950s, and the U. S. Department of Agriculture photographs from the 1930s-1980s. In the report, mounds and earthworks are defined and discussed, as well as consideration of other possible mound features.

Besides being a resource for baseline information about the site, this document will be used to support a variety of ongoing activities, including the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) documents involving potential land disturbance (e.g., waste disposition and the process buildings, which involve certain infrastructure elements), and proposed property transfers addressed in the sitewide Environmental Assessment for reuse.

The U.S. Department of Energy (DOE) is issuing this inventory for your information and for the information of our consulting parties and interested members of the public.

If you have any questions in reference to this submittal or the National Historic Preservation Act (NHPA) program activities at the Portsmouth site, please contact Amy Lawson of my staff at 740-897-2112.

Sincerely,

A handwritten signature in black ink, appearing to read 'V. Adams', with a long horizontal flourish extending to the right.

Dr. Vincent Adams  
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# Prehistoric Native American Earthwork and Mound Sites in the Area of the Department of Energy Portsmouth Gaseous Diffusion Plant, Pike County, Ohio

*An account of the published information and other sources*

by Jarrod Burks, Ph.D.  
September 2011



Photo of the Graded Way, Piketon, OH; Courtesy of the Ohio Historical Society

OVAI Contract Report #2009-22-2

**Prehistoric Native American Earthwork and Mound Sites in the Area of the  
Department of Energy Portsmouth Gaseous Diffusion Plant, Pike County, Ohio**

*An account of the published information and other sources*

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## Purpose

The purpose of this report is to document and describe what is known about the mounds and earthworks in the vicinity of the Department of Energy's Portsmouth Gaseous Diffusion Plant (PORTS), a 3,777-acre tract located along the east side of U.S. Rt. 23 just south of Piketon, Ohio. Although no documented mounds or earthworks are known to occur within the boundaries of PORTS, a number of important sites are located nearby on the Scioto River floodplain.

The information related to these mounds was collected from published and unpublished reports and articles, William Mills' *Archaeological Atlas of Ohio* (Mills 1914), museum catalog records, and the Ohio Archaeological Inventory (also known as the OAI files). All archaeological sites documented in the OAI files have been assigned an OAI number, for example 33Pk22. The first part of this number, "33," refers to Ohio; the letters "Pk" stand for Pike County; and the number after the county designator, in this case "22," is assigned to represent each unique site per county to be entered into the inventory. The OAI files are maintained by the Ohio State Historic Preservation Office, located in the Ohio Historical Center in Columbus. These files consist of site forms and maps. The site forms for most mounds and earthworks, which were added to the site database early in its history, include fairly limited information about each of the sites. Today the site locations are plotted on the 7.5' U.S. Geological Survey (USGS) topographic quadrangle maps, though the first maps to be used were the 15' USGS topographic quadrangle maps. While many of the documented sites on these maps are plotted in the correct locations, those recorded in the late 1800s and early 1900s—especially the mounds and earthworks—are sometimes inaccurately plotted. However, by using a combination of published and archival documents and older aerial photographs, it is still possible today to rectify many of the locations of the old mound and earthwork sites.

## Introduction

Ohio is home to many different kinds of earthen constructions built in antiquity by the antecedents of today's Native American peoples. Archaeologists have divided these constructions into two major classes—mounds and earthworks.

*Mounds* are the most numerous, numbering perhaps as many as 10,000 at one time, and consist of soil that has been piled into a conical or oval shape. They usually cover and/or include burials. Ohio's mounds were built in a range of sizes, from as small as 15 ft in diameter to as large as 500 ft long, and from a few inches tall to 60+ ft in height. Most, however, were less than 100 ft in diameter and 20 ft high. Those who built the mounds were often very particular about the kinds of soil used during construction. Frequently, sand, clay, and soils of different colors were used to create different layers in the mound, and some mounds were covered by a layer of gravel. Not all mounds were built with soil; some were constructed almost entirely of chunks and blocks of stone.

*Earthworks* are linear embankments of soil, often accompanied by flanking ditches, formed into a variety of irregular and geometric shapes, including circles, squares, octagons, and many other shapes. In 1914 Mills recorded nearly 600 earthwork

sites in Ohio. The embankments built in Ohio, primarily in the southern half of the state, ranged from a few inches high to about 20 ft tall and enclosed spaces of less than an acre to as much as 100 acres in size. Earthworks served as the locales for ceremonies of a variety of types, from burying the dead to observations of astronomical events. Only a very few burials have ever been found in an earthwork embankment (e.g., the Turner site near Cincinnati [Willoughby and Hooton 1922]), though earthworks enclose areas containing mounds with burials. Like mounds, earthworks were sometimes intentionally built with soils of different colors, and rock, of a variety of sizes, was also used.

There are other kinds of ancient constructions that have left a lasting impression on the Ohio landscape, including villages, smaller camp sites, individual burials, and things that cannot even be explained today. Since the signing of the Treaty of Greenville in 1795 (which brought peace to frontier Ohio and displaced many Native American groups) and the expansion of Ohio settlement by European Americans, as well as other immigrant populations, the clearing of the land for farming has both exposed these ancient constructions and, in many cases, led to their destruction. Today, the number of intact mounds and earthworks in Ohio is a mere fraction of what it once was and most of the remaining ancient earthen constructions are much harder to locate because they have been reduced by erosion, plowing, development, and other actions.

## 1. Some Background on the Mound Building Period in Southern Ohio<sup>1</sup>

Based on 100+ years of archaeological study in Ohio, and the rest of the Midwest, archaeologists have come to divide up prehistory into four periods and a variety of subperiods:

Period Names	Subperiods	Time	
		Calendar Years	Years Before Present (2011)
approximate beginning of written record	Archaeological Culture Groups Fort Ancient	AD 1650	361
<b>Late Prehistoric</b>		AD 1000	1011
<b>Woodland</b>	Late "Intrusive Mound"	AD 450	1561
	Middle Hopewell	200 BC	2211
	Early Adena	1000 BC	3011
<b>Archaic</b>	Late Glacial Kame/Maple Creek	3000 BC	5011
	Middle	5000 BC	7011
	Early	8000 BC	10,011
<b>Paleoindian</b>	Folsom	8000 BC	10,011
	Clovis	12,000 BC	14,011

Figure 1. Ohio's archaeological time periods and cultural groups (from Burks 2010).

These divisions of time were devised by archaeologists and are based on archaeologically-derived information about past peoples that have lived in the region. Similarly, the culture group labels, like Adena and Hopewell, are also constructs developed by archaeologists, approximately 100 years ago (see Mills 1902, 1906, 1916). Archaeologists do not know how people living in southern Ohio referred to themselves because no written accounts of their lives or history are known to exist. This time before written records is referred to as prehistory.

The first mounds built in Ohio date to about 1000 BC, though these are quite rare and few have been studied. It was not until about 700 BC that the construction of mounds started to become more commonplace in Ohio. Some of the earliest burial mounds, built during the Early Woodland period, actually cover burial features used in the Late Archaic. Why people first decided to heap earth over some of their burials we may never know—perhaps they were trying to emulate the shapes of the glacial kames that were commonly used for burial in the past? But once mounding earth over the dead started, mounds began to appear all over Ohio. By no means are the Ohio mounds the earliest in

the eastern United States—the oldest mounds, located in the Southeast, are some 5000-6000 years old.

### 1.1 The Early Woodland Period and the Adena Culture

The Early Woodland period (1000 BC-200 BC) in the Middle Ohio Valley is most well known for the Adena culture. Adena is not an actual tribe or name that people in the Early Woodland period called themselves; rather, it is a term that archaeologists use to refer to a suite of cultural attributes that seem to be shared by many people from about 400 BC to AD 200 across large parts of the Middle Ohio Valley. However, archaeologists sometimes use the term Adena as if it referred to an actual people. In some situations “Adena” does refer to a people, but there were surely many distinct cultural groups living in the region at the time, each unique in its own way. What they shared in common was a variety of burial-ceremonial practices that archaeologists have been fascinated with for over two hundred years.

Large, conical burial mounds are the most conspicuous aspect of Adena. Some of these mounds were as tall as about 70 ft (e.g., the Grave Creek Mound at Moundsville, West Virginia) when European-Americans first had a mind to measure them in the 1800s. In central Ohio, 20-30 ft tall mounds are more common and they usually occur on the bluffs overlooking streams and rivers, as if they were positioned in such a way that people would encounter them often. In the lower Scioto Valley, south of Chillicothe, most of the large Adena mounds are located on the higher terraces of floodplains in major stream valleys. Approximately a third of Adena mounds cover the remains of a circular wooden construction (Hays 1994)—posts set in the ground every three or four feet, forming a circle. Most archaeologists would hesitate to call these circular patterns of postholes the remains of structures because some were quite large, perhaps too large to be able to support a roof. The circle of posts associated with the Mt. Horeb Earthworks (an Adena site located just north of Lexington, Kentucky), for example, is 97 ft in diameter (Webb 1941). Adena mounds also often cover the remains of log-lined crypts, within which one or more people were buried. Some mounds have up to a half dozen of these crypts found throughout the mound at different levels. Adena mounds that do contain burials often have them scattered throughout the mound, from the crypt below the base of the mound all the way up to within a foot or two of the mound’s surface. Every time somebody was buried in the mound, another layer of earth was added, which is why Adena mounds came to be so large. Of course, there are also mounds that lack human remains altogether. Not all Adena people were buried in mounds, there just are not enough mounds, or rather burials within them, to account for all of the people who must have died from 400 BC to AD 200. Where the remainder of the Adena population was laid to rest we have yet to discover.

Many of the Adena dead were buried with prized objects, such as fancy shell bead necklaces with drilled animal teeth or garments with hundreds of beads. Marine shell beads, imported from the Gulf and Atlantic Coasts, are also common, as are bracelets made from copper brought in from the Lake Superior region. The Adena were not the first to import materials (like marine shell) from great distances; such materials have also been found in Late Archaic period burials, which preceded the Adena.

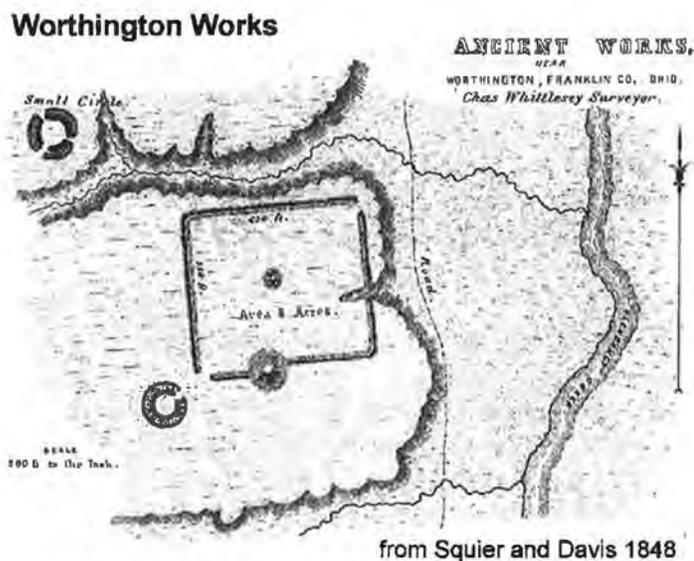
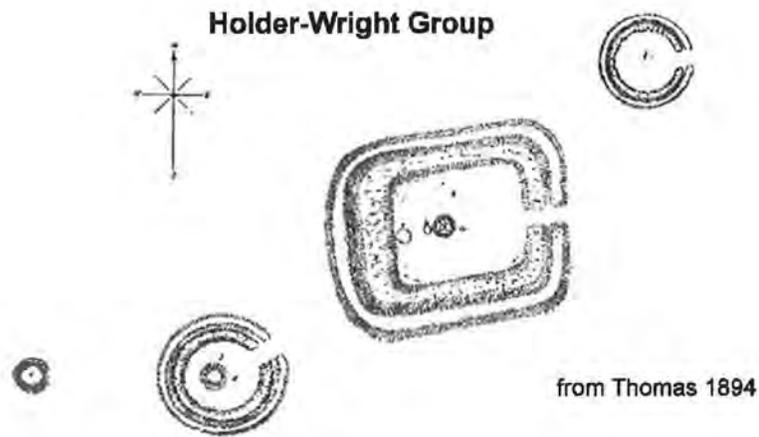


Figure 2. Nineteenth-century maps of small earthwork complexes in the upper Scioto Valley (maps not shown to scale). The Holder-Wright Group is located at the northeast edge of Dublin and the Worthington Works are at the west edge of Worthington.

Archaeologists have excavated a number of Adena habitation sites. These modest settlements usually consist of a small circular building, about 15-20 ft across, surrounded by a number of cooking pits. Hot-rock cooking was clearly important because large quantities of fire-cracked rock are usually found at these settlements. It is a challenge to know just how long an Adena settlement was occupied, but they tend not to have large

amounts of trash. So, did the Adena live in settlements occupied all year, or did they move around the landscape like their Archaic period forbearers? This is a question that has yet to be fully answered. Nevertheless, small Adena settlements have been found all over the landscape, from river floodplains to deep into the uplands. It is hard to imagine living in the uplands away from a ready source of water, so perhaps some of these sites are temporary camps while others, closer to water, are more permanent, at least for short periods. This distinction between temporary and permanent settlement is an important topic in Ohio archaeology as this shift in settlement marks a major change in the way people conduct their daily lives and perhaps even envision the cosmos.

While hunting and gathering was still the primary way to put food on the table during the Early Woodland, growing plants that produced masses of small starchy seeds was on the rise. At about the same time, toward the end of the Early Woodland period, people also started building earthworks—circular enclosures of dirt and wood that were likely used as ceremonial gathering places. Most of the earliest Adena earthworks were small circles, from about 50 or 100 ft across up to about 200 ft. These small circles usually consist of an embankment of earth, a few feet high, with a ditch along the inside edge of the embankment (e.g., the small circles at the earthwork sites shown in Figure 2). All have at least one gap, or gateway, in the ditch and embankment. Sometimes a ring of large posts was set in the ground, and later pulled up, before the embankments were constructed. Very few of these circular earthworks have been excavated in recent times, so it is not known exactly what went on inside of these enclosures, though everyday settlement debris is rarely found inside. Some circles enclosed mounds, and these do tend to contain burials, but the vast majority of Adena circles do not contain mounds. While at least several hundred of these circular enclosures were built in Ohio, the locations of many have been lost to time. Not all Adena circles were small, a few in the Middle Ohio Valley reached several hundred ft in diameter (Clay 1987; Webb 1941).

## 1.2 The Middle Woodland Period and the Hopewell Culture

Whereas the Adena built fairly modest circular enclosures, their descendants and neighbors the Hopewell built some of the largest earthwork complexes known to exist. The term Hopewell, as with Adena, is a label that archaeologists use to refer to the cultural manifestation that followed the Adena in Ohio. The Hopewell are best known for their immense earthen constructions. Some of their circles were as much as 1200 ft across. Hopewell earthworks usually occur as a cluster of one or more enclosures and a number of mounds. Circles and squares are common enclosure shapes, but octagons and many other unusually shaped enclosures were also made.

Unlike the Adena, the Hopewell did not bury their dead in the mounds. Instead, almost all Hopewell mounds cover the place where a building used to stand. One of the more famous of these in the lower Scioto River Valley was found at the Tremper site, which consists of a low embankment encircling a large mound covering the remains of a multi-chambered building (Figure 3). Tremper is located on the west side of the Scioto River about 14.5 miles south of the PORTS area.

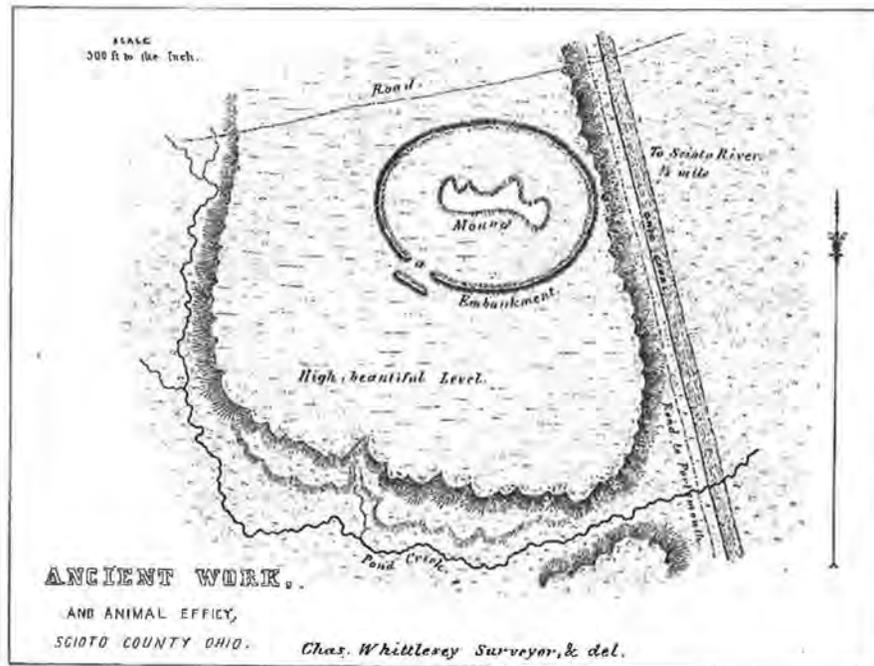


Figure 3. The Tremper earthwork site, a Hopewell site south of the PORTS area (from Squier and Davis 1848: Plate XXIX, no.2).

Many Hopewell ceremonial buildings contain large clay basins on their floors—basins in which the dead were cremated. But not all Hopewell peoples were cremated. Most documented burials occur inside and beneath the buildings at the ceremonial sites, though a few are known from settlement sites. Once the Hopewell were finished with a ceremonial building, they tore it down or burned it down and then covered over its remains with a mound, and some of these mounds were truly massive. The largest known Hopewell mound, which covers the remains of a multi-chambered building with many burials, is found at the Hopewell Mound Group site in Ross County, Ohio. Among the 40+ mounds at this site is Mound 25, reported to be approximately 180 ft wide and nearly 500 ft long (Squier and Davis 1848), with a maximum height more than 30 ft. If the amount of dirt moving required to build this one mound is not awe-inspiring, consider that this mound covers some of the largest deposits of exotic materials known to exist at a Hopewell site, where “exotic” means made from raw materials not found in Ohio. For instance, there are approximately 200 large (6+ inches long), ceremonial spear points made from obsidian (volcanic glass) brought to Ohio from what today is Yellowstone National Park in Wyoming. Also present are hundreds of copper objects made from native copper (meaning naturally occurring almost pure copper) collected in the Lake Superior area. A variety of different kinds of objects were fashioned from copper, most being flat rectangular “breastplates” that are about the size and thickness of license plates.

The Hopewell were experts at conspicuous consumption. They not only brought in all of these rare and unusual raw materials and made them into beautiful and elaborate objects, but then they intentionally buried the objects with the dead or as caches in the mounds. For example, one of the smaller mounds at Hopewell Mound Group covers a

pile of more than 8,000 hand-sized disks made from Wyandotte chert quarried in southern Indiana. One could make a lot of nice projectile points from that cache, but instead the Hopewell buried it.

Hopewell earthwork complexes are smaller in the upper Scioto River Valley at and above Columbus, but from Circleville south to Portsmouth they can be quite large. The greatest concentration of large earthworks in Ohio occurs in the Chillicothe area of Ross County, where many large enclosures consisting of circles, squares, and even an octagon are known to occur. Continuing down the Scioto from Chillicothe, the last large Hopewell earthwork complex before Pike County is the Liberty Group, about seven miles south of Chillicothe. The next large earthwork along the Scioto River is not encountered for another 22 miles, until the Seal Township Works—located just west of PORTS.

Many Hopewell earthwork complexes seem to incorporate smaller Adena enclosures and mounds, suggesting that the Adena and the Hopewell are not simply different cultural groups (cf. Clay 2005). Rather, they shared an ancestor/descendant relationship during a time of rapid cultural change in some valleys, especially the Scioto (Greber 1991).

When the Hopewell were not at their earthwork complexes moving dirt, burying the dead, or participating in ceremonies and rituals, they were at home in small, extended-family settlements of one or two houses, associated cooking pits, and other facilities. The Hopewell grew a number of plants for their seeds, including sunflower, maygrass, little barley, chenopodium, and knotweed. But what archaeologists do not know is how large their gardens were. Some would call the Hopewell farmers, others prefer the term horticulturalist. Whatever the title, it is clear that the Hopewell depended a great deal on these plants that they grew because their little burned seeds are found at every settlement excavated. Of course, wild resources were also important, especially nuts and deer, and the bones of many different kinds of animals have been found in Hopewell trash dumps, including turtle, turkey, and raccoon.

Though their earthworks are relatively easy to find, Hopewell settlements, because they are so small, are a challenge to locate and as a consequence not many have been studied in depth. While clearing the way for a development project in the 1970s, a small Hopewell settlement was found just north of Columbus along State Route 315. After excavating the plowed layer with large machines, the DECCO-1 site (33DI28) produced one of the first complete Hopewell house patterns (a circular pattern of postholes) known in Ohio, plus quantities of pottery and some cooking pits (Figure 4). One of the pits even contained a collapsed ceramic vessel with some pieces of mica. Mica, a shiny, platy mineral, was used by the Hopewell for decoration and it was cut into many kinds of two dimensional shapes, similar to cutting shapes into fancy construction paper, though the Hopewell did not have scissors as we use today. Mica is an import, perhaps brought in to Ohio from the North Carolina region, and finding thin little bits of it about the size of a quarter is quite common at Hopewell sites. Numerous more Hopewell houses have been found since the DECCO-1 excavations, including some near the U.S. Route 23 and State Route 32 interchange.

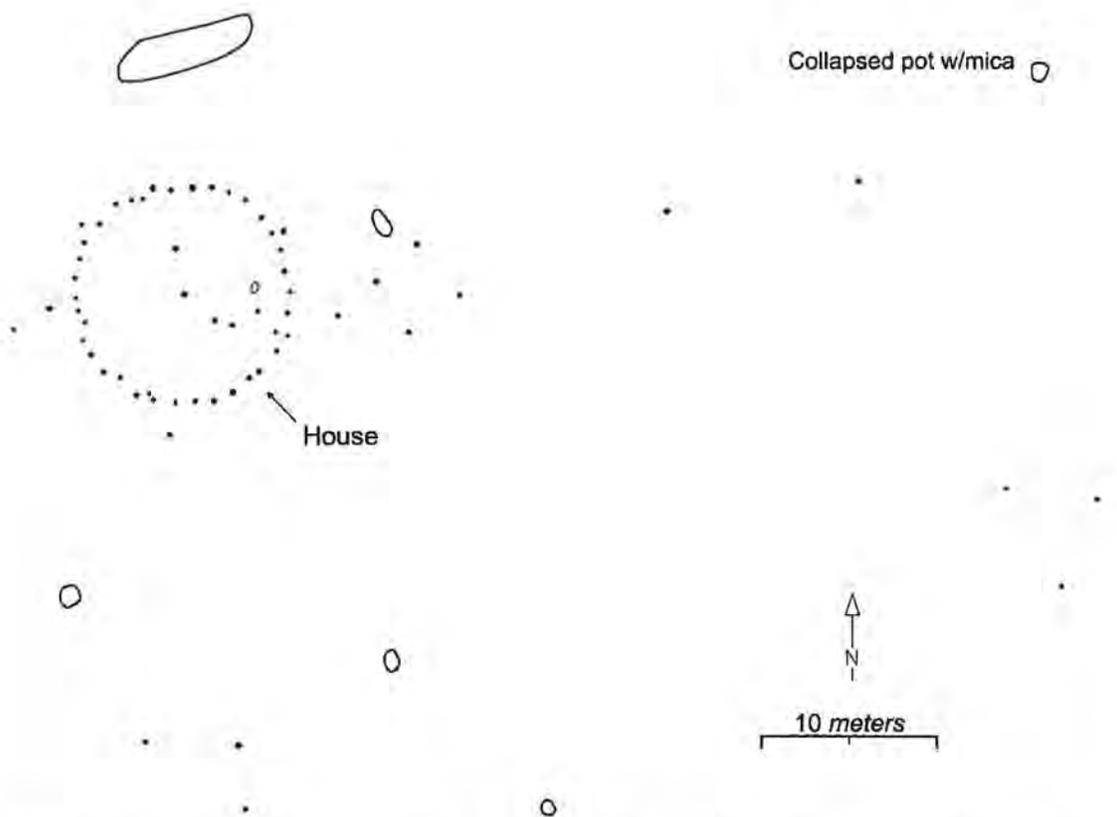


Figure 4. A map of the DECCO-1 site (33Di28), a Hopewell settlement in Delaware County, after excavation (from Phagan 1977). The small black spots are the locations of filled in postholes and the open circular features are pits that were dug in the ground for various purposes.

Sometime around AD 450, the Hopewell stopped importing fancy raw materials for making extravagant artifacts and they abandoned their earthwork sites. This “collapse” of Hopewell burial ceremonialism, which marks the beginning of the Late Woodland period (AD 450-AD 1000) is one of the great unanswered mysteries in world prehistory—what happened to the Hopewell? One thing that is known is that the people did not go anywhere; they just stopped practicing those behaviors that resulted in the construction of earthworks and the elaborate treatment of the dead. Instead, it appears that families began to group their houses together in larger village sites, many of which have ditches and embankments surrounding them. Though there is very little evidence of trauma caused by warfare at this time in southern Ohio, living in barricaded villages is usually a sign that people are trying to protect themselves from something. It could be that all of their hard work at growing their own food had begun to pay off and they needed to protect their stored food supplies from others. Winters in the Middle Ohio Valley can be very hard and taking your neighbors’ food stores might have been the only option. Regardless, the construction of large mounds and earthworks faded from the scene at about AD 450, ending the Middle Woodland period and the Hopewell.

## 2. Earthwork and Mound Sites in the PORTS Area of Pike County

Figure 5 is a map of the PORTS area showing the location of nearby mounds and earthworks. These locations are based on published and unpublished accounts, the OAI files, old aerial photographs, and Mills' (1914) *Archaeological Atlas of Ohio*. In some cases the locations of mound sites could be pinpointed (solid red dots) and in others they had to be estimated (open dashed lines). The following sections explore and present the available information related to each of the known mound and earthwork sites located within about 1.5 miles of the PORTS property boundary.



Figure 5. Aerial photo of PORTS area showing the locations of documented prehistoric mounds and earthworks. The PORTS boundary is shown in yellow.

## 2.1 Documented Earthwork Sites

There are three major earthwork sites in the PORTS area: the Graded Way to the north at the south edge of Piketon, Earthwork “N” at the west entrance to PORTS off U.S. Rt. 23, and the Seal Township Works to the southwest of the southwest PORTS entrance (Figure 5). None of these sites are on PORTS property but all are located in close proximity.

### 2.1.1 The Graded Way (33Pk1)

The Graded Way, now mostly destroyed, was a series of large, parallel embankments of soil, gravel, and sand approximately six ft tall and about 600-700 ft long (Fowke 1902). They were built, likely by Hopewell groups about 1800 years ago, along the edges of an ancient channel scar of Beaver Creek or one of its tributaries (Thomas 1894:491), perhaps cut during the end of the last glacial age. The large embankments were first shown on a map by Atwater in 1820, who claimed they were 20 ft high then, but one of the most accurate plans of this earthwork was drawn by Fowke (1902) around the turn of the twentieth century (Figure 6). The pictures in Figure 7, on file in the Department of Archaeology at the Ohio Historical Society, show what the large embankments would have looked like around 1900. Though, according to Fowke (1902:274-278), previous drawings and descriptions exaggerate other details related to this earthwork (e.g., Atwater 1820; Squier and Davis 1848; MacLean 1879), most archaeologists agree that the overall scale of these parallel walls is unmatched at similar sites in Ohio with parallel walls (e.g., the earthworks at Marietta or the Hopeton site near Chillicothe).

In their drawing of the Graded Way site, Squier and Davis (1848) show a smaller embankment running south about 2000-2500 ft from the paired large embankments to an area with numerous mounds. While these mounds are not illustrated by Fowke (1902), the cluster of four mounds along the “Chillicothe and Portsmouth Turnpike” on Squier and Davis’s map (1848:Plate XXXI, no.1) are still today clearly visible in Mound Cemetery at the southern edge of Piketon, and the largest of these is marked by a small red dot in Figure 5. Fowke’s excavations in four of these mounds are summarized in the Documented Mound Sites section (Sec. 2.2).

Around the turn of the twentieth century the embankments of the Graded Way were still plainly visible at the south side of Piketon, as is evident in the two photographs shown in Figure 7. If the embankments were still visible today, they would flank U.S. Rt. 23 just west of the fair grounds. The map in Figure 8 shows an overlay of the Fowke and Squier and Davis maps on a 2006 aerial photograph. Fowke’s (1902) drawing and a 1946 aerial photograph taken by the Ohio Department of Transportation (in which the western wall of the Graded Way is plainly visible) were used to determine the location of the large embankments in Figure 8. The Squier and Davis (1848:Plate XXXI, no.1) map provided the location of the long, smaller (i.e., less tall) embankment that extends south to the Mound Cemetery area. A number of the mounds within Mound Cemetery are still

visible today, but determining the locations of other features on Fowke's and Squier and Davis's maps are not so easy.

During a reconnaissance survey of the area in 1952, undertaken by OHS before construction began at PORTS, OHS archaeologist W. H. Sassaman visited the Graded Way and Mound Cemetery area and made a number of important observations (see Sassaman 1952). First, he observed that the western embankment wall of the Graded Way was still intact. Gravel mining had nearly obliterated the east wall, except for a small segment at the southern end. Moving south toward Mound Cemetery, Sassaman claims to have been able to see portions of the low embankment from Squier and Davis's map, at least on the east side of the road (i.e, the Portsmouth-Columbus Pike, as it was before U.S. Rt. 23 was moved west and was widened to four lanes). The mounds within the cemetery were easily identified in 1952, as was a 6-ft-tall mound with a base about 100 ft across that was in an alfalfa field to the southeast of the cemetery. Using Sassaman's measurements, it is possible to position this mound from the alfalfa field on the map in Figure 8 to within about 50 ft of its actual location. It is quite likely that this mound, referred to as 33Pk1/2 but not marked on the OAI maps, is the "Mound 30 ft high" noted on the Squier and Davis map and apparently excavated by Fowke in the late 1880s (for a description of these excavations, see the Documented Mound Sites section, Sec. 2.2).

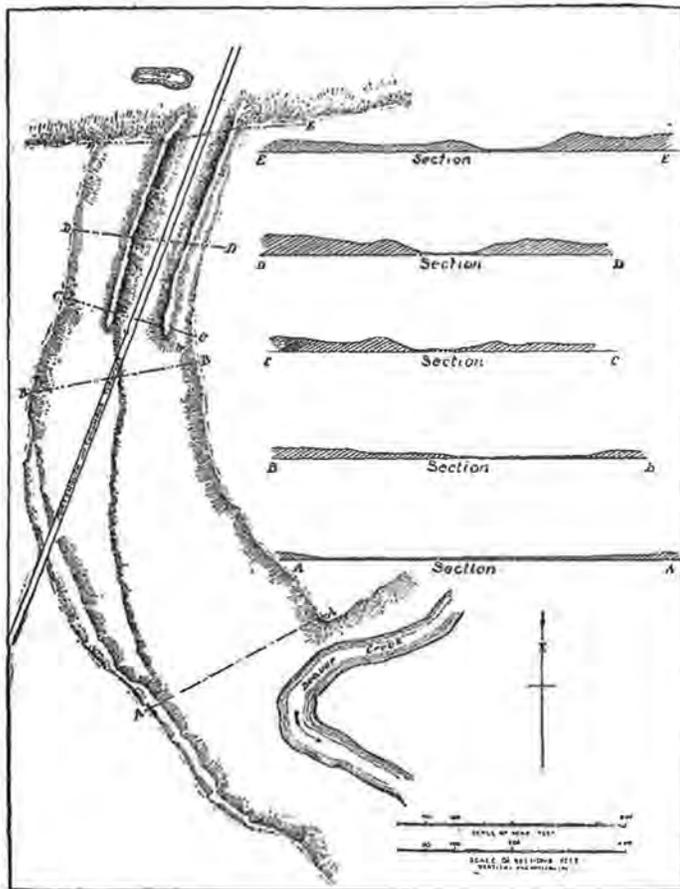


Figure 6. Drawing of the Graded Way by Gerard Fowke (1902: Figure 77).



Figure 7. The Graded Way at Piketon (*circa* 1900), (a) looking north along the spine of the eastern embankment and (b) looking north into the southern entrance of the Graded Way, standing on the Portsmouth and Columbus Turnpike. (photos from the Pike County file, Archaeology Department, Ohio Historical Society)

Although most of the embankment walls at the Graded Way have been destroyed, the portion of the embankment drawn by Squier and Davis now located in Mound Cemetery, may yet be detectable using geophysical survey devices. There is in fact a topographic rise in the area where Sassaman observed what he thought might be a mound to the southeast of the cemetery. Though Fowke excavated this mound in the late 1800s, the footprint of the mound should be detectable during a geophysical survey.



Figure 8. Estimated location of the Graded Way and associated mounds shown on a 2006 aerial photograph. PORTS boundary approximately one mile to the southeast.

### 2.1.2 Earthwork “N” (33Pk6)

In their 1846 map of the Seal Township Works (see Figure 10), published in 1848, Squier and Davis included as an inset map a small “unique work” located one mile north of the large earthwork complex at the Seal Township Works (Squier and Davis 1848:66). They referred to this inset map as “Supplementary Plan N” but gave no other name for the earthwork. When Squier and Davis made their map of the site, Earthwork “N” consisted of a circular embankment, about four feet tall, with openings to the northwest and southeast. No ditch was shown or described as accompanying the embankment, suggesting that it was constructed with surface soils from the surrounding ground. A small mound is shown to the northeast of the northern opening in the walls. The mound was excavated in the late 1800s and Thomas reports that it “contained charcoal and ashes, but no bones or relics” (Thomas 1894:491). In his comprehensive volume on Ohio archaeology, Fowke (1902) did not mention this earthwork site, suggesting that by 1900 it was nearly destroyed by one hundred years of plowing.

Today we know that site 33Pk6, sometimes also referred to as the Scioto Township Works II (e.g., on the 33Pk6 OAI form), is located along the U.S. Rt. 23 northbound off ramp—on the east side of U.S. Rt. 23—at the west entrance to PORTS (see Figure 5). However, the exact location of this site was only recently re-established (Burks 2006 and GIS specialist Mark Kalitowski independently re-discovered the site at about the same time). Prior to 2006, the site was positioned in the wrong location on the OAI maps. But this inaccuracy was rectified after the earthwork was re-identified in early aerial photographs of the area. The first aerial photograph of the site was taken by Dache Reeves in 1934; it shows the earthwork very clearly<sup>2</sup>. In Figure 9 the Reeves photograph is shown side by side with a photograph from 1994. Much clearly has changed in the 60 years between the two photographs, including the construction of U.S. Rt. 23. When these two images are overlaid, it becomes apparent that the ground where the earthworks was located in 1934 may yet be intact—miraculously, the construction of U.S. Rt. 23 did not destroy the ground on which this earthwork is located. The image at the bottom of Figure 9 shows the 1934 photo overlaid on the 1994 photo with a drawing of roads and other features. The parking area and drives, as well as a building (black rectangle along east edge of the parking area), were built after 1994 and mapped in 2006 using a global positioning system (see Burks 2006 for details). Today the earthwork is located on privately owned land. The ditch along the northbound off ramp to PORTS just barely intersects the northwest edge of the earthwork; future modifications to the ditch should include considerations of this earthwork during project planning.

In his book *Hidden Cities*, Roger Kennedy (1994:57) matter-of-factly refers to this earthwork as a “herradura,” or a wayside shrine along a path of pilgrimage. In this case, Kennedy’s path of pilgrimage runs from the Chillicothe area south along the Scioto River to Portsmouth. While ancient paths of various configurations and courses no doubt existed along the Scioto, and these likely changed over the millennia, we have no indications that one ever went through 33Pk6. Even when the earthwork is very clearly visible in the 1934 and 1938 aerial photographs, there is no sign of any pathway or embankment walls leading up to or away from the 33Pk6 gateways. While long lines of parallel embankments are present at the Newark Earthworks, and have been the source of much discussion surrounding the existence of a “Great Hopewell Road” running between

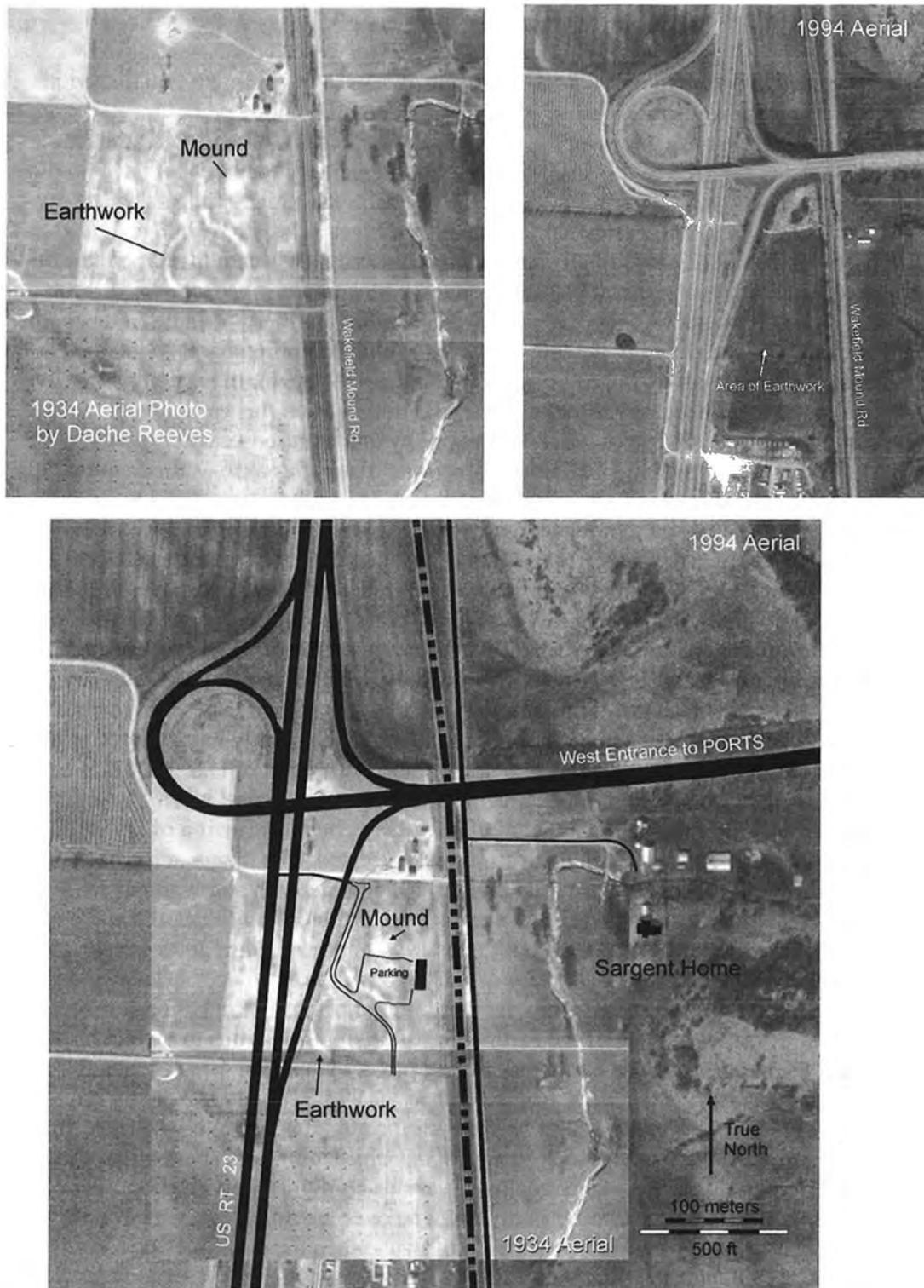


Figure 9. Aerial photographs showing the location of Earthwork "N" in 1934 and 1994.

Newark and the Chillicothe area (e.g., Lepper 1996, 2006), this postulated, formal road has not been traced into the Lower Scioto Valley. Of course, this does not preclude the possibility of there having been a formal trail linking the earthwork-rich area at Chillicothe with its southern neighbors at the Seal Township Works and Portsmouth. But, such a linkage must consider the age of all of these earthworks for not all of them were present or in use at the same. This latter distinction is an important one. The mere presence of an earthwork on the landscape does not mean that it was actively being used at a given time in prehistory. Quite a few small enclosures, of the size of 33Pk6, if not the exact shape, were built in the few hundred years before the existence of the Seal Township Works and the “Great Hopewell Road” and they had been “abandoned,” in the sense that they were no longer being used, by the time the Seal Township Works were built. Dating the construction and use-period of an earthwork, to a small period of time (e.g., a 100-year period), is a very difficult archaeological task.

### 2.1.3 Seal Township Works (33Pk22)

The largest and most complex earthwork site in Pike County is the Seal Township Works (33Pk22). The remains of this site are located on private property to the west of U.S. Rt. 23, just west of the southwest PORTS entrance (see Figure 5). The site was owned by the Barnes family, who were using it for farmland, in 1846 when Squier and Davis made a trip to the site from their home base in Chillicothe to make the only known map of this large site. What they found when they arrived was a classic Hopewell earthwork complex with a large circular embankment (about 1050 ft across) connected to a large square embankment by a set of low parallel embankment walls (Figure 10). A number of smaller enclosures and mounds were found on the same terrace to the south of the square. At the northwest corner of the square and along the connecting embankment walls, Squier and Davis indicate the locations of depressions, or borrow pits, which may have been areas where soil was excavated for use in building the embankment walls.

In terms of basic plan and size, the Seal Township Works is very similar to the Hopeton Works, located along the Scioto River at the north edge of Chillicothe, though they differ in a number of ways. The Seal Township square, which was resurveyed by the Mound Exploring Division of the Bureau of Ethnology (Thomas 1889, 1891), is approximately 850 ft square and is similar in design to, though somewhat smaller than, Hopewell squares found at many sites in the Scioto River Valley.

Like many other Hopewell earthworks of a similar design, a mound was built in front of each of the gateways in the square. Excavations in these gateway-mounds at other sites (e.g., Hopewell Mound Group) have failed to locate anything within this type of mound, but most other mounds associated with large earthwork complexes, assuming they are Hopewell and not Adena constructions, cover the remains of buildings. If Hopewell burials are present, they are usually located on or below the floors of these buildings.

The Seal Township Square is also known for being aligned to the cardinal directions. Squier and Davis (1848:66) did not think much of this detail, saying that it was “an accidental coincidence” since the alignment of most earthworks is constrained by the landforms they are built on and the Seal Township Works’ landform (the terrace edge

along the west side of the earthwork) just so happens to be a nearly north-south line. However, in a more recent study of the Seal Township Works layout, Romain (2000) demonstrated that the square is almost perfectly aligned to the cardinal directions and thus parts of it (the north edge and the south edge) are aligned to the vernal and autumnal equinoxes. Since we now know that many Hopewell earthworks were constructed with built-in alignments referencing astronomical phenomena like the rising and setting of the sun and the moon (e.g., Hively and Horn 1982, 1984, 2006; Romain 2000), these alignments at the Seal Township Works were probably an intentionally constructed feature of the earthworks.

Only two other mounds, outside of the square, were identified by Squier and Davis. One is located inside the oval-shaped enclosure marked B on their map (Figure 10). The second, and only mound known to have been excavated, can be seen on their map just off the southeast corner of the square and is marked “m,” an abbreviation that Squier and Davis commonly used for mounds. In the summer or fall of 1895 Gerard Fowke excavated the central portion of this mound, locating human remains and a number of other artifacts. Details of these excavations, in what has been called the “Barnes Mound” by the Academy of Natural Sciences of Philadelphia (ANSP) (where the artifacts were initially curated), are provided later in this report in the section on Documented Mound Sites.

By the 1890s, when many of the mounds in the area were being excavated, the large circle at the Seal Township Works was already nearly obliterated (Thomas 1894:489), no doubt from plowing and stream erosion. Sometime before 1938, much of the land on which the Seal Township Works was built, including most of the large circle, the southern half of the square, and all of the smaller enclosures and mounds to the south of the square, was destroyed by gravel mining. The sequence of images in Figure 11 show aerial photographs of the site in 1938 and in 1994. In the areas not destroyed by gravel quarries the embankment walls of the square and the connecting walls south of the creek are plainly visible. What appears to be a small section of the large circle, along its northeastern edge, is also visible. During the construction of U.S. Rt. 23 in the 1950s, the remains of the circle were destroyed, but the square was spared by the road—only to be almost completely erased by additional gravel mining. Now all that remains of this once massive earthwork complex are small portions of the northern part of the square, some of the circle-square connecting walls that once attached to the square, and the borrow pits depicted by Squier and Davis between the square and the creek. Today, none of these features are visible in the field that contains them; the embankments have been plowed flat and the borrow pits have been filled in. That said, this does not mean that the site is totally destroyed: the base of the embankment walls and the filled-in borrow pits are still present. The remains of the Seal Township Works are not directly part of the PORTS property. However, the creek that passes between the former location of the large circle and what remains of the large square has its headwaters within the PORTS complex to the east of the Seal Township Works site and in the 1970s a retention and monitoring pond (Holding Pond No. 1 X-2230M) was constructed within PORTS along the upper part of this stream.

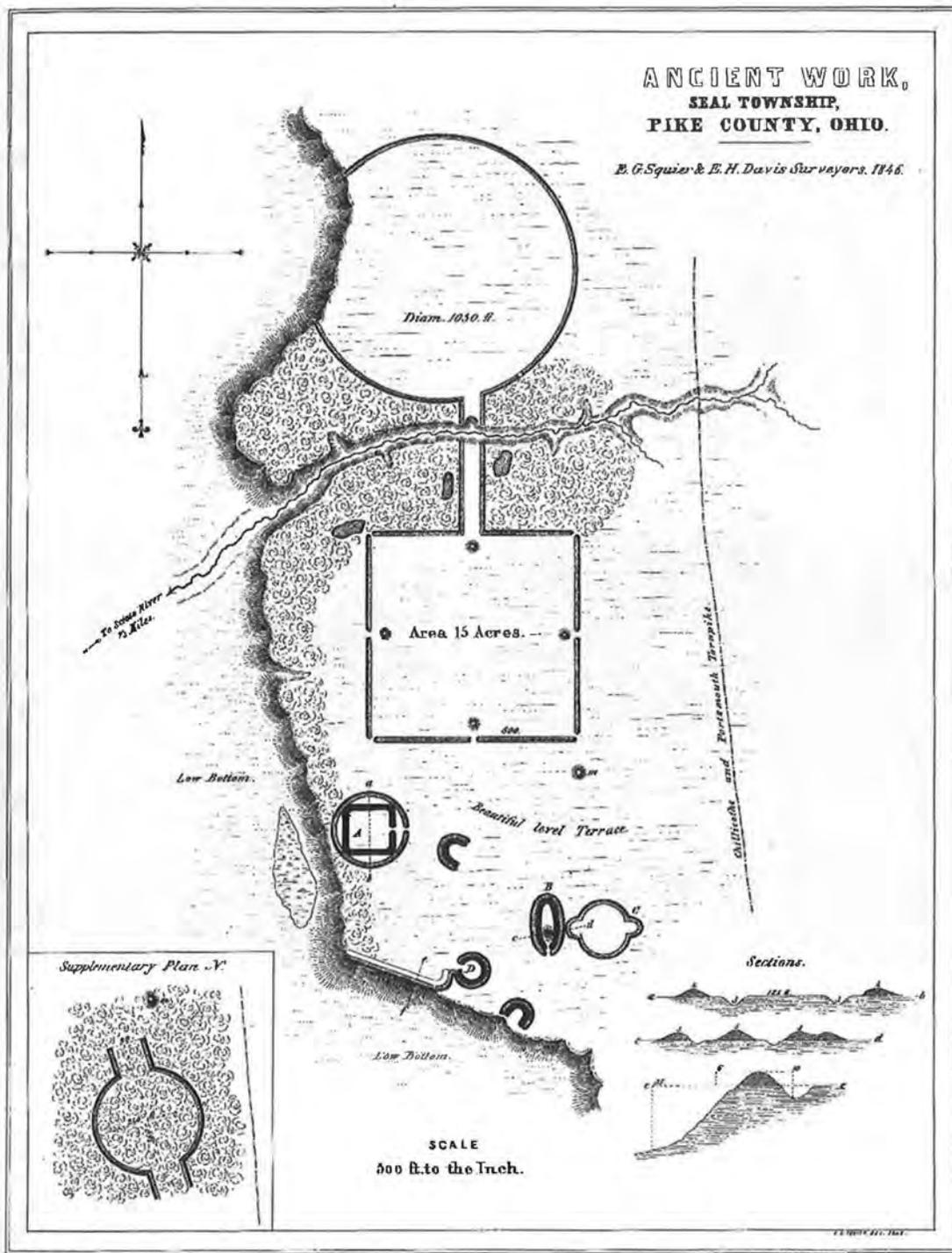


Figure 10. The 1846 map of the Seal Township Works (33Pk22) and “N” drawn by Squier and Davis (1848: Plate XXIV). The Seal Township Works are near the southwest corner of PORTS.

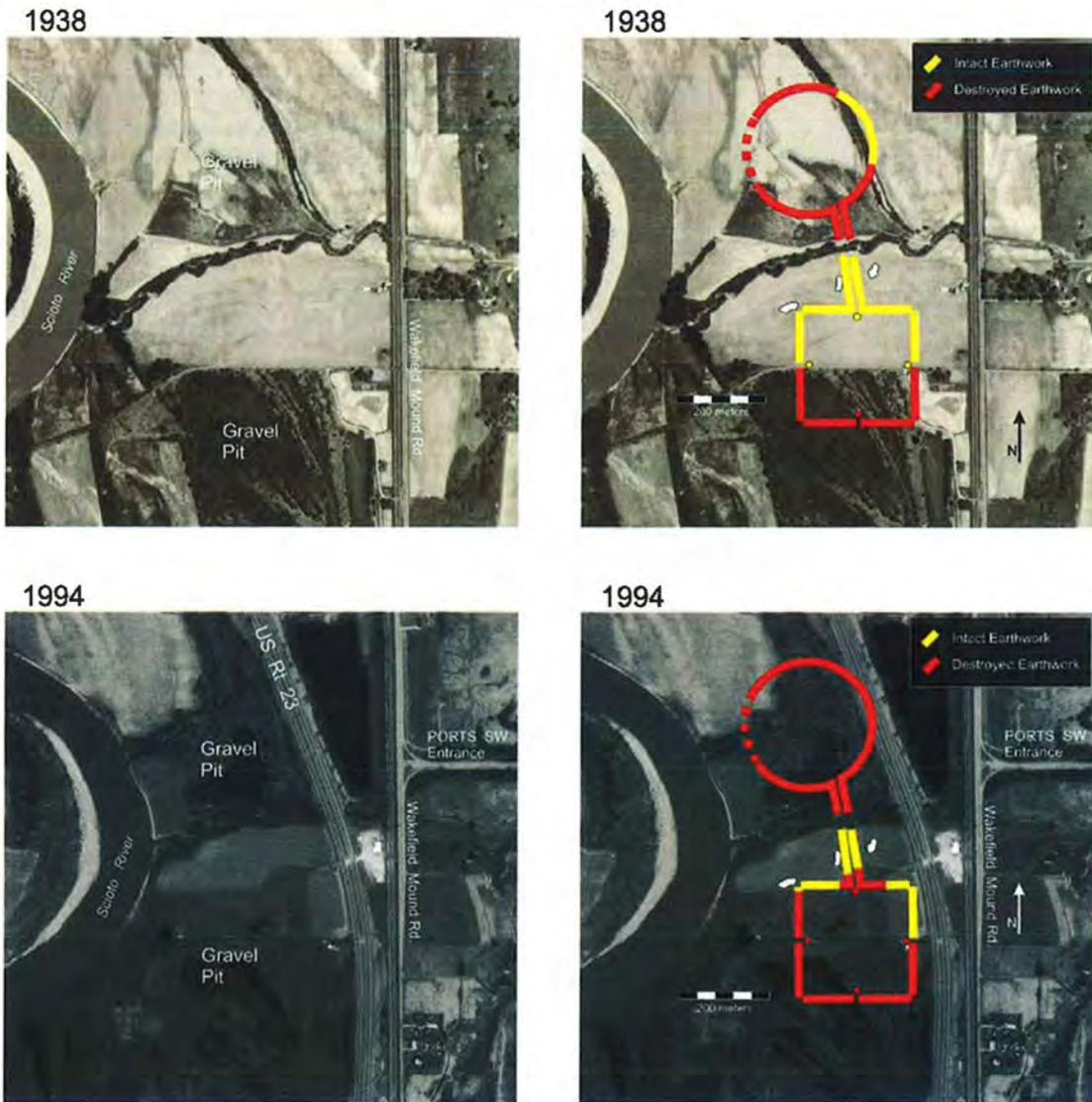


Figure 11. Aerial views of the Seal Township Works in 1938 and 1994 showing what remains of the earthworks.

## 2.2 Documented Mound Sites

Estimates vary on the number of mounds present in Ohio at the time of European contact. Certainly the number must have been close to 10,000; Fowke (1902:299) thought it might even be higher. In 1848 the largest mound in Ohio was nearly 500 ft long and about 180 ft wide, with a height of 30 ft (Squier and Davis 1848). This colossal mound, the largest known Hopewell mound in the eastern United States, was located in Ross County at Hopewell Mound Group. In Pike County the largest mounds are Adena mounds, most of the largest of which likely date from approximately 200 BC to 1 AD. There are about two dozen known mounds located within 1.5 miles of the PORTS

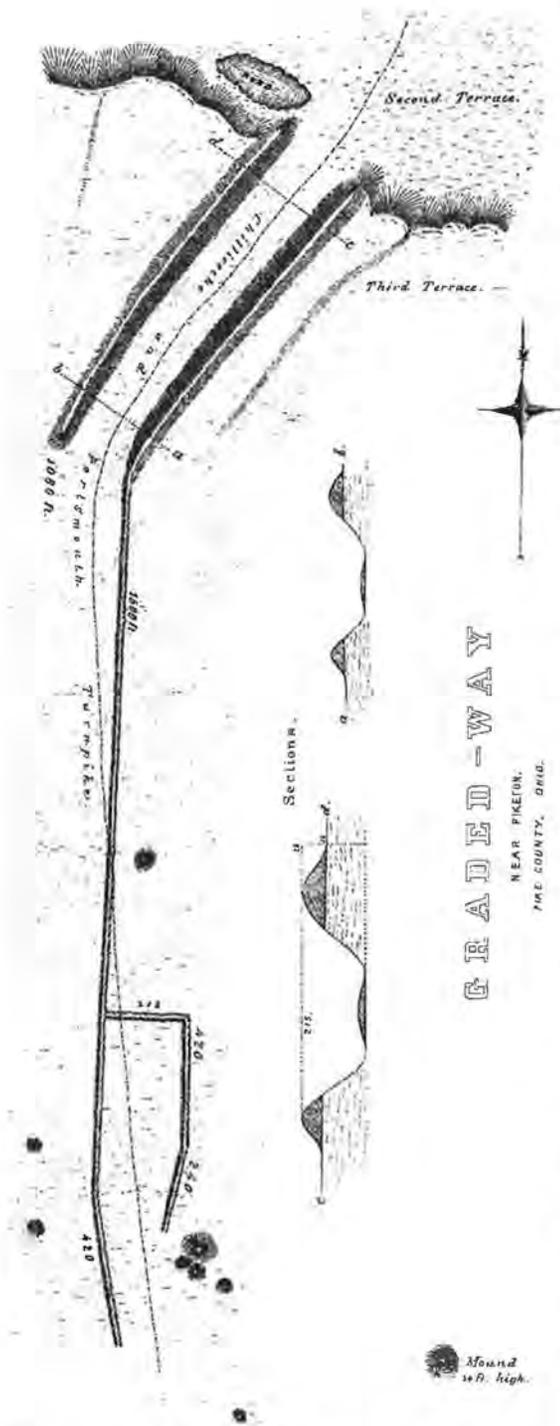


Figure 12. Map of the Graded Way (33Pk1), from Squier and Davis (1848: Plate XXXI, no.1).

boundary fence. Many of these were excavated by Gerard Fowke while he was working for the Bureau of Ethnology's Division of Mound Exploration in the late 1880s. After Thomas's (1894) big summary volume on the Bureau's mound excavations, Fowke apparently found another benefactor in the likes of Clarence B. Moore, a wealthy paper company executive from Philadelphia who spent much of his time conducting archaeological excavations in the southeastern United States. Moore was linked to the Academy of Natural Sciences in Philadelphia and this is the institution to which he donated most of the artifacts from his digs (Knight 1996). In more than one place in his writings Fowke refers to the artifacts excavated from the Pike County mounds dug in 1894 and 1895 as being the property of Moore. Therefore, it is likely that Moore was funding Fowke's excavations, and on the condition that Fowke sent all of the artifacts to Philadelphia.

### 2.2.1 Graded Way Mounds (33Pk1)

As mentioned previously, the Graded Way earthwork complex consists of embankment walls and a number of mounds, which Squier and Davis depict in their drawing of the site—shown here in Figure 12. Most of the mounds are located near the southern end of the complex around and inside of what today is known as Mound Cemetery. In fact, the group of conjoined mounds is quite prominent in the cemetery even today. The drawing in Figure 13 is a bird's-eye view provided in the Squier and Davis volume as part of Figure 57 (1848:170).

Gerard Fowke was also keenly

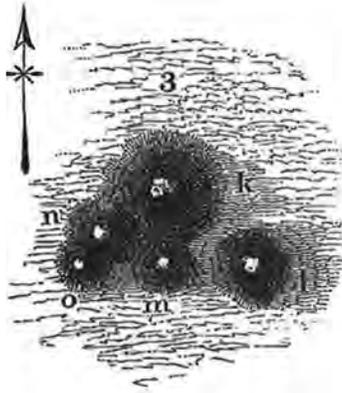


Figure 13. Bird's-eye view drawing of the mounds in Mound Cemetery (from Squier and Davis 1848: Fig 57).

interested in the Graded Way, often referring to it as the “so-called Graded Way” as he did not approve of the site’s name—for it was not a graded feature but a set of parallel walls. Despite not showing any of the mounds on his drawing of the Graded Way published in 1902, Fowke did in fact excavate a number of these mounds, including some of the mounds in Mound Cemetery and the mound marked “30 ft high” (south and east of the mounds in Mound Cemetery) on Squier and Davis’s map (see Figure 12).

Fowke’s excavations of the Mound Cemetery area mounds were published in an 1898 article, his 1902 book (1902:362-380), and in the 1926-27 *Annual Report of the Bureau of American Ethnology*. Some of the details between these sources differ and one wonders if perhaps by the 1920s Fowke had forgotten or mixed up some of the

details because he had excavated so many mounds in Pike County and elsewhere in the eastern United States. In the largest mound, that marked “Mound 30 ft. high” in the Squier and Davis map shown in Figure 12, Fowke began his excavation at the south side of the mound with a trench 10 ft wide. He reports that at the time of his excavations the mound was just 16 ft high and 75 ft in diameter. If the Squier and Davis measurement of 30 ft was accurate, this mound was reduced in height, probably by plowing, by 14 ft in just 50 years. This is precisely the reason why we cannot accurately estimate the number of mounds that once existed in Ohio—plowing had nearly erased many of them by the late 1800s when archaeologists like Fowke were working in the state.

Fowke’s excavation revealed numerous burial features and the overall mound structure; it appeared to have been built in at least two major episodes. First built was a mound of compacted dark soil about 59 ft across and 9 ft tall. Later the darker soil was covered by a layer of yellow clay about eight feet thick. There were five burials, four adults and one teen, in the top of the mound in this yellow clay, about two to three feet below the mound top. These likely are intrusive burials (burials added to mounds long after they are built) added to the mound perhaps 700-1000 years after it was first built. Another burial, an adult, was found at the interface between the dark central mound and the outer yellow clay layer about seven feet up from the base of the mound. This burial likely dates to the Early Woodland period when the mound was originally constructed. The lower six feet of mound fill, in the darker soil, contained numerous areas (Fowke did not specify how many) of decayed wood and bark with human bone fragments. Each of these is some kind of burial context. Such features are very common in Adena mounds (Dragoo 1963; Hays 1994).

In his excavation trench, Fowke found a number of heavily burned areas at the base of the mound with layers of ash, charcoal, and bone. In one of these burned areas he found three “little packages of spherical copper beads” (Fowke 1926/27:497), “fifty-four in all” (Fowke 1902:373). The chemical properties of copper, and its corrosion products, tend to preserve organic materials that are touching it or buried nearby. In this case, the

copper preserved the layers of cloth, bark, and skin (probably animal) wrapped around the copper beads and it preserved the leather cord on which the beads were strung. Figure 14 is a drawing of a section of the fabric wrapped around four of the copper beads.

In a final statement about his work in this mound, Fowke mentioned that below the six-foot level (we do not know if this is six feet from the top or the bottom of the mound) he encountered more than a dozen small logs from 5 to 15 ft long. The Adena used logs to build all kinds of structures within and on the surface of their mounds. Most common are rectangular holes, or crypts, lined on the sides, and sometimes the top, by logs—these were often used as burial crypts.

Every time a crypt-like feature was added to a mound, a layer of soil was used to cover it over. Sometimes the features were burned, preserving the logs by turning them to charcoal. In other Adena mounds, some of the logs are preserved in an unburned state.

The other two mounds in Mound Cemetery excavated by Fowke (No. 6 and No. 7, Fowke 1902) were fairly small and we do not know exactly which ones they are on the Squier and Davis drawings. Both had been reduced in height by plowing. Fowke's (1902:373) No. 6 mound was built with yellow clay and was 28 ft across and 2 ft high. It was centered over a pit that had been dug down into the clay and gravel. Two people were buried in this pit—an adult male and a child about three years old. The adult male had half a freshwater clam shell at his right elbow and two freshwater clam shell halves, with small drilled holes, at his left foot. On his chest were two bear canines, probably part of a necklace. Fowke also found four drilled, freshwater pearls and some other modified animal teeth mixed in among the vertebrae of the adult's lower back. These too could have been part of a necklace or some other component of the adult's burial garb. On the child's chest were two gorgets (flat ornaments, usually made of stone) with drilled holes.

The third mound (No. 7, Fowke 1902:373) was 45 ft in diameter and 4 ft high. Fowke found three burial features in the yellow clay of this mound. There were two small clusters of burned bone near the center of the mound. One of these clusters contained two copper awls (2 and 4 inches long), which Fowke described as being a little smaller than slate pencils, and two gorgets, one of shale and another of banded slate. The third burial feature was a complete adult skeleton with no objects. None of these burial features in Mound No.7 occurred at the base of the mound—they were added to the mound, and then covered over, after the mound was already about a foot tall.

It is possible that Fowke dug another mound in the Graded Way cluster, No. 8 in his 1902 book (Fowke 1902:374), but it is not clear that this mound belongs with others from the Graded Way. The locations of many of the mounds Fowke excavated in Pike County are confused or not known because he neglected to provide detailed locational descriptions for most.

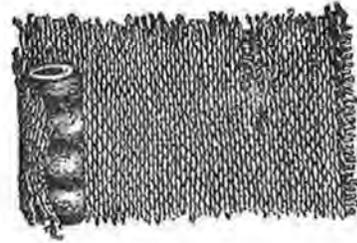


Figure 14. Cloth and copper beads from large mound at the end of the Graded Way (from Fowke 1902: Figure 290).

### 2.2.2 Van Meter Mound (33Pk4)

The Van Meter Mound (33Pk4) is actually two mounds built so close to one another that they appear to be conjoined. The location of this double mound is inaccurately recorded in the OAI files (as of July 2009), which place it on top of a hill on the east side of Wakefield Mound Road (Figure 15). However, Fowke's description of the mound's location quite clearly places it in a much different place than what is recorded in the OAI records. In the first sentence of Fowke's 1894 article concerning his excavation of the mounds, he describes their location as:

Three miles south of Piketon, half a mile from the point where Beaver Creek discharges into the Scioto River, on the farm of J. M. Van Meter, is a 'double mound' on the highest terrace. The larger part...has its west base just at the brink of the terrace at a point where the bluff is 50 ft high, quite steep, with the creek at its foot. (Fowke 1894:308)

Three parts of Fowke's description clearly identify where this mound was located. First, he states that it is half a mile from where Beaver Creek dumps into the Scioto. Figure 15 shows the probable location of the Van Meter Mounds on a portion of the *Piketon* USGS 7.5' topographic quadrangle map. The blue circle has a radius of half a mile. The only place where a circle of this radius, centered on the Beaver Creek-Scioto River confluence, hits a "bluff" (using Fowke's 1894 term) about 50 ft high overlooking the creek is at the location of the red star in Figure 15. This fits the second of Fowke's locational descriptors that the mound had as its western edge a bluff 50 ft high. The third important descriptor, that the site is located on a "terrace" also matches the proposed location in Figure 15. Fowke and others in the late 1800s (e.g., Thomas 1891) used the word terrace to refer to terraces in the floodplains of river valleys, not the tops of hills in the uplands. Together, these three locational descriptors make it clear that the double Van Meter Mound is located on the edge of a floodplain terrace, overlooking the confluence of Beaver Creek and the Scioto River, about 3,900 ft west of the west entrance to PORTS off U.S. Rt. 23. In 1952 Sassaman ventured up to the top of the hill looking for 33Pk4 at the location incorrectly recorded on the OAI maps and "found nothing resembling a mound" (Sassaman 1952:7). The Ohio Historical Society identified 33Pk4 as a "large Adena mound" in a 1952 report to their Board of Trustees about the prehistoric cultural resources found in the vicinity of PORTS (see Sec. 2.3.1).

When Fowke arrived in the summer or autumn of 1895 at the double Van Meter mound, along the floodplain terrace edge overlooking Beaver Creek, he found two mounds sitting side by side and close enough that they overlapped. Both mounds had been heavily plowed but the larger mound, situated at the edge of the terrace, was still 10 ft tall and now 75 ft wide. The smaller mound located south and east of the larger, was 56 ft across and 6.5 ft tall. Where the mounds overlapped, the height was about 3 ft above the original ground surface.

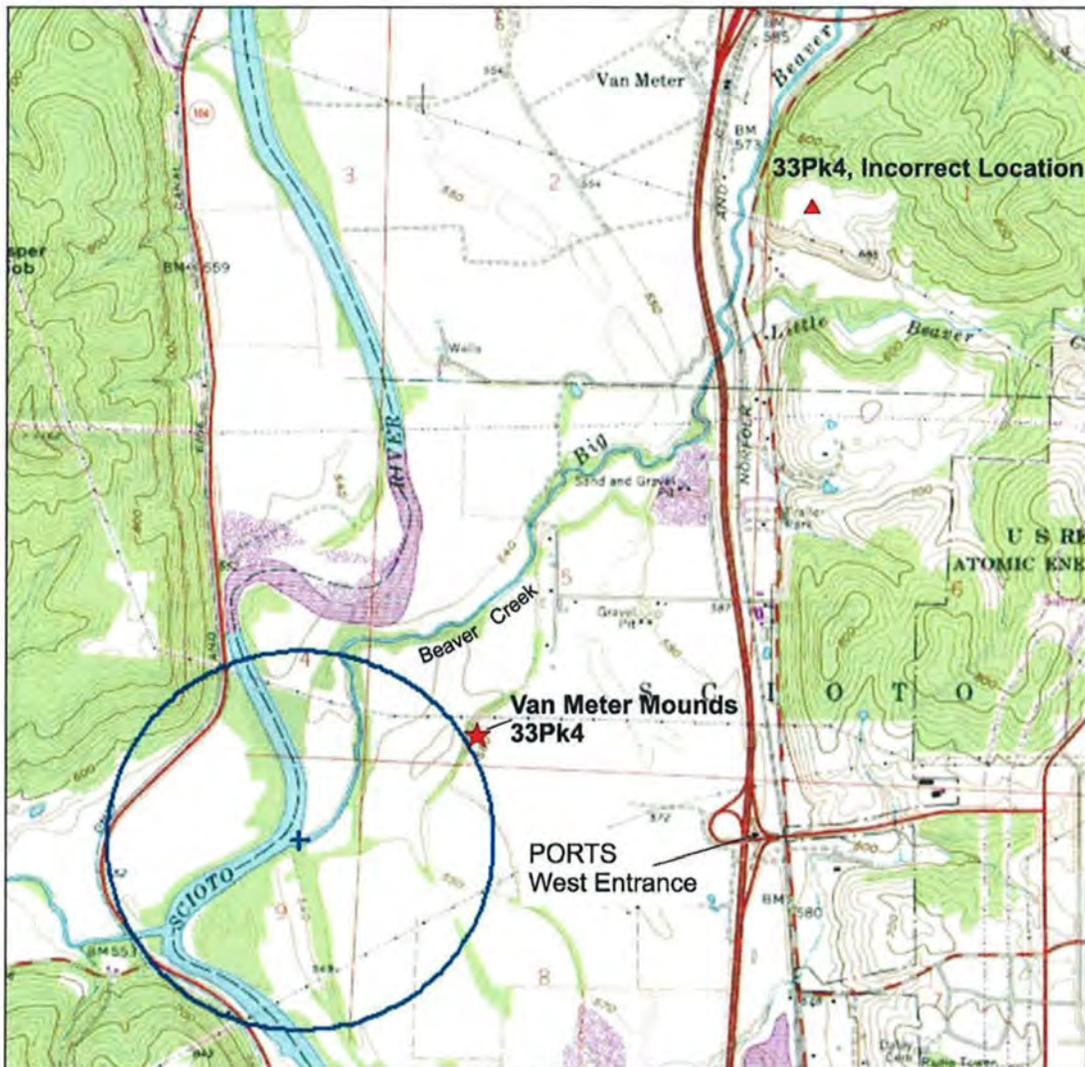


Figure 15. A portion of the *Piketon* (1961 [revised 1971]) USGS 7.5' topographic quadrangle map showing the incorrect location for 33Pk4 and the location of the Van Meter Mounds (33Pk4) based on Fowke's (1894) description. The blue circle has a radius of half a mile.

Fowke began his excavation in the smaller mound with a roughly east-west trench varying in width from 10 ft to 25 ft (Figure 16). A variety of artifacts were found in the mound fill, probably accidentally scooped up by the mound builders in the dirt used to create the mound. At the base of the mound there was a large burned area covering a space about 25 ft long and up to 25 ft wide. The burned soil was about an inch thick and on top of it was charcoal, ash, and some small burned animal bone fragments. No human remains were found in the small mound—at least in the areas excavated by Fowke.

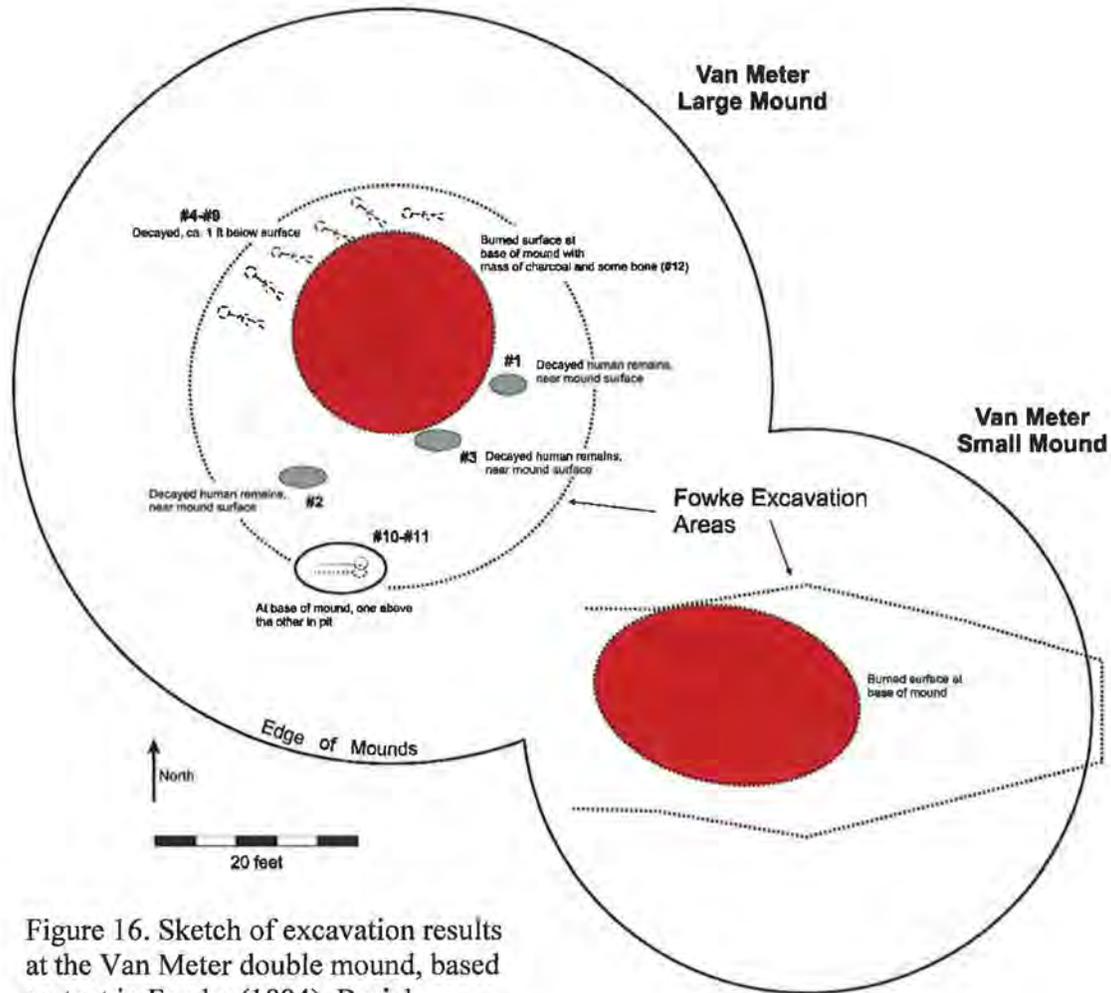


Figure 16. Sketch of excavation results at the Van Meter double mound, based on text in Fowke (1894). Burial contexts are numbered.

For the large mound, Fowke laid a circle 40 ft in diameter over the center of the mound as his excavation area. He encountered numerous extended burials (people laid out on their backs, arms at their sides) in the top foot or so of soil. It is hard to know how close the burials were to the original surface since so much of the mound had been plowed away. Burials 1-3 were very decayed when exposed. Burial #1 (burial numbers refer to labels in Figure 16 and burial/context numbers in Table 1) was accompanied by a “few rough beads and fragments of pottery.” Burial #2 had a flint “knife” near one leg and a flint “chisel” with polishing near the head. Burial #3 was very fragmentary but Fowke’s team found a flint “knife” near the head and a whole, but crushed, pottery vessel on the chest. This placement of a pottery vessel is fairly unusual in Adena/Hopewell burials. Six additional “intrusive” burials (Burial #4-9 sketched in on Figure 16) were found on the west and north edges of the excavation area, and none were buried with any objects—and perhaps as a consequence Fowke failed to provide any details about these

burials. Other than a “knife” and a slate ornament with a groove around the middle, nothing else was found in the upper part of the mound.

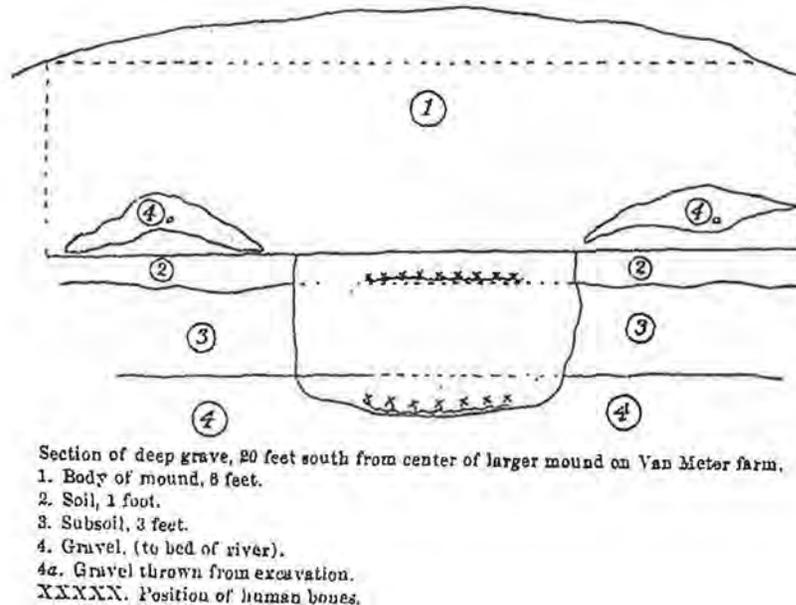


Figure 17. A profile of the Burial #10-#11 pit at the base of the larger Van Meter Mound, from Fowke (1894:309).

Two features were found at the base of the large mound. A pit containing two burials (Burials #10 and #11, Figure 16) was encountered along the southern edge of the excavation area. It measured nine feet by five feet and extended from the surface down into the glacial gravel found beneath the subsoil clay. Figure 17 shows the profile of this burial pit as published by Fowke (1894:309). This pit was excavated before the mound was built, as evidenced by the gravel piled up on either side of the pit, underneath the mound fill. Two adult burials were placed in the pit, in an extended position, one about two feet above the other. A dark, mucky soil was placed on top of a layer of bark covering the lower burial (Burial #11), then the upper burial was put in place. No objects were found buried with the lower individual. The upper individual (Burial #10) had a very unusual copper object or adornment around the wrist. This copper object consisted of five small copper plates, 1 mm thick and on average about 2.5 x 3.3 inches across. These were arranged about the wrist like a bracelet or perhaps they were attached to the sleeve of a garment. The copper preserved some possible fur or fabric, which also had red ochre pigment sprinkled on it.

On the north side of the large Van Meter Mound excavation area, Fowke found an area of burned soil where a very large fire had burned (see Figure 16). Numerous kinds of burned plant parts were found, including a pine log a foot in diameter and six feet long. In some areas the charcoal was a foot thick, and some burned human bone fragments were found mixed in (this feature is Burial #12 in Figure 16 and Table 1). Fowke

surmised that the fire had been smothered at some point because there was very little ash and quite a lot of charcoal that would have otherwise burned down to ash. On top of the thicker part of the charcoal layer were numerous, large fragments of charred cloth of at least four varieties, as well as what Fowke thought might be charred fur. Drawings of the fabric weave patterns are shown in Figure 18 (left); also included in Figure 18 (right) are photographs of select charred fragments from the Smithsonian museum collections.

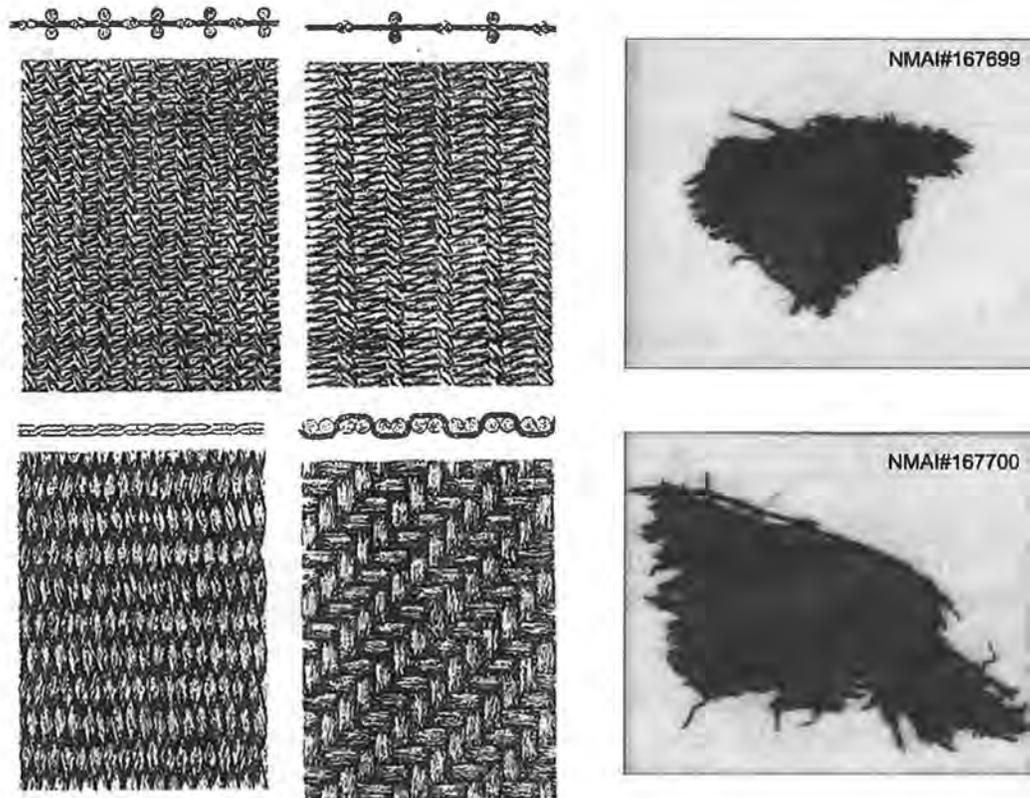


Figure 18. Drawings (left) and photographs (right) of various types of charred fabric from the large burned feature at the base of the Large Van Meter Mound. Fabric drawings from Fowke (1894:312) and photographs from Smithsonian catalog records.

Many of the objects Fowke found in the Van Meter mounds were handed over to Clarence B. Moore, who then donated them to the Academy of Natural Sciences of Philadelphia (ANSP). Table 1 contains a list of these objects and their associated catalog numbers and information from the old ANSP accession/catalog records. In the late 1920s the Academy transferred all of their archaeological objects to other museums, especially the University of Pennsylvania Museum of Archaeology and Anthropology (the Penn Museum) and the Smithsonian, where they are now part of the National Museum of the American Indian (NMAI). Those objects sent to the Smithsonian, including many samples of charred fabric, are still present in the remote collections facility of the NMAI, and the Penn Museum still houses the Van Meter mounds objects that they received from the ANSP.

Table 1. Objects from the double Van Meter Mound (33Pk4) originally donated to the Academy of Natural Sciences in Philadelphia.

ANSP <sup>1</sup> Cat #	Other Museum Cat # <sup>2</sup>	Burial #/context <sup>3</sup>	Object Description <sup>4</sup>	Current Location
14762	NMAI 16/7720	upper mound fill	Ornament of slate	NMAI
14763	Penn L-563-6040	“	knife of chert	Penn
14764	Penn L-563-6041	#2	knife with polished edge	Penn
14765	Penn L-563-6042		Arrowhead	Penn
14766	Penn L-563-6043	#1?	Fragment [pottery?]	Penn
14767	Penn L-563-6044	#10	sheets of hammered native copper (originally five)	4 are at Penn
14768	NMAI 16/7697	#12	carbonized vegetable fabric	NMAI
14769	NMAI 16/7700	#12	carbonized vegetable fabric	NMAI
14770	NMAI 16/7696	#12	carbonized vegetable fabric	NMAI
14771	NMAI 16/7698 & 16/7701	#12	carbonized vegetable fabric	NMAI
14772	NMAI 16/7699	#12	carbonized vegetable fabric	NMAI
14773	Penn L-563-6045	#12	carbonized vegetable fabric	Penn
14774	Penn L-563-6046	small mound	Arrow point	Penn
14775	Penn L-563-6047	“	Lance point	Penn
14776	Penn L-563-6048	“	Flake	Penn

1 – ANSP=Academy of Natural Sciences of Philadelphia

2 – NMAI=National Museum of the American Indian, Smithsonian; Penn= Penn Museum, University of Pennsylvania Museum of Archaeology & Anthropology, Philadelphia

3 – Burial/context numbers correspond to numbers on excavation sketch in Figure 16

4 – Descriptions taken from the original ANSP Accession/catalog records, on file at the ANSP archives.

Working from the identified location of the double Van Meter Mound in Figure 15, recent aerial photographs show that this mound's location is now a gravel pit and the remains of the mound have been completely destroyed.

### 2.2.3 Vulgamore Mound (33Pk5)

The Vulgamore mound is one of the largest mounds on the lower Scioto River and in 1894 it was about 130 ft long north-south, 110 ft wide east-west, and about 18 ft tall. Many of the larger mounds excavated in the 1800s in Pike County are hard to locate on the ground or on maps, but three sources of information allow the Vulgamore Mound to be precisely located (see Figure 5). First, in Fowke's 1895 account of excavating the mound, he indicates that the mound was located three and one half miles south of Piketon and about a mile north of the Seal Township Works—putting the mound somewhere close to the west entrance to PORTS. Fowke provides another bit of locational information by saying that the mound stood on the third of four terrace levels (on the east side of the river), indicating that the mound was not down by the river but up closer to Wakefield Mound Road. How close to the road is unclear from Fowke's article, but a brief mention of the mound in Thomas's 1891 catalog of mounds and earthworks establishes the east-west positioning of the mound: "It is 300 yards west from the pike..." (Thomas 1891:182). The final piece to this puzzle is a 1951 aerial photograph taken of this area (Figure 19), in which a circular, ring-shaped feature about 100 ft across is clearly present at the approximate location for the mound described by Fowke and Thomas. The mound appears like a ring on aerial photos because of Fowke's excavations in 1895 (as discussed below).



Figure 19. Location of the Vulgamore mound remains in an open field in 1951 (left image) and under a concrete mixing facility in 1994 (right image).

When Fowke arrived at the Vulgamore mound in 1895 the mound was much smaller in height than it originally had been. Just a year before, in 1894, the owner of the mound removed its top 11 ft and scraped a narrow trench across the middle of it, cutting down another eight feet to a depth of about three feet above the pre-mound surface level (Fowke 1895). The deepest excavations reportedly exposed two burials with some shell beads and two copper bracelets.

In 1895 Fowke again used his circle-method to excavate: he located the approximate center of the mound and measured off a circle about 40 ft in diameter, centering it on this location. He and his team then excavated this 40-ft circle in the middle of the mound down to a foot below the original ground surface. They only encountered three burials in their excavations. The first marked #1 in the Figure 20 sketch of Fowke's excavation results was that of a child laid out on its back in a pit dug into the mound when it was about three feet tall. The child was wearing a necklace with copper and shell beads strung on a vegetable fiber cord. Two copper bracelets were on the right wrist.

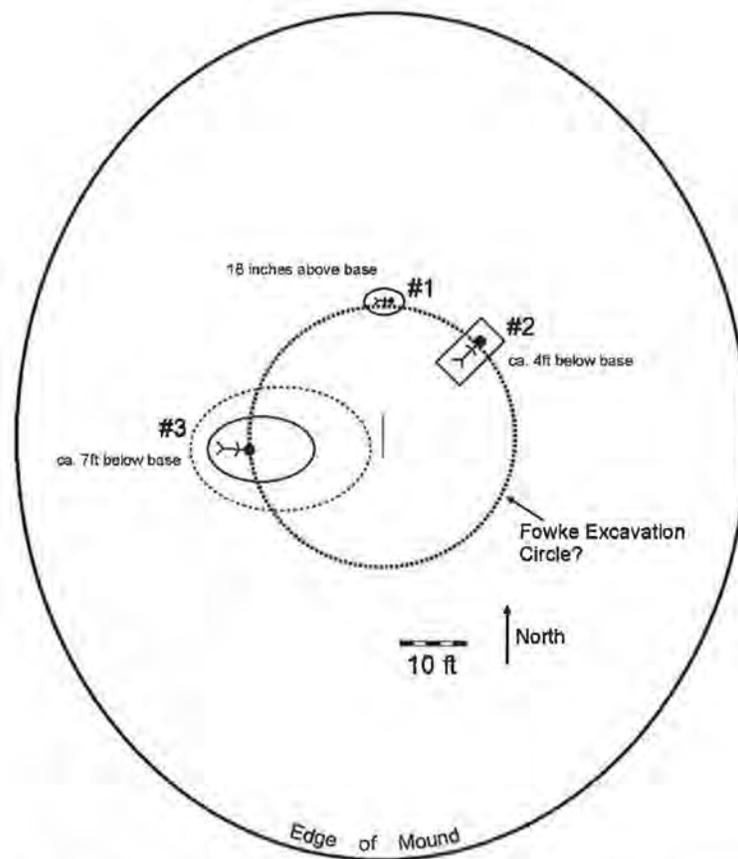


Figure 20. Sketch of features within and below the Vulgamore Mound based on Fowke's (1895) descriptions. Burial contexts are numbered.

The second burial was found in a pit extending down below the mound four feet. This pit was dug before dirt began to be piled up to make the mound. As with Burial #1, the Burial # 2 pit was lined with bark. An adult was laid to rest in the bottom of the pit on top of the bark, head to the northeast. On each wrist were two small copper bracelets and about the waist, on what Fowke thought perhaps was a belt, were about a pint of shell disk beads. A few marginella shell beads were found between the thighs. These may have been attached to other parts of the burial garments, perhaps as beads attached to the fringe of a long shirt, or they could have been part of the belt with the disk-shaped shell beads. A necklace of eleven cylindrical or barrel-shaped shell beads was found around the neck—these might be made from the columns of whelk or conch shells (marine shells). Finally, a three-inch-long spear point made of what Fowke referred to as “basanite” (perhaps jasper?) was found beneath the feet.

The third burial also occurred in a large, submound pit—in this case seven feet deep and about 8x16 ft across at its deepest. At the bottom of the pit, with head pointing east, was an adult extended burial. About the neck were a few shell disk beads and above the knees were a few marginella shells. On each forearm were found three copper bracelets, one large and two small. A thin layer of bark was used to cover the body before the pit was filled with earth, but no bark was found under the burial or along the sides of the pit.

Based on the rough sketch in Figure 20, it is clear that Fowke only excavated a small portion of the Vulgamore Mound, though just how much is uncertain as it is also clear that he did not excavate in a circle (since his measurements put some of the excavated burials outside his supposed 40 ft diameter excavation circle). The mound remnants, roughly matching Fowke’s measurements, are clearly visible in the 1951 aerial photograph (Figure 19), despite an additional 55 years of plowing since Fowke’s excavations. From the 1994 aerial we can see that the mound area is covered by some kind of business operation, which from U.S. Rt. 23 one can see is a concrete mixing facility. Though now even more flattened by years of plowing and the more recent addition of the mixing facility, it is likely that the very bottom of the mound is still preserved. Any additional submound burial pits, outside the area Fowke excavated, should also still be intact.



Figure 21. Copper bracelets, left (NMAI 167694), and copper beads, right (NMAI 167695) from the 1895 Vulgamore Mound excavation.

The artifacts recovered by Fowke in the Vulgamore Mound were handed over to Clarence B. Moore. In 1911 Moore donated the Vulgamore Mound material to the ANSP. The Academy divested itself of archaeological objects in 1929, refocusing their collections on natural history, and they sent the Vulgamore Mound material to the Smithsonian, where it all resided in the NMAI until 2003 when some of it was returned to the Miami Tribe of Oklahoma.

A list of the objects that originally went to the ANSP is presented in Table 2, including the original descriptions of the objects from the ANSP accession/catalog records that are on file in the ANSP archives in Philadelphia. While some of the objects are still housed at the Smithsonian's remote collections facility for the NMAI, the locations of others have yet to be determined. The pictures in Figure 21 show the catalog record images for some of the objects housed at the Smithsonian. Detailed descriptions and pictures of the Vulgamore Mound objects have never been published.

Table 2. Objects from the Vulgamore Mound donated to the Academy of Natural Sciences in Philadelphia.

ANSP <sup>1</sup> Cat #	NMAI Cat # <sup>2</sup>	Burial # <sup>3</sup>	Object Description <sup>4</sup>	Current Location
14780	16/7691	#2	forearms of skeleton	Repatriated to Miami of Oklahoma
14781	16/7691	#2	copper bracelets found on forearms of 14780	Repatriated to Miami
14782	16/7693	#2	massive beads wrought from axis of strombus	Repatriated to Miami
14783	16/7689	#2	discoidal shell beads probably from conch shell	Repatriated to Miami
14784	16/7690	#2	small shells (marginella) perforated for beads	Repatriated to Miami
14785	16/7692	#2	broken knife of chert	Repatriated
14786		#3	discoidal beads of shell	unknown
14787		#3	small pierced shells (marginella) used as beads	unknown
14788		#3	bracelets of native copper	unknown
14789		#3	bracelets of native copper, apparently made from native copper????	unknown
14790	16/7694	1894 burials	bracelets of native copper, massive	at NMAI
14791	16/7694	#1	bracelets of native copper	at NMAI
14792	16/7695	#1	beads of native copper	at NMAI
14793		#1	beads of shell	unknown

1 – ANSP=Academy of Natural Sciences of Philadelphia

2 – NMAI=National Museum of the American Indian, Smithsonian

3 – Burial numbers correspond to numbers on excavation sketch in Figure 20.

4 – Descriptions taken from the original ANSP Accession/catalog records, on file at the ANSP archives.

#### 2.2.4 33Pk6-Mound

A small mound is associated with the circular earthwork identified in the *Supplementary Plan N* inset map of Squier and Davis's (1848:Plate XXIV) drawing of the Seal Township Works (see Figure 10). Thomas (1894:491) reports that this mound was excavated and "contained charcoal and ashes, but no bones or relics." As of 2006 the area that contained the mound was situated along the edge of a gravel parking lot next to a church. In Figure 9 the mound location is noted on a 1934 aerial photograph and in relation to modern features, such as the church, its parking lot, and the north-bound off ramp of U.S. Rt. 23 at the west entrance to PORTS. Though the mound has been excavated (by whom is uncertain at this point) and plowed over for many years, the base of it, or any submound pits or other features, may yet be intact. It is not unusual for nineteenth-century excavations to have missed submound features.

#### 2.2.5 Barnes Mound (part of 33Pk22)

The Barnes Mound, so called in the accession/catalog records of the ANSP, is located just outside the southeast corner of the Seal Township Works square (see Figure 22). Today the ground around the mound, and what might have remained of the mound itself, is located just west of U.S. Rt. 23, but it has been completely destroyed—taken away by gravel mining sometime before 1938 (the gravel mining pits are visible on a USDA 1938 aerial photograph).

This mound was excavated in 1895 by Gerard Fowke, when it was still part of the Barnes farm. At the time of his excavations, the mound was 60 ft in diameter and 3 ft high. Fowke (1895:515) also mentions that the mound was surrounded by a ditch and embankment, which is a very significant detail not depicted on the Squier and Davis (1848:Plate XXIV) map. Mounds located inside small ditch-and-embankment circular earthworks are common in southern Ohio, but why Squier and Davis left off this detail is not known.

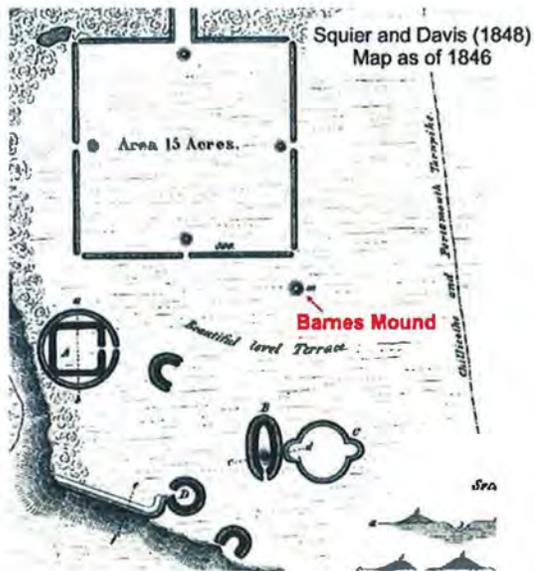


Figure 22. Maps of the Barnes Mound location from Squier and Davis (1848) and on a 1994 aerial photograph.



Fowke used the same excavation technique at the Barnes Mound as he employed at the Vulgamore Mound: he started the project by first laying out a circle, in this case 25 ft across, centered on the mound and then proceeded to excavate out everything within the circle. Figure 23 is a to-scale sketch of the excavation results. Only one area of human remains (#1 in Figure 23), skull and leg fragments, was found, suggesting to Fowke that he had found the fragmented and nearly disintegrated remains of an adult extended burial. These remains were located about 16 inches above the base of the mound, indicating that this individual was buried after mound construction had begun. No objects were found with Burial #1.

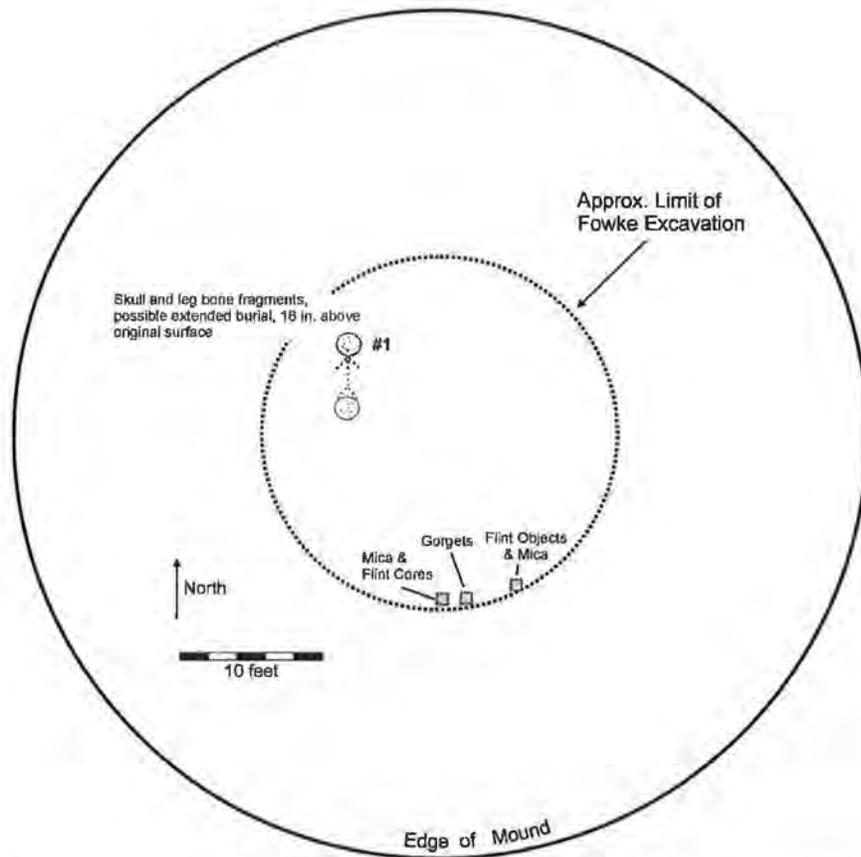


Figure 23. Sketch based on the description of Fowke's 1895 excavation results at the Barnes Mound (part of 33Pk22).

Along the southern edge of his excavation circle, Fowke encountered three small clusters of objects at the same depth as Burial #1. One cluster contained fragments of worked mica underneath nine blocks of flint, which Fowke suggested might be cores for producing flint tools. This was all partially covered by a sheet of mica. The second cluster consisted of two objects, a one-hole slate gorget and a two-hole sandstone gorget—Fowke neglected to describe the overall shapes of these, which is unfortunate because certain gorget shapes are known to date to particular time periods. Finally, the third cluster of objects included two flint projectile points, one complete and one broken, another flint core, and a sheet of mica. Most interesting is the way Fowke described the type of flint represented by the cores. He says “the flint blocks were irregular fragments of larger nodules, with a chalky exterior...” and notes that “...a similar stone occurs abundantly near the Wyandotte Cave in southern Indiana” (Fowke 1895:515). This was a very astute observation for an archaeologist in the late 1800s, demonstrating how much experience Fowke had accumulated in his travels and work on all kinds of archaeological sites in the Midwest, and beyond. Today we know that Wyandotte chert was commonly used by the Adena and Hopewell. In fact, 8,000 hand-sized flint disks were buried under Mound 2 at Hopewell Mound Group, located west of Chillicothe. Wyandotte chert and mica, when found together in a mound, suggest that the mound may have been

constructed early in Hopewell times. Whether this mound was built and/or used at the same time as the Seal Township Works cannot be determined without conducting excavations on the remains of the Seal Township Works. The components of earthwork sites, as we see them today, are often the result of hundreds of years of building, making it difficult to know which earthwork components were in use at the same time.

Nearly all of the objects, but not the human remains, Fowke recovered from the Barnes Mound were handed over to Clarence B. Moore, who donated them to the ANSP. Table 3 shows a list of the ANSP catalog numbers for the Barnes Mound collection. ANSP 14759 is an interesting entry as Fowke failed to mention that he found galena in the Barnes Mound. Galena, or lead sulfide, is an exotic mineral not present in Ohio but sometimes found at Hopewell sites. It is usually found in its natural crystalline form—the crystals of which look like small cubes. As with all of the other archaeological remains housed at the ANSP, the Barnes Mound artifacts were de-accessioned in about 1930. These objects were not sent to the Smithsonian. Instead, most are now located at the Penn Museum in Philadelphia. Neither the Penn Museum nor the Smithsonian seem to have objects ANSP 14755 (chert arrow point) or 14758 (flint cores or blocks). The current location of these objects is unknown.

Table 3. Objects from the Barnes Mound donated to the Academy of Natural Sciences in Philadelphia.

ANSP <sup>1</sup> Cat #	Other Museum Cat # <sup>2</sup>	Burial #/ context <sup>3</sup>	Object Description <sup>4</sup>	Current Location
14754	Penn L-563-6034	cluster 1	chert lance-point or knife	Penn
14755	?	cluster 1	chert arrow point	unknown
14756	Penn L-563-6035	cluster 1	chert arrow point, broken	Penn
14757	Penn L-563-6036	cluster 1, 3	sheets and scraps of mica	Penn
14758	?	cluster 1	flint cores or blocks (2 of the 9 found with above mica)	unknown
14759	Penn L-563-6037	unknown	Galena	Penn
14760	Penn L-563-6038	cluster 2	gorget of banded slate	Penn
14761	Penn L-563-6039	cluster 2	gorget of micaceous sandstone, broken	Penn

1 – ANSP=Academy of Natural Sciences of Philadelphia

2 – Penn=Penn Museum, University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia

3 – Burial number/context corresponds to excavation sketch in Figure 23.

4 – Descriptions taken from the original ANSP Accession/catalog records, on file at the ANSP archives.

## 2.2.6 Wakefield Mound (33Pk23)

Many no doubt wonder about the origin of the name “Wakefield Mound Road” near PORTS and assume that it refers to a mound that once existed in Wakefield, Ohio. If such a mound did exist at Wakefield, its exact location is not now known for, despite having an OAI number, it was never plotted on the OAI maps.

The *Archaeological Atlas of Ohio* (Mills 1914), a portion of which is shown in Figure 24, does show a mound located in the general vicinity of Wakefield. The mound’s position on this map suggests that it was located somewhere on the Scioto River floodplain to the west of Wakefield.

According to the OAI form, this mound was excavated by William Mills in 1913 and the artifacts recovered are part of Accession 28 in the Ohio Historical Society museum collections in Columbus. However, the Ohio Historical Society accession records indicate that the objects in Accession 28 were “picked up by Curator Mills May 13, 1913 in the vicinity of Wakefield, Pike Co., OH” and include:

- #1) 34 chipped hoes
- #2) piece of polished granite; possibly unfinished celt
- #3) Hematite ball, pecked, possibly unfinished
- #4) Stone ball, 1 ½ in in diameter
- #5) 29 chipped flint points; 15 are arrow points, rude to fair; other fragments or chips.

The Wakefield Mound (33Pk23) is not Fowke’s “Caldwell Mound,” which according to Fowke was located “a few hundred feet south of the county line, sixteen miles from the Ohio River, on the farm of Mr. S. A. Caldwell” (Fowke 1895:512). Fowke’s Caldwell mound is likely one of those illustrated on Mills’s atlas to the south of Big Run Creek (see Figure 24). The Caldwell Mound is most likely 33Sc5, actually a group of three mounds located along the east side of U.S. Rt. 23 in northern Scioto County.

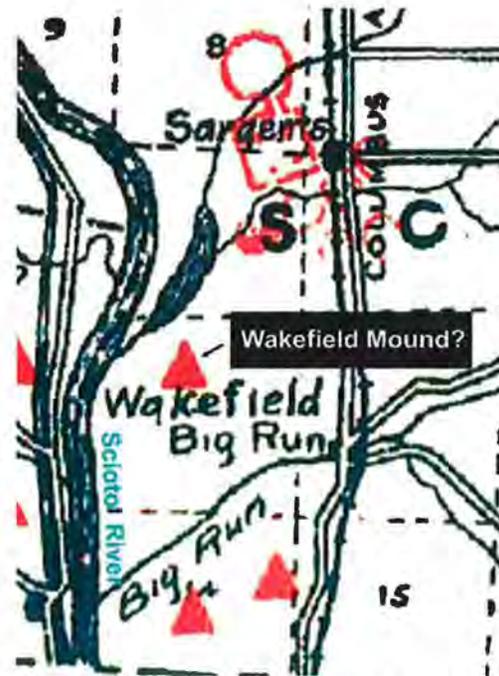


Figure 24. A portion of Mills’s Atlas (1914) showing the possible location of the Wakefield Mound.

### 2.2.7 Galloway Mound (33Pk33)

The Galloway Mound measures 10.5 meters by 8.5 meters and was 50 cm high in 1980. It is located about one mile south of the southwest entrance to PORTS on the east side of Wakefield Mound Road (Figure 25). The mound was recorded for the OAI files by Christopher Lindner, and notes about its excavation by Bud Galloway, a local artifact collector, are provided in Lindner (1980).

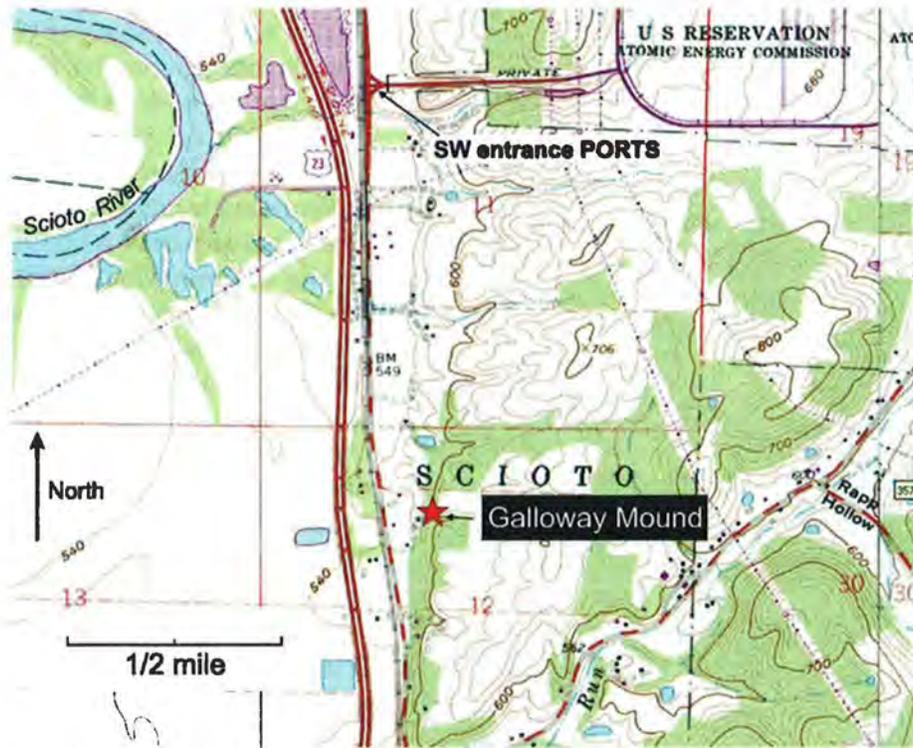


Figure 25. Location of the Galloway Mound on a portion of the *Wakefield* (1961 [revised 1986]) 7.5' USGS topographic quadrangle map.

In July of 1980 Bud Galloway excavated an east-west trench 30 inches wide across the mound (Lindner 1980). This trench was expanded on one side to an area 5 ft by 2 ft. At about 16 inches below surface a slightly burned layer with some charcoal was encountered. No human remains were found during the excavations, but a posthole feature was found beneath the burned layer and extended down into the subsoil. Though a topographic rise, it is hard to know from these results if this feature is in fact a prehistoric mound. However, based on the excavation results in other mounds from the area, we know that burning events occurred in numerous cases before the erection of a mound.



Figure 26. Projected locations of the Small Barnes and Henry Sargent Mounds based on Thomas's (1891) description.

The projected location of this mound is also shown in Figure 26 (white dashed line). This area too has been heavily disturbed by gravel mining, road construction, and building. If the area indicated in Figure 26 is the correct approximate location, then the Henry Sargent Mound from Thomas (1891) is now destroyed.

### 2.2.8 Small Barnes Mound (no OAI)

In his 1891 *Catalogue of Prehistoric Works East of the Rocky Mountains*, Thomas (1891:182) reports the presence of a "small mound on the land of Dr. T. S. Barnes, on the third Terrace of the Scioto, 4 ½ miles south of Piketon." This mound reported by Thomas is likely not the same as the one dug by Fowke at the SE corner of the square of the Seal Township Works. In fact, its projected location based on Thomas is about 0.9 miles north of Fowke's Barnes Mound (see Figure 26). Giving Thomas's estimates a quarter mile buffer, because it is likely the numbers were rounded to the half mile, the map in Figure 26 shows the projected location of the Small Barnes Mound on a 2006 aerial photo (the white dotted line). This area covers the third terrace between the railroad tracks on the east and the terrace edge on the west. If the mound is located in this area, it has long since been destroyed by gravel mining and the construction of U.S. Rt. 23.

### 2.2.9 Henry Sargent Mound (no OAI)

Thomas (1891:182) also lists a small mound on Henry Sargent's land, "one-fourth of a mile north of" the Small Barnes Mound. The

## 2.3 Other Possible Mound Features

A number of possible mounds have been identified in the PORTS area over the years. Some of these are referred to in archival documents; others are based on local lore passed down over the generations. Determining if these possible mounds were in fact built by Native American groups can be virtually impossible without archaeological excavation, but sometimes a search of old maps and aerial photos can reveal that some of these mound-like features only recently appeared on the landscape.

This section of the report presents the information currently known about a number of mound-like features within and surrounding PORTS.

### 2.3.1 "large Adena Mound"

When word got out in 1952 that the federal government was going to be building a large facility in the PORTS area, the Ohio Historical Society was quick to try to secure permission to salvage archaeological remains that would be impacted by the new construction. The Ohio Historical Society Department of Archaeology's Pike County archival file contains a number of letters and brief documents related to the initiation of an archaeological project in the PORTS area. After being contacted by Assistant Regional Director E. M. Lisle of the Department of the Interior on September 23, 1952, Erwin C. Zepp, Director of the Ohio Historical Society, sent the Department of the Interior a brief report on the Society's plans to document and salvage archaeological and historical sites; the report originally was prepared for the Society's Board of Trustees. The full text of the work plan is presented here:

#### "Pike County Field Program

The Atomic Energy Commission's recent disclosure that a two-billion-dollar gaseous diffusion plant will be constructed in Pike County has instituted an extensive field program involving several departments of the Society.

The plant, which will occupy some 6500 acres, will lie immediately south-east of Piketon and about 24 miles north of Portsmouth. In addition to the area directly affected, much land along U.S. Route 23 will be disturbed as a result of widening the highway, and expansion of housing facilities in neighboring towns will necessitate the destruction of certain buildings as well as some natural features. The Department of Archaeology has made a preliminary survey and plans to conduct excavations at various places in the area. A **large Adena mound** is located on the plant site while another, the largest between Portsmouth and Chillicothe, stands on the fringe. Eight Hopewell sites, moreover, are known to be just outside the area. The Department of Natural History, already aware of the existence of some uncommon plants in Pike County, is interested in determining and recording all of the types of animal and plant life to be found on the site. Special attention will be given to the

valley of the Teays River which was the master stream of the pre-glacial era. Members of the Department of Research and Publications will search the atomic plant site for interesting structures that are destined to be demolished and for any significant vestiges of the past. In the vicinity are several old log cabins, one of which, it has been proposed, could be moved to the State Fairgrounds to become a part of the Sesquicentennial exposition. Also desirable would be timbers, doors, window glass, and the like, which could be salvaged from the early nineteenth-century structures for use in restorations. In all phases of work a thorough photographic record will be made. A complete set of aerial photographs has been obtained from the federal government, and additional photos are being furnished by the State Highway Aerial Mapping Survey.

Staff members have conferred with Lieutenant-Governor George D. Nye and with leading federal officials. Kenneth Dunbar, the head of the atomic development, and Robert Rose, federal coordinator, have indicated their willingness to cooperate with the Society. The field program will get under way immediately and will continue until the area has been completely canvassed." (from Pike County file, Ohio Historical Society, Archaeology Department; emphasis added)

Of note in this passage is the mention of a "large Adena mound" purportedly located "on the plant site." Though not named in the plans for the field program, this mound is referred to again in a list of important archaeological sites, all mounds and earthworks (including the "eight Hopwell sites" located outside the plant, which refers to the mounds and earthworks of Seal Township Group), sent along with the plan. The full text of this list is apparently a report of preliminary field work conducted by OHS (see Sassaman 1952), and it makes clear which mound—the Van Meter Mound—is being referred to as the "large Adena mound" within the Atomic plant:

#### "Archaeological Sites in the Piketon Area

From ground and aerial surveys carried on during the months of September and October of this year [1952], and from data in the Department of Archaeology files, the following archaeological sites will be directly "or indirectly" [penciled in here] affected by the construction of the Atomic Energy plant near Piketon, Ohio.

##### PK 1, 1/1, & 1/2

Great Graded-Way and nine mound complex, located one mile south of Piketon, on both the east and west sides of U.S. Route 23. Eastern portion of Graded-Way destroyed by gravel operations of State Highway Department.

##### PK 4

Large mound on hill-top three miles south of Piketon on J. M. Vanmeter farm.

PK 5

Mound, three and one half miles south of Piketon on third of four river terraces, east side of Scioto River. The largest mound between Chillicothe and the Ohio River, 130' x 110' x 18' high.

PK 6

Circular earthworks, west side of U.S. Route 23, between Piketon and Wakefield, completely destroyed by commercial gravel operations.

PK 22

Scioto Township works (circle and square connected by parallel walls) and seven mounds located between Scioto River and U.S. Route 23. Mound and Earthworks obliterated by cultivation. A Portion of square earthwork can be seen on aerial photographs.

SC 5

Group of three mounds along east side of U.S. Route 23 just south of Wakefield, Ohio, Scioto County.

The above sites with the exception of PK 4 will be affected by the widening and relocation of U.S. Route 23. These plans are as yet incomplete. The Atomic Energy people have indicated that PK 4 in the atomic plant area will not be destroyed. All of the above sites have been partially investigated, or "dug into" by Moorehead and Fowke, 1892-1898. It is planned therefore to limit archaeological work to sites to be destroyed." (from Pike County file, Ohio Historical Society, Archaeology Department)

Apparently, according to the last paragraph of this mini-report, the mound 33Pk4 is the "large Adena mound" located "in the atomic plant area." From the information provided earlier in this report on site 33Pk4, which in fact is the double Van Meter Mound, we know that the Ohio Historical Society (OHS) report quoted above must be in error on two counts. First, the Van Meter Mound was located nearly 4,000 ft west of the west entrance to PORTS, as established above in the Documented Mound Sites section. Second, even if 33Pk4 or some other mound is located on the "hilltop" as the OHS mini-report and the incorrect OAI map suggest, this location is not today on the PORTS property. In fact, OHS seemed to be making a distinction between sites that would be impacted by work on U.S. Rt. 23 and those that might be impacted by the construction of the plant. The only site, according to OHS in 1952 that might be impacted by plant construction was 33Pk4—though they were unable to locate this mound at its incorrect location as indicated on the OAI map (Sassaman 1952). However, it is probable that if this site had been properly plotted on the OHS maps in 1952, as shown in Figure 15, then OHS would not have considered it to be in danger of destruction from construction of the

plant or from work on U.S. Rt. 23. In summary, there is no “large Adena mound,” per the 1952 OHS Field Program plan and survey mini-report, on PORTS property<sup>3</sup>.

### 2.3.2 Hughes “Mound” (33Pk32)

About 5,000 ft south of the southwest entrance to PORTS is a house built on a large topographic rise between Wakefield Mound Rd. and U.S. Rt. 23 (Figure 27). Long occupied by members of the Hughes family, many have commented on how mound-like this topographic feature under the Hughes house appears to be. In 1952 while stopping to ask for directions to the Seal Township Works (33Pk22), Sassaman observed the Hughes house to be “a farm house that looks as if it were built on top of a large sub-conical mound” (Sassaman 1952:7). Lindner (1980) continued this tradition of identifying the base of the Hughes house as a mound and even re-submitted an OAI form for the mound and surrounding archaeological site (the surrounding archaeological materials are likely unrelated to the “mound” as they include artifacts from a period before mounds were built in Ohio). What Lindner based this conclusion on is not known, though in an interview, Sam Hughes, the nephew of the house’s occupant, indicated that the house had been built on a mound. However, nowhere have any of these documents (e.g., OAI form or Lindner (1980) report) or informants mentioned why it is that they think the topographic feature under the Hughes house is a prehistoric Native American mound. Importantly, none of the nineteenth-century archaeologists make note of this “mound” feature under the Hughes house in the numerous articles published on the mounds and earthworks of the area. Since these early archaeologists were very much attuned to recording the biggest archaeological features on the landscape, it seems uncharacteristic that they would have left out such an obvious feature because the goal of some of these publications was to document and catalog known mounds and earthworks (e.g., Thomas 1891).

In 1977 archaeologist Rodney Riggs was the first to submit an OAI form including the Hughes mound. At that time Riggs stated that “the Hughes home reportedly is built on part of the mound as well as the site” and “further field inspection is required.” Despite the additional efforts of Lindner and his colleagues in March of 1980, when they mapped the “mound” and conducted surface collections, it would seem that we are no closer today to knowing if this feature is a Native American mound.



Figure 27. Locations of two purported mounds, shown on a portion of the *Wakefield* (1961 [1986]) 7.5' USGS topographic quadrangle map.

### 2.3.3 “Large Barnes Mound”

There is a purported large mound (~20 ft high) located just outside PORTS along the southern edge of the southwest PORTS entrance. Figure 27 shows the location of the purported mound, which is here referred to as the “Large Barnes Mound” because there are two other mounds already assigned the Barnes name in the nineteenth century: the Barnes Mound (part of 33Pk22) excavated by Fowke in 1895 and the Small Barnes Mound listed by Thomas (1891).

This purported mound has been suggested to be the “large Adena mound” identified by the Ohio Historical Society in 1952 (as quoted above in the “Pike County Field Program” text). However, OHS identified their “large Adena mound” as 33Pk4 (in the “Archaeological Sites in Piketon Area” document quoted above), and this OAI number has been assigned to the double Van Meter Mound. According to Fowke, the Van Meter Mound is located on a high floodplain terrace about half a mile from the Beaver Creek-Scioto River confluence—about 4,000 ft west of the west entrance to PORTS and almost two miles from the purported Large Barnes mound.



Figure 28. 1938 USDA aerial photograph of the PORTS southwest entrance area showing topographic feature.

If the supposed “Large Barnes Mound” is not 33Pk4, and all of the other large mounds documented in the nineteenth century are accounted for, there is no evidence to suggest that there ever was a mound located near the Southwest entrance to PORTS. Figure 28 shows a portion of the 1938 USDA aerial photograph covering the area where the PORTS southwest entrance is today. Plainly visible are the Barnes House and its associated barn, as well as Wakefield Mound Road and the adjacent railroad. Just north of the barn is a topographic ridge with a number of trees growing on its spine. The lighter colored area at the end of the ridge is exposed dirt in an area of erosion at the very end of the ridge. No obvious indication of an excavated mound, like that observed earlier for the Vulgamore Mound in Figure 19, is evident in the 1938 aerial photograph (Figure 28) or the 1951 aerial photograph (not shown)—and Fowke used the same excavation technique at both mounds (digging out a circle in the middle of the mound).

This same ridge visible on the 1938 aerial photograph is evident in the topographic contour lines shown on the 15' and 7.5' USGS topographic quadrangle maps in Figure 29. In 1917, before the PORTS facility existed, the ridge is unbroken and

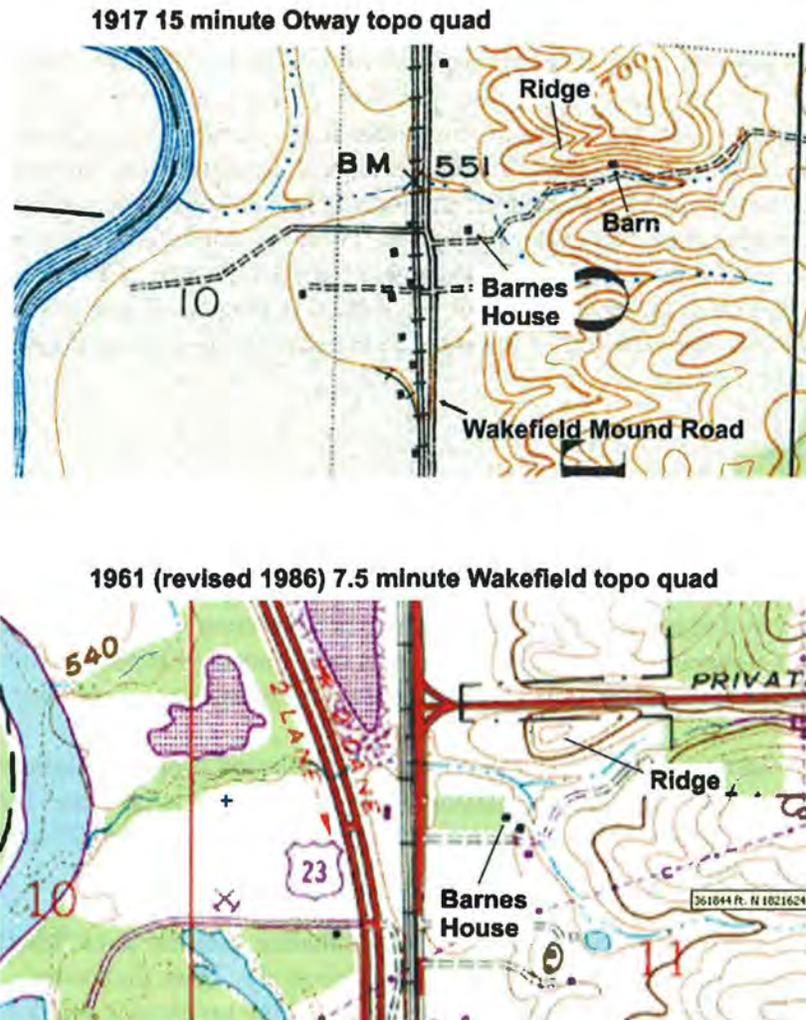


Figure 29. Topographic quadrangle maps from 1917 and 1961 showing the ridge feature north of the Barnes House before and after installation of the PORTS southwest entrance.

terminates well before reaching Wakefield Mound Road. On the 1961 topographic map the new southwest entrance to PORTS is shown cutting through the ridge, but no topographic features the size of the double Van Meter Mound (ca. 120 ft long x 75 ft wide x 10 ft high when Fowke excavated it) are evident in the topographic contour lines. Because the southwest entrance was not expanded until 1979, there should be some indication of the purported mound on the 1961 topographic map—but there is not. Usually extant mounds this large are noted with a small circle and are labeled as “Mound” on the 7.5’ USGS quadrangle maps, as at Mound Cemetery on the south edge

of Piketon and the Tremper Mound down the Scioto River at Coles Park. However, no such mound identifier is present north of the Barnes House.

A mound of the purported size would have shown up on the topographic contour maps from 1917 and 1961, because both use topographic contour intervals of 20 ft, meaning large features greater than 20 ft in height should be visible. Furthermore, such a large feature would have been visible on the 1938 aerial photographs. Neither topographic maps nor the aerial photograph show any indication of this purported mound.

No mention of a mound near the southwest PORTS entrance has ever been made by archaeologists or historians, despite numerous high-profile projects having been conducted in the area in the 1800s. Surely if a large mound had been present during Fowke's time he would have excavated it, much as he did with other mounds on the Barnes, Vulgamore, and Van Meter properties. There is no indication of a mound-like feature in any aerial photographs or topographic maps of the area. The only documented topographic feature in the area of the alleged mound is the end of a ridge that, in the 1950s, was cut off from the rest of the ridge to the east by the original construction of the southwest entrance road.

#### 2.3.4 Knoll Site

There has been speculation that archaeologist Christopher Lindner in a 1980 archaeological report had potentially recorded a mound site within the PORTS perimeter loop road. The purported mound, known as the "knoll site," was found by local resident Bud Galloway and reported to Lindner while he and his crew were in the area in 1980 performing an archaeological survey. It is worth here quoting Lindner's entire passage about the Knoll Site because it is clear that he was not referring to a mound:

"(m) A knoll site on the Atomic Energy Commission property. Galloway says that it was only 10' in diameter, only black chert, large flakes but none of secondary decortications, and a few bases of blades to 2" long."  
(Lindner 1980:11)

On page 7 of his report, Lindner indicates that he uses the term "knolls" to refer to the highest topographic elevations in the area of his study. Thus, Galloway's "knoll site" is a very small area, on top of a knoll, where he found the prehistoric-era debris from making some flint tools. The "knoll site" is not a mound site; it is what archaeologists sometimes call a small lithic scatter. Furthermore, no specific location was ever given for this lithic scatter and Lindner never assigned it an OAI number or submitted an OAI site form for it. Thus, the exact location of the "knoll site" lithic scatter on PORTS is not known. However, other lithic scatters like the knoll site were located during a Phase I archaeological survey of PORTS (Schweikart et al. 1997).

#### 2.3.5 Base of X-605G Control House

The X-605 well field is located on the Scioto River floodplain to the northwest of the PORTS facility (see Figure 5), and it consists of four wells and a control house built on a pile of dirt. The X-605G control house was built by Diehl Pump and Supply

Company between January 5 and June 10, 1953. Before construction of the control house, dirt was piled up to make an elevated base so that the control house would be above the level of all but the worst floods. The base of the control house is not a pre-existing Native American mound. Figure 30 is the 1917 15' topographic quadrangle map of the area, with an indication of where the X-605 wells were installed—there is no indication of a mound-like topographic feature in this area. Figure 31 shows the planned location of the X-605 well field on a 1951 USDA aerial photograph and there is no sign of any mound-like features in the plowed field, either. In other words, there was no mound present at the location of the X-605 well field before the construction of the control house in 1953. In the *Archaeological Atlas of Ohio Mills* (1914) plotted a mound about 700 meters to the southeast of the X-605 wells, along Beaver Creek (see Figure 5). However, this mound has never been mentioned in any other published or unpublished accounts.

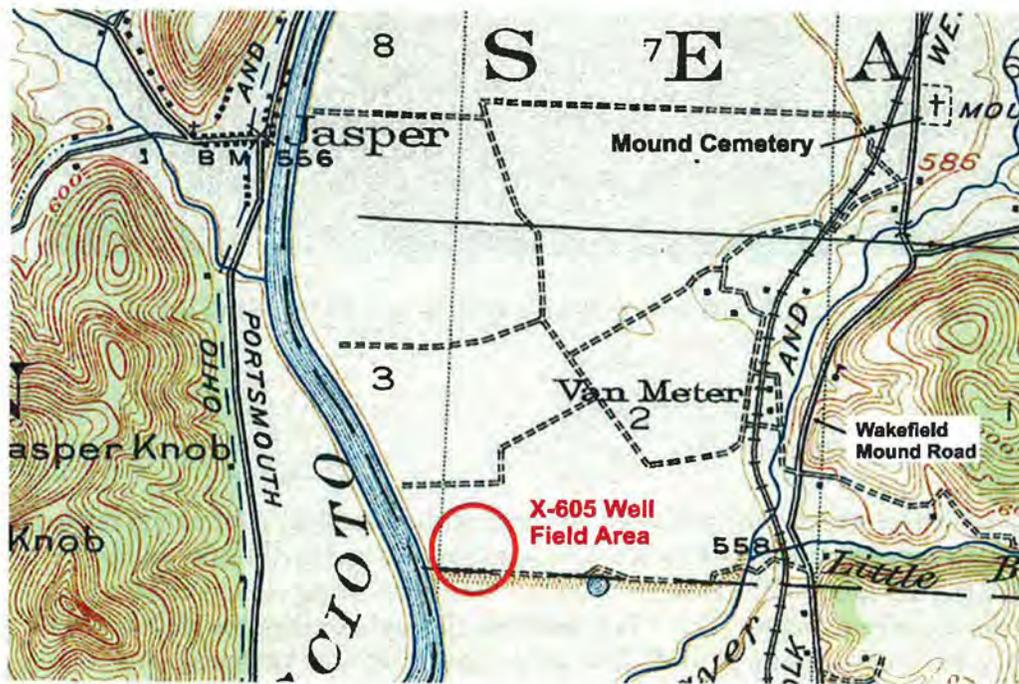


Figure 30. Location of the X-605 well field on a portion of the Piketon, OH 15' USGS topographic quadrangle map.

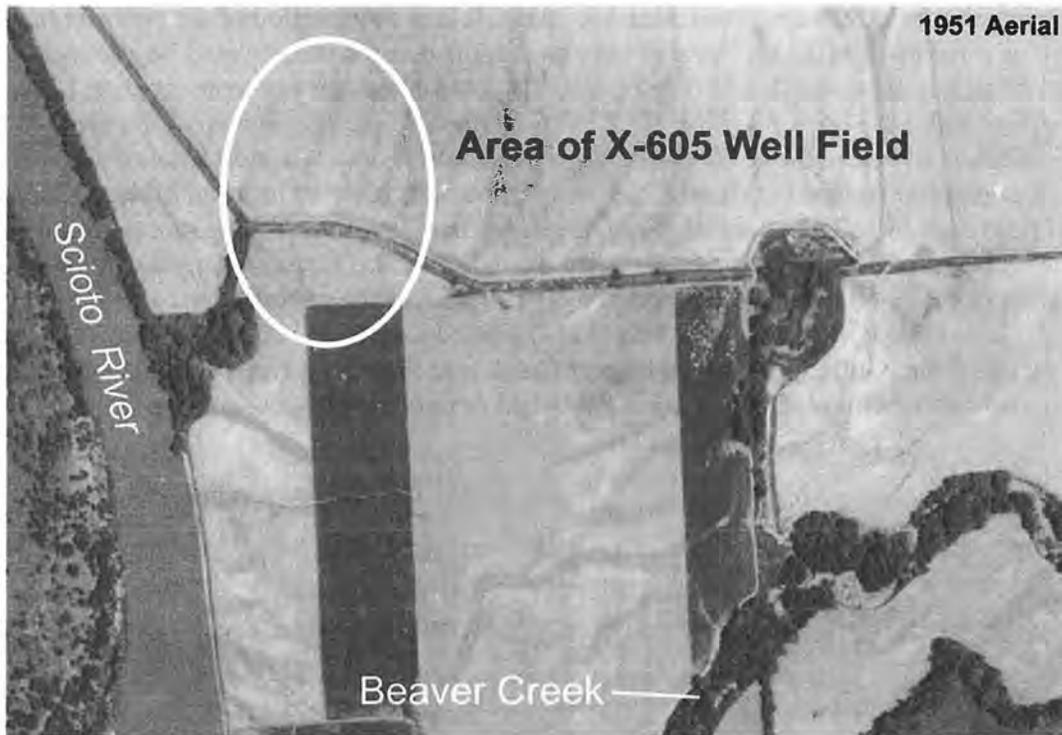


Figure 31. Location of the X-605 well field on a portion of a 1951 USDA aerial photograph.

### 3. Summary and Conclusions

This report presents the published and unpublished archival information related to all of the previously documented Native American mounds and earthworks within approximately 1.5 miles of the PORTS boundary fence, including three prehistoric earthworks and nine mounds. Table 4 is a summary list of these sites and their current conditions. No documented and confirmed prehistoric mounds or earthworks are located on PORTS property. In one case, the Seal Township Works, a creek that has its headwaters within the PORTS facility passes right by the north edge of the intact portion of the site.

Table 4. A summary list of mounds and mound-like features in the PORTS area discussed in the text.

Mound or Earthwork Site	Current Condition	To be Considered if Within the Area of Potential Effects for Future Undertakings by the Project Sponsor
<b>Earthwork Complexes</b>		
Graded Way(33Pk1)	Partially destroyed, exact location of some parts unknown	yes
Earthwork “N”(33Pk6)	Site still exists, condition of earthwork unknown	yes
Seal Township Works (33Pk22)	Partially intact—large areas destroyed	yes
<b>Documented Mounds</b>		
Graded Way Mounds (33Pk1)	Some intact	yes
Van Meter Mounds (33Pk4)	probably destroyed	no
Vulgamore Mound (33Pk5)	base potentially intact	no
33Pk6-Mound	base potentially intact	yes
Barnes Mound (part of 33Pk22)	destroyed	no
Wakefield Mound (33Pk23)	unknown location	no
Galloway Mound (33Pk33)	excavated, unknown	no
Small Barnes Mound	destroyed	no
Henry Sargent Mound	destroyed	no
<b>Other Possible Mounds and Mound-like Features</b>		
“large Adena mound”	Is 33Pk4, prob. destroyed	no
Large Barnes	not a mound	no
Hughes	not a confirmed mound	unknown
Base of X-605G Control House	not a mound	no
“Knoll Site”	not a mound	no

Five additional purported mounds and mound-like features in the area were also considered. Two of these were determined not to be mounds: the Knoll Site and the X-605G Well Field Control House. One, the Hughes House feature, has never actually been shown to be a mound but could be a mound, though now it is largely destroyed because the Hughes House is built right on top of and down into it. Finally, the last two, the “large Adena mound” and the “Large Barnes Mound” represent a case of mistaken identity in that both have been thought to refer to the double Van Meter Mound (33Pk4), which actually is known to be located elsewhere.

While many of these mound and earthwork sites have been destroyed by gravel mining and road construction, all that remain (except for the mounds in Mound Cemetery) have been reduced in height by plowing to the point where they are nearly invisible at the surface. However, plowed mounds and earthworks may have intact components beneath the plowed layer.

## End Notes

1. The text in Section 1.2 is based in large part on a chapter written by Burks for a book published on the history and archaeology of a parcel of land in Delaware County, Ohio (Burks 2010). While Delaware County is some 80 miles north of the PORTS area, the basic story of Ohio's prehistoric past, as presented in this section, is much the same—the differences are in the details related to specific sites and the people who lived in either area. Short of finding a person's skeleton, it is very hard to tell the story of individuals using archaeology because people live in groups and the things they leave behind are mixed with those who lived with them in their houses and village and those who lived on the same piece of ground throughout prehistory.

2. In 1934 and 1935, primarily, Dache Reeves took hundreds of aerial photographs of earthworks from all over southern Ohio. These photographs are now part of the Dache Reeves collection in the National Anthropological Archives at the Smithsonian Institution in Washington, D.C.

3. In a letter dated November 4, 1952 Kenneth A. Dunbar, Manager of the Portsmouth Area atomic energy project, indicated to Ohio Historical Society Director Erwin C. Zepp that he had received the Department of Interior's letter requesting that OHS archaeologists, and other specialists, be given permission to conduct salvage work during the construction of the Atomic Energy Commission's project. Dunbar, however, indicated that the construction schedules were so tight that they would not be able to "tolerate delays associated with searching for archaeological specimens." But he did indicate that his office was "anxious to cooperate with all worthy undertakings," except presumably those that would delay the project, and offered to turn over to OHS any artifacts found during the construction. Apparently no artifacts were found during the construction project as OHS has no accession records or artifacts for Pike County dating to the 1950s or the 1960s. (Dunbar to Zepp letter, dated Nov. 4, 1952, in the Pike County file, Archaeology Department, Ohio Historical Society)

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