



## Department of Energy

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JUN 20 2013

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PPPO-03-1927531-13

Dear Dr. Snyder:

### TRANSMITTAL OF THE PHASE I ARCHAEOLOGICAL SURVEY OF SITES 33PK322, 33PK323, AND 33PK324 AT THE PORTSMOUTH GASEOUS DIFFUSION PLANT, PIKE COUNTY, OHIO AND SUPPORTING DOCUMENTS

Enclosed for your information is the *Phase I Archaeological Survey of Sites 33PK322, 33PK323, and 33PK324 at the Portsmouth Gaseous Diffusion Plant (PORTS), Pike County, Ohio*, an *Addendum Letter Report for Site 33PK322*, and the *Geophysical and Buried Utility Investigation Historic Farmstead Site 33PK322 (HMBL 4) PORTS Facility, Piketon, Ohio*

In 2002, the Department of Energy (DOE) submitted the *“Phase I Archaeological Survey of the Portsmouth Gaseous Diffusion Plant (PORTS Facility) in Scioto and Seal Townships, Pike County, Ohio”* prepared in 1997 by ASC Group (Schweikart et al. 1997). As a result of that report the Ohio Historic Preservation Office (OHPO) recommended, and DOE agreed, that additional field surveys be conducted of 13 historic-era farmsteads. DOE initiated the Phase II surveys in 2009 and completed the fieldwork in 2012. The Phase II surveys were divided into three reports that were submitted to your office in 2010 and 2013.

As we have discussed, as a part of the research for the 13 field surveys, the professional archaeologists performing the work located a map, dated 1905, that identified a number of additional farmsteads on the Portsmouth Gaseous Diffusion Plant (PORTS) site. Research showed that these farmsteads had not yet been surveyed. In order to complete the site inventory efforts, 40 reconnaissance-level surveys were conducted at all the newly identified historic-era sites. These reports were submitted to your office in May 2013. Phase I surveys were performed on 11 of the 40 sites. At this time we are submitting the results of the Phase I archaeological surveys of three farmsteads – 33Pk322, 33Pk323, and 33Pk324. The Phase I reports documenting the remaining eight farmsteads are forthcoming and will be provided to the OHPO and the consulting parties as they are available.

The results of these and all of the other historic-era surveys will be included in a comprehensive summary report of the site’s historic-era farmsteads which we believe will be very useful in understanding the pre-DOE acquisition settlements, from the earliest historic-era farmstead, to the time of purchase by the Atomic Energy Commission in 1952.

Additionally, DOE is preparing a *“Comprehensive Summary Report of Cultural Resource Investigations Conducted at the Portsmouth Gaseous Diffusion Plant (PORTS Facility), Scioto*

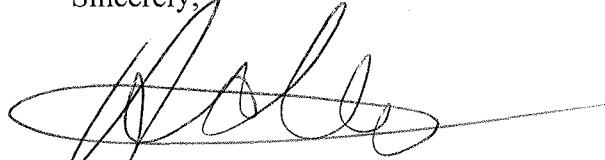
*and Seal Townships, Pike County, Ohio* ". The above referenced report, which is in development, will include information on all temporal aspects of PORTS, from the prehistoric to the historic-era and including the DOE-era thus there can be a comprehensive presentation of the resources that offers cumulative perspective, and opportunities for understanding and interpretation. DOE has conducted many surveys and investigations in support of its Environmental Management (EM) mission and believes that while individual reports such as those attached are important, that the volume of information that has been gathered over the years can be best understood comprehensively and contextually.

DOE's proposed Comprehensive Environmental Response Compensation Liability Act (CERCLA) actions conducted to carry out its EM mission are similarly comprehensive in that they have the potential to affect cultural resources from each of these time periods. The CERCLA documentation that is being prepared considers the effects of the proposed action and alternatives on both individual and collective cultural resources and has been informed in its development by the individual survey results and also by consideration of the comprehensive perspective. DOE will continue to send copies of the individual reports for your information as they become available, and look forward to sending you the comprehensive materials when they have been completed. DOE anticipates that the comprehensive materials will be an especially valuable asset in your review of our CERCLA documents.

A copy of the *Phase I Archaeological Survey of Sites 33PK322, 33PK323, and 33PK324 at the Portsmouth Gaseous Diffusion Plant (PORTS), Pike County, Ohio, an Addendum Letter Report for Site 33PK322, and the Geophysical and Buried Utility Investigation Historic Farmstead Site 33PK322 (HMBL 4) PORTS Facility, Piketon, Ohio* is enclosed and can be obtained at the Environmental Information Center by contacting 740-289-8898 or at [eic@wems-llc.com](mailto:eic@wems-llc.com). Additionally, an electronic copy can be found at <http://www.pppo.energy.gov/nhpa.html>.

If you have any questions, please contact Amy Lawson of my staff at (740) 897-2112.

Sincerely,



Dr. Vincent Adams  
Portsmouth Site Director  
Portsmouth/Paducah Project Office

Enclosures:

1. Phase I Archaeological Survey of Sites 33PK322, 33PK323 and 33PK324 at PORTS, Pike County, Ohio.
2. Addendum letter report for Site 33PK322 as documented in Mustain and Klinge (2011) Phase I Archaeological Survey of Sites 33PK322, 33PK323, and 33PK324 at PORTS, Pike County, Ohio
3. Geophysical and Buried Utility Investigation Historic Farmstead Site 33PK322 (HMBL 4) PORTS Facility, Piketon, Ohio

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**Phase I Archaeological Survey of Sites 33PK322, 33PK323,  
and 33PK324 at the Portsmouth Gaseous Diffusion Plant  
(PORTS), Pike County, Ohio**

**By**

**Chuck Mustain and David F. Klinge, MA, RPA**

**Phase I Archaeological Survey of Sites 33PK322, 33PK323, and 33PK324 at the  
Portsmouth Gaseous Diffusion Plant (PORTS), Pike County, Ohio**

**By**

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**February 7, 2012**

## ABSTRACT

Under contract with Fluor-B&W Portsmouth, LLC, ASC Group, Inc., completed Phase I archaeological investigations of three historic sites at the Portsmouth Gaseous Diffusion Plant (PORTS) in Pike County, Ohio. The three sites are pieces of the late nineteenth- and early twentieth-century rural community that was subsumed into the PORTS property during the mid-twentieth century acquisition of the property. They were first documented in 2011 during a review of historic cartographic sources by Ohio Valley Archaeology, Inc., and they were subsequently identified in the field by a preliminary site assessment completed by ASC Group, Inc. This investigation was completed in compliance with Section 110 of the National Historic Preservation Act of 1966, as amended.

The three sites are on the western and northwestern peripheries of the plant. Site 33PK322 (HMBL 4) is the remnants of a small house and three small outbuildings. Site 33PK323 (HMBL 5) marks the location of a school house that is identified on the earliest twentieth-century maps and was likely built in the nineteenth century. Site 33PK324 (HMBL 50) is a large, twentieth-century farm complex with multiple barns, a developed spring with two cisterns, and a large paved barnyard or feedlot. Each site was subjected to an intensive visual inspection and shovel test survey. An archaeological literature review was not completed for this investigation. Rather, this study draws on several large and successful archaeological investigations on sites on the PORTS property that have been completed between 1997 and the present for cultural and environmental background data.

The archaeological investigation revealed that each of the three sites has been subjected to varying degrees of post-occupational disturbance. In each instance, this appears to have occurred during the site demolition, when each appears to have been razed with heavy machinery. At 33PK323 (HMBL 5) this demolition event has completely compromised the site and there is no intact evidence of the school remaining. At 33PK324 (HMBL 50), the disturbance was intensive and may have completely compromised the house site while leaving large portions of the site (barn foundations and silo bases) relatively intact. At 33PK322 (HMBL 4), heavy machinery scars cross the site and appear to have impacted the house foundation but do not appear to have affected the outbuilding foundations.

Site 33PK323 (HMBL 5) is recommended not eligible for the National Register of Historic Places as it has been entirely compromised and does not have any integrity. Site 33PK324 (HMBL 50) is recommended as not eligible based on the extensive disturbance documented on site, the lack of any suggestion of sealed archaeological contexts, and a relative dearth of archaeological data beyond the location, design, and function of the major site components. A determination cannot be made for 33PK322 (HMBL 4) based on the data that was collected during this study. Although it too suffers from some of the same challenges the other sites do, chiefly post-occupational disturbance, there are suggestions that it may contain more intact archaeological data than other sites. No further archaeological investigations are recommended for 33PK323 (HMBL 5) and 33PK324 (HMBL 50), but additional Phase I fieldwork and historical research are recommended for 33PK322 prior to any undertaking that may impact the site.

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## INTRODUCTION

Under contract with Fluor-B&W Portsmouth, LLC (Fluor-B&W), ASC Group, Inc. (ASC) completed Phase I archaeological investigations of three historic sites at the Portsmouth Gaseous Diffusion Plant (PORTS) in Pike County, Ohio. The three sites are pieces of the late nineteenth- and early twentieth-century rural community that was subsumed into the PORTS property during the mid-twentieth century acquisition of the property. They were first documented during a review of historic cartographic sources by Ohio Valley Archaeology, Inc. (OVAI) [Burks 2011], and they were subsequently identified in the field by a preliminary site assessment completed by ASC (Mustain and Klinge 2011). This investigation was completed in compliance with Section 110 of the National Historic Preservation Act of 1966, as amended.

The three sites examined for this study area located on the western and northwestern peripheries of the plant property (Figure 1). Site 33PK322 (HMBL 4) is the remnants of a small, pier-supported house and several outbuildings associated with a farmstead. Site 33PK323 (HMBL 5) is the remnants of a school house, and 33PK324 (HMBL 50) is a large farmstead complex that includes numerous poured concrete foundations. They were first identified during review of historic cartographic sources conducted by OVAI (Burks 2011). At that time, 51 historic period sites were identified on maps as Historic Map Building Locations (HMBLs). Just one of those 51 sites had been identified during a Phase I study of the PORTS property that was completed in 1997 (Schweikart et al. 1997). The 1997 study identified numerous sites through limited shovel testing and intensive pedestrian survey/visual inspection, and it recommended that 13 historic sites be advanced to Phase II investigations. Phase II investigation on those 13 sites have been completed, and none have been determined eligible for inclusion in the National Register of Historic Places (NRHP) [Klinge 2010; Klinge and Mustain 2011].

To bring the 51 newly discovered HMBLs to a comparable state of evaluation, three consulting firms completed preliminary site assessments of a subset of the 51 HMBLs. The preliminary assessments were an intensive visual inspection and limited shovel testing in-line with the effort of the 1997 Phase I survey. Eleven of the HMBLs were put forward for Phase I testing based on the quality or quantity of material remains that were documented during preliminary assessment and three of those Phase I studies are presented in this document. The archaeological investigation of these sites is being completed without a specific undertaking driving them. Rather, in light of several possible projects related to the remediation and re-use of

the PORTS facility, the Department of Energy (DOE) is attempting to proactively evaluate and manage the cultural resources located within the plant bounds.

## **RESEARCH DESIGN**

### **RESEARCH GOALS**

The primary goal of a typical Phase I survey is to locate and identify archaeological resources within a study area. If possible, a secondary goal is to collect sufficient data to make a preliminary determination of any identified resource's eligibility for inclusion in the NRHP. As such, it is difficult to link the Phase I study with a specific research design outside of the basic goals of anthropological and historical research. These goals include the construction of cultural chronologies, the reconstruction of past lifeways, and the search for the processes of cultural change.

The current study is slightly more focused as the three sites were previously identified and the subject of a cursory visual inspection. Therefore, these investigations targeted the secondary goal of the Phase I survey and explored the potential that each site may be eligible for the NRHP. The aim of the field investigation was to recover sufficient data to evaluate the sites as individual resources while acknowledging the large body of data that has already been generated concerning the type, quantity, and quality of historic archaeological sites within the PORTS property. None of the 36 sites identified during the 1997 Phase I survey or the 13 sites subjected to Phase II site evaluations in 2010 and 2011 have proven eligible for inclusion in the NRHP (Klinge 2010; Klinge and Mustain 2011; Schweikart et al. 1997).

### **BACKGROUND RESEARCH**

To conduct an effective archaeological survey, it is necessary to have an understanding of the environmental setting, as well as the prehistoric and historic setting of a study area. Additionally, it is beneficial to be aware of the previous archaeological research that has been conducted in the vicinity. With this information it is possible to develop a general understanding of the prehistoric settlement patterns and systems and historic development in the region. The understanding can guide field investigations and inform the interpretation of any cultural remains that are encountered. In this instance, a great deal of environmental and cultural background data has already been gathered for the PORTS property.

## Environmental Setting<sup>1</sup>

It is generally accepted that human occupation in the eastern United States started between 11,000 and 13,000 years ago, depending on the particular dates that are accepted (Lepper 1986). The data for the environmental period are incomplete, but preliminary studies based on the pollen record suggest that the period from 12,000 to 7,000 B.C. was a time of major vegetation and climatic change (Shane 1994). Warming trends in the late and postglacial periods resulted in the replacement of spruce forests and/or spruce woodlands with coniferous-deciduous forests. By ca. 8,000 B.C., the environment had begun to resemble the present-day environment. Data recorded by early Euro-American settlers in the region may be utilized to shed light on the environment in which the prehistoric people of Ohio lived, while other sources of environmental information may be derived from recorded archaeological and geological data.

Pike County is situated within the Unglaciated Plateau Province (Fenneman 1938). Beyond the broad Scioto River valley, the terrain is hilly and cut by narrow, steep-sided tributaries. Upland elevations range between 171 m (558 ft) and 360 m (1,181 ft) above mean sea level (AMSL) with elevations averaging 168 m (551 ft) AMSL in the Scioto River valley (Fenneman 1938). The subsurface geology of the immediate region consists of the Logan formation of the Waverly series, which contains limestones of the Mississippian system (Orton 1874). The western portion of the Scioto Valley has eroded into Middle Devonian Huron shales (Orton 1874). According to Stout and Schoenlaub (1945), no flint sources are known within the county, excluding glacial chert cobbles in the river and stream valleys.

Almost all of Pike County is drained by the Scioto River and its tributaries, such as Little Beaver Creek and Big Run Creek, which drain the northern and southern portions of the PORTS plant. Drainage is generally good, except for occasional flooding that can occur in the spring (United States Department of Agriculture, Soil Conservation Service [USDA, SCS] 1990). Below 165 m (541 ft) AMSL of elevation, the active floodplain has been altered by the meandering of the Scioto River.

Upland areas east of the Scioto River, including portions of the PORTS plant, have been affected by the preglacial Teays River that drained much of the southeastern United States. This abandoned valley is filled with Gallia sands, old alluvium, Minford silts, varied clay lacustrine

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<sup>1</sup> Adapted from Schweikart et al. (1997).

sediments, local colluvium and alluvium, and loess. Glaciers blocked the Teays channel and formed the Minford silts and Lake Tight (USDA, SCS 1990).

During early glacial advances the Newark River cut a channel through what was to become the Scioto River valley in Pike County. This channel was deeper than the preglacial Teays River and the channel of the Scioto River today. Furthermore, smaller tributary streams also cut deeper into side valleys which were later filled with local colluvium and alluvial sediments (USDA, SCS 1990). Later glacial advances formed terraces of meltwater sediments in the Scioto River valley, and glacial till deposits are restricted to the extreme northwestern corner of the county along Massie Run in Perry Township (USDA, SCS 1990).

The PORTS plant encompasses preglacial valleys and moderate to steeply sloped and dissected uplands consisting of two soil areas, Olmulga soils and Shelocta-Latham soils (USDA, SCS 1990). Olmulga series soils consist of deep, moderately well-drained soils on slight rises at the head of drainageways, high saddles, and on side slopes in preglacial valleys. These soils were formed in loess, colluvium, and old alluvium and have a fragipan (USDA, SCS 1990). Shelocta-Latham series soils consist of deep and moderately deep, strongly sloping to steep, well-drained and moderately well-drained soils formed in colluvium and residuum derived from shale, siltstone, and sandstone on hillsides and ridgetops in the uplands (USDA, SCS 1990).

Prior to widespread Euro-American settlement in the region, uplands including the western portions of the PORTS plant were covered in Mixed Mesophytic forest, which included associations of oak-chestnut-tulip tree, oak-hickory-tulip tree, white oak-beech-maple, and hemlock-beech-chestnut-red oak. Mixed Mesophytic forests prefer moister and more shaded areas that are often on north-facing slopes or in narrow valleys or hollows (Gordon 1969).

The eastern portions of the PORTS plant were once covered in Mixed Oak forests, which included associations of white oak-black oak-hickory, white oak-black oak-chestnut, and chestnut oak-chestnut types. Mixed Oak forests occurred on the drier south-facing slopes or other areas prone to late summer drought in unglaciated areas (Gordon 1969).

In the adjacent Scioto River valley, extensive bottomland forests covered the valley floor. Depending upon differences in elevation, wetness, and underlying soils within the valley, bottomland hardwood associations include such trees as beech-white oak, beech-maple, beech-elm-ash-yellow buckeye, elm-sycamore-river birch-red maple, and sweet gum-river birch (Gordon 1966).

Within the PORTS plant boundary, understory growth would have been composed of numerous small shrubs and trees with natural openings in the forest filled with seed and wild berry colonizers. Sedges, cattails, and other marshy plants would have been available in wet marshy areas along Little Beaver Creek and other wetland areas.

Archaeological investigations at the nearby Madeira Brown site (33PK153), located just north of the PORTS plant on a terrace of the Scioto River near the intersection of US 23 and SR 32, yielded evidence of prehistoric utilization of hickory, hazelnut, walnut, acorn, and squash during the Late Archaic period (Church 1995). Features dating to the Middle Woodland period yielded economically important seed species including goosefoot, amaranth, *Mollugo*, *Galium*, pokeberry, raspberry, and maygrass, indicating that both domesticated and wild plants were utilized prehistorically in the vicinity (Church 1995).

The fauna in southern Ohio has been greatly affected by modern patterns of land use in much the same way that the flora has been altered. Many species that were adapted to forest environments faced habitat loss when these original forests were cleared, and have to varying degrees re-established themselves in areas allowed to revert to forest growth.

By post-Pleistocene times, the faunal component of the landscape would have included most of the species noted by early Euro-American explorers and settlers. Animal species included large mammals such as elk, white-tailed deer, bear, and wolf, a variety of medium-sized animals like raccoon, woodchuck, bobcat, dog, red fox, gray fox, coyote, beaver, muskrat, opossum, and skunk, as well as a number of small mammals including gray and fox squirrels, ground squirrels, chipmunks, wood rats and field mice. Avian species included flocks of wild turkey, bobwhite, quail, passenger pigeons, and a wide variety of migratory fowl. Reptilian species present in the region included a variety of snakes (poisonous and nonpoisonous species), turtles, as well as numerous amphibian, piscean, and molluscan species in the Scioto River, tributary streams, ponds, and marshy areas. Faunal resources utilized by the Late Archaic prehistoric inhabitants of the nearby Madeira Brown site (33PK153) included white-tailed deer and turtle, as well as small avian and molluscan species (Church 1995).

To summarize, seasonal resources in the vicinity of the PORTS plant were many and varied. Probably the prime season of natural abundance, as elsewhere in the Eastern Woodlands, would have been from late summer into late fall, when wild seeds and berries were ripening, nut mast was produced, animals were at their fattest, and herds and flocks of migratory species were

congregating. For prehistoric and historic inhabitants involved in food production activities, the preglacial valleys and terraces of the PORTS plant would have served as productive areas for crop or livestock production with convenient access to the Scioto River and routes for interregional communication and exchange.

## **Cultural Overview<sup>2</sup>**

Typically, at a Phase I level the cultural overview would provide a brief review of both regional prehistoric and historic period lifeways and cultural development. This would provide a framework through which to identify and analyze any sites that were identified within a study area. Given that this Phase I investigation is focused on three specific historic period sites, rather than all sites within a particular area, it is unnecessary to review the prehistoric development of the area. Accordingly, this review will summarize the historic occupation of Pike County and the PORTS property from approximately the end of the eighteenth century.

Intensive Euro-American occupation in Pike County can be traced to the mid-1790s, when the first permanent settlers moved into the region from Pennsylvania and Virginia. Those first settlers established themselves on the Pee Pee Prairie northeast of Waverly and approximately 13.6 km (8.5 mi) north of the sites considered here (Howe 1902). During the first decade of the nineteenth century, settlement was slowed by rising tensions with western and northern Native Americans and British forces in Canada, culminating in the War of 1812. After the conclusion of that conflict, the pace of settlement in Pike County increased greatly. It is noteworthy that both Pike County and the village of Piketon were established in that year (Howe 1902).

Pike County was established from portions of Ross, Highland, Adams, Scioto, and Jackson counties, all of which had been established in the preceding decades. The county is roughly bisected by the Scioto River, and the western half falls within the Virginia Military District (VMD). The VMD was a reservation of 1,701,561 ha between the Little Miami and Scioto rivers set aside for the Virginia soldiers of the Revolutionary War. The part of Pike County east of the Scioto River is located in an original Ohio land subdivision called the Congress Lands. This was surveyed in 1798 to 1802 under the regulations of the Land Ordinance of 1796, which specified the rectangular method of surveying. This method called for

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<sup>2</sup> Adapted from Klinge and Mustain (2011) and Schweikart et al. (1997).

dividing the land into square townships, arranged into north-south ranges. The townships were composed of 36 one-mile square sections that are 259 ha (640 ac). Each section was divided by “quarter lines” into 64.75-ha (160-ac) quarter sections, which, after the Land Act of 1800, were the smallest units of land sold by the government, at \$2.00 per acre (Bond 1941). Whereas many of the earliest settlers within the VMD hailed from Virginia, present-day West Virginia, and Kentucky, many of the first settlers in rest of Pike County came from Pennsylvania, with a significant number of German immigrants settling in the eastern half of the county after ca. 1825 (Howe 1902).

With the exception of broad river valleys surrounding the Scioto River and Beaver Creek and a handful of smaller valleys formed by lesser watercourses, Pike County is largely covered by hills that can be steeply sloped. Contrary to anticipated patterns of settlement in similar geographic regions, many of the first generation of settlers in Pike County did not clear and settle along the river bottoms, but rather established their farms along the side slopes of the many hills. The river bottoms, it was reported, were so densely overgrown that clearing the open woods along the hills was easier for the small labor force that typically accompanied an immigrating family (Howe 1902). However, recent scholarship regarding the Upland South settlement pattern suggests the use of marginal uplands rather than more fertile lowlands may be connected to the cultural origins of the settlers (Smith 1993). Although the valley bottoms are well-developed and productive farmland today, this pattern of hillside subsistence persisted throughout the development of Pike County and culturally connects the region to other portions of Appalachia. This settlement pattern persisted in the region despite changes in the immigrant base and the rise of other patterns as the region became more settled (Schweikart and Coleman 2003).

Although Pike County includes part of the rich Scioto Valley, most of the county is much less productive. The Scioto Valley in Pike County shares many characteristics with Ross County, while the remainder of the hilly and dissected county is more typical of others portions of Appalachian Ohio. Agriculture was the primary industry of the initial settlers in Pike County. Subsistence was provided by cultivating crops or raising livestock to feed the family and to sell locally for cash, or to barter for necessary items. Although new settlers were largely self-sufficient out of necessity, they still had to trade for basic supplies such as coffee, tea, salt, sugar,

hardware, farm implements, and cloth, dispelling the myth of the entirely self-reliant first generation settler that pervades our popular understanding of American history.

During the first generations of settlement, farm life and labor was largely egalitarian in that all members of a household participated in the family economy. Gender-based labor divisions were diminished, as the all available labor was employed to clear fields, plant crops, tend livestock, and harvest/store foodstuffs. This egalitarianism tended to fade as settlement progressed and the thrust of agriculture moved away from household consumption and toward a professionalized, market-based activity (Hartgen Archeological Associates 2004). The average settler family cleared only 2 ha to 3 ha (5 ac to 7 ac) of their land per year. Generally they used a small portion of land (approximately 4 ha [10 ac]) for crops and reserved plenty for pasture for animals and forest for firewood and hogs. To produce much more than the family needed would have been pointless as early roads were not adequate to get goods to market to make a profit (Noble and Wilhelm 1995).

Corn was the most important crop of the initial settlers. It was grown primarily to be consumed on the farm by the family and by the livestock, particularly since the method of cattle feeding depended on the corn crop. It was invariably the first crop planted by the initial settlers as it did relatively well regardless of topography or soil conditions and was of benefit to the settlers during their first year (Jones 1983). However, the soils and topography of Pike County were not, and are not, suited for large scale crop farming, and cattle raising was an important early industry brought by the settlers from western Virginia, Pennsylvania, and Kentucky. Early cattle needed a minimum of care and were generally free-range year-round. Milk and meat were sold locally (Jones 1983).

Hog production developed simultaneously with the cattle feeding industry as pigs require as little, if not less, care during the first years of settlement. Initially, allowed to roam free as were the cattle, the South Branch method of feeding cattle and hogs in feedlots came to dominate the raising of these creatures in the nineteenth century. Hog raising emerged as a significant agricultural practice in the Scioto Valley starting in 1840, and the region was the third most productive for hogs in Ohio by the 1850s and 1860s. Fattened hogs were usually driven to pork-packing centers like Cincinnati, Chillicothe, and Marietta (Jones 1983). The ability to drive livestock to market alive was important to the region in the mid-nineteenth century, as a transportation network capable of quickly delivering perishable goods did not exist at the time.

In the second quarter of the nineteenth century, the Ohio & Erie Canal brought some measure of prosperity to the farms of the area and connected inland portions of eastern and central Ohio with national markets (Jones 1983). At the time, corn remained the most important crop in the Scioto Valley, but wheat production rose as ground flour was readily shipped to markets along the Mississippi River and the Eastern Seaboard through the canals. Higher wheat production resulted in an expansion of the milling industry within the county. Starting in the mid-nineteenth century, the railroad made for faster transport to eastern markets and the price of corn rose based on demand from these additional markets. The rising cost of corn limited the raising cattle and hogs, which were dependent on inexpensive feed (Jones 1983).

In 1887, Pike County had about 25,000 ha (61,000 ac) of woodland, 24,000 ha (60,000 ac) of cultivated land, 20,000 ha (50,000 ac) of pasture and 2,400 ha (6,000 ac) unused. The major agricultural products were about  $17,619 \text{ m}^3$  (500,000 bushels) of corn,  $4,757 \text{ m}^3$  (135,000 bushels) of wheat, and  $2,960 \text{ m}^3$  (84,000 bushels) of oats. Other products included rye, buckwheat, hay, potatoes, tobacco, butter, sorghum, maple syrup, eggs, grapes, wine, sweet potatoes, apples, peaches, pears, and wool (Howe 1902).

The agricultural economy continued to flourish after industrialization. Industrialization brought about innovations in agricultural implements, increasing the efficiency of farm production. Farm acreage continued to increase into the 1910s (Noble and Korsok 1975). This era saw most counties within Ohio shifting to manufacturing and other industries that developed, in large part, as a result of industrialization. One of the major demographic impacts of industrialization was the rapid and widespread growth of urban centers in the late nineteenth and early twentieth centuries. Pike County, however, remained nearly entirely rural.

Agricultural production collapsed during the Depression in the 1930s. As a result, many rural workers migrated to urban centers to find work, contributing to the suburban sprawl that commenced in the 1930s. Agricultural production experienced a slight boost in production after the Second World War, which also saw the rise of large mono-crop farms in place of the smaller farms with more a more diversified crop yield that characterized much of the region prior to the war (Kiefer 1972; Noble and Korsok 1975). Farming practices changed after World War II, from farms that traditionally fielded several crops on smaller amounts of acreage to farms that fielded a single crop on a larger amount of acreage.

After the initial period of settlement, transportation infrastructure played an important role in the historical economic development of Pike County, as it did elsewhere. Types of transportation included rivers, trails, roads and railroads. The use, construction and improvement of these transportation methods altered the pattern of settlement and farming. Settlers entered the area on the transportation routes that were available, and typically preferred to live near a means of transportation. Easier access to markets provided material benefits in delivering goods as well as securing goods and materials that were not produced at home. Improvements to transportation routes provided markedly easier market access, which in turn provided the impetus to farmers to increase their cultivated land and their income (Noble and Wilhelm 1995).

The Scioto River was a significant navigable natural waterway in Pike County, which drew early settlers to enter the area. Before the Ohio & Erie Canal was built, most Scioto Valley produce was rafted down the Scioto River to the Ohio and Mississippi rivers and then to Southern markets (Howe 1902). The Scioto probably fell out of use when the canal became operational. Overland routes used by the settlers were Native American trails, which often dictated the first settlement locations. Ohio possessed a network of trails weaving through the forests and prairies and complementing the system of waterways. A few were of transcontinental importance, and some were of regional importance, and many were minor trails connecting one obscure Native American village to another. Mapping and descriptions of these trails tend to be ambiguous and conflicting, with early roads often confused with the older and somewhat different trails. The importance of some trails have been exaggerated or obscured simply because one was recorded and another was not. Various trails were in different levels of use at different times, as dictated by the location of Native American towns, availability of open land, and warfare (Conway 1965).

Four distinct trails are indicated in Pike County. The first and most important was the Scioto Trail or Warrior's Path, running through the Scioto Valley and connecting the Ohio River at the mouth of the Scioto with Lake Erie at Sandusky Bay. This was one of the most important north-south trails in the Ohio Country, connecting to trails feeding southward into Cherokee territory. The Scioto Trail in Pike County ran along the west side of the Scioto River. At what is now Waverly, it headed northward toward Chillicothe and cut across a low divide, bypassing the eastward swing of the Scioto River. This route is approximated by US 23 north of Waverly, and SR 104 south of Waverly (Conway 1965; Hulbert 1900; Lewis and Dawley ca. 1902; Mills

1914). The second distinct trail is an unnamed route running east-west through what is now Piketon. It is approximated by Beaver Road, Zahns Corner Road, probably Prairie Road, and farther west, by SR 220 and SR 124. It primarily connected Pee Pee, the early settlement near Piketon, to the salt works at what is now Jackson, Ohio (Conway 1965; Lewis and Dawley ca. 1902).

Two other distinct trails were in the western part of Pike County. One was the Pickawillany Trail, running northwestward. Another was the route followed by Colonel Robert Todd in a military expedition in 1787, and later improved by Ebenezer Zane as Zane's Trace (Conway 1965; Lewis and Dawley ca. 1902; Schneider and Stebbins 1973). In 1796, a year after the Greenville Treaty made most of Ohio safe for settlement, Congress contracted Ebenezer Zane to open a road between Wheeling, West Virginia, and Maysville, Kentucky. Known as Zane's Trace, this road ran through the western part of Pike County, running through what is now Morgantown and Latham. This trace represented the first attempt to open a public thoroughfare through the interior of the Northwest Territory. Although it was at first only a horse trail and not a wagon road, with its opening, settlement of the region increased rapidly and Zane's Trace became an important part of the Ohio Road system. In 1798, it was designated as a post road and United States mail was carried on the road on horseback. In 1804, the trace was improved into a 6.1-m (20-ft) wide road (Bond 1941; Schneider and Stebbins 1973).

However, early roads were virtually impassable when the spring rains arrived and required significant maintenance to remain in serviceable condition. In the first decades of the nineteenth century, state legislators realized that if they were to induce more people to come to Ohio, they would have to ensure that these prospective settlers had reliable and affordable market access. The resulting canal system was largely constructed between 1825 and the 1840s. The system consisted of two main canals and many public and private branch canals, totaling nearly 1,600 km (1,000 mi) of waterways with almost 30 different names (Canal Society of Ohio 1975:4; Gieck 1992).

The Ohio & Erie Canal, the eastern of the two main canals, ran from Lake Erie at Cleveland through Akron, Newark, and Circleville to the Ohio River at Portsmouth, passing through Waverly in Pike County (Canal Society of Ohio 1975; Huntington and McClelland 1905). In late 1832, it was opened to traffic and within a year it revolutionized the economy of the Scioto Valley. Waverly grew in population because of its favorable location on the canal and

a significant number of Irish and German immigrants, who were often drawn to the area as canal construction workers, remained in the area (Evans 1987; Gieck 1992; Grabb 1985).

Within decades, however, the canal system began to yield to railroads. After a peak in 1853, canal revenues decreased rapidly. Over the next 30 years, general lack of maintenance and design flaws of the Newark Summit led to the disuse of the entire southern part of the Ohio & Erie Canal by the late 1880s. In 1911, the state officially abandoned the canal from the Dresden Side Cut to Newark and from Columbus to Portsmouth. The flood of 1913—the worst in the state's history—severely damaged or destroyed much of what remained. Afterward, the state abandoned the entire canal system of Ohio and began selling off the land (Canal Society of Ohio 1975).

Three railroads were built through Pike County. The Scioto Valley (SV) Railroad was built north-south from Portsmouth to Columbus, and first operated in Pike County in 1877–1878. It ran on the east side of the Scioto Valley to Piketon, and crossed over to the west side near Waverly. The SV railroad made a connection with the Norfolk & Western (N&W) Railway in 1892, and soon became a part of the N&W. Apparently during construction of the USDOE PORTS plant in 1952, a spur was built from the N&W to the north side of the federal reservation to ship in materials and connect with the Chesapeake & Ohio (C&O). In 1982, the N&W became Norfolk Southern. This railroad line is still active (Drury 1985; Sheldon 1924).

The second railroad, the Scioto, Jackson & Pomeroy, ran east-northwest through the county in 1878–1879. It ran through the south side of Waverly and eastward after crossing the Scioto River. In 1905, it became the Detroit, Toledo & Ironton. The line was abandoned after becoming a part of the Grand Trunk Western Railroad in the early 1980s. The third railroad was built into the county in 1917 by the Chesapeake & Ohio Railway, and was designed to avoid towns and road crossings. Thus, it had a limited influence on the local economy (Drury 1985; Sheldon 1924).

In the early twentieth century, the surface road system consisted of largely unpaved paths between individual farmer's parcels. Railroads dominated the shipping of goods and passengers. The push for a paved national highway system occurred in the first three decades of the twentieth century. At first the automobile was seen as a means of short-distance leisure transportation for the well-to-do. But by the eve of the First World War, both longer-distance passenger driving and the early use of motorized trucking led to the organization of movements for publicly

financed hard-surface roads. These roads, the supporters believed, should be linked in a systematic manner that would tie distant points together much like the existing rail network.

As early as 1910, the state began thinking in terms of a road network oriented toward the automobile. That year the Highway Department published a bound set entitled *Highway Maps of Ohio* that showed, county by county, the condition of the sectional roads. In 1911, state roads were designated with numbers, and state funds were made available for their maintenance. As an important state road, the Columbus & Portsmouth Road was probably paved and improved in the 1910s or 1920s, allowing improved transportation. In 1925, it was designated US 23, running from Portsmouth through Columbus and Toledo to Mackinac, Michigan. US 23 was one of 16 roads in Ohio that were considered of primary importance for interstate or continental traffic (Aumann 1954; Ohio Department of Highways 1930).

### **Literature Review**

In 1997, an archaeological literature review was completed for the entire PORTS property as a part of a site-wide Phase I investigation (Schweikart et al. 1997). That literature review was designed to examine a sufficient geographic area to develop a predictive model of site type and location within the PORTS plant boundary. As such, it identified all documented archaeological resources within a 6-km (4-mi) radius of the PORTS property. This is far in excess of typical literature review search areas, which are generally constrained to 0.8 km (0.5 mi) or 1.6 km (1 mi). In all, 71 documented archaeological sites were found within that radius. Rather than restate the results of that literature review here, the following will summarize the results of that survey, as well as recent archaeological investigations that have occurred on the PORTS property.

The 1997 Phase I investigation resulted in the identification of 36 archaeological sites within the boundary of the PORTS property (Schweikart et al. 1997) [Table 1]. Thirteen of the sites were determined to represent historic farmsteads, seven were identified as historic period open refuse dumps or artifact scatters, two were historic period isolated finds, four were sites associated with the PORTS plant, one is a historic period cemetery, two sites had both prehistoric and historic period elements, five were prehistoric isolated finds, and two were prehistoric lithic scatters. Of these, two sites were recommended for preservation in place. Site 33PK210 is a prehistoric lithic scatter on a ridge overlooking the Scioto Valley with a high potential to contain subsurface archaeological remains. The other site recommended for

preservation was one of four historic period cemeteries within the PORTS boundary, although the Phase I report also recommended that the three previously identified cemeteries be preserved in place, as well.

The 13 historic farmsteads were recommended as potentially eligible for inclusion in the NRHP and it was recommended that a sample of those sites be subjected to Phase II site evaluations. Each was identified as at least one architectural cluster” which consisted of either building rubble, exposed building foundations, driveways, or other evidence of cisterns, wells, and similar structures, and a scattering of artifacts above the ground surface. Limited shovel testing was completed at a handful of the sites, but each was identified as a farmstead dating from the late-nineteenth to mid-twentieth centuries. They were recommended as potentially eligible based on their potential to contain data regarding changes in settlement patterns and subsistence systems over time in this rural area (Schweikart et al. 1997).

In 2010 and 2011, ASC and OVAI completed Phase II investigations of each of the 13 farmstead sites (Klinge 2010; Klinge and Mustain 2011). Sites 33PK184, 33PK185, 33PK193, 33PK194, 33PK195, 33PK197, 33PK203, 33PK206, 33PK211, 33PK212, 33PK213, 33PK217, and 33PK218 were subjected to close-interval shovel testing and test unit excavation, and some level of geophysical work was conducted at all but two. None of the 13 sites was recommended eligible for inclusion in the NRHP. Sites, 33PK193, 33PK195, and 33PK197 were determined to be elements of larger farmsteads that were not subjected to Phase II level work, rather than individual farms themselves. Accordingly, insufficient data was collected to determine whether or not those sites meet NRHP eligibility criteria. The remaining sites, however, were recommended as not eligible for the NRHP by the report authors.

In 2011, Jarrod Burks identified an additional 51 historic period sites within the PORTS boundary through a review of historic cartographic sources and aerial photographs that predated the construction of the PORTS plant (Burks 2011). Each of those sites was assigned a Historic Map Building Location (HMBL) number and each was investigated during preliminary assessments conducted in late summer (Mustain and Klinge 2011). A handful of the 51 HMBLs were identified as schools, churches or other structure types based on the map data, but most were identified as either residences or farmsteads. The preliminary assessment was designed to confirm the location of sites in the field, document visible site elements, and evaluate each site’s condition. Several sites were documented in areas of excessive disturbance associated with the

PORTS plant construction or land use, and several others were documented beyond the plant boundary.

The goal of the preliminary assessment was to determine which of the 51 HMBLs were archaeological sites and to evaluate their suitability for Phase I testing. Of 12 HMBLs that ASC reviewed, three were selected for testing at this time. At the conclusion of the preliminary assessment, 33PK422 (HMBL 4) was identified as a series of stone footers and a stone and concrete stoop for a house. Site 33PK423 (HMBL 5) was identified as the location of a former school house that had likely been impacted by demolition. Site 33PK424 (HMBL 50) was identified as the remnants of a large farmstead with numerous foundation remnants, all of which were made of poured and cast concrete (Mustain and Klinge 2011). These three sites were selected for Phase I study as the first two are types that were not well-represented in the previous investigations that have occurred, and the last showed a greater degree of integrity than has been found at similar sites in the PORTS property (Klinge 2010; Klinge and Mustain 2011).

## **METHODS**

### **ARCHAEOLOGICAL FIELD METHODS**

Two methods of investigation were utilized during the Phase I archaeological survey: visual inspection and shovel test pit (STP) excavation. The sites and surrounding areas were visually inspected to identify readily visible archaeological resources, such as roads, farm lanes, driveways, and building or structure remnants, and to document areas of disturbance. Visual inspection, as the name implies, is a visual examination of areas.

At each site a datum was established and used as the origin of a grid system. A second datum was set and the locations of both were recorded with a Trimble ProXRS Global Positioning System (GPS) unit. A TOPCON GTS-3c Total Station was used to set in 20-m (65.617-ft) grid points across the site. Measuring tapes were stretched between these grid points and pin flags were set at 5-m (16.404-ft) intervals along the 20-m (65.617-ft) grid lines. These were used as reference for the placement of STPs, which were excavated at 5-m (16-ft) intervals around the buildings and structures and at 10-m (33-ft) intervals between them.

STP excavation is a subsurface testing strategy utilized to determine the presence of archaeological resources in relatively level areas where the surface visibility is less than 50 percent. Units are 50 cm (20 in) square in size and typically are excavated a minimum of 5 cm

(2 in) into the subsoil, but do not exceed 30 cm (12 in) in depth as prescribed by PORTS regulations, which require a permit to penetrate the ground deeper than this. Soil from the STPs is screened through 0.25-in hardware cloth to facilitate the recovery of artifacts. Notes are taken on each STP, recording soil characteristics and the presence of cultural material.

Field notes are also kept recording information including field conditions, methods of investigation, locations of photographs, site elements, STPs, etc. Photographs of the sites are taken as deemed appropriate. A record of the photographs is kept in a photo-log. Additional mapping and notes were also kept recording specific information about the various individual site elements and their conditions, sizes, etc.

## **ARTIFACT ANALYSIS**

All artifacts were sent to the ASC archaeological laboratory for processing and analysis. Artifacts were washed, dried, and analyzed during this stage of work.

### **Prehistoric Material**

Lithic materials are the most durable artifacts collected on prehistoric sites and generally represent the largest portion of an assemblage. Another important category of prehistoric artifacts is ceramics, the forms and decorations of which are key temporal and cultural indicators. Faunal and botanical remains can provide a wide variety of information and generally require specialized comparative analysis. Only lithic material was recovered during this survey. Because the focus of the project was the historic components of the sites and single prehistoric artifacts were recovered from two of the site the prehistoric analysis was limited in scope.

### **Lithic Analysis**

Although prehistoric peoples utilized many organic materials, lithic material is often the only evidence of prehistoric activity to survive. The primary technique used in the manufacture of lithic tool is chipped stone. Lithic materials from archaeological sites are divided into two general categories: debitage and tools. Additional categories of lithic artifacts include but are not limited to ground stone and fire-cracked rock.

Analysis of the debitage and the tool consisted of an examination of the artifacts to identify characteristics suggesting stage of production, completeness, and material type. Attributes such as the presence or absence of cortex and evidence for heat alteration were also considered. Metric attributes, i.e., size and weight, were also recorded for each artifact. The debitage was identified as a secondary flake. This is a generalized category that includes flakes

removed in the middle stages of production, typically lacking cortex and being relatively thin. The tool that was identified is a preform, a biface in the early stages of production before the distinctive shaping has taken place.

Efforts to identify the sources of the lithic raw materials utilized at archaeological sites is often problematic, due to the fact that, on the one hand, there can be great variations of attributes between chert samples taken from the same source, and on the other hand, there are similarities in the attributes of cherts from different sources (Odell 2003). For example, it can be difficult to distinguish Columbus from Delaware chert.

There are separate Columbus and Delaware formations. However, the cherts in these formations are often difficult to distinguish from one another. Therefore, for the purposes of analysis, both types are essentially treated as one. The chert-bearing Delaware formation is within the marine limestones and dolomites of the Devonian system. This formation extends north in a narrow band from western Pickaway County through Franklin, Delaware, Marion, Wyandot, Crawford, Seneca, Huron, Sandusky, and Erie counties, and is also present in northwest Ohio in Lucas, Wood, Henry, Defiance, Putnam, and Paulding counties. Delaware chert is tan to dark gray in color with relatively large lighter colored areas that create a mottled appearance, and often exhibits tiny ostracod inclusions (Stout and Schoenlaub 1945; Vickery 1983).

The chert-bearing Columbus formation is within the marine limestones and dolomites of the Devonian system. This formation extends in a narrow band from western Pickaway County to the north through Franklin, Delaware, Marion, Wyandot, Crawford, Seneca, Huron, Sandusky, and Erie counties, and is also present in northwest Ohio in Lucas, Wood, Henry, Defiance, Putnam, and Paulding counties. The flint ranges in color from light mottled gray to brown (Stout and Schoenlaub 1945; Vickery 1983).

## **Historic Material**

Historic cultural material was identified according to various accepted typographies. These included *The Development and Application of a Chronology for American Glass* (Deiss 1981), Gillio et al.'s (1980) *Some Common Artifacts Found at Historical Sites*, Magid's (1984) Ceramic Code Book, *Nail Chronology as an Aid to Dating Old Buildings* (Nelson 1968), the Florida Museum Natural History (FLMNH 2004) Digital Type Collection, Telling Time for

Archaeologists (Miller et al. 2000), and *An Archaeological Guide To Historic Artifacts Of The Upper Sangamon Basin, Central Illinois, U.S.A.* (Stelle et al. 2001).

The ceramic artifacts were initially sorted by function and ware type. Ware types are distinguished on the basis of paste color, paste texture, glaze, and decoration; attributes generally recognized as temporal indicators for historic ceramics. Architectural brick was also included in the ceramic material type.

Glass artifacts were assigned to functional categories, when that could be determined. Categories include window, bottle, drinking, and a broad category of vessel" glass when a more refined category could not be determined. Window glass was analyzed for production-related diagnostic attributes. During the nineteenth century, window glass was most often manufactured as either crown glass, improved broad glass, or plate glass, and each manufacturing method can leave diagnostic markers on glass fragments. The manufacture of bottle glass had remained technologically static for thousands of years, but underwent a revolution during the nineteenth century. The introduction of bottle molds, lipping tools, snap-cases, press-molding machines, and other advances resulted in identifiable and diagnostic attributes and markings on many bottle fragments from the nineteenth and twentieth centuries. These manufacturing characteristics and their respective temporal ranges were identified for bottle, jar, tableware, window, and miscellaneous glass, if possible.

Metal artifacts were first identified by type of material (e.g., iron, steel, brass, copper, lead, etc.) and function (wagon hardware, tools, nails, etc.). Where possible, the technique of manufacture was identified, especially in the classification of nail types (e.g., machine-cut versus wire). However, metal objects are often oxidized to the point that their original shape and function cannot be established. In those instances, metal objects were cataloged as unidentified.

## RESULTS

### SITE 33PK322 (HMBL 4)

Site 33PK322 is a historic site on a small toe in a large ravine near the northern edge of the PORTS property (Figure 2). Designated HMBL 4, the site was initially documented by Mustain and Klinge (2011). One building is depicted along Stockdale Road (CR 301) at this location on the oil and gas map (ODNR, DGS 1905) [Figure 3] and the 1917 Piketon quadrangle (USGS 15' topographic map) [Figure 4], two buildings are shown on the AEC (1952) property map (Figure 5), and at least one building appears to be visible on 1939 and 1951 aerial photographs of the area (Figures 6 and 7) [Table 2]. The initial testing identified one building remnant that included what was identified as a concrete stoop, a driveway, and a small midden. Two STPs were excavated at the site, both of which contained a few historic artifacts (Mustain and Klinge 2011). The artifacts were not collected but were mostly pieces of coal and brick, concrete fragments, and a few pieces of glass (Mustain and Klinge 2011).

The site was mostly cleared of vegetation for the current study (Plate 1) and a 20-m (65.6-ft) grid was set in with the Topcon laser transit along which STPs were excavated at 5-m (16.4-ft) and 10-m (32.8-ft) intervals. A total of 105 STPs were excavated, 66 of which produced artifacts (Figure 8). All of the site elements identified by Mustain and Klinge (2011) were located, re-evaluated, and mapped with the laser transit. The main building at the site was identified as a house, although the stoop has been reinterpreted as a pad for a cast-iron stove, and the small midden appears to be the remains of a small outbuilding. The remnants of two previously unidentified outbuildings and a circular depression were also observed at the site and documented.

Two datums were established at the site. Datum 1 is at the origin of the grid (0N,0E) and Datum 2 is approximately 17 m (56 ft) to the southeast. The locations of both were recorded with the Trimble GPS unit and based on these coordinates Grid North is  $43^{\circ}55'27.70''$  on the US State Plane (NAD83), which approximately follows the railroad bed north of the site and the road cut for Stockdale Road south of the site. The State Plane, UTM, and site grid coordinates for the datums are included in Table 3.

Visual inspection of the site indicated that there were what appeared to be bulldozer ruts, with a prominent one extending through the building foundation at the center of the site, but subsurface testing indicated that most of the site was somewhat intact with a ca. 20-cm–30-cm

(8-in–12-in) deep A horizon composed of dark brown (10YR3/3) silt loam. However, it did show considerable variability, being less than 10 cm (4 in) deep in some areas. There were 10 STPs where artifacts were recovered from disturbed contexts, but most of the artifacts (87.13 percent) were in the A horizon. The site was bounded by disturbance on three sides: a road cut to the south, a railroad bed to the north, and a gravelly fill layer to the west (Plate 2) that appears to be associated with the railroad construction. The railroad was constructed ca. 1952, presumably as part of the PORTS plant development, which postdates the earliest cartographic evidence for the site by almost half a century (Figures 3–7). Artifacts were recovered from the A horizon up to the edge of the railroad fill. It is unknown if any deposits that extended under the railroad bed have survived, but the site could extend to the west. The fill in this area was more than 30 cm (12 in) deep, which was the limit set on excavation depths for this survey.

A total of 334 historic artifacts were recovered from the STPs excavated at 33PK322 (Table 4; Appendix A-1). One prehistoric chert flake was also present at this site (Appendix A-1). Functional groups represented by the historic artifacts include Architectural ( $n=190$ ), Kitchen ( $n=108$ ), Miscellaneous Hardware ( $n=6$ ), and Unknown ( $n=30$ ). A detailed analysis is included in Appendix A-1. The assemblage is dominated by Architectural Group and Kitchen Group artifacts, strongly suggesting a building once stood at this location as is indicated on the early cartographic sources and that considerable domestic activities occurred at the site. Of the 122 temporally diagnostic artifacts, nearly half ( $n=50$ ) are shards of plates [Table 5]. Most of the rest are various ceramics that were either datable based on their type or their decoration, including three sherds of American yellowware, five sherds of ironstone, two sherds of stoneware, and 36 sherds of whiteware. Generally, the ceramics date from the mid-nineteenth century to present (FLMNH 2004; Magid 1984; Miller et al. 2000; Stelle et al. 2001). Other diagnostic items include six glass bottle fragments, 15 cut nails, and five wire nails. The Pepsi bottle fragment dates to 1934–present (Jones and Sullivan 1989), but the other bottle fragments and many of the nails could have been produced as early as the nineteenth century (Deiss 1981; Gillio et al. 1980; McKearin 1978; Nelson 1968). The artifacts were concentrated around and north of the house foundation in the center of the site, but there were no readily discernable patterns in the distribution beyond this.

Four building foundation remnants were identified at the site (Figure 8). The largest measures approximately 8.0 m x 9.5 (26 ft x 31 ft) and appears to have been a continuous stone

foundation along the west edge (Plate 3) and a stone pier foundation on the east edge (Plate 4). However, it is in poor condition (presumably due to post occupation disturbance) and it may well be a formerly complete foundation that was impacted during the site demolition. The platform that was originally interpreted as a stoop consists of two courses of sandstone blocks that have been capped with a concrete pad. It is approximately 1.5 m (4.9 ft) square and extends 55 cm (22 in) above the ground surface (Plate 5). However, when the limits of the foundation were fully exposed it became clear that it is situated inside the foundation along the east wall. There is a ca. 1.5-m (4.9 ft) square of concrete along the outside of the north wall and a ca. 50-cm x 1-m (20-in x 3.3-ft) step along the outside of the south wall (Plates 6 and 7). Taken as a whole, the foundation almost certainly supported a house. The concrete pad and step likely correspond to the locations of the front and back doors of the house. Further, the raised limestone and concrete platform is reinterpreted as the foundation for a cast-iron stove.

The foundation remnants of three outbuildings were also observed at the site. Two concrete foundation remnants (Outbuildings 1 and 3) are along the base of the railroad bed at the north edge of the site and what appear to be sandstone footers of Outbuilding 2 are located opposite the driveway from the house. This latter foundation remnant was originally interpreted as a small midden by Mustain and Klinge (2011), but when the area was cleared of vegetation footers in three corners of a 4-m (13-ft) square were discovered (Plate 8). There are brick fragments in the fourth corner. The two concrete foundation remnants appear similar in size and composition, although the western one (Outbuilding 3) is in an area of what appears to be a bulldozer push pile (Plate 9). Outbuilding 1's foundation remnant is relatively intact and is located near the end of the driveway (Plate 10). Both are about 3.5 m x 5 m (11 ft x 16 ft) and neither had concrete floors. The concrete foundation elements, including those at the house site, were likely constructed sometime after ca. 1920. The stone footers and foundations, however, may well predate those site elements.

No indications of a well or cistern were observed, but a ca. 1.5-m (5-ft) diameter, 35-cm (14-in) deep circular depression located about 8 m (26 ft) west of the house could be a privy or a cistern. Limitations on depth of excavations prevented a thorough examination of the depression, but a soil core taken in the center of it indicated a soil change about 25 cm (10 in) below the surface to a yellowish brown (10YR 5/4) silty clay loam. It is unclear if this subsoil is naturally occurring, or if is redeposited subsoil in the fill of a shaft feature. There are also two

push piles along the south edge of the site. The larger one to the southeast has several lengths of corrugated metal culvert piping in it.

The site has been delineated by the disturbance to the north, south, and west, and the surface scatter of artifacts, which extends to the edge of the landform to the east. It measures approximately 50 m x 80 m (164 ft x 262 ft) with an area of 3,120 m<sup>2</sup> (33,584 ft<sup>2</sup>). Although there are a few outbuildings at the site, there is nothing to suggest it was anything more than a residential site. The earliest cartographic evidence of the site is the ODNR, DGS (1905) oil and gas map. The two foundation building materials (sandstone and concrete) suggest at least two building episodes, with the first possibly occurring in the mid- to late nineteenth century. This is reinforced by the artifacts, which include a number of types that may have been produced throughout the nineteenth century as well as some types, like cut nails, which were most likely not produced in the twentieth century. The presence of potentially older buildings and artifacts, coupled with newer buildings and modern artifacts like the Pepsi bottle, suggest this site may contain a record of occupation from the mid-to-late nineteenth century through the mid-twentieth century.

Cartographic sources and aerial photographs suggest the site was occupied until, or nearly until, the property was acquired by the AEC ca. 1952. The artifact assemblage is consistent with a residential site spanning this time period. It appears that the surface of the site had been disturbed and there are no remains of any of the superstructures of the house or various outbuildings. The A horizon at the site, while somewhat intact, has been moved around as evidenced by the push piles, bulldozer ruts, and variability in A-horizon depth. The site's physical integrity has suffered considerably, which has in turn affected its archaeological integrity.

### **SITE 33PK323 (HMBL 5)**

Site 33PK323 is a historic site with a minor prehistoric component on a terrace in a small stream valley near the northern edge of the PORTS property (Figure 2). Designated HMBL 5, the site was initially documented by Mustain and Klinge (2011). One building labeled as Moore School is depicted along Shyville Road (CR 30) at this location on Figure 3, the oil and gas map (ODNR, DGS 1905) and the 1908 Waverly quadrangle (USGS 15' topographic map) [Figure 4]. No building is shown at this location on the on the AEC (1952) property map (Figure 5) nor is one discernable on 1939 and 1951 aerial photographs of the area (Figures 6 and 7; Table 2). The

initial testing identified a leveled area but no remains of a building or its foundation. No artifacts were collected, but brick, coal, and concrete were recorded in two positive units, one of which was in the leveled area (Mustain and Klinge 2011). No prehistoric artifacts were encountered during the initial testing.

The site is in an open wooded area with little underbrush (Plate 11) and a 20-m (65.6-ft) grid was set in with the Topcon laser transit along which STPs were excavated at 5-m (16.4-ft) intervals. A total of 60 STPs were excavated, 19 of which produced artifacts (Figure 9). Except for delineating two push piles along the road, no new site elements were identified.

Two datums were established at the site. Datum 1 is at the origin of the grid (0N,0E) and Datum 2 is approximately 7 m (23 ft) to the east. The locations of both were recorded with the Trimble GPS unit and based on these coordinates Grid North is  $3^{\circ}01'02.82''$  on the US State Plane (NAD83), which approximately follows Shyville Road east of the site. The State Plane, UTM, and site grid coordinates for the datums are included in Table 3.

Visual inspection of the site indicated that there was a flattened area along the roadside that appears to be a 5-cm (2-in) to 10-cm (4-in) deep cut into the terrace (Figure 9; Plate 12). The STPs along the road in the flattened area were completely disturbed, those farther west of the road were less so; all contained a shallow, mixed layer of what appeared to be the natural dark yellowish brown (10YR 3/4) silt loam topsoil. The made land (ML) in the center of the flattened area is black (10YR2/2) silty fill. The rest of the cut and fill area had a thin, dark brown (10YR 3/3) layer of silty ML top soil. The soils in the surrounding area appeared intact with a ca. 15-cm (6-in) to 25-cm (10-in) A horizon composed of dark brown (10YR3/3) to dark yellowish brown (10YR 3/4) silt loam. It was slightly deeper nearer the creek along the north side of the site. Except for three units in the leveled area, all of the artifacts were recovered from the A horizon outside of where the school is suspected to have been located.

A total of 119 historic artifacts were recovered from the STPs excavated at 33PK323 (Table 6). Functional groups represented include Architectural ( $n=67$ ), Fuel and Energy ( $n=40$ ), Kitchen ( $n=11$ ), and Personal ( $n=1$ ). One prehistoric preform manufactured from Columbus/Delaware chert was also recovered from this site. A detailed analysis is included in Appendix A-2. Small bits of coal were present in the black (10YR2/2) silty fill in STPs 30N,5W and 30N,10W. The assemblage is dominated by Architectural Group and Fuel and Energy Group artifacts, strongly suggesting a building once stood at this location as is indicated on the early cartographic

sources. The building shown on the maps is a school and one of the artifacts recovered from the site, a glass ink well fragment (Table 6; Plate 13A), reflects this function. According to Covill (1971), the Carter's Ink inkwell was manufactured sometime between 1895 and 1949 (Table 7). Interestingly, the dominance of fuel/energy artifacts, here approximately 40 pieces of coal that were not collected from two STPs may reflect the non-residential function of the site as well. While homes certainly employed coal as a fuel source as well, that this group in such a large portion of the overall assemblage may indicate that other activities like cooking, cleaning, processing foodstuffs, or any one of a myriad of household tasks, did not occur at this site.

Other temporally diagnostic artifacts included two ironstone sherds that date to 1842–present (Magid 1984; Miller et al. 2000), two whiteware sherds that date to ca.1820–present (Miller et al. 2000), and four milk glass canning jar lid liner fragments that date to 1869–present (Miller et al. 2000). The single prehistoric artifact recovered from the site is a preform manufactured from Columbus/Delaware chert (Plate 13B). The only readily discernable pattern observed in the artifact distribution was the brick and mortar clustering along the north edge of the flattened area.

A shallow, leveled area measuring about 5 m x 15 m (15 ft x 50 ft) is located along the west side of Shyville Road, approximately 30 m (100 ft) south of a small unnamed stream. The only elements to the site beyond the leveled area are two push piles located along the road at the at east edge (Figure 9). Both are about 50 cm (20 in) high and contain considerably more gravel than is present in the natural soils on the terrace. It is unknown if this is from the adjacent road or from another source. No evidence of a privy, well, or cistern was observed.

The site has been delineated by Shyville Road to the west, the leveled area, and the surface scatter of artifacts. It measures approximately 35 m x 40 m (115 ft x 131 ft) with an area of 927 m<sup>2</sup> (9,978 ft<sup>2</sup>). It seems clear that 33PK323 is the remains of Moore School (HMBL 5). The Shyville Road, although abandoned, is easily discernable and the adjacent stream serves as distinctive landmark. There are not enough domestic items in the assemblage to suggest it served a residential function. The single glass ink well fragment is scant evidence of the site's use, but taken as a whole the data (particularly the cartographic data) make it clear that this is the remains of the school. Further, the cartographic information suggests the school was abandoned in the early twentieth century, which is consistent with the dates of the artifacts recovered. It also seems clear that the site had been bulldozed and the landform severely impacted by

demolition. No foundation walls, piers, or footers were observed, leading to the conclusion that the flat area was created when the school was razed rather than as a prepared building site as suggested by Mustain and Klinge (2011). It seems there is little left of the site and even less reflecting activities associated with its historic component.

The prehistoric component is an isolated find consisting of a single preform. This artifact is not temporally diagnostic. It was located at the west edge of the site and because the focus of the present study was the historic component the portion of the terrace west of the site was not tested. It is possible that the prehistoric component extends beyond the limits of the site as it is presently defined. At present the prehistoric component cannot be placed in its historic context and thus would not be considered significant. However, it is possible that additional remains associated with it exist that could date the site and possibly provide important information about the prehistory of the region.

### **SITE 33PK324 (HMBL 50)**

Site 33PK324 is a historic site with a minor prehistoric component on a ridgetop above the Scioto River Valley near the western edge of the PORTS property (Figure 2). Designated HMBL 50, the site was initially documented by Mustain and Klinge (2011). One building north of Beaver Road is depicted on the 1917 Piketon quadrangle (USGS 15' topographic map) [Figure 10] , three buildings are shown on the AEC (1952) property map (Figure 11), and several buildings appear to be visible on 1938 and 1951 aerial photographs of the area (Figures 12 and 13; Table 2). No building is shown at this location on the oil and gas map (ODNR, DGS 1905). The initial testing identified four building remnants, the base of a silo, a trough, a concrete pad, and a pile of concrete blocks. Four STPs were excavated at the site, one of which contained artifacts. No artifacts were collected, but a cut nail and some coal were recorded in the northernmost unit (Mustain and Klinge 2011).

The site was mostly cleared of vegetation for the current study (Plate 14) and a 20-m (65.6-ft) grid was set in with the Topcon laser transit along which STPs were excavated at 5-m (16.4-ft) and 10-m (32.8-ft) intervals. A total of 252 STPs were excavated, 32 of which contained artifacts (Figure 14, Sheets 1 and 2). All of the site elements identified by Mustain and Klinge (2011) were located, re-evaluated, and mapped with the laser transit. Several other site elements were observed once the thick underbrush was cleared from the site. They include a

circular depression near the foundation rubble at the top of the hill, a large barn foundation remnant, and a developed spring with two adjacent cisterns at the north end of the site.

Two datums were established at the site. Datum 1 is at the origin of the grid (0N,0E) and Datum 2 is approximately 13 m (43 ft) to the northeast. The locations of both were recorded with the Trimble GPS unit and based on these coordinates Grid North is  $342^{\circ}34'53.26''$  on the US State Plane (NAD83), which is approximately perpendicular to the easement for the power line along the south edge of the site. The State Plane, UTM, and site grid coordinates for the datums are included in Table 3.

Visual inspection of the site indicated that much of the ground surface was uneven and rutted, possibly indicating post-occupation disturbance. A large push pile in the southeast corner of the site also attests to substantial disturbance. Subsurface testing indicated that a large portion of it had been paved with concrete or graveled. The paved and graveled areas surround the cluster of building remnants in the southeast part of the site and the two barn foundation remnants to the north and west. The area around the building remnant on top of the hill seemed reasonably intact. There was a ca. 15 cm–25 cm (6 in–10 in) deep, dark yellowish brown (10YR 4/4) sandy loam A horizon in most of the units. A-horizon soils on the lower parts of the landform were heavier, composed of dark brown (10YR 3/3), brown (10YR 4/3), and dark yellowish brown (10YR 4/4) silt loam. Although some artifacts were present in and adjacent to the graveled areas in the south of the site, nearly all of the positive STPs were around the building remnant near the top of the hill. No artifacts were recovered in the vicinity of the barn foundation remnant at the north end of the site.

A total of 109 historic artifacts were recovered from the STPs excavated at 33PK324 (Table 8). Functional groups represented include Agricultural ( $n=6$ ), Architectural ( $n=43$ ), Furniture ( $n=2$ ), Kitchen ( $n=55$ ), and Miscellaneous Hardware ( $n=3$ ). One prehistoric chert flake was also recovered. A detailed analysis is included in Appendix A-3. More than a quarter of the artifacts recovered are brick fragments, and glass bottle and vessel fragments make up another 40 percent of the assemblage. Twenty of the artifacts are temporally diagnostic (Table 9). Interestingly, one possible piece of tin-enamelled ware was recovered. This ceramic type was produced by English potters from ca.1640–ca. 1800 (Noel Hume 1970). However, a single piece of an older ceramic type is not sufficient to assign an early date to the site. Rather, this artifact may well have entered the archaeological record as a curated heirloom or decorative antique,

rather than as a functional vessel. The rest of the diagnostic artifacts may have been produced from the mid-nineteenth century to the present (Gillio et al. 1980; Magid 1984; Miller et al. 2000; National Park Service 2011; Osterhoudt 1866; Stelle et al. 2001). A few of the ceramic sherds are decorated, but for the most part these are all nondescript items. The single prehistoric artifact recovered from the site is a secondary flake manufactured from Columbus/Delaware chert. The only readily discernable pattern observed in the artifact distribution was the clustering in the vicinity of the foundation rubble near the top of the hill.

Five building foundation remnants were observed at the site (Figure 14, Sheets 1 and 2). Three seem clearly to have been barns. Barn 1, the east barn, is in a cluster of buildings and structures surrounding a concrete paved area in the southeast of the site (Figure 14, Sheet 1). Barn 1's foundation is poured concrete with a concrete floor (Plate 14). It measures approximately 15 m by 6.7 m (50 ft x 22 ft) and rises 10 cm–15 cm (4 in–6 in) above the adjacent concrete pad. Also in this cluster are the remains of a silo (Plate 15), a small outbuilding foundation with a trough in the floor (Plate 16), and a concrete watering trough (Plate 17). The silo has a 3.7-m (12-ft) diameter and was constructed of concrete tiles held in place with circles of round bar. It is sitting on a 6-m by 3.2-m (20-ft by 10-ft) rectangular platform. The entire area surrounding the silo is covered with tiles and it appears that most if not all of the structure is still present, but collapsed. The outbuilding has a 3-m by 3-m (10-ft by 10-ft) concrete slab foundation with a trough built into its east end. A metal pipe connects it to the trough just to the south. One wire nail and two glass bottle fragments were recovered along the west edge of the cluster. Although not reflected by the artifacts, taken as a group these buildings and structures suggest dairy farming was the focus of activities in this part of the farm.

Barn 2, the west barn, is about 50 m (164 ft) west of the cluster (Figure 14, Sheet 1). It is the only building or structure in this part of the site (Plate 18). It is surrounded by a graveled area. The foundation is poured concrete and measures 12 m by 8 m (40 ft by 25 ft) and has a concrete floor with an interior wall and two footers. Threaded rods are set vertically in both footers. The north wall is on the upslope side of the building and rises about 10 cm (4 in) above the ground surface (Plate 19) and the south wall is about 65 cm (2 ft) tall (Plate 18). One glass bottle fragment, one shard of window glass, and the iron railroad spike were recovered near Barn 2. There is also a stack of concrete edging at the north edge of the graveled area surrounding the barn (Plate 20).

Barn 3, the north barn, was not documented during the initial survey of the site. It is located at the end of a farm lane cut into the hillside and extending about 80 m north of the cluster to a small toe along the side of a ravine (Figure 14, Sheet 2). It is the largest of the three barns at the site, measuring 8 m by 21 m (25 ft by 70 ft). Similar to Barn 2, the foundation of Barn 3 rises above the ground surface, but it is nearly 1 m (3 ft) tall all the way around (Plates 21 and 22). There are two interior walls near the center of the foundation and a concrete pad in the narrow (ca. 2 m [6 ft]) between them (Plate 23). There are mounting bolts set in the concrete pad. The floor of the barn was concrete. No artifacts were recovered in this part of the site. A developed spring is approximately 50 m (164 ft) farther down the ravine from Barn 3, consisting of a concrete box built into the hillside. There are two adjacent concrete cisterns (Plates 24 and 25).

The final building remnant consists of foundation rubble near the top of the hill north of Barn 2 and northwest of the cluster of buildings and structures around Barn 1 (Figure 14). The east end of the 2-m (6-ft) wide by 9-m (30-ft) long line of rubble is composed of jumbled, large pieces of concrete foundation (Plate 26). At the west end of the rubble is a line of three concrete blocks (Plate 27). The large pieces of concrete have obviously been moved and partially buried with machinery but the concrete blocks could be in situ. No outline of a building foundation was discernable. The surrounding area did not appear to be particularly disturbed and most of the artifacts recovered from the site came from this area. The artifacts were mostly glass bottle and vessel fragments, brick, and window glass. Although there are relatively few artifacts, their concentration in this area and the number of concrete blocks suggests that this was the location of the house. However, the large pieces of concrete foundation and relatively undisturbed soils (i.e., not disturbed during construction, either) suggest that this deposit may be a secondary deposition.

There is a 1.5-m (5-ft) diameter circular depression about 5 m (16 ft) east of the foundation rubble. It is about 30 cm (12 in) deep and had a few large pieces of brick in it, but it was not excavated so its extent and nature are unknown. If rubble marks the location of the house this depression could be a well or cistern as it may be too close to the house to be a privy. There is a small bottle midden located about 40 m (131 ft) up the hill from foundation rubble (Figure 14, Sheet 1). It contained fewer than 10 modern bottles and jars, all of which were on the surface. Most of them were relatively complete.

The site has been delineated by various elements, including the graveled areas, a push pile, the developed spring, and a surface scatter of artifacts. It measures approximately 130 m x 200 m (427 ft x 656 ft) with an area of 1.2 ha (2.9 ac). The site is not depicted on the gas and oil map (ODNR, DGS 1905) and based on this and the building materials present (i.e., exclusively concrete foundations), the historic component of the site was most likely first constructed during the second quarter of the twentieth century. Numerous building and structure remnants are present, including three barns and a silo, clearly indicating it was a farm and apparently, at least in part, a dairy farm. Much of the site is either paved with concrete or graveled and there are very few artifacts present. A large push pile and an uneven ground surface across parts of the site attest to substantial post-occupational disturbance across portions of the site and draw into question the sequence of material deposition on site. The foundation rubble at the top of the hill is tentatively identified as the remnants of the house, but it has been grossly impacted by demolition and there is some evidence that the material was deposited in this location during the site demolition and not during its occupation. Although much of the site remains, it seems there is little left that reflects activities associated with its historic component except in very general terms. The site's physical integrity has suffered considerably, which has in turn affected its archaeological integrity.

The prehistoric component is an isolated find of a single flake. This artifact is not temporally diagnostic. It was located at the center of the site. The prehistoric component is very ephemeral. It cannot be placed in its historic context based on current data and there are no indications that substantial remains are present that would date the site or provide important information about the prehistory of the region. This component of the site is not significant.

## DISCUSSION

The three archaeological sites investigated for this study represent three different phases of historic development within what is now the PORTS plant boundary. Site 33PK322 (HMBL 4) is small residential site that may have originally been constructed in the nineteenth century, 33PK323 (HMBL 5) is the remnants of small school house, and 33PK324 (HMBL 50) is the remnants of a relatively large, twentieth-century dairy farm. Each of the sites shows some level of post-occupational disturbance and two contain minor prehistoric components.

## **SITE 33PK322 (HMBL 4)**

The archaeological evidence of 33PK322 (HMBL 4) indicates that it is a residential site that may have originally been built in the nineteenth century and was occupied through the mid-twentieth century. The site is defined by a limestone house foundation, an artifact scatter contained in a partially disturbed A horizon, the foundations/footers of three small outbuildings, and a depression that may mark the location of a shaft feature. The suggestion that the site has nineteenth-century origins is based on a review of the construction materials, cartographic sources, and the recovered artifacts. The site function was determined by the identified site elements.

That there at least two construction episodes on site is made clear by the choice of construction materials used in the foundations/footers of the three buildings within the site. The house foundation is constructed of mortared stone. Three features associated with the house foundation, a stove base and two steps/stoops, are either partially or entirely poured concrete. Two of the three outbuilding foundations are also poured concrete, but the third outbuilding stood on sandstone footers. The different choices in construction material strongly suggest two distinct building episodes.

Unfortunately, the construction materials do not provide absolute chronology. The poured cement foundations and features likely post-date ca. 1920. The rotary cement kiln, which made concrete a viable construction material for small-scale residential and rural construction, was not developed until 1899 (Miller et al. 2000). Assuming a time-lag between the development of a technology and its widespread application, we can tentatively date the concrete building elements to a date of ca. 1920–ca.1952. However, they may have been built slightly earlier and more importantly, the stone foundations may have been built during the same time period. The availability of one technology does not proscribe against the application of another, so it is impossible to say that the stone foundations were absolutely built before ca. 1920 by the construction materials alone.

The artifacts recovered from the site, however, do indicate that one of the building episodes likely occurred in the nineteenth century. Of the 45 nails that were recovered from the site, 15 are cut nails, five are wire nails, and 25 could not be assigned to either category (Appendix A-1). Wire nails became the dominant nail type sometime around 1890. Although it is possible that wire nails predate that time, and that cut nails post-date that time, it is generally

agreed upon that cut nails on historic sites were likely manufactured in the nineteenth century (Adams 2002). Assuming that the cut nails on this site are nineteenth-century artifacts, the stone foundation elements may be associated with that building episode and may date to the nineteenth century, as well.

The likelihood of a nineteenth-century occupation on site is also indicated by other artifact types. The ceramic assemblage contains types like American yellowware, scalloped edge-decorated whiteware, and Albany-slipped stonewares that were also likely manufactured during the nineteenth century, and at least one nineteenth-century bottle finish (Appendix A-1). Certainly, there is a time-lag between when dishes and bottles were produced and when they enter the archaeological record. There is also the possibility that older items may be incorporated into more recent deposits as curated keepsakes, but the presence of these items in the archaeological record of this site suggests that the site may have been occupied during the nineteenth century.

The earliest depiction of the site on cartographic sources is found on the ca.1905 oil and gas map (ODNR, DGS 1905) [Figure 3]. Taken together, these three data streams strongly suggest a nineteenth-century occupation on site. They also suggest that the two stone building foundations/footers are associated with that early occupation.

The site is identified as a residential site, rather than as a farmstead, because the term farmstead carries implications regarding the livelihood of the site occupants and the types of site elements that might be encountered. Farmsteads are occupied by farmers and their families, who make at least a part of their income from agriculture or animal husbandry. One might expect to find evidence of one or more barns, as well as other dependent structure types like a corn crib, silo, chicken coop, smoke house, root cellar, or any of a host of other types. The three outbuildings identified here are relatively small and at least one of the poured concrete foundations likely served as an automobile garage. The identity of the other two is unknown, but neither is large enough to support more than the most humble of farming operations.

While it is possible that the site occupants were farmers or farm laborers, this site does not appear to represent the remains of a farmstead comparable with other farms that have been explored at PORTS (Klinge 2010; Klinge and Mustain 2011). This does not mean this site is an aberration, as after the initial generation of settlers the rural countryside was populated by mill-workers, shop keepers, hired farm hands, business owners, and the like as much as it was by

farmers. However, it does suggest that the site is differs qualitatively from nearby sites that have recently been subjected to more intensive investigations.

It was clear that the site had been subjected to post-occupational disturbance. This was from two primary events: the site demolition, and the construction of the railroad. After it was abandoned, the site superstructures were razed and the site appears to have been bull-dozed. The full extent of this disturbance is not clear, but substantial portions of the house foundation have been dislodged and many of the artifacts were recovered from a co-mingled and mixed A horizon. Portions of the site have also been covered with railroad grading and bedding material. It is unclear if this construction impact has preserved or compromised that part of the site that was affected.

Levels of disturbance from contemporary demolition events have varied on other historic sites that have been explored recently (Klinge 2010; Klinge and Mustain 2011). They have ranged from extremely disturbed with few to no intact deposits remaining to largely undisturbed with naturally collapsed superstructures left in place. The level of disturbance observed at 33PK322 (HMBL 4) does not preclude the potential for intact and sealed or stratified deposits to exist below the co-mingled A horizon.

Site 33PK322 (HMBL 4) is identified as a disturbed (extent unknown) rural residential site that dates from the last decades of the nineteenth century to ca. 1952.

#### **SITE 33PK323 (HMBL 5)**

33PK323 (HMBL 5) is the disturbed remnants, or perhaps more appropriately the disturbed former location, of a school house. The site is marked by a relatively flat area cut into the landform along Shyville Road (CR 30). It was identified as the Moore School on the ca. 1905 oil and gas map (ODNR, DGS 1905 [Figure 3], but no building is visible in the location on mid-twentieth century aerial photographs. The flattened area corresponds with the location of the school, but appears to have been scoured with a bulldozer during the site demolition. This was made clear by severely disturbed soils in the flat area and large push piles along its western margin.

No structural remnants of the school building were identified and the site boundaries are defined by the flattened area that presumably held the former building and a low-density artifact scatter that extends to the west. STPs west of the flat, disturbed area revealed a thin, intact A horizon, but no evidence of features below the A horizon was documented. The majority of the

artifacts that were recovered or observed were architectural or energy-related artifacts, chiefly brick fragments, window glass fragments, and coal fragments (Appendix A-2). While these originated at the school house, only one artifact was recovered that can be associated with its function. The bottom of a Carter's Ink inkwell that was manufactured between 1895 and 1949 was found (Covill 1971). Ink wells are not uncommon artifacts on other site types, but one can expect to find them in a school house context.

Unfortunately, the remainder of the artifact assemblage from this site does not contain sufficient characteristics to refine the site chronology any further. Based on the artifact and cartographic evidence, the site likely dates from the late-nineteenth century and was demolished prior to 1938. Unfortunately, the demolition and post-occupational disturbance has been so extensive just trace evidence of the site remains.

#### **SITE 33PK324 (HMBL 50)**

Site 33PK324 (HMBL 50) is the largest, and most recent, of the three sites in this study. The surviving building remnants clearly identify it as a farm and the modern construction materials provide a fairly tight chronological range. It is defined by five building foundations, including three large barns, a possible house site, and a small outbuilding with an integral trough in the floor, as well as a silo base, a developed spring with two cisterns, a broad paved area surrounding one barn complex, and a low-density artifact scatter. Each of the site elements is constructed of poured concrete, modern three-hole concrete block, or some combination of both.

There is little no doubt that this site represents a relatively large farm when compared to others studied within the PORTS boundary (Klinge 2010; Klinge and Mustain 2011). The farmstead is arranged on a modified linear plan, with the likely house location and major barns aligned along their long axes and arranged roughly in a line (Terrell 2006). It is considered a modified linear plan in that the likely house site, Barn 1, the small outbuilding, and the silo base are arranged on a traditional linear plan, while Barns 2 and 3 flank the site to the north and south while remaining oriented along a common linear axis.

Farm layout, or the arrangement of farm buildings, is not necessarily a chronological indicator. It has been used to that purpose in the past with varying degrees of success, but recent research on late nineteenth- and twentieth-century farms has suggested that a regional analysis of farm layout may reveal patterns of arrangement tied to the cultural backgrounds of inhabitants (Terrell 2006).

All of the major site elements are constructed of poured concrete. As previously noted, it is possible that this material dates as early as 1899, but more reasonably it was likely in use for rural residential and farm construction ca. 1920. Interestingly, a single building is depicted at the site on the 1917 USGS 15' topographic map (Figure 10), suggesting at least some element of the site may date as early as the 1910s. Based on the construction material and cartographic data, the site was likely occupied between 1910 and ca. 1952.

The artifact record of the site does not challenge this date range. Unfortunately, few artifacts were recovered from the site and just 20 items were chronologically diagnostic (Appendix A-3). The majority of these were types that could have been manufactured through a portion of the nineteenth century and the entire twentieth century.

Interestingly, a single piece of what appears to be a thick, buff-bodied tin-enamelware ceramic was recovered. This piece is most reminiscent of English delftware, which was popular in the seventeenth and eighteenth centuries (Miller et al. 2000). The fragment is small and may not be tin-enameled ware. If it is, it certainly served a twentieth-century function that differed greatly from its original seventeenth- or eighteenth-century function. Most likely, it would have entered the archaeological record of this site as either a curated family heirloom, or a decorative antique. Regardless, it does not challenge the interpretation of the site as a purely twentieth-century farm.

Beyond the generalized identification of farmstead," it is possible to posit that this was a dairy farm. At the least, it is clear that a portion of the farm was dedicated to raising livestock from the structure types found on site. This is most apparent in the barn with the paved/compact gravel barnyard and the silo foundation.

Paved barnyards or feed lots are common on farms with concentrations of livestock like dairy cows. As large herd animals concentrate in one location, for feeding for instance, they can quickly turn an earthen farmyard into a churned and muddy morass that provides treacherous footing for both humans and animals. A solution is to pave such areas with either concrete or another material like ash, gravel, cinder, or even brick. A well-paved barnyard or stockyard is also considered a sanitary measure. Manure can be easily collected from paved surfaces, whereas muddy earthen yards can easily collect manure and its attendant bacteria and parasite load, and paved surfaces can be pitched to direct rainwater and runoff from feeding areas (Wilcox 1912).

Silos are designed for long-term storage of bulk materials. On farms this is typically grains or silage as a food source for livestock herds. Accordingly, the presence of the silo foundation in proximity to the barn with the paved barnyard strongly suggests that a livestock herd was maintained on site. We can assume that the central barn, Barn 1, was the livestock/dairy barn, but the function of the other two barns on site is not known.

Unfortunately, the artifact record from this site does not speak to the function of the site or its components as well as the structure remnants. Despite being the largest of the three sites investigated during this study, the fewest number of artifacts were recovered during the field work (Appendix A-3). In large part, the materials that were recovered were concentrated in the vicinity of the house rubble. The lack of artifacts, and their concentration around the dwelling, is typical of twentieth-century farmsteads. Whereas earlier farmsteads and rural sites can be expected to include a sheet midden (accumulated debris and refuse across the yard and activity areas), this is not always true of twentieth-century sites (Cabak et al. 1999). The relative paucity of artifacts or sheet midden on these sites has been explained as the result of modern sanitation and refuse management practices, including centralized refuse disposal.

The artifact assemblage that was recovered follows a general pattern or trend of domestic/residential sites first quantified by Stanley South during work on colonial sites in the Carolinas. That is to say, that if the artifacts are sorted by functional classifications, the majority of the artifacts can be assigned to either the Kitchen Group (food storage, preparation, and service/consumption) or the Architectural Group (building materials, building fabric), with other grouping making up relatively small percentages of the total artifact assemblage. The fact that the artifact assemblage does not more readily depict farming activities suggests that the site was cleaned of valuable and useful materials like tools and farm equipment before it was transferred to the AEC in the early 1950s.

Although the site retains a degree of integrity in that the site structure is readily identified and most of the site components remain visible above the ground surface, there is considerable evidence of post-occupational disturbance. A large push pile and bulldozer scars attest to the site demolition and the extent of the disturbance. The disturbance is so extensive that the proposed house location cannot be confirmed and it is possible that the accumulated rubble was transported from another part of the site and deposited there during the demolition event.

A circular depression may mark the location of a shaft feature near the probable house site. Located just 5 m (16 ft) from the house rubble, this depression likely marks a well or cistern, rather than a collapsed or filled privy vault. While there is no hard rule defining how far a privy will be from a residence, they tend to be located at distance closer to 10 m (32 ft) and 15 m (50 ft) than 5 m (16 ft). It is not unreasonable to assume that this site does include one or more privy shafts as they have been documented on contemporary farms on the PORTS property (Klinge and Mustain 2011). It is also possible though, that the site was built with an interior water-closet and a rudimentary septic system for waste disposal. One potential septic system was also documented on a contemporary site at the PORTS facility (Klinge and Mustain 2011).

## **RECOMMENDATIONS**

At the conclusion of this Phase I investigation, none of these three sites are recommended as eligible for inclusion in the NRHP. The prehistoric components found at two of the sites are isolated finds with no clear cultural context, and neither meets the criteria for inclusion in the NRHP. The historic components at two of the sites do not appear to meet the criteria either, while insufficient data has been collected at the third to make such a determination.

Site 33PK323 (HMBL 5) is recommended not eligible for inclusion in the NRHP. Site 33PK323 (HMBL 5) has been completely destroyed and no intact evidence of the building remains. The site does not retain sufficient integrity to warrant additional study. The site cannot be considered significant and is therefore not eligible for inclusion in the register.

Site 33PK324 (HMBL 50) is also recommended not eligible for inclusion in the NRHP. While the site retains some degree of integrity in that many of the site components are visible and identifiable above the ground surface, it too has been grossly affected by post-occupational disturbance. The ground surface across much of the central site area shows deep bulldozer scars and at least one large push pile exists at the site margin. The bulldozer scars indicate that the ground surface and work yards are disturbed contexts and any artifacts recovered from those locations may not reflect their primary or even secondary deposition. The disturbance was so intensive that it is not possible to confirm the location of the house on site, although it appears to be marked by a large pile of concrete and concrete block rubble around which the majority of artifacts were found.

The artifact record is also sparse from the site. This in and of itself is not detrimental to the site's significance, but the fact remains that all of the artifacts from the site were recovered from disturbed contexts created after the site was abandoned. While potential shaft features were identified on site, no evidence of sealed, artifact-bearing archaeological contexts was documented. On other sites on the PORTS property, these have included privy vaults, pit cellars, and refuse pits (Klinge and Mustain 2011). No such features or potential sealed contexts were identified on this site, as the only refuse feature was a small bottle midden on the ground surface. The lack of artifacts is a product of the twentieth-century origins of the site, the relatively brief period of occupation, and the fact that the site was apparently cleaned of re-useable and valuable items before it was abandoned. The material that does remain is contained within disturbed contexts created after the site's occupation.

For these reasons, the site does not appear to contain a strong research potential that would make it eligible for inclusion in the NRHP under Criterion D. Nor does it meet with Criteria A-C in any but the broadest of terms. Accordingly, the site is recommended not eligible for the NRHP.

Site 33PK322 (HMBL 4) is intriguing because it suffers from many of the same deficiencies of the previous two. It too has been affected by post-occupational disturbance and the majority of the artifacts were recovered from an A horizon that has been disturbed to an unknown extent. But the site includes several other elements that suggest it may have a stronger research potential than the other two.

In contrast to 33PK324 (HMBL 50), there is evidence that the occupation of 33PK322 spanned the last quarter of the nineteenth century through the mid-twentieth century. This expanded range of occupation presents two possible advantages to researchers. First, it provides a greater time frame for the accumulation of debris and refuse around the living and working areas of the site. This particularly true during the nineteenth century when waste disposal practices were not as rigorous as more recent times and when a greater number of productive activities were carried out around residences and farms. Second, the greater span of occupation provides an opportunity to examine changes in the social, economic, and technological worlds of Pike County if artifact deposits and features can be segregated by chronological or occupational periods on a site. Of the three sites considered here, 33PK322 (HMBL 4) has the greatest potential to address topics like changes in the local and regional economy over time.

There is evidence for just such a change in the evidence of two buildings episodes on site. It is apparent that the older, nineteenth-century buildings were constructed with stone foundations and footers, while more modern buildings were constructed with poured and cast concrete foundation. The use of different construction materials can speak to changes in technology and the application of modern materials versus the preservation of traditional construction methods. The need to expand the number of buildings on site may speak to responses to other changes and may give some insight into how those changes affected the organization and use of space on rural properties. One of the twentieth-century outbuildings on 33PK322 likely served as an automobile garage and there is no denying that the advent of the automobile revolutionized American culture, both rural and urban. Sites like 33PK322 with clearly defined chronological components may help shed light in these changes in rural lifeways in Pike County.

Unlike the other two sites, 33PK322 also contained some evidence of potential shaft features which might contain sealed deposits. A small, circular depression was noted behind the house site during the field inspection and it was posited that it might be collapsed or filled privy vault. It is reasonable to assume that more than one privy vault is present on site, as privies were by their nature temporary buildings that were relocated when the vault was filled or rendered unusable. If privies from different time periods of different occupations can be found, they may contain a wealth of information regarding the site inhabitants including socio-economic data, dietary and health data, and most importantly any changes in those aspects of the household over time. It is also possible that other sealed context types, like a pit cellar, may exist within the footprint of the house itself. Unfortunately, the limitations on the depth of excavation for this study precluded testing to confirm the presence of these features on site.

At this point, it is not possible from these data at hand if this site does or does not meet the criteria for listing in the NRHP. The discussion above argues that the site may possess that type of information that would generally make a site eligible for inclusion. Unfortunately, it is not possible to confirm that this type of information exists on site. A discussion of changing farm structure and building types/arrangement will be dependent on additional historic research to determine if the advent of newer buildings on site can be connected with historic trends, changes in occupation, or change in the function of the property. An analysis of the sheet midden may be compromised by the post-occupational demolition activities, and it remains

unknown if pit or shaft features with sealed artifact deposits exist on site. Accordingly, there is insufficient evidence to either recommend or not recommend the site for the NRHP.

ASC Group recommends that no additional work is necessary for 33PK323 and 33PK324 as both are recommended not eligible for inclusion in the NRHP. Additional Phase I investigation is recommended for 33PK322 in advance of any planned construction or undertaking impacts to investigate the potential for shaft features to contain sealed archaeological deposits. The additional fieldwork may include a geophysical survey to identify potential pit or shaft features and the excavation of test units in excess of 31-cm (12-in) below the ground surface. Additional historic research including deed research, census research, and tax record research ought to be undertaken to identify changes in property ownership or function that may have affected the archaeological record on site.

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## **FIGURES**

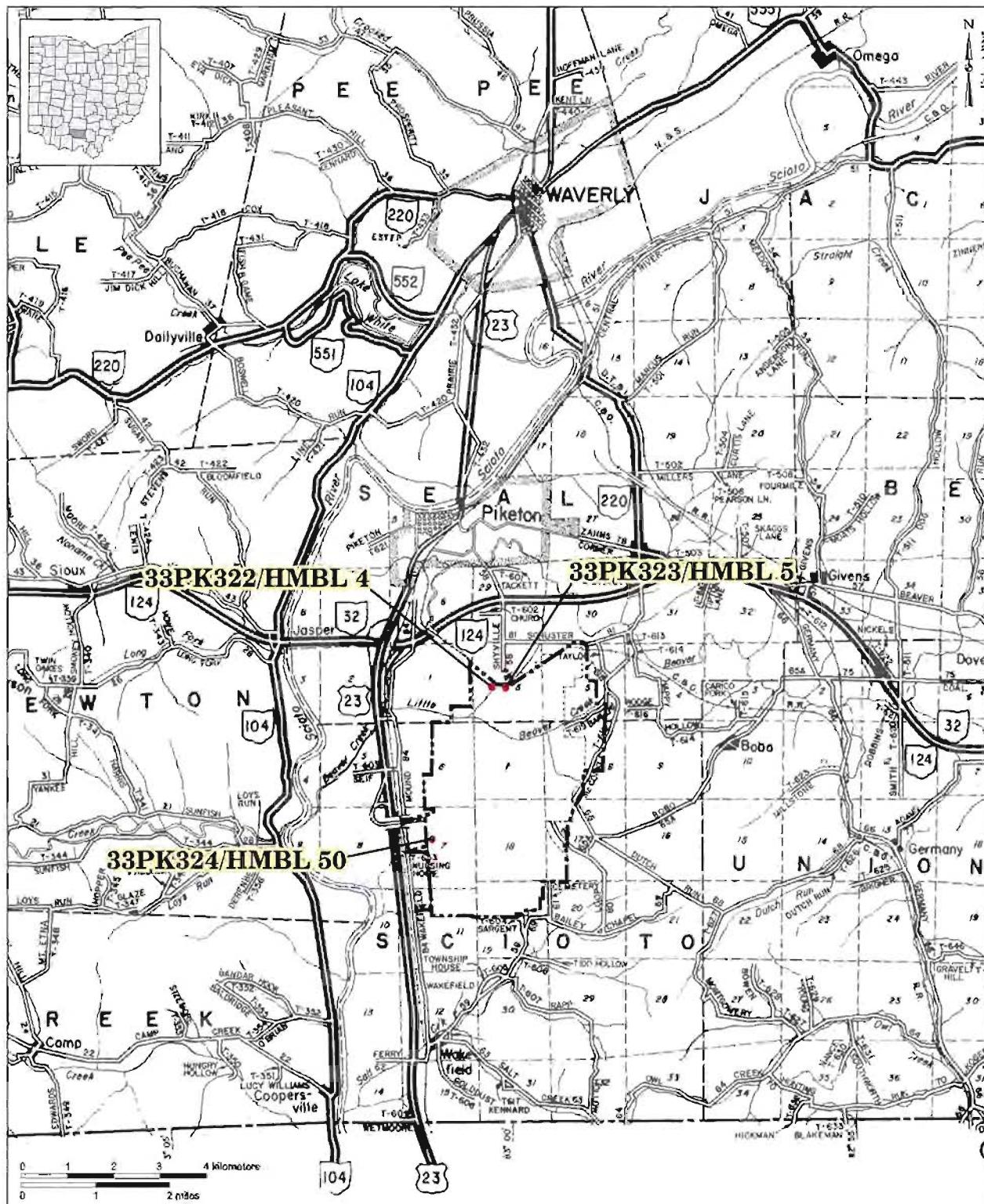


Figure 1. Portion of the ODOT Pike County highway map showing the vicinity of the project area.

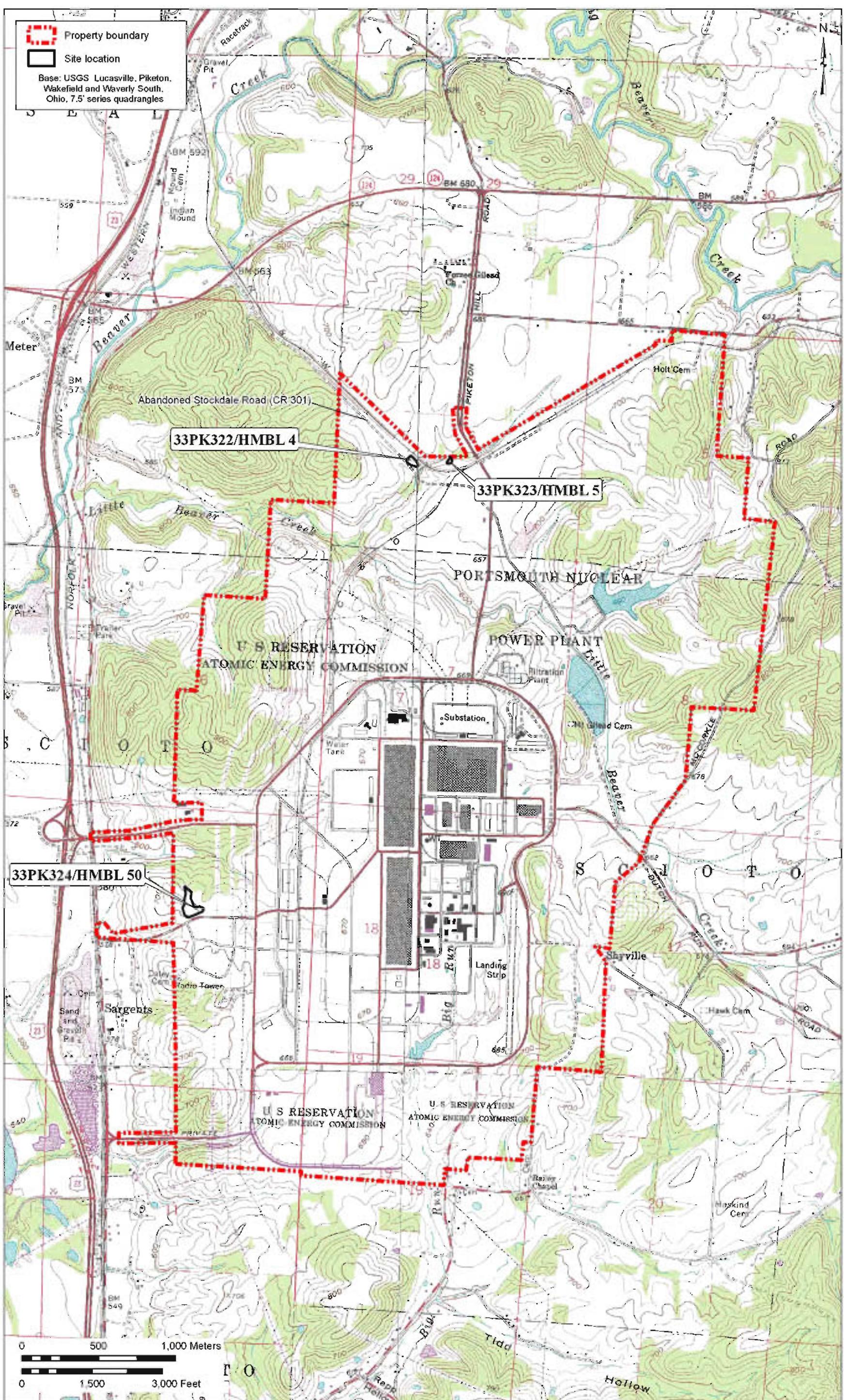


Figure 2. Portions of the 1972 Lucasville, 1979 Piketon, 1986 Wakefield, and 1992 Waverly South quadrangles (USGS 7.5' topographic maps) showing the locations of 33PK322-33PK324.

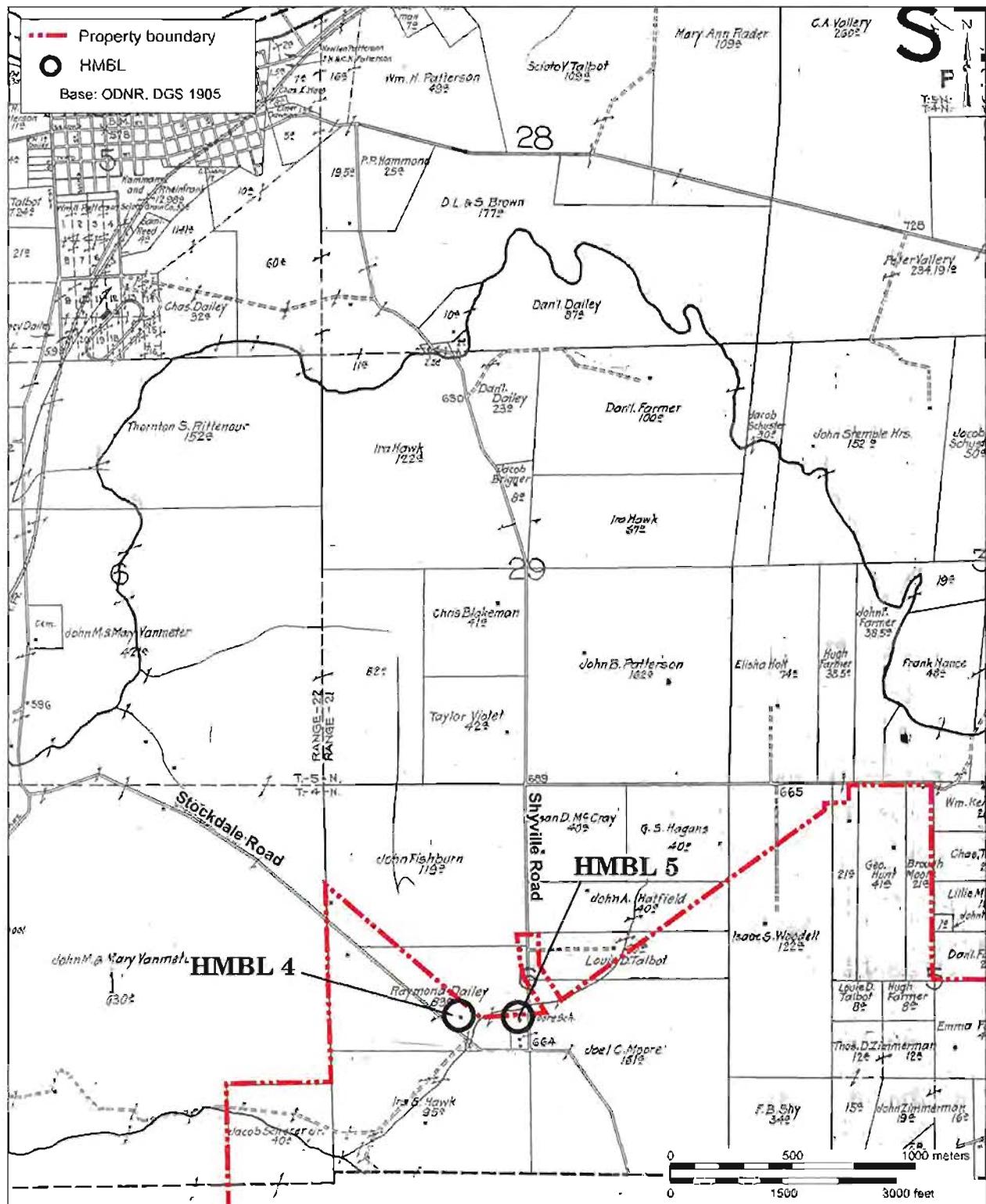


Figure 3. Portion of the oil and gas map (ODNR, DGS 1905) of the area showing HMBL 4 and HMBL 5.

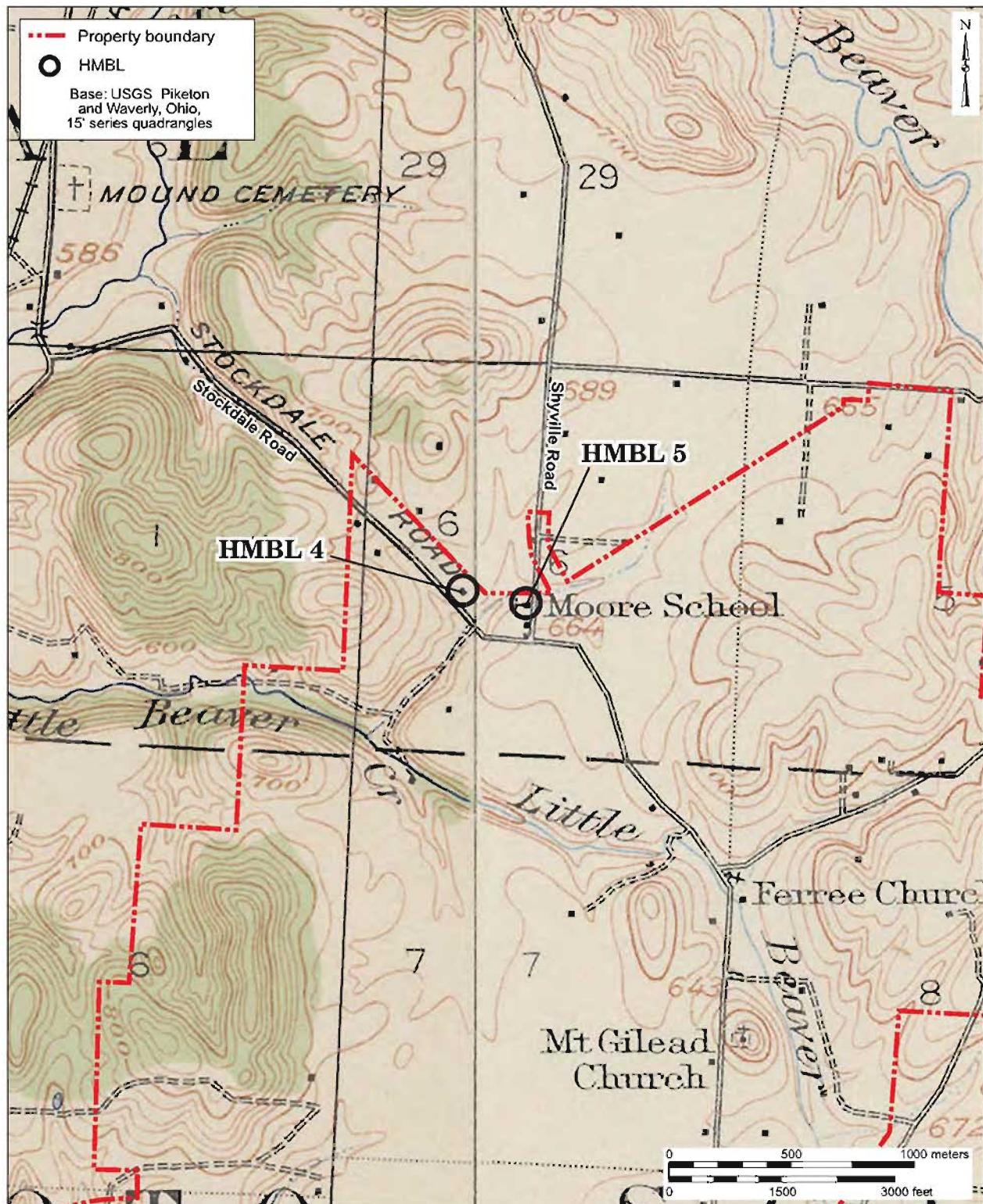
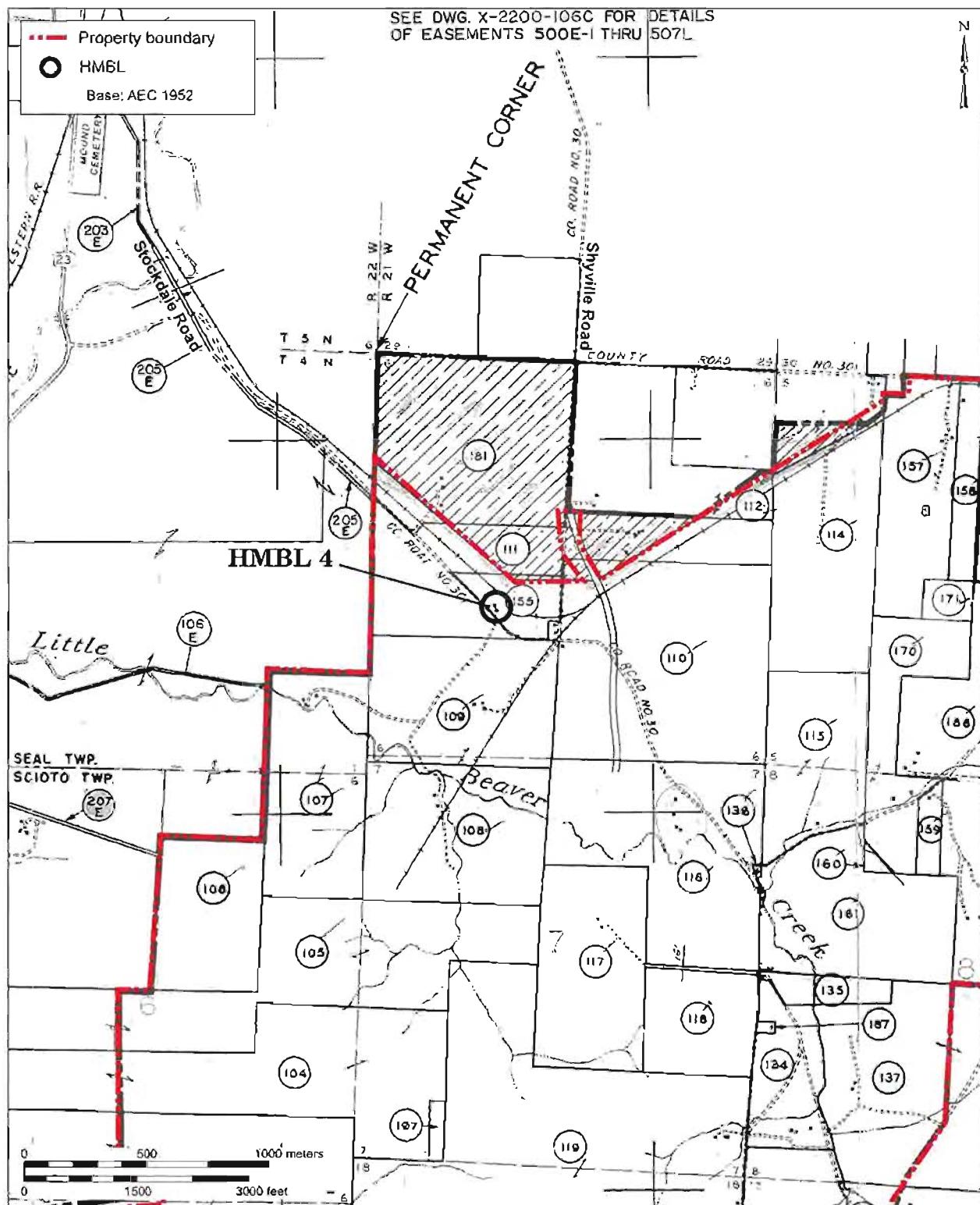


Figure 4. Portions of the 1917 Piketon and 1908 Waverly quadrangles (USGS 15' topographic maps) showing HMBL 4 and HMBL 5.



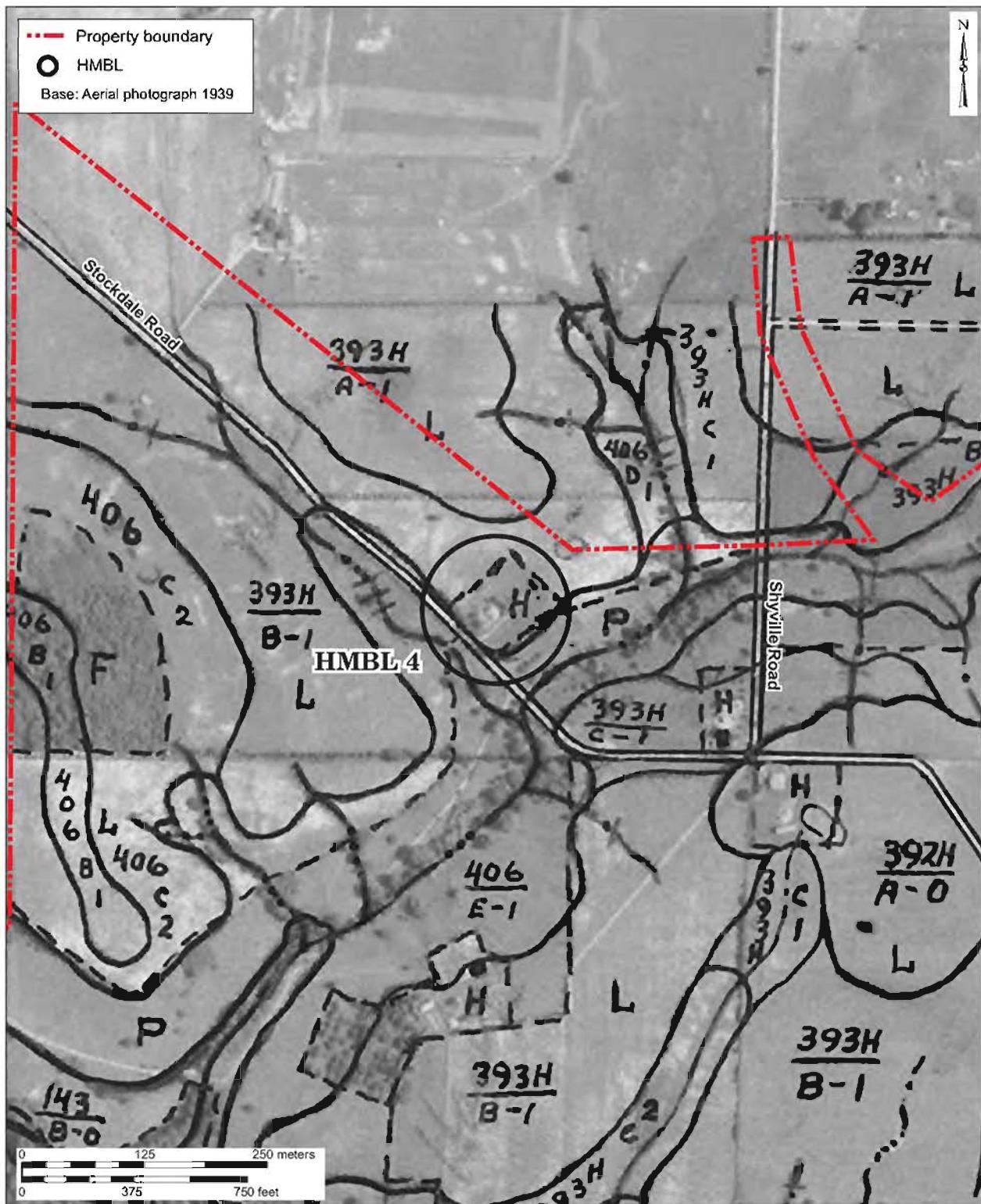


Figure 6. Portion of a 1939 aerial photograph showing HMBL 4.



Figure 7. Portion of a 1951 aerial photograph showing HMBL 4.

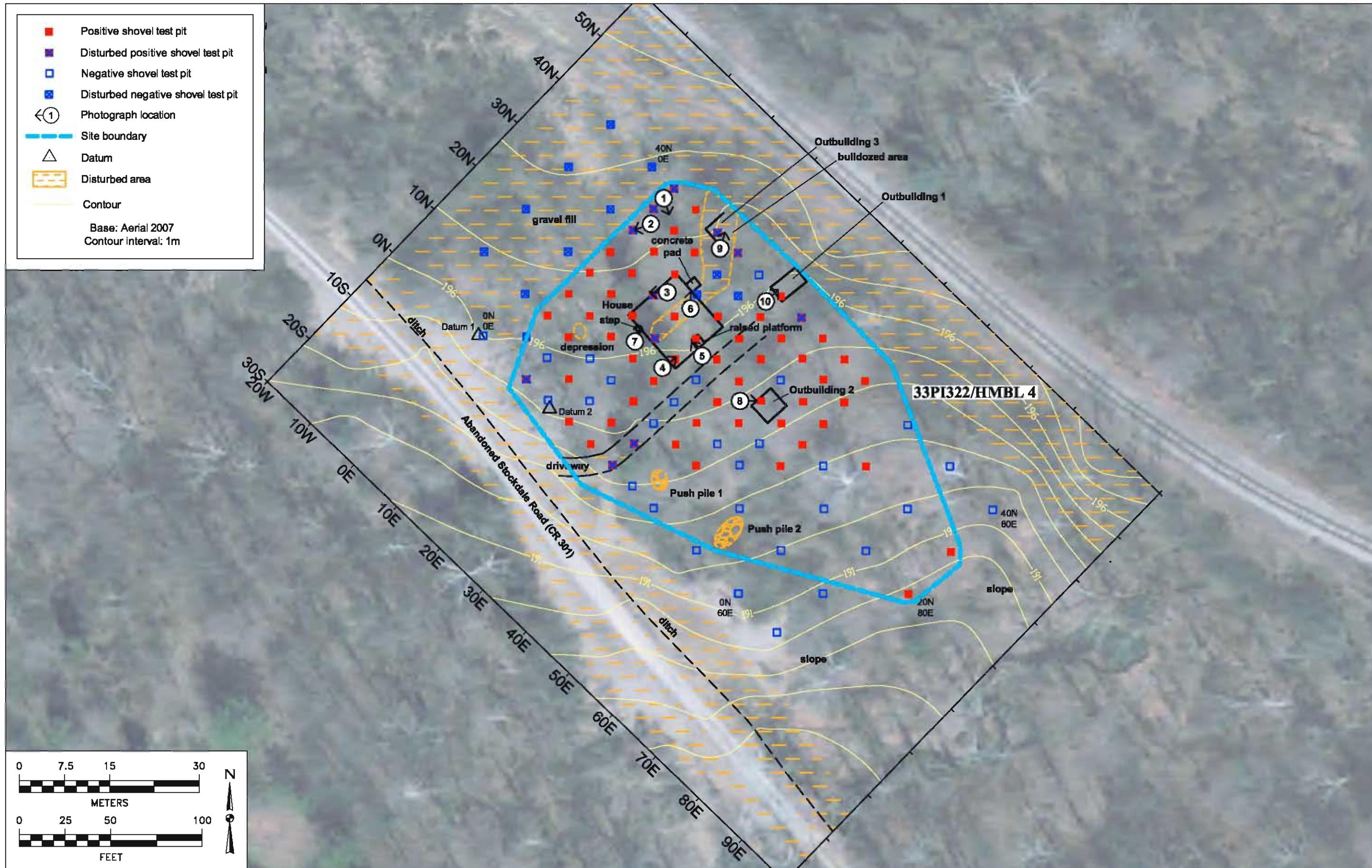


Figure 8. Topographic map of 33PK322 detailing the archaeological testing and keyed to Plates 1–10.

Figure 9. Topographic map of 33PK323 detailing the archaeological testing and keyed to Plates 11 and 12.

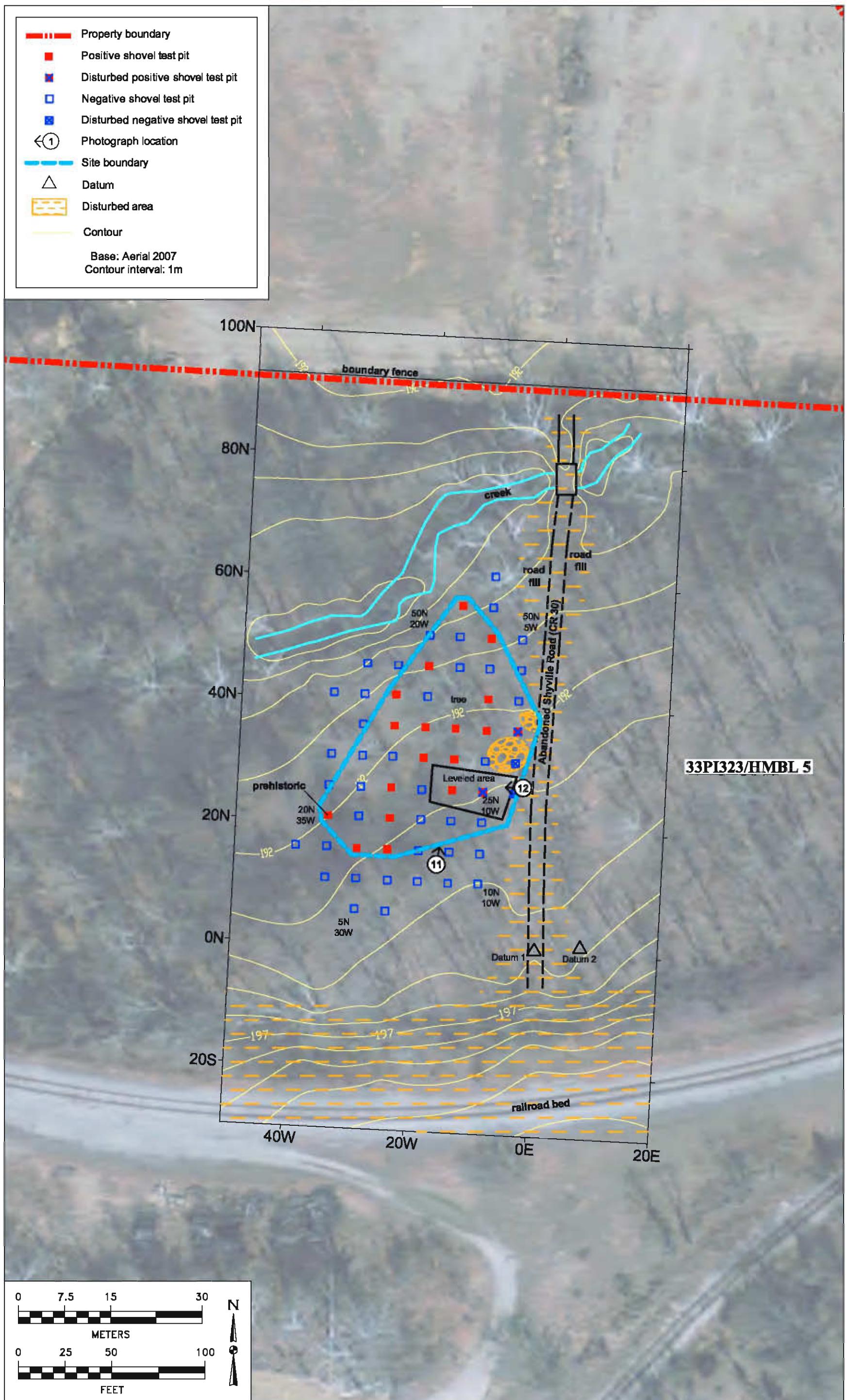


Figure 9  
 55

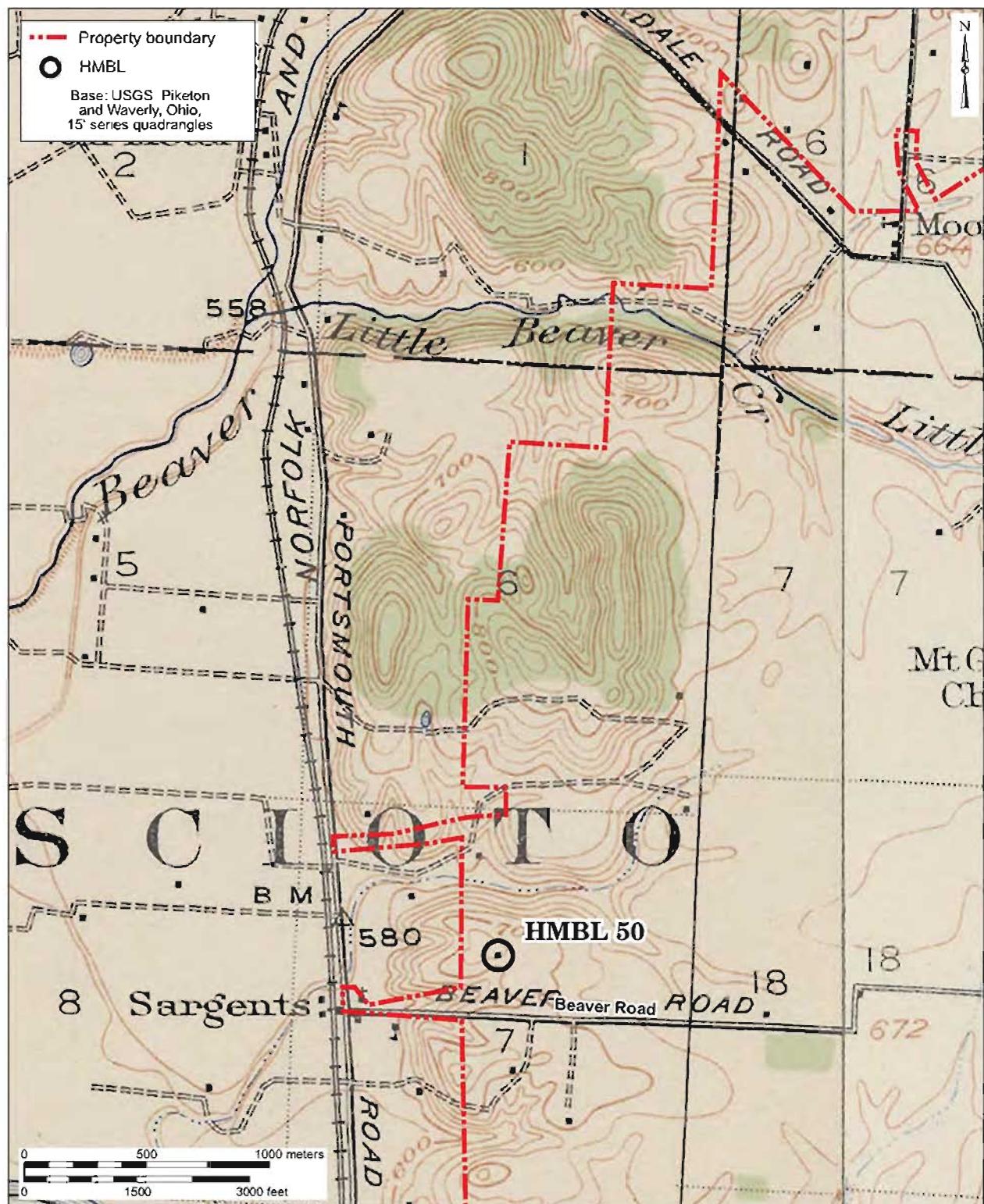


Figure 10. Portions of the 1917 Piketon and 1908 Waverly quadrangles (USGS 15' topographic maps) showing HMBL 50.

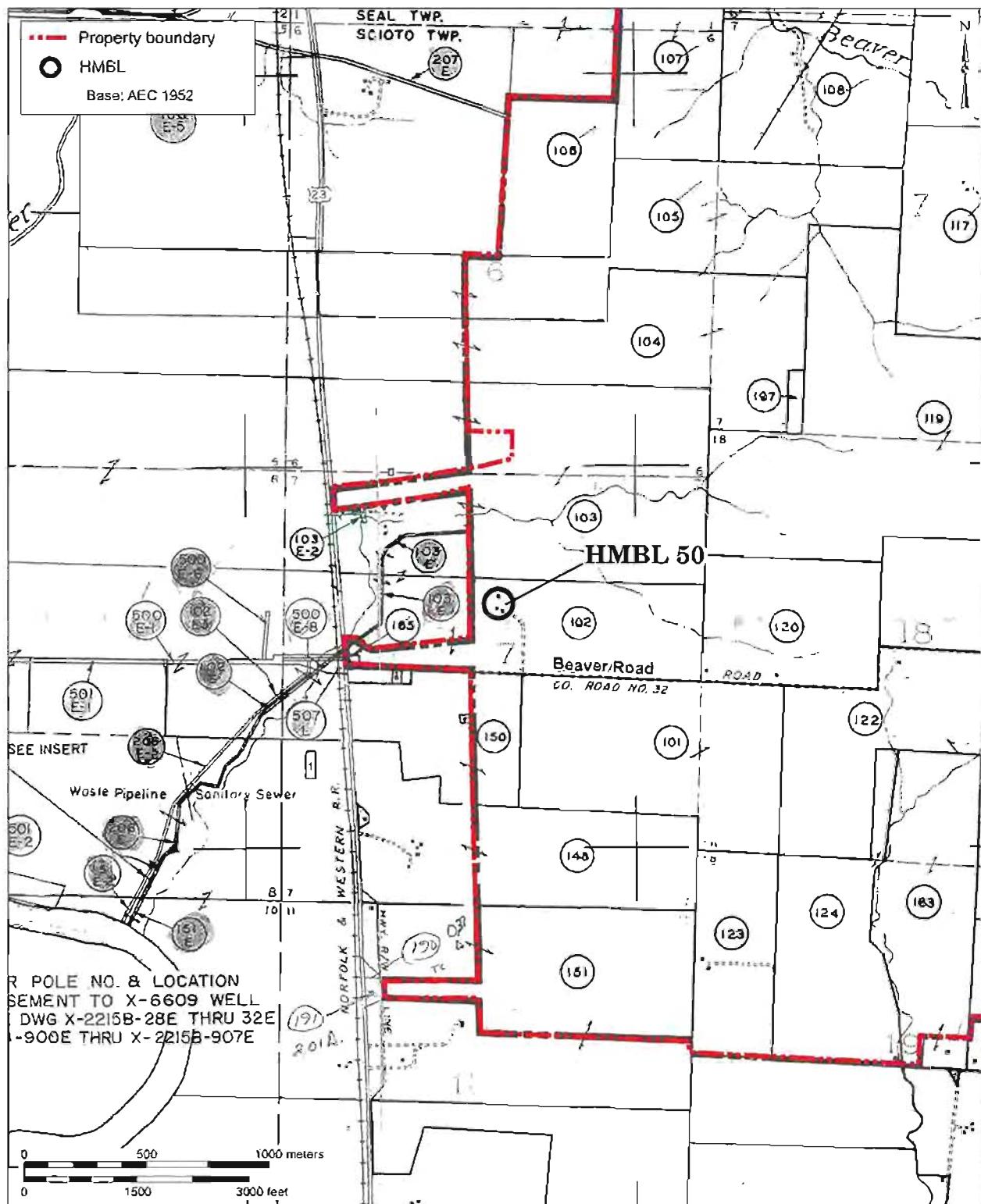


Figure 11. Portion of the AEC (1952) property map showing HMBL 50.



Figure 12. Portion of a 1938 aerial photograph showing HMBL 50.



Figure 13. Portion of a 1951 aerial photograph showing HMBL 50.



Figure 14. Topographic map of 33PK324 detailing the archaeological testing and keyed to Plates 14–27. (2 Sheets)

Figure 14  
Sheet 1 of 2

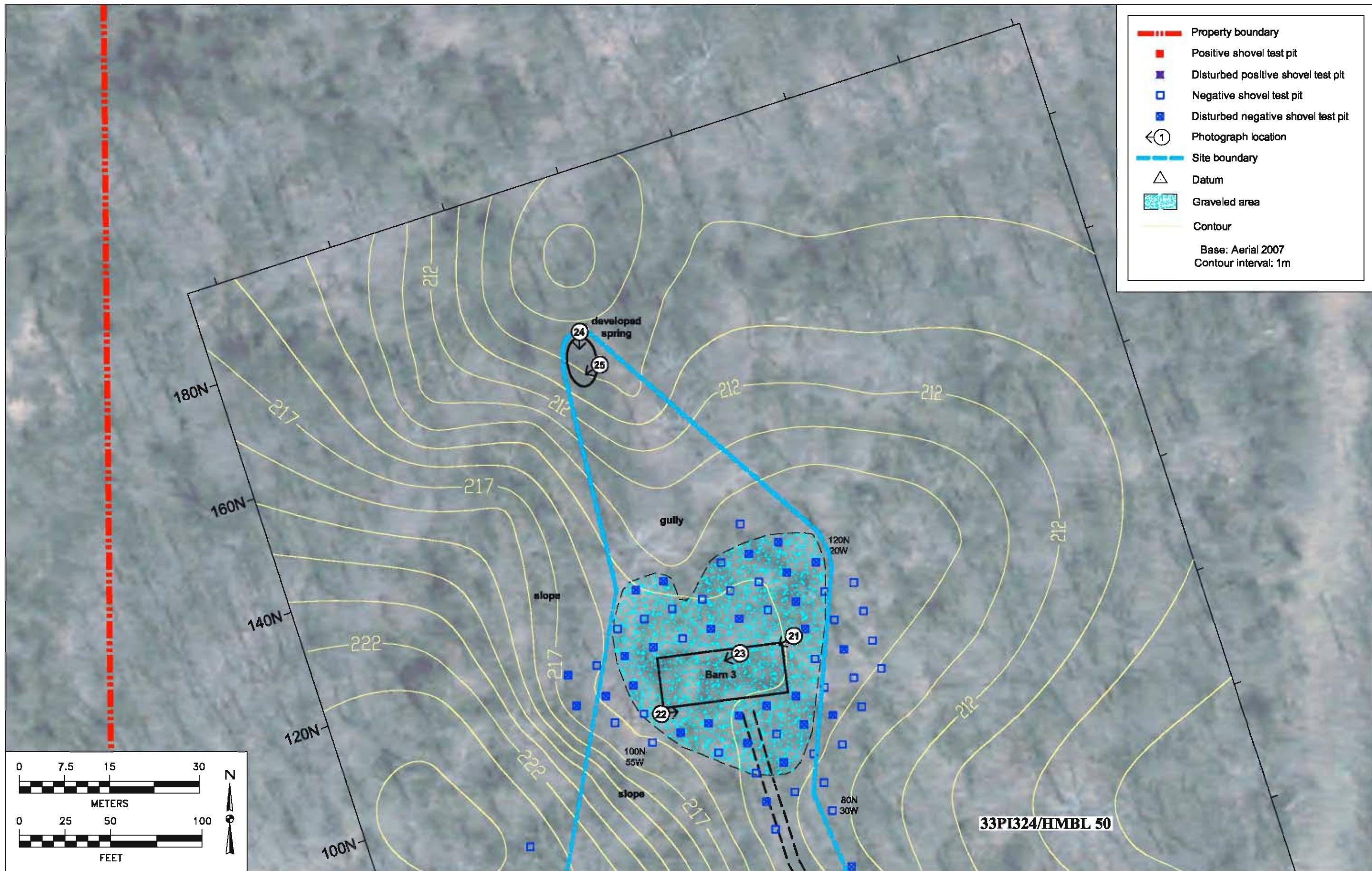


Figure 14. Topographic map of 33PK324 detailing the archaeological testing and keyed to Plates 14–27. (2 Sheets)

Figure 14  
Sheet 2 of 2

## **TABLES**

Table 1. Sites Documented by Schweikart et al. (1997).

OAI No.	Temporal Affiliation	Site Type	Site Size (m)	Landform	Comments
33PK184	ca. 1820-present	Farmstead	70 by 65	Hill/ridgetop	Further work recommended
33PK185	ca. 1900-present	Farmstead	70 by 35	Hill/ridgetop	Further work recommended
33PK186	Unassigned prehistoric	Lithic Scatter	15 by 145	Hill/ridgetop	Point fragment recovered
33PK187	ca. 1915-1951	Farmstead	10 by 23	Hill/ridgetop	Highly disturbed
33PK188	post-1952	Worker's barracks	140 by 85	Hill/ridgetop	Highly disturbed, plant related
33PK189; PIK-206-9	Unassigned prehistoric; historic ca. 1790-present	Isolated Find, Cemetery, Tower platform	55 by 50	Hilltop	Preservation recommended (for Cemetery & Chapel)
33PK190	post-1952	Radio tower	30 x 18	Hilltop	Highly disturbed, plant related
33PK191	ca. 1830s-present	Open dump	6 x 30	Intermittent stream bed	
33PK192	ca. 1900-present	Open dump	43 x 53	Hill/ridgetop	
33PK193	ca. 1820-present	Farmstead	55 x 135	Side slope/bench, intermittent stream bed	Further work recommended
33PK194	ca. 1820-present	Farmstead	110 by 150	Ridgetop	Further work recommended
33PK195	ca. 1820-present	Farmstead	73 by 55	Ridgetop	Further work recommended
33PK196	ca. 1952-present	Culvert and drain pipes	8 by 1	Intermittent steam bed	Plant-Related
33PK197	ca. 1951	Farmstead	35 by 30	First terrace	Further work recommended
33PK198	Unassigned Prehistoric	Isolated Find	1 by 1	Preglacial terrace	
33PK199	ca. 1820-present	Isolated Find	1 by 1	Preglacial terrace	
33PK200	ca. 1820-present	Historic Scatter	1 by 1	Preglacial terrace	
33PK201	ca. 1890-present	Isolated Find	1 by 1	Preglacial terrace	
33PK202	ca. 1934-present	Historic Scatter	15 by 15	First terrace	
33PK203	ca. 1820-present	Farmstead	140 by 150	First terrace	Further work recommended
33PK204	Unassigned Prehistoric	Isolated Find	1 by 1	Ridgetop	
33PK205	Unassigned Prehistoric	Isolated Find	1 by 1	Ridgetop	
33PK206	Unassigned Prehistoric, 1820-present	Lithic Scatter, Farmstead	120 by 172	First terrace	Further work recommended
33PK207	Unassigned Prehistoric	Isolated Find	1 by 1	Side slope, first terrace	

Table 1. Sites Documented by Schweikart et al. (1997).

OAI No.	Temporal Affiliation	Site Type	Site Size (m)	Landform	Comments
33PK208	Unassigned Prehistoric	Isolated Find	1 by 1	Ridgetop	Biface recovered
33PK209	1933–1964	Historic Scatter	1 by 1	Ridgetop	
33PK210	Unassigned Prehistoric	Lithic Scatter	15 by 15	Ridgetop	Further work recommended
33PK211	ca. 1890–1964	Farmstead	90 by 130	Ridgetop	Further work recommended
33PK212	ca.1931–present	Farmstead	152 by 76	First terrace	Further work recommended
33PK213	ca. 1820–present	Farmstead	14 by 9	Terrace and toe ridge	Further work recommended
33PK214 (PIK-207-12)	ca. 1877–mid 20th century	Cemetery	55 by 40	Hilltop	Preservation Recommended
33PK215	ca. 1820–present	Open Dump	12 by 6	Ridgetop	
33PK216	ca. 1879–present	Open Dump	6 by 5	Ridgetop	
33PK217	ca. 1820–present	Farmstead (Dairy)	185 by 85	Preglacial terrace and toe ridge	Further work recommended
33PK218 (PIK-205-12)	ca. 1820–present	Farmstead	155 by 75	Toe ridge	Further work recommended
33PK219	post-1952	Old Firing Range	70 by 75	Side slope and artificial bench	Plant-related site that is highly disturbed

Table 2. Historic Map Building Locations Information from Mustain and Klinge (2011).

<b>HMBL</b>	<b>OAI</b>	<b>UTM (NAD27) Easting</b>	<b>UTM (NAD27) Northing</b>	<b>ODNR, DGS 1905</b>	<b>15' TOPO</b>	<b>Aerial Photo 1938/1939</b>	<b>Aerial Photo 1951</b>	<b>AEC 1952</b>
4	33PK322	326853	4322487	Present	1917 Piketon	1939	Present	Present
5	33PK323	327108	4322473	Present	1908 Waverly	Absent	Absent	Absent
50	33PK324	325451	4319540	Absent	1917 Piketon	1938	Present	Present

Table 3. Site Datum Coordinates.

<b>OAI No.</b>	<b>Datum Number</b>	<b>State Plane (NAD83)</b>		<b>UTM Zone 17 (NAD27)</b>		<b>Site Grid</b>	
		<b>Northing</b>	<b>Easting</b>	<b>Northing</b>	<b>Easting</b>	<b>Northing</b>	<b>Easting</b>
33PK322	1	377811.545	1826261.870	4322487.922	326816.882	0.000	0.000
	2	377771.427	1826300.763	4322475.501	326828.524	-0.588	17.154
33PK323	1	377691.386	1827260.411	4322446.295	327120.597	0.000	0.000
	2	377692.585	1827284.585	4322446.539	327127.985	0.734	7.151
33PK324	1	368075.270	1821979.110	4319542.137	325462.853	0.000	0.000
	2	368108.724	1821955.680	4319552.450	325455.880	12.406	-3.932

Table 4. Artifacts Recovered from the STPs at 33PK32.

Functional Group	Artifact	Count
Architectural	Brick fragment	62
	Ceramic drain pipe fragment	10
	Concrete foundation rubble	2
	Glazed tile fragment	2
	Iron cut nail	15
	Iron nail	25
	Iron wire nail	5
	Mortar fragment	3
	Sandstone foundation fragment	3
	Window glass shard	63
<b>Architectural Total</b>		<b>190</b>
Kitchen	American yellowware sherd	3
	Ceramic colander fragment	1
	Drinking glass fragment	1
	Glass bottle fragment	26
	Glass vessel fragment	24
	Ironstone sherd	5
	Porcelain sherd	1
	Redware sherd	1
	Stoneware sherd	5
	Tin alloy can part	2
	Unidentified ceramic sherd	1
	Whiteware sherd	38
<b>Kitchen Total</b>		<b>108</b>
Miscellaneous Hardware	Brass staple or chain link	1
	Iron chain link	1
	Iron horseshoe	1
	Iron machine part	1
	Large iron drill bit	1
	Large iron strap	1
<b>Miscellaneous Hardware Total</b>		<b>6</b>
Unknown	Folded sheet iron	26
	Mammal bone fragment	2
	Plastic fragment	1
	Tooth	1
<b>Unknown Total</b>		<b>30</b>
<b>Grand Total</b>		<b>334</b>

Table 5. Temporally Diagnostic Artifacts Recovered from the STPs at 33PK322.

Artifact	Description	Decoration	Date Range	Reference	Count
American Yellowware sherd	Body sherd	Slip trailed, annular banding, brown and white	1840–1900	Magid 1984	1
	Body sherd, delaminating glaze	—	1840–1900	Magid 1984	2
<b>American Yellowware Sherd Total</b>					<b>3</b>
Glass bottle fragment	Body sherd	Color-applied label, “Franc....Pepsi C.....Cin.....”	1934–present	Jones and Sullivan 1989	5
	Closure and neck, applied tooled finish	—	late 1820s–early 1870s	Deiss 1981; McKearin 1978	1
<b>Glass Bottle Fragment Total</b>					<b>6</b>
Iron cut nail	Nail, cut	—	ca. 1790–1890s (peak production)	Gillio et al. 1980; Nelson 1968	13
	Nail, cut (large)	—	ca. 1790–1890s (peak production)	Gillio et al. 1980; Nelson 1968	1
	Nail, cut (two sides)	—	ca. 1790–1890s (peak production)	Gillio et al. 1980; Nelson 1968	1
<b>Iron Cut Nail Total</b>					<b>15</b>
Iron wire nail	Nail, wire	—	1890s–present (predominate)	Gillio et al. 1980	5
<b>Iron Wire Nail Total</b>					<b>5</b>
Ironstone sherd	Body sherd	—	1842–present	Magid 1984; Miller et al. 2000	1
	Body and foot ring sherd, bowl	Underglaze, applied decoration, blue - classical/Grecian scene	1842–present	Magid 1984; Miller et al. 2000	4
<b>Ironstone Sherd Total</b>					<b>5</b>
Stoneware sherd	Body sherd	Albany slip, interior and exterior	1825–ca. 1910	Stelle et al. 2001	1
		Albany slip, interior, Bristol glaze, exterior	1825–ca. 1910	Stelle et al. 2001	1
<b>Stoneware Sherd Total</b>					<b>2</b>
Whiteware sherd	Body sherd	Annular banding, green. Hand painted, floral, pastel green and red	ca. 1830–present	FLMNH 2004	1
		Hand painted, floral, red	ca. 1830–present	FLMNH 2004	2

Table 5. Temporally Diagnostic Artifacts Recovered from the STPs at 33PK322.

Artifact	Description	Decoration	Date Range	Reference	Count
Whiteware sherd		Hand painted, underglaze, blue	ca. 1850–present	Magid 1984	1
		Hand painted, underglaze, floral, purple	ca. 1850–present	Magid 1984	1
		Transfer print, underglaze, purple on exterior	ca. 1828–present	Magid 1984	2
		—	ca. 1820–present	Miller et al. 2000	8
	Body sherd, delaminating glaze	—	ca. 1820–present	Miller et al. 2000	2
	Body sherds (4), foot rim sherds (2), rim sherds (1) - plate	—	ca. 1820–present	Miller et al. 2000	7
	one body sherd, one foot ring sherd	—	ca. 1820–present	Miller et al. 2000	2
	Rim fragment	Blue transfer print	ca. 1820–present	Miller et al. 2000	1
	Rim sherd	Annular banding, green. Hand-painted, floral, pastel green and red	ca. 1830–present	FLMNH 2004	1
		Blue, scalloped rim, shell edged	ca. 1840s–ca. 1870s	Miller and Hunter 1990	1
		Edge decorated, blue	ca. 1820–present	Miller et al. 2000	1
		Green, shell-edged	ca. 1820–1850	Magid 1984	1
		—	ca. 1820–present	Miller et al. 2000	1
	Rim sherd, soup tureen or serving dish	Transfer print, red around everted rim	ca. 1828–present	Magid 1984	1
	Foot ring fragment, plate or shallow bowl	Hand painted, underglaze, floral, red, blue, and green	ca. 1830–present	FLMNH 2004	3
<b>Whiteware Sherd Total</b>					<b>36</b>
Window glass shard	Fragment, plate glass	—	ca. 1830–present		50
<b>Window Glass Shard Total</b>					<b>50</b>
<b>Grand Total</b>					<b>122</b>

Table 6. Artifacts Recovered from the STPs at 33PK323.

Functional Group	Artifact	Count
Architectural	Brick fragment	19
	Mortar fragment	29
	Window glass shard	19
<b>Architectural Total</b>		<b>67</b>
Fuel and Energy	Coal fragment	40
<b>Fuel and Energy Total</b>		<b>40</b>
Kitchen	Glass bottle fragment	2
	Glass vessel fragment	1
	Ironstone sherd	2
	Milk glass canning jar lid liner fragment	4
	Whiteware sherd	2
<b>Kitchen Total</b>		<b>11</b>
Personal	Glass ink well fragment	1
<b>Personal Total</b>		<b>1</b>
<b>Grand Total</b>		<b>119</b>

Table 7. Temporally Diagnostic Artifacts Recovered from the STPs at 33PK323.

Artifact	Description	Decoration	Date Range	Reference	Count
Ironstone sherd	Crock fragment, rim sherd	—	1842–present	Magid 1984; Miller et al. 2000	1
	Cup fragment, foot rim	—	1842–present	Magid 1984; Miller et al. 2000	1
<b>Ironstone Sherd Total</b>					<b>2</b>
Milk glass canning jar lid liner fragment	Canning jar lid liner fragment	Embossed FOR”	1869–present	Miller et al. 2000	1
		Embossed S” on one fragment	1869–present	Miller et al. 2000	2
	Canning jar lid liner fragment, melted	—	1869–present	Miller et al. 2000	1
<b>Milk Glass Canning Jar Lid Liner Fragment Total</b>					<b>4</b>
Whiteware sherd	Body fragment	—	ca. 1820–present	Miller et al. 2000	1
	Fragment	—	ca. 1820–present	Miller et al. 2000	1
<b>Whiteware Sherd Total</b>					<b>2</b>
Glass ink well fragment	Bottle base, three-piece mold, sand-tipped pontil scar	Embossed –CARTER’S” around inside of kick-up, embossed –1897” in center of kick-up	1895–1949	Covill 1971	1
<b>Glass Ink Well Fragment Total</b>					<b>1</b>
<b>Grand Total</b>					<b>9</b>

Table 8. Artifacts Recovered from the STPs at 33PK324.

Functional Group	Artifact	Count
Agricultural	Iron barbed wire fence fragment	6
<b>Agricultural Total</b>		<b>6</b>
Architectural	Brick fragment	29
	Iron nail	4
	Iron wire nail	4
	Window glass shard	6
<b>Architectural Total</b>		<b>43</b>
Furniture	Glass ashtray fragment	1
	Redware flower pot fragment	1
<b>Furniture Total</b>		<b>2</b>
Kitchen	Delft ware sherd	1
	Drinking glass fragment	1
	Glass bottle fragment	19
	Glass vessel fragment	25
	Iron key and metal strip from key opening can	1
	Ironstone sherd	1
	Milk glass canning jar lid liner fragment	1
	Redware sherd	1
	Stoneware sherd	2
	Whiteware sherd	3
<b>Kitchen Total</b>		<b>55</b>
Miscellaneous Hardware	Iron file or rasp fragment	1
	Iron railroad spike	1
	Iron strap hinge fragment	1
<b>Miscellaneous Hardware Total</b>		<b>3</b>
<b>Grand Total</b>		<b>109</b>

Table 9. Temporally Diagnostic Artifacts Recovered from the STPs at 33PK324.

Artifact	Description	Decoration	Date Range	Reference	Count
Delft ware sherd	Body sherd, tin-enameled ware (delft ware?)	—	1640–ca.1800	Noel Hume 1970	1
<b>Delft ware sherd Total</b>					<b>1</b>
Glass vessel fragment	Rim and neck fragment, screw thread closure, machine-made	—	1858–present	Miller et al. 2000	2
<b>Glass vessel fragment Total</b>					<b>2</b>
Iron barbed wire fence fragment	Barbed wire, double strand, Burnell Four Point or Ross Twist Four Point	—	1887–present	National Park Service 2011	6
<b>Iron barbed wire fence fragment Total</b>					<b>6</b>
Iron key and metal strip from key opening can	Key type opener, typically canned meat, with curled strip of iron can	—	1866–present	Osterhoudt 1866	1
<b>Iron key and metal strip from key opening can Total</b>					<b>1</b>
Iron wire nail	Nail, wire	—	1890s–present (predominate)	Gillio et al. 1980	4
<b>Iron wire nail Total</b>					<b>4</b>
Ironstone sherd	Rim sherd, broad bowl or serving vessel	Overglaze transfer print, floral (green and red)	1842–present	Magid 1984; Miller et al. 2000	1
<b>Ironstone sherd Total</b>					<b>1</b>
Milk glass canning jar lid liner fragment	Canning jar lid liner fragment	Embossed BOY" near edge	1869–present	Miller et al. 2000	1
<b>Milk glass canning jar lid liner fragment Total</b>					<b>1</b>
Stoneware sherd	Body sherd, rilled interior	Albany slip interior, Bristol glaze exterior	1825–ca. 1910	Stelle et al. 2001	1
<b>Stoneware sherd Total</b>					<b>1</b>
Whiteware sherd	Body sherd	—	ca. 1820–present	Miller et al. 2000	1
	Body sherd, foot rim, plate or small plate	—	ca. 1820–present	Miller et al. 2000	1
	Rim fragment	Blue transfer print	ca. 1820–present	Miller et al. 2000	1
<b>Whiteware sherd Total</b>					<b>3</b>
<b>Grand Total</b>					<b>20</b>

## **PLATES**



Plate 1. Overview of 33PK322 at HMBL 4; facing south-southeast.



Plate 2. Fill along the west edge of 33PK322; facing west-southwest.



Plate 3. Stone foundation wall in STP 25N,15E along the west edge of the house at 33PK322; facing west.



Plate 4. Collapsed stone-pier foundation along the east edge of the house at 33PK322; facing northeast.



Plate 5. Raised platform foundation for stove in the house at 33PK322; facing north-northwest.



Plate 6. Concrete pad along the north (back) side of the house foundation at 33PK322; facing north.



Plate 7. Sandstone step along the south (front) side of the house foundation at 33PK322; facing north-northeast.



Plate 8. Foundation remnant of Outbuilding 2 at 33PK322; facing east.



Plate 9. Foundation remnant of Outbuilding 3 at 33PK322; facing northeast.



Plate 10. Foundation remnant of Outbuilding 1 at 33PK322; facing northeast.



Plate 11. Overview of 33PK323; facing north.



Plate 12. Flattened area at 33PK323; facing west.

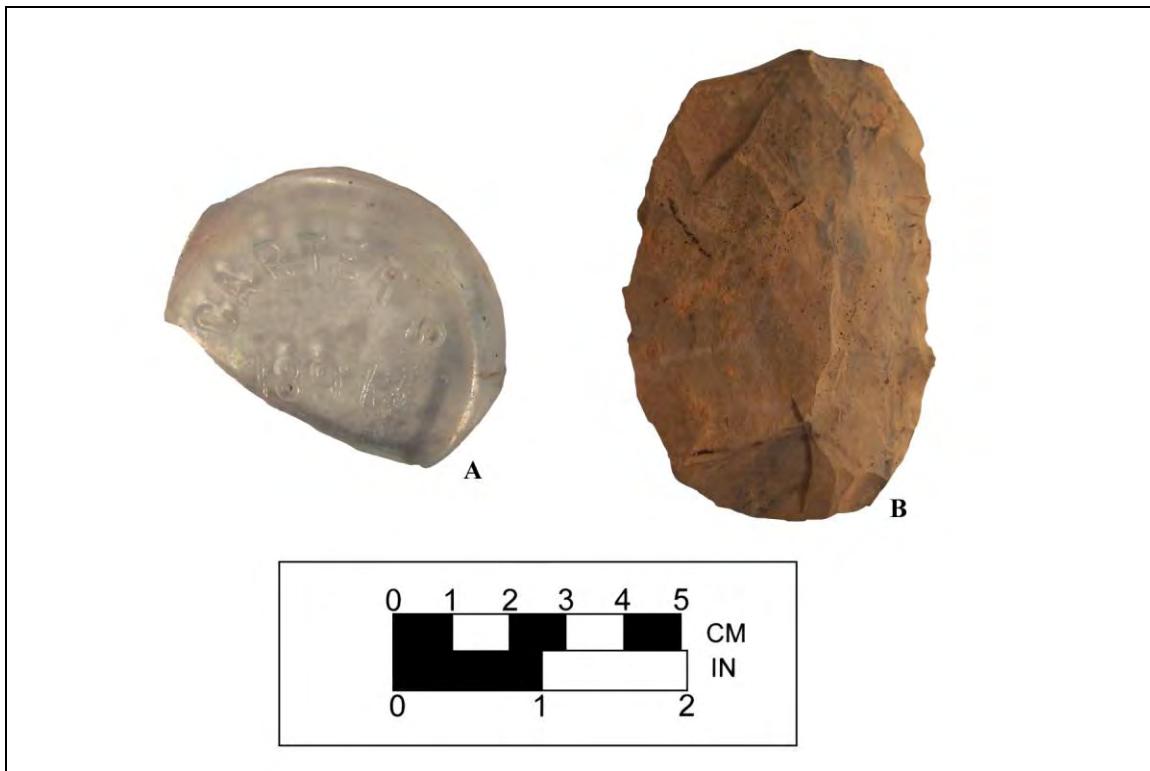


Plate 13. Selected artifacts recovered from 33PK323: A) glass ink well fragment; B) Columbus/Delaware chert preform.



Plate 14. Overview of the cluster of building and structure remnants in the southeast part of 33PK324 showing Barn 1; facing west-northwest.



Plate 15. Remnant of silo at 33PK324; facing west-northwest.



Plate 16. Foundation remnant of outbuilding at 33PK324; facing west.



Plate 17. Concrete trough at 33PK324; facing west.



Plate 18. Foundation remnant of Barn 2 at 33PK324; facing northwest.



Plate 19. Foundation remnant of Barn 2 at 33PK324; facing southeast.



Plate 20. Stack of concrete edging near Barn 2 at 33PK324; facing southeast.



Plate 21. Foundation remnant of Barn 3 at 33PK324; facing west-southwest.



Plate 22. Foundation remnant of Barn 3 at 33PK324; facing east.



Plate 23. Floor of Barn 3 foundation remnant showing interior walls and machine pad; facing west-southwest.



Plate 24. Developed spring and northern cistern at 33PK324; facing south.



Plate 25. Southern cistern near the developed spring at 33PL324; facing southwest.



Plate 26. Large pieces of concrete at the east end of a line of foundation rubble at 33PK324; facing northeast.



Plate 27. Concrete blocks at the west end of a line of foundation rubble at 33PK324; facing west-southwest.

## **APPENDIX A: ARTIFACT CATALOG**

Appendix A-1: Artifact Analysis for 33PK322.

ASC Bag #	Context	North East Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference	
1	STP	0	30	ML	0-30	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Body sherd, delaminating glaze	1	ca. 1820-present	Miller et al. 2000	
2	STP	5	30	ML	0-30	Architectural	Iron nail	Metal	Iron	Hardware	Nail, unidentified type	1			
2	STP	5	30	ML	0-30	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Body sherd, delaminating glaze	1	ca. 1820-present	Miller et al. 2000	
2	STP	5	30	ML	0-30	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Foot rim fragment	1			
3	STP	15	30	A	0-26	-	-	Lithic	Sample	Sample	Lithic sample - DISCARDED	One possible slate shingle fragment	D		
4	STP	30	30	A	0-18	Unknown	Tooth	Faunal	Tooth	Unidentified species	Bicuspid, one root, fractured vertically	1			
4	STP	30	30	A	0-18	Architectural	Iron cut nail	Metal	Iron	Hardware	Nail, cut		3	ca. 1790-1890s (peak production)	
4	STP	30	30	A	0-18	Kitchen	American Yellowware sherd	Ceramic	Refined Earthenware	American Yellowware	Body sherd, delaminating glaze	2	1840-1900	Magid 1984	
4	STP	30	30	A	0-18	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Body sherd	Hand painted, underglaze, floral, purple	1	ca. 1850-present	Magid 1984
4	STP	30	30	A	0-18	Kitchen	Window glass shard	Glass	Window	Colorless	Fragment		1	ca. 1790-1890s (peak production)	Magid 1984
5	STP	35	30	A	0-21	Architectural	Iron cut nail	Metal	Iron	Hardware	Nail, cut		1	ca. 1790-1890s (peak production)	Magid 1984
6	STP	40	30	A	0-11	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Rim fragment, possible drinking glass/wine glass		1		
6	STP	40	30	A	0-11	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Body fragment	Blue enameled on obverse, unglazed on reverse	3		
7	STP	25	35	A	0-24	Architectural	Glazed tile fragment	Ceramic	Buff-bodied earthenware	Architectural	Kitchen/bathroom tile fragment		1		

Appendix A-1: Artifact Analysis for 33PK322.

ASC Bag #	Context	North Level	East Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference
7	STP	25	35	A	0-24	Architectural	Glass	Window	Clear	Fragment			1		
7	STP	25	35	A	0-24	Architectural	Iron nail	Metal	Iron	Hardware	Nail, unidentified type		1		
7	STP	25	35	A	0-24	Kitchen	Glass vessel fragment	Glass	Vessel	Aqua	Body fragment		2		
7	STP	25	35	A	0-24	Kitchen	Glass vessel fragment	Glass	Vessel	Aqua	Rim and neck fragment, screw thread closure, machine-made		2		
8	STP	10	35	A	0-16	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Rim fragment	Blue transfer print	1	ca. 1820–present	Miller et al. 2000
9	STP	25	30	A	0-24	Architectural	Iron cut nail	Metal	Iron	Hardware	Nail, cut (two sides)		1	ca. 1790–1890s (peak production)	Fillio et al. 1980; Nelson 1968
10	STP	5	15	A	0-19	Architectural	Iron cut nail	Metal	Iron	Hardware	Nail, cut		1	ca. 1790–1890s (peak production)	Fillio et al. 1980; Nelson 1968
11	STP	15	15	A	0-19	Kitchen	Glass bottle fragment	Glass	Bottle	Colorless	Body fragment, blown-in-mold, possible pharmaceutical bottle		1		
12	STP	20	15	A	0-14	Architectural	Iron nail	Metal	Iron	Hardware	Nail, unidentified type		2		
12	STP	20	15	A	0-14	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Body sherd	Hand painted, underglaze, blue	1	ca. 1850–present	Magid 1984
13	STP	30	15	A	0-14	Architectural	Iron wire nail	Metal	Iron	Hardware	Nail, wire		1	1890s–present (predominate)	Fillio et al. 1980
13	STP	30	15	A	0-14	Architectural	Iron nail	Metal	Iron	Hardware	Nail, unidentified type		2		
13	STP	30	15	A	0-14	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Body fragment		1		
14	STP	35	15	A	0-17	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Rim sherd	Green, shell edged	1	ca. 1820–1850	Magid 1984
14	STP	35	15	A	0-17	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Body fragment		1		

Appendix A-1: Artifact Analysis for 33PK322.

ASC Bag #	Context	North East Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference
15	STP	20	35	A	0-19	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Body sherd	Blue, sponge decorated	1	
15	STP	20	35	A	0-19	Kitchen	Ironstone sherd	Ceramic	Refined Earthenware	Ironstone	Body sherd		1	1842-present
15	STP	20	35	A	0-19	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Rim sherd	Blue, scalloped rim, shell edged	1	ca. 1840s-ca. 1870s
16	STP	40	35	ML	0-20	Architectural	Iron nail	Metal	Iron	Hardware	Nail, unidentified type		1	
17	STP	0	20	A	0-20	Miscellaneous Hardware	Brass staple or chain link	Metal	Brass/Coppe r	Hardware	Staple or broken chain link (?)		1	
17	STP	0	20	A	0-20	Kitchen	Ceramic colander fragment	Ceramic	Coarse Earthenware	Buff-bodied	Body sherd, delaminated - possible colander or strainer	Lead glaze	1	
18	STP	20	15	A	0-25	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Rim sherd	Annular banding, green. Hand painted, floral, pastel green and red	1	ca. 1830-present
18	STP	20	15	A	0-25	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Body sherd		1	ca. 1820-present
19	STP	20	20	ML	0-15	Kitchen	Glass bottle fragment	Glass	Bottle	Colorless	Color-applied label, "Franc...Pe psi C....Cin...."		5	1934-present
20	STP	25	20	A	15-25	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		1	

Appendix A-1: Artifact Analysis for 33PK322.

ASC Bag #	Context	North East Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference	
21	STP	40	20	A	5-10	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Body sherd	1	ca. 1830–present	FLMNH 2004	
21	STP	40	20	A	5-10	Architectural	Window glass shard	Glass	Window	Colorless	Annular banding, green. Hand painted, floral, pastel green and red	1			
22	STP	35	35	A	10-20	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment	1			
23	STP	15	35	A	10-23	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment	3			
23	STP	15	35	A	10-23	Kitchen	American Yellowware sherd	Ceramic	Refined Earthenware	American Yellowware	Body sherd	Slip trailed, annular banding, brown and white	1	1840–1900	Magid 1984
23	STP	15	35	A	10-23	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Body sherd	Hand-painted, floral, red	2	ca. 1830–present	FLMNH 2004
23	STP	15	35	A	10-23	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Rim sherd	Edge decorated, blue	1	ca. 1820–present	Miller et al. 2000
23	STP	15	35	A	10-23	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Body fragment	1			
23	STP	15	35	A	10-23	Kitchen	Glass bottle fragment	Glass	Bottle	Green	Body fragment, blown-in-mold	1			
24	STP	0	25	A	0-25	Kitchen	Glass bottle fragment	Glass	Bottle	Green	Bottle closure and neck, cork closure, molded finish, fire polished	1			
25	STP	5	25	A	0-29	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Body sherd	1	ca. 1820–present	Miller et al. 2000	
26	STP	10	25	A	0-25	Kitchen	Stoneware sherd	Ceramic	Stoneware	Grey-bodied	Bottle closure, two-piece mold, poor quality	1			

Appendix A-1: Artifact Analysis for 33PK322.

ASC Bag #	Context	North East Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference
26	STP	10	25	A	0-25	Kitchen	Redware sherd	Ceramic	Refined Earthenware	Utilitarian Redware	Body fragment	1		
27	STP	15	25	A	0-25	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	one body sherd, one foot ring sherd	2	ca. 1820-present	Miller et al. 2000
27	STP	15	25	A	0-25	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Body fragment	1		
28	STP	20	25	A	0-28	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Body sherds (4), foot rim sherds (2), rim sherds (1) - plate	7	ca. 1820-present	Miller et al. 2000
28	STP	20	25	A	0-28	Architectural	Window glass shard	Glass	Window	Colorless	Fragment	2		
28	STP	20	25	A	0-28	Kitchen	Glass bottle fragment	Glass	Bottle	Colorless	Shoulder fragment, glass disease	1		
28	STP	20	25	A	0-28	Unknown	Mammal bone fragment	Faunal	Bone	Unidentified Species	Medium-mammal	2		
29	STP	25	25	A	0-29	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Body sherd	2	ca. 1828-present	Magid 1984
29	STP	25	25	A	0-29	Architectural	Window glass shard	Glass	Window	Colorless	Transfer print, underglaze, purple on exterior			
30	STP	30	25	A	0-5	Kitchen	Glass bottle fragment	Glass	Bottle	Colorless	Fragment	1		
31	STP	30	35	A	0-30	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Body fragment (modern)	12		
32	STP	30	35	A	0-30	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Body sherd	1	ca. 1820-present	Miller et al. 2000
32	STP	30	35	A	0-30	Miscellaneous Hardware	Large iron drill bit	Metal	Iron	Hardware	Drill, auger - large	1		

Appendix A-1: Artifact Analysis for 33PK322.

ASC Bag #	Context	North East Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference	
33	STP	40	40	A	0-18	Architectural	Iron cut nail	Metal	Iron	Hardware	Nail, cut		1	ca. 1790-1890s (peak production)	Gillio et al. 1980; Nelson 1968
34	STP	35	45	A	0-20	Architectural	Iron nail	Metal	Iron	Hardware	Nail, unidentified type		1		
34	STP	35	45	A	0-20	Architectural	Ceramic drain pipe fragment	Ceramic	Coarse Earthenware	Buff-bodied	Drain pipe/sewer pipe fragment		1		
34	STP	35	45	A	0-20	Architectural	Ceramic drain pipe fragment	Ceramic	Coarse Earthenware	Utilitarian Redware	Drain pipe/sewer pipe fragment		2		
34	STP	35	45	A	0-20	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		8		
35	STP	30	50	A	11-25	Architectural	Iron cut nail	Metal	Iron	Hardware	Nail, cut		2	ca. 1790-1890s (peak production)	Gillio et al. 1980; Nelson 1968
35	STP	30	50	A	11-25	Architectural	Iron wire nail	Metal	Iron	Hardware	Nail, wire		3	1890s-present (predominate)	Gillio et al. 1980
35	STP	30	50	A	11-25	Architectural	Iron nail	Metal	Iron	Hardware	Nail, unidentified type		2		
35	STP	30	50	A	11-25	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		2		
35	STP	30	50	A	11-25	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Rim sherd		1	ca. 1820-present	Miller et al. 2000
35	STP	30	50	A	11-25	Kitchen	Drinking glass fragment	Glass	Drinking	Tumbler	Press-molded, body fragment		1		
36	STP	50	25	A	10-20	Architectural	Ceramic drain pipe fragment	Ceramic	Coarse Earthenware	Buff-bodied	Drain pipe/sewer pipe fragment		5		
37	STP	50	20	A	5-15	Architectural	Glazed tile fragment	Ceramic	Buff-bodied earthenware	Architectural	Kitchen/bathroom tile fragment	Blue enameled on obverse, unglazed on reverse	1		

Appendix A-1: Artifact Analysis for 33PK322.

ASC Bag #	Context	North East Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference
38	STP	10	15	A	15-22	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Body fragment		2	
38	STP	10	15	A	15-22	Miscellaneous Hardware	Iron machine part	Metal	Iron	Hardware	Unidentified object - machine part (?)		1	
39	STP	5	15	A	15-25	Architectural	Iron nail	Metal	Iron	Hardware	Nail, unidentified type		1	
40	STP	5	25	A	10-20	Architectural	Iron nail	Metal	Iron	Hardware	Nail, unidentified type		2	
40	STP	5	25	A	10-20	Unknown	Plastic fragment	Synthetic	Plastic	Unidentified	Fragment	Blue	1	
41	STP	40	10	A	0-20	Architectural	Iron nail	Metal	Iron	Hardware	Nail, unidentified type		2	
42	STP	35	40	A	0-20	Kitchen	Stoneware sherd	Ceramic	Stoneware	Grey-bodied	Rim sherd, crock	Lead-glazed around rim, interior/exterior unglazed		
43	STP	25	40	A	0-25	Kitchen	Glass bottle fragment	Glass	Bottle	Colorless	Neck fragment	Embossed curlicue	1	
43	STP	25	40	A	0-25	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Body fragment		1	
43	STP	25	40	A	0-25	Architectural	Window glass shard	Glass	Window	Colorless	Fragment, plate glass		1	ca. 1830-present
44	STP	25	45	A	0-29	Architectural	Iron cut nail	Metal	Iron	Hardware	Nail, cut		1	ca. 1790-1890s (peak production)
45	STP	20	40	A	0-29	Miscellaneous Hardware	Iron chain link	Metal	Iron	Hardware	Chain-link or coupling, large		1	
45	STP	20	40	A	0-29	Architectural	Ceramic drain pipe fragment	Ceramic	Coarse Earthenware	Utilitarian Redware	Drain pipe/sewer pipe fragment		1	
45	STP	20	40	A	0-29	Architectural	Window glass shard	Glass	Window	Colorless	Fragment		1	
45	STP	20	40	A	0-29	Kitchen	Stoneware sherd	Ceramic	Stoneware	Grey-bodied	Body sherd, crock	Salt-glazed exterior, unglazed interior	1	
45	STP	20	40	A	0-29	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Body sherd		2	ca. 1820-present
														Miller et al. 2000

Appendix A-1: Artifact Analysis for 33PK322.

ASC Bag #	Context	North Level	East Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference
45	STP	20	40	A	0-29	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Rim sherd, soup tureen or serving dish	Transfer print, red around everted rim	1	ca. 1828–present	Magid 1984
46	STP	20	10	A	0-25	Kitchen	Ironstone sherd	Ceramic	Refined Earthenware	Ironstone	Body and foot ring sherd, bowl	Underglaze, applied decoration, blue - classical/Grecian scene	4	1842–present	Magid 1984; Miller et al. 2000
46	STP	20	10	A	0-25	Architectural	Ceramic drain pipe fragment	Ceramic	Coarse Earthenware	Utilitarian Redware	Drain pipe/sewer pipe fragment		1		
47	STP	20	5	A	0-26	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Foot ring fragment, plate or shallow bowl	Hand painted, underglaze, floral, red, blue, and green	3	ca. 1830–present	FLMNH 2004
48	STP	25	10	A	0-29	Miscellaneous Hardware	Iron horseshoe	Metal	Iron	Hardware	Horseshoe		1		
49	STP	30	10	A	0-20	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Body fragment		2		
49	STP	30	10	A	0-20	Architectural	Window glass shard	Glass	Window	Colorless	Fragment		3		
49	STP	30	10	A	0-20	Kitchen	Glass bottle fragment	Glass	Bottle	Colorless	Body and shoulder fragment, possible multi-sided (polygonal) flask		1		
50	STP	35	10	A	0-30	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Body fragment		2		
50	STP	35	10	A	0-30	Kitchen	Porcelain sherd	Ceramic	Porcelain	Semi-vitreous	Body sherd		1		
50	STP	35	10	A	0-30	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Rim sherd	Edge decorated, molded pattern	1		
51	STP	30	20	A	0-20	Architectural	Window glass shard	Glass	Window	Colorless	Fragment, plate glass		14	ca. 1830–present	

Appendix A-1: Artifact Analysis for 33PK322.

ASC Bag #	Context	North Level	East Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference
51	STP	30	80	A	0-20	Architectural	Iron cut nail	Metal	Iron	Hardware	Nail, cut (large)		1	ca. 1790-1890s (peak production)	Gillio et al. 1980; Nelson 1968
51	STP	30	80	A	0-30	Unknown	Folded sheet iron	Metal	Iron	Unidentified	Folded sheet iron		7		
52	STP	30	80	A	0-30	Architectural	Window glass shard	Glass	Window	Colorless	Fragment, plate glass		32	ca. 1830-present	
52	STP	30	80	A	0-30	Unknown	Folded sheet iron	Metal	Iron	Unidentified	Folded sheet iron		5		
52	STP	30	80	A	0-30	Architectural	Iron nail	Metal	Iron	Hardware	Nail, unidentified type		3		
53	STP	20	80	A	0-21	Architectural	Window glass shard	Glass	Window	Colorless	Fragment, plate glass		2	ca. 1830-present	
53	STP	20	80	A	0-21	Unknown	Folded sheet iron	Metal	Iron	Unidentified	Folded sheet iron		14		
54	STP	40	45	A	0-16	Architectural	Iron cut nail	Metal	Iron	Hardware	Nail, cut		1	ca. 1790-1890s (peak production)	Gillio et al. 1980; Nelson 1968
55	STP	40	50	A	0-11	Architectural	Iron nail	Metal	Iron	Hardware	Nail, unidentified type		4		
55	STP	40	50	A	0-11	Kitchen	Glass vessel fragment	Glass	Vessel	Soda	Body fragment, possible drinking glass		1		
56	STP	30	45	A	0-17	Kitchen	Glass vessel fragment	Glass	Vessel	Aqua	Body fragment		1		
56	STP	30	45	A	0-17	Architectural	Iron wire nail	Metal	Iron	Hardware	Nail, wire		1	1890s-present (predominate)	Gillio et al. 1980
57	STP	35	50	A	0-20	Architectural	Window glass shard	Glass	Window	Colorless	Fragment, plate glass		1	ca. 1830-present	
57	STP	35	50	A	0-20	Architectural	Iron nail	Metal	Iron	Hardware	Nail, unidentified type		1		
57	STP	35	50	A	0-20	Kitchen	Tin alloy can part	Metal	Tin alloy	Unidentified	Possible can parts		2		
58	STP	10	40	A	0-26	Kitchen	Glass bottle fragment	Glass	Bottle	Green	Closure and neck, applied tooled finish		1	late 1820s-early 1870s	Deiss 1981; McKearin and Wilson 1978
59	STP	10	10	A	0-23	Kitchen	Glass bottle fragment	Glass	Bottle	Aqua	Base fragment		1		

Appendix A-1: Artifact Analysis for 33PK322.

ASC Bag #	Context	North Level	East Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference
59	STP	10	10	A	0-23	Architectural	Iron cut nail	Metal	Iron	Hardware	Nail, cut		1	ca. 1790-1890s (peak production)	Gillio et al. 1980; Nelson 1968
60	STP	10	5	A	0-23	Kitchen	Stoneware sherd	Ceramic	Stoneware	Buff-bodied	Body sherd		1	1825-ca. 1910	Stelle et al. 2001
61	STP	0	10	A	0-30	Architectural	Iron cut nail	Metal	Iron	Hardware	Nail, cut		1	ca. 1790-1890s (peak production)	Gillio et al. 1980; Nelson 1968
61	STP	0	10	A	0-30	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Body sherd		1	ca. 1820-present	Miller et al. 2000
61	STP	0	10	A	0-30	Architectural	Window glass shard	Glass	Window	Colorless	Fragment		2		
61	STP	0	10	ML	0-30	Kitchen	Glass bottle fragment	Glass	Bottle	Colorless	Body sherd	Embossed “...BLDS...” S....B8T...”	1		
62	STP	30	5	ML	0-30	Architectural	Iron cut nail	Metal	Iron	Hardware	Nail, cut		1	ca. 1790-1890s (peak production)	Gillio et al. 1980; Nelson 1968
62	STP	30	5	ML	0-30	Architectural	Window glass shard	Glass	Window	Colorless	Fragment		1		
62	STP	30	5	ML	0-30	Kitchen	Stoneware sherd	Ceramic	Stoneware	Grey-bodied	Body sherd		1	1825-ca. 1910	Stelle et al. 2001
63	STP	35	5	ML	0-30	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Body sherd		2	ca. 1820-present	Miller et al. 2000
63	STP	35	5	ML	0-30	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Body fragment		1		
64	STP	40	5	ML	0-30	Architectural	Iron nail	Metal	Iron	Hardware	Nail, unidentified type		1		
65	STP	30	60	A	0-22	Kitchen	Unidentified ceramic sherd	Ceramic	Refined Earthenware	Unidentified	Body sherd		1		
66	STP	45	35	A	0-5	Miscellaneous Hardware	Large iron strap	Metal	Iron	Hardware	Large strap/bracket, machine part? (1.5 in wide, 37 in long)		1		

Appendix A-1: Artifact Analysis for 33PK322.

ASC Bag #	Context	North East Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference
-	STP	10	30	A	0-22	Architectural	Mortar fragment	Mineral	Mortar	Lime	Fragment		3	
47	STP	20	5	A	0-26	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		5	
46	STP	20	10	A	0-25	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		5	
15	STP	20	35	A	0-19	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		10	
-	STP	25	15	ML	Surface	Architectural	Sandstone foundation fragment	Stone	Sandstone	Architectural	Foundation stone fragment		3	
-	STP	25	15	ML	Surface	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		5	
44	STP	25	45	A	0-29	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		5	
-	STP	40	15	ML	Surface	Architectural	Concrete foundation rubble	Mineral	Concrete	Poured	Foundation Rubble		2	
16	STP	40	35	ML	0-20	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		15	

Appendix A-2: Artifact Analysis for 33PK323.

ASC Bag #	Context	North East Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference
1	STP	35	-5	ML	5-15	Architectural	Window glass shard	Glass	Window	Colorless	Fragment	1		
1	STP	35	-5	ML	5-15	Architectural	Window glass shard	Glass	Window	Aqua	Fragment	1		
2	STP	20	-35	A	10-20	Prehistoric	Columbus/D elaware chert preform	Lithic	Chert biface	Columbus/Delta ware	Preform; 89.9 grams, 72.5 mm x 47 mm	1		
3	STP	20	-25	A	10-18	Architectural	Window glass shard	Glass	Window	Colorless	Fragment	2		
4	STP	15	-25	A	0-25	Kitchen	Ironstone sherd	Ceramic	Refined Earthenware	Ironstone	Cup fragment, foot rim	1	1842-present	Magid 1984; Miller et al. 2000
5	STP	15	-30	A	0-27	Architectural	Window glass shard	Glass	Window	Colorless	Fragment	1		
6	STP	25	-10	ML	0-22	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Body fragment	1		
6	STP	25	-20	A	0-22	Kitchen	Milk glass canning jar lid liner fragment	Glass	Lid Liner	Milk glass	Canning jar lid liner fragment	1	1869-present	Miller et al. 2000
7	STP	25	-15	A	0-18	Architectural	Brick fragment	Ceramic	Brick	Architectural	Embossed "FOR"	1		
7	STP	25	-15	A	0-18	Kitchen	Ironstone sherd	Ceramic	Refined Earthenware	Ironstone	Crock fragment, rim sherd	1	1842-present	Magid 1984; Miller et al. 2000
7	STP	25	-15	A	0-18	Architectural	Window glass shard	Glass	Window	Colorless	Fragment	1		
8	STP	20	-25	A	0-23	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Fragment	1	ca. 1820-present	Miller et al. 2000
9	STP	35	-25	A	0-18	Kitchen	Glass bottle fragment	Glass	Bottle	Pharmaceutical	Bottle base, two part mold, glass-tipped pontil scar	1		
9	STP	35	-25	A	0-18	Architectural	Window glass shard	Glass	Window	Colorless	Fragment	5		

Appendix A-2: Artifact Analysis for 33PK323.

ASC Bag #	Context	North East Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference	
10	STP	30	-15	A	0-20	Architectural	Mortar fragment	Mineral	Mortar	Lime	Fragment		2		
10	STP	30	-15	A	0-20	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		1		
10	STP	30	-15	A	0-20	Architectural	Window glass shard	Glass	Window	Colorless	Fragment		2		
11	STP	30	-20	A	0-20	Architectural	Mortar fragment	Mineral	Mortar	Lime	Fragment		1		
11	STP	30	-20	A	0-20	Architectural	Window glass shard	Glass	Window	Colorless	Fragment		1		
11	STP	30	-20	A	0-20	Personal	Glass ink well fragment	Glass	Ink well	Colorless	Bottle base, three-piece mold, sand-tipped pontil scar		1	1895-1949	Covill 1971
12	STP	40	-10	A	0-30	Architectural	Mortar fragment	Mineral	Mortar	Lime	Fragment		1		
12	STP	40	-10	A	0-30	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		1		
13	STP	40	-25	A	0-30	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Body fragment		1	ca. 1820-present	Miller et al. 2000
14	STP	45	-20	A	0-22	Architectural	Window glass shard	Glass	Window	Colorless	Fragment		1		
14	STP	45	-20	A	0-22	Kitchen	Milk glass canning jar lid liner fragment	Glass	Lid Liner	Milk glass	Canning jar lid liner fragment		2	1869-present	Miller et al. 2000
14	STP	45	-20	A	0-22	Kitchen	Milk glass canning jar lid liner fragment	Glass	Lid Liner	Milk glass	Canning jar lid liner fragment, melted		1	1869-present	Miller et al. 2000

Appendix A-2: Artifact Analysis for 33PK323.

ASC Bag #	Context	North Ing	East Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference
15	STP	50	-10	A	20-30	Kitchen	Glass bottle fragment	Glass	Bottle	Green	Body fragment	Embossed vertical lines	1		
16	STP	55	-15	A	10-15	Architectural	Window glass shard	Glass	Window	Colorless	Fragment		3		
16	STP	55	-15	A	10-15	Architectural	Window glass shard	Glass	Window	Aqua	Fragment		1		
16	STP	55	-15	A	10-15	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		1		
-	STP	35	-20	A	0-28	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		5		
-	STP	35	-20	A	0-28	Architectural	Mortar fragment	Mineral	Mortar	Lime	Fragment		5		
-	STP	35	-15	A	0-22	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		5		
-	STP	35	-15	A	0-22	Architectural	Mortar fragment	Mineral	Mortar	Lime	Fragment		5		
-	STP	35	-10	ML	0-30	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		5		
-	STP	35	-10	ML	0-30	Architectural	Mortar fragment	Mineral	Mortar	Lime	Fragment		5		
-	STP	25	-5	ML	0-28	Fuel and Energy	Coal fragment	Mineral	Coal	Bituminous?	Fragment		20		
-	STP	25	-10	ML	0-22	Fuel and Energy	Coal fragment	Mineral	Coal	Bituminous?	Fragment		20		

Appendix A-3: Artifact Analysis for 33PK324.

ASC Bag #	Context	North Level	East Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference
1	STP	40	-40	A	0-30	Agricultural	Iron barbed wire fence fragment	Metal	Iron	Fence wire	Barbed wire, double strand, Burnell Four Point or Ross Twist Four Point		6	1887-present	National Park Service 2011
1	STP	40	-40	A	0-30	Kitchen	Stoneware sherd	Ceramic	Stoneware	Grey-bodied	Body sherd, rilled interior		1		
1	STP	40	-40	A	0-30	Kitchen	Glass bottle fragment	Glass	Bottle	Colorless	Body fragment		1		
1	STP	40	-40	A	0-30	Architectural	Window glass shard	Glass	Window	Colorless	Fragment		1		
2	STP	40	-50	A	10-20	Kitchen	Glass bottle fragment	Glass	Bottle	Colorless	Body fragment, mold seam		1		
2	STP	40	-50	A	10-20	Kitchen	Glass bottle fragment	Glass	Bottle	Green	Body fragment, possible wine bottle		1		
3	STP	15	-30	ML	0-30	Kitchen	Glass bottle fragment	Glass	Bottle	Colorless	Body fragment		1		
4	STP	30	-65	A	0-11	Kitchen	Glass bottle fragment	Glass	Bottle	Colorless	Shoulder fragment	Embossed pattern visible at edge of sherd	1		
5	STP	35	-65	A	0-12	Kitchen	Glass bottle fragment	Glass	Bottle	Colorless	Body fragment		1		
6	STP	10	-40	A	0-30	Architectural	Iron wire nail	Metal	Iron	Hardware	Nail, wire		1	1890s-present (predominate)	Gillio et al. 1980
7	STP	15	-40	A	0-26	Prehistoric	Unidentified chert flake	Lithic	Chert	Flake	Secondary flake, unidentified chert, 1.2 grams, 20 mm x 14 mm		1		
8	STP	20	-40	ML	0-11	Kitchen	Glass bottle fragment	Glass	Bottle	Light Green	Body fragment, possible water bottle		1		
9	STP	30	-40	A	0-17	Kitchen	Whiteware sherd	Ceramic	Refined Earthware	Whiteware	Body sherd, foot rim, plate or small plate		1	ca. 1820-present	Miller et al. 2000

Appendix A-3: Artifact Analysis for 33PK324.

ASC Bag #	Context	North East Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference
10	STP	40	-60	A	0-26	Kitchen	Stoneware sherd	Ceramic Stoneware	Grey-bodied	Body sherd, rilled interior	Albany slip interior, Bristol glaze exterior	1	1825-ca. 1910	Stelle et al. 2001
10	STP	40	-60	A	0-26	Kitchen	Iron key and metal strip from key opening can	Metal	Iron	Can Opener	Key type opener, typically canned meat, with curled strip of iron can	1	1866-present	Osterhoudt 1866
10	STP	40	-60	A	0-26	Architectural	Iron wire nail	Metal	Iron	Hardware	Nail, wire	1	1890s-present (predominate)	Gillio et al. 1980
10	STP	40	-60	A	0-26	Architectural	Window glass shard	Glass	Window	Colorless	Fragment	1		
10	STP	40	-60	A	0-26	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Rim fragment	1		
10	STP	40	-60	A	0-26	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Body sherd	1	ca. 1820-present	Miller et al. 2000
11	STP	35	-60	A	0-26	Kitchen	Milk glass canning jar lid liner fragment	Glass	Lid liner	Milk glass	Canning jar lid liner fragment	1	1869-present	Miller et al. 2000
11	STP	35	-60	A	0-27	Architectural	Window glass shard	Glass	Window	Colorless	Fragment	1		
11	STP	35	-60	A	0-27	Furniture	Glass ashtray fragment	Glass	Furniture	Colorless	Ashtray, press-molded, fragment	1		
12	STP	-5	-80	ML	0-10	Miscellaneous	Iron railroad spike	Metal	Iron	Hardware	Large spike (railroad?) or bar stock fragment	1		
13	STP	-5	-90	A	15-25	Architectural	Window glass shard	Glass	Window	Colorless	Fragment	1		
13	STP	-5	-90	A	15-25	Kitchen	Glass bottle fragment	Glass	Bottle	Colorless	Body fragment	1		
14	STP	40	-85	A	0-15	Architectural	Iron nail	Metal	Iron	Hardware	Nail, unidentified type	1		

Appendix A-3: Artifact Analysis for 33PK324.

ASC Bag #	Context	North	East	Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference
15	STP	35	-85	A	10-20	Kitchen	Glass bottle fragment	Glass	Bottle	Aqua	Body fragment, possible water bottle			1		
16	STP	45	-60	A	0-21	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment			2		
17	STP	45	-55	A	0-30	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment			4		
17	STP	45	-55	A	0-30	Furniture	Redware flower pot fragment	Ceramic	Coarse Earthenware	Redware	Terra Cotta flower pot fragment			1		
17	STP	45	-55	A	0-30	Kitchen	Glass bottle fragment	Glass	Bottle	Colorless	Body fragment			1		
17	STP	45	-55	A	0-30	Architectural	Iron wire nail	Metal	Iron	Hardware	Nail, wire			1	1890s-present (predominate)	
17	STP	45	-55	A	0-30	Kitchen	Whiteware sherd	Ceramic	Refined Earthenware	Whiteware	Rim fragment	Blue transfer-print		1	ca. 1820-present	
18	STP	45	-85	A	10-25	Architectural	Iron nail	Metal	Iron	Hardware	Nail, unidentified type			1	Gillio et al. 1980	
18	STP	45	-85	A	10-25	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Rim fragment, press molded, burned, possible vase/pitcher fragment	Crenulations around edge of rim		1	Miller et al. 2000	
18	STP	45	-85	A	10-25	Kitchen	Glass vessel fragment	Glass	Vessel	Aqua	Rim and neck fragment, screw thread closure, machine-made			1	1858-present	
18	STP	45	-85	A	10-25	Kitchen	Glass vessel fragment	Glass	Vessel	Aqua	Body fragment, jar			12	Miller et al. 2000	
18	STP	45	-85	A	10-25	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Rim and neck fragment, screw thread closure, machine-made			1	1858-present	
18	STP	45	-85	A	10-25	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Body fragment, jar			3	Miller et al. 2000	

Appendix A-3: Artifact Analysis for 33PK324.

ASC Bag #	Context	North	East	Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference	
18	STP	45	-85	A	10-25	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Body fragment, thin - possible drinking glass or pharmaceutical bottle			2			
19	STP	80	-70	A	20-30	Miscellaneous Hardware	Iron strap hinge fragment	Metal	Iron	Hardware	Fragment of strap hinge, or leaf hinge. 3 holes, one iron nail still in place			1			
20	STP	-25	-90	A	1-16	Architectural	Window glass shard	Glass	Window	Colorless	Fragment			1			
21	STP	40	-75	A	0-14	Kitchen	Glass bottle fragment	Glass	Bottle	Colorless	Body fragment			1			
											Embossed “...R...” over “...MA...” on one fragment. Embossed “.P.” on one fragment.			2			
21	STP	40	-75	A	0-14	Kitchen	Glass bottle fragment	Glass	Bottle	Agua	Body fragment						
22	STP	35	-75	A	0-15	Kitchen	Redware sherd	Ceramic	Coarse Earthenware		Utilitarian redware	Body sherd			1		
												Grey slip exterior with no glaze, mottled lead glaze interior.					
23	STP	30	-75	A	0-16	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Body and base fragment	Embossed “...2419...” near base		1			
23	STP	30	-75	A	0-16	Kitchen	Glass vessel fragment	Glass	Vessel	Colorless	Body fragment			2			
24	STP	55	-70	A	0-15	Miscellaneous Hardware	Iron file or rasp fragment	Metal	Iron	Hardware	File/rasp fragment			1			

Appendix A-3: Artifact Analysis for 33PK324.

ASC Bag #	Context	North Ing	East Level	Depth (cmbs)	Functional Group	Artifact	Material	Type	Subtype	Description	Decoration	Mend	Count	Date Range	Reference
25	STP	60	-70	A	0-19	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		1		
25	STP	60	-70	A	0-19	Architectural	Iron wire nail	Metal	Iron	Hardware	Nail, wire		1	1890s-present (predominate)	Gillio et al. 1980
26	STP	50	-20	A	0-21	Architectural	Iron nail	Metal	Iron	Hardware	Nail, unidentified type		1		
27	STP	20	-90	A	0-16	Kitchen	Glass bottle fragment	Glass	Bottle	Colorless	Body fragment		5		
28	STP	40	-100	A	0-12	Kitchen	Delft ware sherd	Ceramic	Coarse Earthenware	Buff-bodied	Body sherd, tin-enamaled ware (delft ware?)		1	1640-ca.1800	Noel Hume 1970
28	STP	40	-100	A	0-12	Kitchen	Glass bottle fragment	Glass	Bottle	Aqua	Body fragment		1		
29	STP	50	-65	A	0-24	Architectural	Window glass shard	Glass	Window	Colorless	Fragment		1		
30	STP	45	-50	A	0-30	Kitchen	Ironstone sherd	Ceramic	Refined Earthenware	Ironstone	Rim sherd, broad bowl or serving vessel	Overglaze transfer print, floral (green and red)	1	1842-present	Magid 1984; Miller et al. 2000
30	STP	45	-50	A	0-30	Architectural	Iron nail	Metal	Iron	Hardware	Nail, unidentified type		1		
30	STP	45	-50	A	0-30	Kitchen	Glass vessel fragment	Glass	Vessel	Blue	Body fragment, possible perfume or pharmaceutical bottle		1		
30	STP	45	-50	A	0-30	Kitchen	Drinking glass fragment	Glass	Drinking	Tumbler	Press-molded, body fragment	Geometric panels on bottom two-thirds, cylindrical top third	1		
10	STP	40	-60	A	0-26	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		2		
-	STP	50	-80	A	0-30	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		5		
-	STP	60	-80	A	0-22	Architectural	Brick fragment	Ceramic	Brick	Architectural	Fragment		15		

**OHIO ARCHAEOLOGICAL INVENTORY**

\*Response required for acceptance of form

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Coder \_\_\_\_\_

Date \_\_\_\_\_

**A. Identification**

\*1. Type of Form (select as many as appropriate):

 New Form  Revised Form  Transcribed Data2. County Pike \*3. Trinomial State Site Number 33- PK - 322

4. Site Name(s) \_\_\_\_\_

5. Project Site Number \_\_\_\_\_

6. Other State Site Number \_\_\_\_\_

7. Source (of Item A.5. and/or A.6.) ASC Group, Inc. 2011 Project Number 1988-01,03 PORTS Farmsteads**B. Location**\*1. UTM Zone 16 or  17Easting 3 2 6 8 5 0Northing 4 3 2 2 4 9 0

0

0

2. Latitude          °         '         "Longitude          °         '         "\*3. Township 4 N Range 21 W Not Applicable \_\_\_\_\_Section 6 1/4 Section:  SW  SE  NW  NE

Township Name Seal

1 9

\*4. Quadrangle Name Piketon\*5. Quadrangle Date 1979\*6. Confident of Site Location  Yes  No**C. Ownership**\*1. Name(s) United States Department of EnergyAddress 1000 Independence Ave., SWCity/Town, State, Zip Washington, DC 20585Phone ( 202 ) 586-5000
 \*Site No. 33- PK - 322  
 Plotted 

2. Tenant (if any) \_\_\_\_\_

Address \_\_\_\_\_

City/Town, State, Zip \_\_\_\_\_

Phone (        ) \_\_\_\_\_

\*3. Ownership Status (select only one, as appropriate):

 Private (single) Private (multiple) Local Govt. State Govt. Federal Govt. Multiple Govt. Mixed-Govt./Private Unknown**D. Temporal Affiliations**

\*1. Affiliations Present (select only one, as appropriate):

 Prehistoric Historic Prehistoric and Historic Unknown Unrecorded

**Prehistoric**

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\*2. Prehistoric Temporal Period(s) Represented (select as many as appropriate)

Unassigned Prehistoric  Paleoindian \_\_\_\_\_

Archaic:  Unassigned  Early  Middle  Late \_\_\_\_\_

Woodland:  Unassigned  Early  Middle  Late \_\_\_\_\_

Late Prehistoric  Protohistoric  Other (specify) \_\_\_\_\_

\*3. Minimum Number of Prehistoric Temporal Periods Represented \_\_\_\_\_

\*4. Basis for Assignment of Prehistoric Temporal Period(s) (select as many as appropriate):

Diagnostic Artifacts  Diagnostic Features  Radiometric \_\_\_\_\_

Unrecorded  Other (specify) \_\_\_\_\_

5. Prehistoric Cultural Component(s) Represented (see manual):

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_
- f. \_\_\_\_\_

6. Describe how Prehistoric Temporal Period(s) and Cultural Component(s) were determined (list diagnostic artifacts and/or features; include type names, attach photographs and/or illustrations, and identify researcher). When listing artifacts and/or features please specify Prehistoric Cultural Component(s) by using letter designations from Item D.5.

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Researcher \_\_\_\_\_

\*7. Categories of Prehistoric Materials Present at Site (select as many as appropriate)

Lithics  Ceramics  Metal  Faunal Remains  Floral Remains \_\_\_\_\_

Human Skeletal Remains  Unrecorded  Other (specify) \_\_\_\_\_

8. Specific Prehistoric Cultural Materials Collected:

Type	Count	Type	Count
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

**Historic**

\*9. Affiliation Present (select only one, as appropriate):

Aboriginal  Non-Aboriginal  Both  Undetermined \_\_\_\_\_

\*10. Historic Temporal Period(s) Represented (select as many as appropriate):

- |   |  |   |       |
|---|--|---|-------|
| a. <input type="checkbox"/> Pre-1795                | b. <input type="checkbox"/> 1796-1829            | c. <input type="checkbox"/> 1830-1849               | _____ |
| d. <input type="checkbox"/> 1850-1879               | e. <input checked="" type="checkbox"/> 1880-1899 | f. <input type="checkbox"/> 1900-1929               | _____ |
| g. <input type="checkbox"/> 1930-1949               | h. <input type="checkbox"/> 1950-1974            | i. <input type="checkbox"/> 1975-2000               | _____ |
| j. <input type="checkbox"/> Historic                | k. <input type="checkbox"/> 18th Century         | l. <input checked="" type="checkbox"/> 19th Century | _____ |
| m. <input checked="" type="checkbox"/> 20th Century | n. <input type="checkbox"/> Historic Aboriginal  |   | _____ |

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\*11. Minimum Number of Historic Temporal Periods Represented 1

\*12. Basis for Assignment of Historic Temporal Period(s) (select as many as appropriate):

- Diagnostic Artifacts  Diagnostic Architectural Remains  
 Diagnostic Features  Documentary Evidence  Oral Tradition  
 Unrecorded  Other (specify) \_\_\_\_\_

13. Describe how Historic Temporal Period(s) were determined (list any diagnostic architectural remains, diagnostic artifacts and/or features; include type names, attach photographs and/or illustrations, and identify researcher). When listing artifacts and/or features specify Historic Temporal Period(s) by using letter designations from Item D.10.

It is depicted on the oil and gas map (Ohio Department of Natural Resources 1905), the 1917 Piketon quadrangle (USGS 15' topographic map), and the Atomic Energy Commission (1952) property map and is visible on 1939 and 1951 aerial photographs of the area.  
Diagnostic artifacts included several types that were not produced in the 20th century, or were most likely produced in the 19th century.

Researcher \_\_\_\_\_

\*14. Functional Categories of Historic Materials Present at Site (select as many as appropriate):

- |   |  |   |       |
|---|--|---|-------|
| <input checked="" type="checkbox"/> Kitchen       | <input type="checkbox"/> Furniture                 | <input type="checkbox"/> Personal                   | _____ |
| <input type="checkbox"/> Toys & Games             | <input type="checkbox"/> Printed Matter            | <input type="checkbox"/> Religious/Ceremonial       | _____ |
| <input type="checkbox"/> Military                 | <input type="checkbox"/> Weapons                   | <input type="checkbox"/> Transportation             | _____ |
| <input checked="" type="checkbox"/> Architectural | <input checked="" type="checkbox"/> Misc. Hardware | <input type="checkbox"/> Const./Manufacturing Tools | _____ |
| <input type="checkbox"/> Agricultural             | <input type="checkbox"/> Fuel/Energy               | <input type="checkbox"/> Food Remains               | _____ |
| <input type="checkbox"/> Clothing                 | <input type="checkbox"/> Unrecorded                | <input checked="" type="checkbox"/> Unknown         | _____ |
| <input type="checkbox"/> Other (specify) _____    |  |   |       |

15. Specific Historic Cultural Materials Collected:

Type	Count	Type	Count
Brick fragment	62	Mortar fragment	3
Ceramic drain pipe frag.	10	Sandstone fragment	3
Concrete fragment	2	Window glass/flat glass frag.	63
Glazed tile fragment	2	Yellowware sherd	3
Nail, cut	15	Ceramic collander frag.	1
Nail, unidentified type	25	Glass bottle/vessel frag.	50
Nail, wire	5	Ironstone sherd	5

**General**

16. Describe Prehistoric and/or Historic Cultural Materials observed but not collected. State reason(s) for not collecting.

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17. Affiliated Ohio Historic Inventory Site Number and Name:

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**E. Physical Description**

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\*1. Archaeological Setting (select only one, as appropriate):

Rockshelter/Cave  Open  Unrecorded  Unknown  
 Submerged  Other (specify) \_\_\_\_\_

\*2. Prehistoric Site (select as many as appropriate):

Habitation:  Camp  Village  Hamlet  Unspecified Habitation \_\_\_\_\_

Extractive:  Quarry  Workshop \_\_\_\_\_

Ceremonial:  Unspecified Mound  Earth Mound  Stone Mound \_\_\_\_\_

Effigy Mound  Mound Group  Hilltop Enclosure \_\_\_\_\_

Geometrical Earthwork  Cemetery  Isolated Burial(s) \_\_\_\_\_

Petroglyph/Pictograph \_\_\_\_\_

Other:  Unknown  Unrecorded  Other (specify) \_\_\_\_\_

\*3. Historic Site Type (select as many as appropriate):

Residential  Commercial  Social  Government \_\_\_\_\_

Religious  Educational  Mortuary  Recreation \_\_\_\_\_

Subsistence  Industrial  Health Care  Military \_\_\_\_\_

Transportation  Unrecorded  Unknown \_\_\_\_\_

Other (specify) \_\_\_\_\_

4. State the bases on which site type assignment(s) were made.

The site contains the remnants of a house and four small outbuildings, but no absolute evidence that it was a farm complex. Accordingly, it is defined as a residential site.

\*5. Site Condition (select only one, as appropriate):

Undisturbed  Disturbed - Extent Unknown  Fully Disturbed \_\_\_\_\_  
 Destroyed  Unrecorded  Unknown \_\_\_\_\_

\*6. Dominant Agent(s) of Disturbance (select as many as appropriate):

None Apparent  Agriculture  Historic Construction  Water \_\_\_\_\_

Transportation  Archaeological Excavation  Mining  Vandalism \_\_\_\_\_

Unrecorded  Other (specify) Demolition \_\_\_\_\_

7. Nature of Disturbance/Destruction:

The site appears to have been raised with heavy machinery which has impacted the house foundation and portions of the surrounding sheet midden.

\*8. Current Dominant Land Use (see manual):

Industrial

9. Land Use History:

The site was likely undeveloped until the residence and a single outbuilding were constructed in the second half of the 19th century. Two additional outbuildings were added in the first half of the 20th century. It was abandoned ca. 1952 and has not been redeveloped.

\*10. Site Elevation 195 Meters A.M.S.L. (elevation to be taken from UTM point)

\*11. Physiographic Setting of Site (select only one, as appropriate):

Lake Plain  Lexington Peneplain  Unglaciated Plateau \_\_\_\_\_  
 Till Plain  Glaciated Plateau  Unrecorded \_\_\_\_\_

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## \*12. Glacial Geomorphology (select only one, as appropriate):

- Not Applicable  Wisconsin End/Lateral Moraine  
 Kansan Ground Moraine  Wisconsin Kame/Kettle/Esker/Drumlin  
 Illinoian Ground Moraine  Wisconsin Lacustrine Deposit  
 Illinoian Outwash  Post Wisconsin Lacustrine Deposit  
 Wisconsin Ground Moraine  Wisconsin Outwash  
 Unrecorded  Other (specify) Pre-Illinoian Lacustrine Deposits

## \*13. Regional Geomorphological Setting (select only one, as appropriate):

- Stream Valley  Upland Hill Slope  Beach Ridge  
 Hill or Ridge Top  Lake Plains Interfluvial Zone  Unrecorded

## \*14. Local Environmental Setting (select only one, as appropriate):

- Terrace:  Unknown  T-1  T-2  T-3  T-4  
 Beach Ridge  Terrace Remnant  Natural Levee  Floodplain  
 Low Rise on Floodplain  Alluvium  Island  Kame  Drumlin  
 Esker  Moraine  Glacial Hummock  Wetland Hummock  
 Bluff  Bluff Base  Bluff Edge  Saddle  Hill or Ridge Top  
 Closed Depression  Unrecorded  Other (specify) \_\_\_\_\_

## \*15. Soils:

- Soil Association Omulga  
Soil Series-Phase/Complex Latham-Wharton silt loams, 15 to 25 percent slopes  
Reference USDA, Natural Resources Conservation Service Web Soil Survey  
(<http://websoilsurvey.nrcs.usda.gov/app/>)

## \*16. Down Slope Direction (select only one, as appropriate):

- N  NW  NE  E  All  Flat  
 S  SW  SE  W  Unrecorded

\*17. Slope Gradient (percent) 2% Unrecorded \_\_\_\_\_

## \*18. Drainage System (see manual):

- Major Drainage Ohio River  
Minor Drainage Scioto River

## \*19. Closest Water Source (select only one, as appropriate):

- Name: Unnamed Tributary to Little Beaver Creek  
 Permanent Stream  Lake/Pond  Ephemeral Stream  
 Permanent Spring  Swamp/Bog  Intermittent Spring/Seep  
 Slough/Oxbow Lake  Artificial Lake/Pond (historic sites only)  
 Artificial Stream/Ditch (historic sites only)  Unrecorded  
 Other (specify) \_\_\_\_\_

\*20. Horizontal Distance to Closest Water Source 90 (meters from UTM point)

## 21. Elevation Above Closest Water Source \_\_\_\_\_ (meters A.M.S.L. from UTM point)

**F. Reporting Information**

## \*1. Investigation Type (select as many as appropriate):

- Reported  Examination of Collection  Surface Collection  
 Auger/Soil Corer  Shovel Test(s)  Test Pit(s)  Test Trench(es)  
 Deep Test(s)  PZ or Humus Removal  Testing/Excav. (strategy unknown)  
 Mitigation/Block Excavation  Aerial Photograph  
 Remote Sensing (specify) \_\_\_\_\_  
 Chemical Analysis (specify) \_\_\_\_\_  
 Unrecorded  Other (specify) \_\_\_\_\_

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## \*2. Surface Collection Strategy (select as many as appropriate):

- Not Applicable       Grab Sample       Diagnostics \_\_\_\_\_
- Controlled-Unknown       Controlled-Total \_\_\_\_\_
- Controlled-Sample       Unrecorded \_\_\_\_\_
- Other (specify) \_\_\_\_\_

3. If surface collection strategy is Controlled-Total, Controlled-Sample, or Other, describe methodology and percentage.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## 4. Surface Visibility (select only one, as appropriate):

- None       Less than 10%       11-50%
- 51-90%       91-100%       Unrecorded

## 5. Describe surface conditions.

woods

\*6. Site Area (square meters) 3,120

Unrecorded \_\_\_\_\_

## \*7. Basis for Site Area Estimate (select only one, as appropriate):

- Guessed       Historic Maps       Aerial Photograph       Paced
- Taped       Transit/Alidade       Range Finder       Unrecorded
- Other (specify) GPS

\*8. Confident of Site Boundaries:  No       Yes       Unrecorded9. Estimated Percentage of Site Excavated  Unrecorded       Unknown\*10. Name of Form Preparer Chuck Mustain\*11. Institution ASC Group, Inc.\*12. Date of Form (year/month) 11/12\*13. Field Date (year/month) 11/11

## 14. Time Spent at Site \_\_\_\_\_

15. Weather Conditions Cool and rainy

## 16. Name(s), Address(es), Phone Number(s) of Local Informants

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\*17. Artifact Repository (ies) Artifacts are temporarily housed at ASC Group, Inc., but will be returned to the PORTS plant.

## 18. Name(s), Address(es), Phone Number(s) of Owners of Collections From Site (attach inventories of private collections).

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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19. Photographs (select as many as appropriate):

No. of Slides \_\_\_\_\_ No. of Prints \_\_\_\_\_

Aerials:  Black/White  Color  Infrared

20. Name and Address of Institution Where Photos Are Filed (include photo log number if available)

\_\_\_\_\_

\*21. National Register Status (select only one, as appropriate):

National Register Property†

Determined Eligible for National Register†

National Register Status Not Assessed

Removed from National Register

Determined Not Eligible

†Determination made by Keeper of the National Register (date) \_\_\_\_\_

22. State Registry Status (select only one, as appropriate)

State Registry Listed†

Not Assessed for State Registry

Removed from State Registry†

Determined Not Eligible

†Determination made by Ohio Historical Society (date) \_\_\_\_\_

23. Discuss the potential significance of the site (does it meet National Register and/or State Registry criteria of significance in your opinion? Why or why not? Upon what evidence have you based your opinion?)

\*24. Special Status (select only one, as appropriate):

<input checked="" type="checkbox"/> None	<input type="checkbox"/> Wilderness Area	<input type="checkbox"/> Wildlife Preserve
<input type="checkbox"/> Park	<input type="checkbox"/> Scenic River	<input type="checkbox"/> Nature Preserve
<input type="checkbox"/> Forest	<input type="checkbox"/> Military Installation	<input type="checkbox"/> Archaeological Preserve
<input type="checkbox"/> Archaeological District	<input type="checkbox"/> Unknown	
<input type="checkbox"/> Other (specify) _____		

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**\*G. References** - List Primary Documentary References (see manual):

1. 2011 Summary report for preliminary assessment of 12 historic archaeological sites at the PORTS Plant, Piketon, Ohio. Letter from Chuck Mustain and David Klinge to Chad Book.
2. Ohio Department of Natural Resources, Division of Geological Survey 1905 Pike County Oil and Gas Resources Map. Map, 1:15,840. Ohio Department of Natural Resources, Division of Geological Survey, Columbus.
3. Atomic Energy Commission 1952 Final Project Map. Land acquisition Map, 1:16,000. United States Army Corps of Engineers, Huntington District, Louisville Kentucky.

**H. Radiometric Dates**

1. Material(s) Dated \_\_\_\_\_  
Date (uncorrected C14 years) \_\_\_\_\_  
Laboratory \_\_\_\_\_  
Sample # \_\_\_\_\_  
Reference(s) \_\_\_\_\_
2. Material(s) Dated \_\_\_\_\_  
Date (uncorrected C14 years) \_\_\_\_\_  
Laboratory \_\_\_\_\_  
Sample # \_\_\_\_\_  
Reference(s) \_\_\_\_\_
3. Additional Radiometric Dates Yes \_\_\_\_\_ No \_\_\_\_\_  
(use Continuation Section to list other dates)

**I. Description of Site**

- \*1. State physical description of the site and its setting, including dimensions, features (with measurements), nature and location of artifacts and concentrations, extent and location of disturbances, etc.

Site 33PK322 is located in a ravine near the north edge of the PORTS property. It is depicted on the oil and gas map (Ohio Department of Natural Resources, Division of Geological Survey 1905), the 1917 Piketon quadrangle (USGS 15' topographic map), and the Atomic Energy Commission (1952) property map and is visible on 1939 and 1951 aerial photographs of the area. One building is discernable on the aerial photographs. The woods at the site were fairly overgrown making visual inspection difficult. Four sandstone footers forming a roughly 5-m square were observed on the surface. They have been designated Building 1 and most likely correspond to the building shown on the maps and aerial photographs. There is a ca. 1-m x 1.5-m concrete slab set on top of sandstone walls along the south edge of the building. It is probably a stoop outside a doorway, but could be a capped well. There is no opening in the slab so it is unlikely to be a cistern. The cut for the driveway was visible on the surface and southeast of it was a small midden containing brick, bottles, and sheet metal. It is not clear if this is a dump or some other type of deposit. Two STPs were excavated at the site both of which contained artifacts. They were mostly pieces of coal and brick and concrete fragments, but a couple of pieces of glass were also present. Soils in both units appeared to be relatively intact A horizons. It is possible that additional archaeological remains are present that were hidden by the underbrush. Although there is little evidence of site function to support the contention, it is most likely that 33PK322 is the remains of a small house associated with the building on the maps and aerial photographs. The site measures 15 m x 25 m and has an area of 230 sq m.

- \*2. Discuss the relationship between the site and other known sites in the area in terms of location, physical characteristics, size, etc.

**J. Continuation Section:** Specify Section & Item (use additional Continuation Sheet(s) if necessary)

Cont. from D-15

Porcelain sherd - 1

Redware sherd - 1

Stoneware sherd - 5  
Tin alloy can part - 2  
Unid. ceramic sherd - 1  
Whiteware sherd - 38  
Brass staple/chain link - 1  
    Iron chain link - 1  
    Iron horseshoe - 1  
    Iron machine part - 1  
    Iron drill bit, large - 1  
    Iron strap, large - 1  
    Folded sheet iron - 1  
Mammal bone frag. - 2  
Plastic fragment - 1  
Tooth - 1

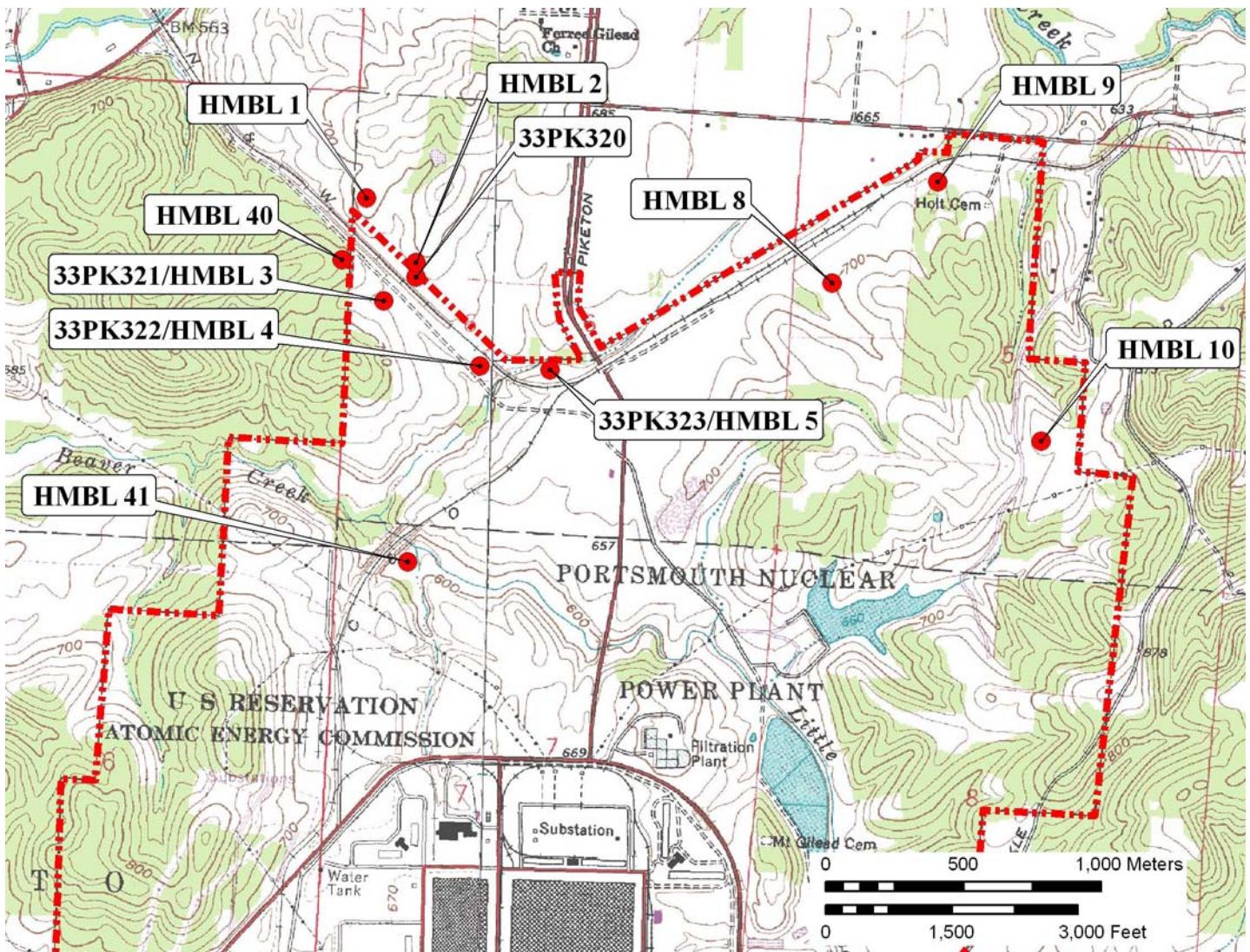
Cont. from G-2

Mustain, Charles and David F. Klinge

2012 *Phase I Archaeological Investigations at 33PK322, 33PK323, and 33PK324, Seal and Scioto Townships, Pike County, Ohio. ASC Group, Inc., Columbus, Ohio. Submitted to Fluor-B&W Portsmouth, LLC., Piketon, Ohio.*

**\*K. Sketch Map or Copy of Project Map of Site**

Include north arrow and scale. Attach a Xeroxed section of the appropriate U.S.G.S. quadrangle on a separate sheet. Outline total area surveyed and include locations of all identified sites on the Xerox of the quadrangle.



**\*Site Location**

### Permanent Feature

Distance (m)

Direction/Bearing from Site to

### Terrain Feature



## OHIO ARCHAEOLOGICAL INVENTORY

\*Response required for acceptance of form

for official use only

Coder \_\_\_\_\_

Date \_\_\_\_\_

### A. Identification

\*1. Type of Form (select as many as appropriate):

New Form  Revised Form  Transcribed Data

2. County Pike \*3. Trinomial State Site Number 33- PK - 323

4. Site Name(s) \_\_\_\_\_

5. Project Site Number \_\_\_\_\_

6. Other State Site Number \_\_\_\_\_

7. Source (of Item A.5. and/or A.6.) ASC Group, Inc. 2011 Project Number 1988-01,03 PORTS Farmsteads

### B. Location

\*1. UTM Zone 16 or  17Easting 3 2 7 1 1 0Northing 4 3 2 2 4 7 0

0

0

2. Latitude \_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ "

Longitude \_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ "

\*3. Township 4 N Range 21 W Not Applicable \_\_\_\_\_Section 6 1/4 Section:  SW  SE  NW  NE

Township Name Seal

1 9

\*4. Quadrangle Name Waverly South\*5. Quadrangle Date 1992\*6. Confidence of Site Location  Yes  No

### C. Ownership

\*1. Name(s) United States Department of EnergyAddress 1000 Independence Ave., SWCity/Town, State, Zip Washington, DC 20585Phone ( 202 ) 586-5000

\*Site No. 33- PK - 323  
Plotted

2. Tenant (if any) \_\_\_\_\_

Address \_\_\_\_\_

City/Town, State, Zip \_\_\_\_\_

Phone (        ) \_\_\_\_\_

\*3. Ownership Status (select only one, as appropriate):

Private (single)  Private (multiple)  Local Govt.

State Govt.  Federal Govt.  Multiple Govt.

Mixed-Govt./Private  Unknown

### D. Temporal Affiliations

\*1. Affiliations Present (select only one, as appropriate):

Prehistoric  Historic  Prehistoric and Historic

Unknown  Unrecorded

**Prehistoric**

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\*2. Prehistoric Temporal Period(s) Represented (select as many as appropriate)

Unassigned Prehistoric     Paleoindian \_\_\_\_\_

Archaic:     Unassigned     Early     Middle     Late \_\_\_\_\_

Woodland:     Unassigned     Early     Middle     Late \_\_\_\_\_

\_\_\_\_\_ Late Prehistoric     Protohistoric     Other (specify) \_\_\_\_\_

\*3. Minimum Number of Prehistoric Temporal Periods Represented \_\_\_\_\_

\*4. Basis for Assignment of Prehistoric Temporal Period(s) (select as many as appropriate):

Diagnostic Artifacts     Diagnostic Features     Radiometric \_\_\_\_\_

Unrecorded     Other (specify) \_\_\_\_\_

5. Prehistoric Cultural Component(s) Represented (see manual):

- a. \_\_\_\_\_
- b. 1 **Lithic; Columbus/Delaware preform** \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_
- f. \_\_\_\_\_

6. Describe how Prehistoric Temporal Period(s) and Cultural Component(s) were determined (list diagnostic artifacts and/or features; include type names, attach photographs and/or illustrations, and identify researcher). When listing artifacts and/or features please specify Prehistoric Cultural Component(s) by using letter designations from Item D.5.

The single prehistoric artifact recovered from this site is non-diagnostic lithic preform.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Researcher \_\_\_\_\_

\*7. Categories of Prehistoric Materials Present at Site (select as many as appropriate)

Lithics     Ceramics     Metal     Faunal Remains     Floral Remains \_\_\_\_\_

Human Skeletal Remains     Unrecorded     Other (specify) \_\_\_\_\_

8. Specific Prehistoric Cultural Materials Collected:

Type	Count	Type	Count
------	-------	------	-------

Columbus/Delaware preform	1	_____	_____
---------------------------	---	-------	-------

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

**Historic**

\*9. Affiliation Present (select only one, as appropriate):

Aboriginal     Non-Aboriginal     Both     Undetermined

\*10. Historic Temporal Period(s) Represented (select as many as appropriate):

- |   |  |  |       |
|---|--|--|-------|
| a. <input type="checkbox"/> Pre-1795                | b. <input type="checkbox"/> 1796-1829            | c. <input type="checkbox"/> 1830-1849            | _____ |
| d. <input type="checkbox"/> 1850-1879               | e. <input checked="" type="checkbox"/> 1880-1899 | f. <input checked="" type="checkbox"/> 1900-1929 | _____ |
| g. <input checked="" type="checkbox"/> 1930-1949    | h. <input type="checkbox"/> 1950-1974            | i. <input type="checkbox"/> 1975-2000            | _____ |
| j. <input type="checkbox"/> Historic                | k. <input type="checkbox"/> 18th Century         | l. <input type="checkbox"/> 19th Century         | _____ |
| m. <input checked="" type="checkbox"/> 20th Century | n. <input type="checkbox"/> Historic Aboriginal  | _____  | _____ |

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\*11. Minimum Number of Historic Temporal Periods Represented 1 \_\_\_\_\_

\*12. Basis for Assignment of Historic Temporal Period(s) (select as many as appropriate):

- Diagnostic Artifacts  Diagnostic Architectural Remains \_\_\_\_\_
- Diagnostic Features  Documentary Evidence  Oral Tradition \_\_\_\_\_
- Unrecorded  Other (specify) \_\_\_\_\_

13. Describe how Historic Temporal Period(s) were determined (list any diagnostic architectural remains, diagnostic artifacts and/or features; include type names, attach photographs and/or illustrations, and identify researcher). When listing artifacts and/or features specify Historic Temporal Period(s) by using letter designations from Item D.10.

The site is depicted on the oil and gas map (Ohio Department of Natural Resources 1905) and the 1908 Waverly quadrangle (USGS 15' topographic map). Diagnostic artifacts from the site include a baseto an glass ink well manufactured between 1895 and 1949.

\_\_\_\_\_

\_\_\_\_\_

Researcher \_\_\_\_\_

\*14. Functional Categories of Historic Materials Present at Site (select as many as appropriate):

- |   |   |   |       |
|---|---|---|-------|
| <input checked="" type="checkbox"/> Kitchen       | <input type="checkbox"/> Furniture              | <input checked="" type="checkbox"/> Personal        | _____ |
| <input type="checkbox"/> Toys & Games             | <input type="checkbox"/> Printed Matter         | <input type="checkbox"/> Religious/Ceremonial       | _____ |
| <input type="checkbox"/> Military                 | <input type="checkbox"/> Weapons                | <input type="checkbox"/> Transportation             | _____ |
| <input checked="" type="checkbox"/> Architectural | <input type="checkbox"/> Misc. Hardware         | <input type="checkbox"/> Const./Manufacturing Tools | _____ |
| <input type="checkbox"/> Agricultural             | <input checked="" type="checkbox"/> Fuel/Energy | <input type="checkbox"/> Food Remains               | _____ |
| <input type="checkbox"/> Clothing                 | <input type="checkbox"/> Unrecorded             | <input type="checkbox"/> Unknown                    | _____ |
| <input type="checkbox"/> Other (specify) _____    |   |   |       |

15. Specific Historic Cultural Materials Collected:

Type	Count	Type	Count
Brick fragment	19	Canning jar lid liner frag.	4
Mortar fragment	29	Whiteware sherd	2
Window glass/flat glass	19	Glass ink well frag.	1
Coal fragment	40		
Glass, bottle fragment	2		
Glass, vessel fragment	1		
Ironstone sherd	2		

**General**

16. Describe Prehistoric and/or Historic Cultural Materials observed but not collected. State reason(s) for not collecting.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

17. Affiliated Ohio Historic Inventory Site Number and Name:

\_\_\_\_\_

\_\_\_\_\_

**E. Physical Description**

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\*1. Archaeological Setting (select only one, as appropriate):

Rockshelter/Cave  Open  Unrecorded  Unknown  
 Submerged  Other (specify) \_\_\_\_\_

\*2. Prehistoric Site (select as many as appropriate):

Habitation:  Camp  Village  Hamlet  Unspecified Habitation \_\_\_\_\_

Extractive:  Quarry  Workshop \_\_\_\_\_

Ceremonial:  Unspecified Mound  Earth Mound  Stone Mound \_\_\_\_\_

Effigy Mound  Mound Group  Hilltop Enclosure \_\_\_\_\_

Geometrical Earthwork  Cemetery  Isolated Burial(s) \_\_\_\_\_

Petroglyph/Pictograph \_\_\_\_\_

Other:  Unknown  Unrecorded  Other (specify) \_\_\_\_\_

\*3. Historic Site Type (select as many as appropriate):

Residential  Commercial  Social  Government \_\_\_\_\_

Religious  Educational  Mortuary  Recreation \_\_\_\_\_

Subsistence  Industrial  Health Care  Military \_\_\_\_\_

Transportation  Unrecorded  Unknown \_\_\_\_\_

Other (specify) \_\_\_\_\_

4. State the bases on which site type assignment(s) were made.

The building at this location is labeled as the Moore School on early maps of the area.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\*5. Site Condition (select only one, as appropriate):

Undisturbed  Disturbed - Extent Unknown  Fully Disturbed \_\_\_\_\_

Destroyed  Unrecorded  Unknown \_\_\_\_\_

\*6. Dominant Agent(s) of Disturbance (select as many as appropriate):

None Apparent  Agriculture  Historic Construction  Water \_\_\_\_\_

Transportation  Archaeological Excavation  Mining  Vandalism \_\_\_\_\_

Unrecorded  Other (specify) Demolition \_\_\_\_\_

7. Nature of Disturbance/Destruction:

The site appears to have been razed with a bulldozer and no intact structural elements survive.

\*8. Current Dominant Land Use (see manual):

Industrial

9. Land Use History:

The site appears to have been undeveloped, although it may have been farm pasture, before the school was constructed in the late 19th or early 20th century. It has not been redeveloped since the site was demolished.

\*10. Site Elevation 195 Meters A.M.S.L. (elevation to be taken from UTM point) \_\_\_\_\_

\*11. Physiographic Setting of Site (select only one, as appropriate):

Lake Plain  Lexington Peneplain  Unglaciated Plateau \_\_\_\_\_

Till Plain  Glaciated Plateau  Unrecorded \_\_\_\_\_

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## \*12. Glacial Geomorphology (select only one, as appropriate):

- Not Applicable  Wisconsin End/Lateral Moraine  
 Kansan Ground Moraine  Wisconsin Kame/Kettle/Esker/Drumlin  
 Illinoian Ground Moraine  Wisconsin Lacustrine Deposit  
 Illinoian Outwash  Post Wisconsin Lacustrine Deposit  
 Wisconsin Ground Moraine  Wisconsin Outwash  
 Unrecorded  Other (specify) Pre-Illinoian Lacustrine Deposits

## \*13. Regional Geomorphological Setting (select only one, as appropriate):

- Stream Valley  Upland Hill Slope  Beach Ridge  
 Hill or Ridge Top  Lake Plains Interfluvial Zone  Unrecorded

## \*14. Local Environmental Setting (select only one, as appropriate):

- Terrace:  Unknown  T-1  T-2  T-3  T-4  
 Beach Ridge  Terrace Remnant  Natural Levee  Floodplain  
 Low Rise on Floodplain  Alluvium  Island  Kame  Drumlin  
 Esker  Moraine  Glacial Hummock  Wetland Hummock  
 Bluff  Bluff Base  Bluff Edge  Saddle  Hill or Ridge Top  
 Closed Depression  Unrecorded  Other (specify) \_\_\_\_\_

## \*15. Soils:

- Soil Association Omulga  
Soil Series-Phase/Complex Latham-Wharton silt loams, 15 to 25 percent slopes  
Reference USDA, Natural Resources Conservation Service Web Soil Survey  
(<http://websoilsurvey.nrcs.usda.gov/app/>)

## \*16. Down Slope Direction (select only one, as appropriate):

- N  NW  NE  E  All  Flat  
 S  SW  SE  W  Unrecorded

\*17. Slope Gradient (percent) 2% Unrecorded \_\_\_\_\_

## \*18. Drainage System (see manual):

- Major Drainage Ohio River  
Minor Drainage Scioto River

## \*19. Closest Water Source (select only one, as appropriate):

- Name: Unnamed Tributary to Little Beaver Creek  
 Permanent Stream  Lake/Pond  Ephemeral Stream  
 Permanent Spring  Swamp/Bog  Intermittent Spring/Seep  
 Slough/Oxbow Lake  Artificial Lake/Pond (historic sites only)  
 Artificial Stream/Ditch (historic sites only)  Unrecorded  
 Other (specify) \_\_\_\_\_

\*20. Horizontal Distance to Closest Water Source 40 (meters from UTM point)

## 21. Elevation Above Closest Water Source \_\_\_\_\_ (meters A.M.S.L. from UTM point)

**F. Reporting Information**

## \*1. Investigation Type (select as many as appropriate):

- Reported  Examination of Collection  Surface Collection  
 Auger/Soil Corer  Shovel Test(s)  Test Pit(s)  Test Trench(es)  
 Deep Test(s)  PZ or Humus Removal  Testing/Excav. (strategy unknown)  
 Mitigation/Block Excavation  Aerial Photograph  
 Remote Sensing (specify) \_\_\_\_\_  
 Chemical Analysis (specify) \_\_\_\_\_  
 Unrecorded  Other (specify) \_\_\_\_\_

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## \*2. Surface Collection Strategy (select as many as appropriate):

- Not Applicable       Grab Sample       Diagnostics \_\_\_\_\_
- Controlled-Unknown       Controlled-Total \_\_\_\_\_
- Controlled-Sample       Unrecorded \_\_\_\_\_
- Other (specify) \_\_\_\_\_

3. If surface collection strategy is Controlled-Total, Controlled-Sample, or Other, describe methodology and percentage.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## 4. Surface Visibility (select only one, as appropriate):

- None       Less than 10%       11-50%
- 51-90%       91-100%       Unrecorded

## 5. Describe surface conditions.

\_\_\_\_\_

\_\_\_\_\_

\*6. Site Area (square meters) 927

Unrecorded \_\_\_\_\_

\_\_\_\_\_

## \*7. Basis for Site Area Estimate (select only one, as appropriate):

- Guessed       Historic Maps       Aerial Photograph       Paced
- Taped       Transit/Alidade       Range Finder       Unrecorded
- Other (specify) GPS \_\_\_\_\_

\*8. Confident of Site Boundaries:  No       Yes       Unrecorded9. Estimated Percentage of Site Excavated  Unrecorded       Unknown \_\_\_\_\_\*10. Name of Form Preparer Chuck Mustain\*11. Institution ASC Group, Inc.\*12. Date of Form (year/month) 11/12\*13. Field Date (year/month) 11/11

## 14. Time Spent at Site \_\_\_\_\_

15. Weather Conditions Cool and rainy

## 16. Name(s), Address(es), Phone Number(s) of Local Informants

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\*17. Artifact Repository (ies) Artifacts are temporarily with ASC, but will be returned to PORTS at the conclusion of the study.

## 18. Name(s), Address(es), Phone Number(s) of Owners of Collections From Site (attach inventories of private collections).

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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## 19. Photographs (select as many as appropriate):

No. of Slides \_\_\_\_\_ No. of Prints \_\_\_\_\_

Aerials: \_\_\_\_\_ Black/White \_\_\_\_\_ Color \_\_\_\_\_ Infrared

## 20. Name and Address of Institution Where Photos Are Filed (include photo log number if available)

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## \*21. National Register Status (select only one, as appropriate):

 National Register Property† Determined Eligible for National Register† National Register Status Not Assessed Removed from National Register† Determined Not Eligible†

†Determination made by Keeper of the National Register (date) \_\_\_\_\_

## 22. State Registry Status (select only one, as appropriate)

 State Registry Listed† Not Assessed for State Registry Removed from State Registry† Determined Not Eligible†

†Determination made by Ohio Historical Society (date) \_\_\_\_\_

## 23. Discuss the potential significance of the site (does it meet National Register and/or State Registry criteria of significance in your opinion? Why or why not? Upon what evidence have you based your opinion?)

The site does not meet the criteria for inclusion in either the State or National Registers of Historic Places. It has been wholly disturbed and no longer retains sufficient integrity to be considered significant.

## \*24. Special Status (select only one, as appropriate):

<input checked="" type="checkbox"/> None	<input type="checkbox"/> Wilderness Area	<input type="checkbox"/> Wildlife Preserve
<input type="checkbox"/> Park	<input type="checkbox"/> Scenic River	<input type="checkbox"/> Nature Preserve
<input type="checkbox"/> Forest	<input type="checkbox"/> Military Installation	<input type="checkbox"/> Archaeological Preserve
<input type="checkbox"/> Archaeological District		<input type="checkbox"/> Unknown
<input type="checkbox"/> Other (specify) _____		

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**\*G. References** - List Primary Documentary References (see manual):

1. 2011 Summary report for preliminary assessment of 12 historic archaeological sites at the PORTS Plant, Piketon, Ohio. Letter from Chuck Mustain and David Klinge to Chad Book.
2. Ohio Department of Natural Resources, Division of Geological Survey 1905 Pike County Oil and Gas Resources Map. Map, 1:15,840. Ohio Department of Natural Resources, Division of Geological Survey, Columbus.
3. Phase I Archaeological Investigations of 33PK322, 33PK323, and 33PK324 at the Portsmouth Gaseous Diffusion Plant (PORTS), Scioto and Seal Townships, Pike County, Ohio. ASC Group, Inc., Columbus, Ohio. Submitted to Fluor-B&W Portsmouth, LLC., Piketon, Ohio.

**H. Radiometric Dates**

1. Material(s) Dated \_\_\_\_\_  
Date (uncorrected C14 years) \_\_\_\_\_  
Laboratory \_\_\_\_\_  
Sample # \_\_\_\_\_  
Reference(s) \_\_\_\_\_
2. Material(s) Dated \_\_\_\_\_  
Date (uncorrected C14 years) \_\_\_\_\_  
Laboratory \_\_\_\_\_  
Sample # \_\_\_\_\_  
Reference(s) \_\_\_\_\_
3. Additional Radiometric Dates Yes \_\_\_\_\_ No \_\_\_\_\_  
(use Continuation Section to list other dates)

**I. Description of Site**

- \*1. State physical description of the site and its setting, including dimensions, features (with measurements), nature and location of artifacts and concentrations, extent and location of disturbances, etc.

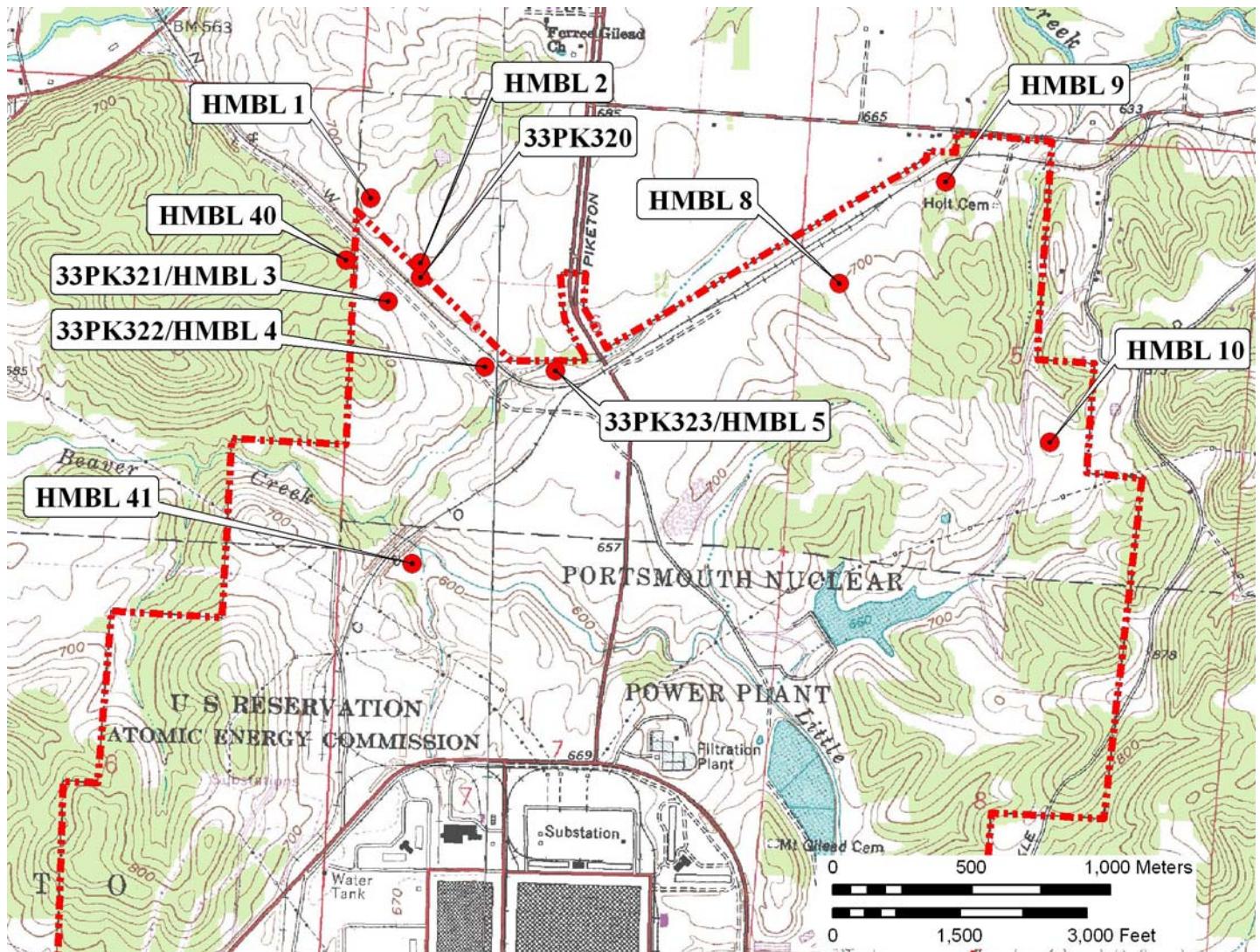
Site 33PK323 is located in a ravine near the north edge of the PORTS property. It is depicted and labeled as Moore School on the oil and gas map (Ohio Department of Natural Resources, Division of Geological Survey 1905) and the 1908 Waverly quadrangle (USGS 15' topographic map). No building is discernable on the aerial photographs. The woods at the site were fairly open making visual inspection relatively easy, but no buildings were observed. The old roadbed was readily identifiable extending from the railroad bed that cut it off to a culvert at the creek north of the site. There is a leveled area but no building materials were observed. A series of close-interval shovel tests excavated across the site documented extensive disturbance resulting from the site demolition. A total of 120 artifacts were recovered with the overwhelming majority relating to energy (coal fragments) or the fabric of the building (window glass, brick, and mortar). The artifacts were recovered from largely disturbed contexts and no intact structural evidence of the building was detected. The site encompasses 927 sq m.

- \*2. Discuss the relationship between the site and other known sites in the area in terms of location, physical characteristics, size, etc.

**J. Continuation Section:** Specify Section & Item (use additional Continuation Sheet(s) if necessary)

### \*K. Sketch Map or Copy of Project Map of Site

Include north arrow and scale. Attach a Xeroxed section of the appropriate U.S.G.S. quadrangle on a separate sheet. Outline total area surveyed and include locations of all identified sites on the Xerox of the quadrangle.



\*Site Location  
Permanent Feature

Distance (m)

Direction/Bearing from Site to  
Terrain Feature

**OHIO ARCHAEOLOGICAL INVENTORY**

\*Response required for acceptance of form

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Coder \_\_\_\_\_

Date \_\_\_\_\_

**A. Identification**

\*1. Type of Form (select as many as appropriate):

 New Form  Revised Form  Transcribed Data2. County Pike \*3. Trinomial State Site Number 33- PK - 324

4. Site Name(s) \_\_\_\_\_

5. Project Site Number \_\_\_\_\_

6. Other State Site Number \_\_\_\_\_

7. Source (of Item A.5. and/or A.6.) ASC Group, Inc. 2011 Project Number 1988-01,03 PORTS Farmsteads**B. Location**\*1. UTM Zone 16 or  17Easting 3 2 5 4 5 0Northing 4 3 1 9 5 4 0

0

0

2. Latitude \_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ "

Longitude \_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ "

\*3. Township 4 N Range 22 W Not Applicable \_\_\_\_\_Section 7 1/4 Section: SW SE NW  NETownship Name Scioto

1 9

\*4. Quadrangle Name Piketon\*5. Quadrangle Date 1979\*6. Confidence of Site Location  Yes  No**C. Ownership**\*1. Name(s) United States Department of EnergyAddress 1000 Independence Ave., SWCity/Town, State, Zip Washington, DC 20585Phone ( 202 ) 586-5000
 \*Site No. 33- PK - 324  
 Plotted 

2. Tenant (if any) \_\_\_\_\_

Address \_\_\_\_\_

City/Town, State, Zip \_\_\_\_\_

Phone (        ) \_\_\_\_\_

\*3. Ownership Status (select only one, as appropriate):

 Private (single)  Private (multiple) Local Govt. State Govt.  Federal Govt. Multiple Govt. Mixed-Govt./Private  Unknown**D. Temporal Affiliations**

\*1. Affiliations Present (select only one, as appropriate):

 Prehistoric  Historic  Prehistoric and Historic Unknown  Unrecorded



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\*11. Minimum Number of Historic Temporal Periods Represented 1 \_\_\_\_\_

\*12. Basis for Assignment of Historic Temporal Period(s) (select as many as appropriate):

Diagnostic Artifacts  Diagnostic Architectural Remains \_\_\_\_\_  
 Diagnostic Features  Documentary Evidence  Oral Tradition \_\_\_\_\_  
 Unrecorded  Other (specify) \_\_\_\_\_

13. Describe how Historic Temporal Period(s) were determined (list any diagnostic architectural remains, diagnostic artifacts and/or features; include type names, attach photographs and/or illustrations, and identify researcher). When listing artifacts and/or features specify Historic Temporal Period(s) by using letter designations from Item D.10.

It is depicted on the 1917 Piketon quadrangle (USGS 15' topographic map) and the Atomic Energy Commission (1952) property map and is visible on 1938 and 1951 aerial photographs of the area. Recovered artifacts generally agree with this date range, and all of the building remnants were made of poured and cast concrete.

Researcher \_\_\_\_\_

\*14. Functional Categories of Historic Materials Present at Site (select as many as appropriate):

<input type="checkbox"/> Kitchen	<input checked="" type="checkbox"/> Furniture	<input type="checkbox"/> Personal	_____
<input type="checkbox"/> Toys & Games	<input type="checkbox"/> Printed Matter	<input type="checkbox"/> Religious/Ceremonial	_____
<input type="checkbox"/> Military	<input type="checkbox"/> Weapons	<input type="checkbox"/> Transportation	_____
<input checked="" type="checkbox"/> Architectural	<input checked="" type="checkbox"/> Misc. Hardware	<input type="checkbox"/> Const./Manufacturing Tools	_____
<input checked="" type="checkbox"/> Agricultural	<input checked="" type="checkbox"/> Fuel/Energy	<input type="checkbox"/> Food Remains	_____
<input type="checkbox"/> Clothing	<input type="checkbox"/> Unrecorded	<input type="checkbox"/> Unknown	_____
<input type="checkbox"/> Other (specify) _____			

15. Specific Historic Cultural Materials Collected:

Type	Count	Type	Count
Barbed wire fragment	6	Tin-enamaled ware	1
Brick fragment	29	Drinking glass fragment	1
Nail, unidentified type	4	Glass bottle/vessel frag.	44
Nail, wire	4	Iron key type can opener	1
Window glass/flat glass frag.	6	Ironstone sherd	1
Glass, ashtray frag.	1	Redware sherd	1
Redware, flower pot sherd	1	Stoneware sherd	1

**General**

16. Describe Prehistoric and/or Historic Cultural Materials observed but not collected. State reason(s) for not collecting.

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17. Affiliated Ohio Historic Inventory Site Number and Name:

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**E. Physical Description**

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\*1. Archaeological Setting (select only one, as appropriate):

Rockshelter/Cave  Open  Unrecorded  Unknown  
 Submerged  Other (specify) \_\_\_\_\_

\*2. Prehistoric Site (select as many as appropriate):

Habitation:  Camp  Village  Hamlet  Unspecified Habitation \_\_\_\_\_

Extractive:  Quarry  Workshop \_\_\_\_\_

Ceremonial:  Unspecified Mound  Earth Mound  Stone Mound \_\_\_\_\_

Effigy Mound  Mound Group  Hilltop Enclosure \_\_\_\_\_

Geometrical Earthwork  Cemetery  Isolated Burial(s) \_\_\_\_\_

Petroglyph/Pictograph \_\_\_\_\_

Other:  Unknown  Unrecorded  Other (specify) \_\_\_\_\_

\*3. Historic Site Type (select as many as appropriate):

Residential  Commercial  Social  Government \_\_\_\_\_

Religious  Educational  Mortuary  Recreation \_\_\_\_\_

Subsistence  Industrial  Health Care  Military \_\_\_\_\_

Transportation  Unrecorded  Unknown \_\_\_\_\_

Other (specify) \_\_\_\_\_

4. State the bases on which site type assignment(s) were made.

The site corresponds with a farm shown on early maps and aerial photographs of the area.

\*5. Site Condition (select only one, as appropriate):

Undisturbed  Disturbed - Extent Unknown  Fully Disturbed \_\_\_\_\_  
 Destroyed  Unrecorded  Unknown \_\_\_\_\_

\*6. Dominant Agent(s) of Disturbance (select as many as appropriate):

None Apparent  Agriculture  Historic Construction  Water \_\_\_\_\_  
 Transportation  Archaeological Excavation  Mining  Vandalism \_\_\_\_\_  
 Unrecorded  Other (specify) Demolition \_\_\_\_\_

7. Nature of Disturbance/Destruction:

The farm buildings and portions of the yard area appear to have been razed with heavy machinery including a bulldozer.

\*8. Current Dominant Land Use (see manual):

Industrial

9. Land Use History:

The site appears to have been undeveloped, although it may have been in use as an agricultural field, until the farm was built in the years immediately preceding 1917. Since 1952, it has been unoccupied.

\*10. Site Elevation 213 Meters A.M.S.L. (elevation to be taken from UTM point) \_\_\_\_\_

\*11. Physiographic Setting of Site (select only one, as appropriate):

Lake Plain  Lexington Peneplain  Unglaciated Plateau \_\_\_\_\_  
 Till Plain  Glaciated Plateau  Unrecorded \_\_\_\_\_

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## \*12. Glacial Geomorphology (select only one, as appropriate):

- Not Applicable  Wisconsin End/Lateral Moraine \_\_\_\_\_  
 Kansan Ground Moraine  Wisconsin Kame/Kettle/Esker/Drumlin \_\_\_\_\_  
 Illinoian Ground Moraine  Wisconsin Lacustrine Deposit \_\_\_\_\_  
 Illinoian Outwash  Post Wisconsin Lacustrine Deposit \_\_\_\_\_  
 Wisconsin Ground Moraine  Wisconsin Outwash \_\_\_\_\_  
 Unrecorded  Other (specify) Pre-Illinoian Lacustrine Deposits \_\_\_\_\_

## \*13. Regional Geomorphological Setting (select only one, as appropriate):

- Stream Valley  Upland Hill Slope  Beach Ridge \_\_\_\_\_  
 Hill or Ridge Top  Lake Plains Interfluvial Zone  Unrecorded \_\_\_\_\_

## \*14. Local Environmental Setting (select only one, as appropriate):

- Terrace:  Unknown  T-1  T-2  T-3  T-4 \_\_\_\_\_  
 Beach Ridge  Terrace Remnant  Natural Levee  Floodplain \_\_\_\_\_  
 Low Rise on Floodplain  Alluvium  Island  Kame  Drumlin \_\_\_\_\_  
 Esker  Moraine  Glacial Hummock  Wetland Hummock \_\_\_\_\_  
 Bluff  Bluff Base  Bluff Edge  Saddle  Hill or Ridge Top \_\_\_\_\_  
 Closed Depression  Unrecorded  Other (specify) \_\_\_\_\_

## \*15. Soils:

- Soil Association Omulga \_\_\_\_\_  
Soil Series-Phase/Complex Princeton fine sandy loam, 8 to 15 percent slopes \_\_\_\_\_  
Reference USDA, Natural Resources Conservation Service Web Soil Survey \_\_\_\_\_  
(<http://websoilsurvey.nrcs.usda.gov/app/>) \_\_\_\_\_

## \*16. Down Slope Direction (select only one, as appropriate):

- N  NW  NE  E  All  Flat \_\_\_\_\_  
 S  SW  SE  W  Unrecorded \_\_\_\_\_

\*17. Slope Gradient (percent) 6% Unrecorded \_\_\_\_\_

## \*18. Drainage System (see manual):

- Major Drainage Ohio River \_\_\_\_\_  
Minor Drainage Scioto River \_\_\_\_\_

## \*19. Closest Water Source (select only one, as appropriate):

- Name: Unnamed Tributary to the Scioto River \_\_\_\_\_  
 Permanent Stream  Lake/Pond  Ephemeral Stream \_\_\_\_\_  
 Permanent Spring  Swamp/Bog  Intermittent Spring/Seep \_\_\_\_\_  
 Slough/Oxbow Lake  Artificial Lake/Pond (historic sites only) \_\_\_\_\_  
 Artificial Stream/Ditch (historic sites only)  Unrecorded \_\_\_\_\_  
 Other (specify) \_\_\_\_\_

\*20. Horizontal Distance to Closest Water Source 360 (meters from UTM point) \_\_\_\_\_

## 21. Elevation Above Closest Water Source \_\_\_\_\_ (meters A.M.S.L. from UTM point)

**F. Reporting Information**

## \*1. Investigation Type (select as many as appropriate):

- Reported  Examination of Collection  Surface Collection \_\_\_\_\_  
 Auger/Soil Corer  Shovel Test(s)  Test Pit(s)  Test Trench(es) \_\_\_\_\_  
 Deep Test(s)  PZ or Humus Removal  Testing/Excav. (strategy unknown) \_\_\_\_\_  
 Mitigation/Block Excavation  Aerial Photograph \_\_\_\_\_  
 Remote Sensing (specify) \_\_\_\_\_  
 Chemical Analysis (specify) \_\_\_\_\_  
 Unrecorded  Other (specify) \_\_\_\_\_

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## \*2. Surface Collection Strategy (select as many as appropriate):

- Not Applicable       Grab Sample       Diagnostics \_\_\_\_\_
- Controlled-Unknown       Controlled-Total \_\_\_\_\_
- Controlled-Sample       Unrecorded \_\_\_\_\_
- Other (specify) \_\_\_\_\_

3. If surface collection strategy is Controlled-Total, Controlled-Sample, or Other, describe methodology and percentage.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## 4. Surface Visibility (select only one, as appropriate):

- None       Less than 10%       11-50%
- 51-90%       91-100%       Unrecorded

## 5. Describe surface conditions.

woods

\*6. Site Area (square meters) 12,000

Unrecorded \_\_\_\_\_

## \*7. Basis for Site Area Estimate (select only one, as appropriate):

- Guessed       Historic Maps       Aerial Photograph       Paced
- Taped       Transit/Alidade       Range Finder       Unrecorded
- Other (specify) GPS

\*8. Confident of Site Boundaries:  No       Yes       Unrecorded9. Estimated Percentage of Site Excavated  Unrecorded       Unknown \_\_\_\_\_\*10. Name of Form Preparer Chuck Mustain\*11. Institution ASC Group, Inc.\*12. Date of Form (year/month) 11/12\*13. Field Date (year/month) 11/11

## 14. Time Spent at Site \_\_\_\_\_

15. Weather Conditions Cool and rainy

## 16. Name(s), Address(es), Phone Number(s) of Local Informants

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\*17. Artifact Repository (ies) Artifacts are temporarily held at ASC Group, Inc., but will be returned to the PORTS plant.

## 18. Name(s), Address(es), Phone Number(s) of Owners of Collections From Site (attach inventories of private collections).

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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## 19. Photographs (select as many as appropriate):

No. of Slides \_\_\_\_\_ No. of Prints \_\_\_\_\_

Aerials: \_\_\_\_\_ Black/White \_\_\_\_\_ Color \_\_\_\_\_ Infrared

## 20. Name and Address of Institution Where Photos Are Filed (include photo log number if available)

---

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## \*21. National Register Status (select only one, as appropriate):

 National Register Property† Determined Eligible for National Register† National Register Status Not Assessed Removed from National Register† Determined Not Eligible†

†Determination made by Keeper of the National Register (date) \_\_\_\_\_

## 22. State Registry Status (select only one, as appropriate)

 State Registry Listed† Not Assessed for State Registry Removed from State Registry† Determined Not Eligible†

†Determination made by Ohio Historical Society (date) \_\_\_\_\_

## 23. Discuss the potential significance of the site (does it meet National Register and/or State Registry criteria of significance in your opinion? Why or why not? Upon what evidence have you based your opinion?)

The site is recommended not eligible for inclusion in the state or national registers. Although many of the site elements remain identifiable above the ground surface, substantial portions of the farm have been wholly disturbed. This includes the house location, which has been entirely compromised, and the yard areas that may have once held a low-density sheet midden. Close interval shovel tests and intensive visual inspection also revealed no evidence of intact sealed archaeological contexts on site. Accordingly, the site is deemed to have a low potential to yield new or significant information regarding past life ways.

## \*24. Special Status (select only one, as appropriate):

<input checked="" type="checkbox"/> None	<input type="checkbox"/> Wilderness Area	<input type="checkbox"/> Wildlife Preserve
<input type="checkbox"/> Park	<input type="checkbox"/> Scenic River	<input type="checkbox"/> Nature Preserve
<input type="checkbox"/> Forest	<input type="checkbox"/> Military Installation	<input type="checkbox"/> Archaeological Preserve
<input type="checkbox"/> Archaeological District		<input type="checkbox"/> Unknown
<input type="checkbox"/> Other (specify) _____		

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**\*G. References** - List Primary Documentary References (see manual):

1. 2011 Summary report for preliminary assessment of 12 historic archaeological sites at the PORTS Plant, Piketon, Ohio. Letter from Chuck Mustain and David Klinge to Chad Book.
2. Atomic Energy Commission 1952 Final Project Map. Land acquisition Map, 1:16,000. United States Army Corps of Engineers, Huntington District, Louisville Kentucky.
3. \_\_\_\_\_

**H. Radiometric Dates**

1. Material(s) Dated \_\_\_\_\_  
Date (uncorrected C14 years) \_\_\_\_\_  
Laboratory \_\_\_\_\_  
Sample # \_\_\_\_\_  
Reference(s) \_\_\_\_\_
2. Material(s) Dated \_\_\_\_\_  
Date (uncorrected C14 years) \_\_\_\_\_  
Laboratory \_\_\_\_\_  
Sample # \_\_\_\_\_  
Reference(s) \_\_\_\_\_
3. Additional Radiometric Dates Yes \_\_\_\_\_ No \_\_\_\_\_  
(use Continuation Section to list other dates)

**I. Description of Site**

- \*1. State physical description of the site and its setting, including dimensions, features (with measurements), nature and location of artifacts and concentrations, extent and location of disturbances, etc.

Site 33PK324 is located on a ridgeline near the west edge of the PORTS property. It is depicted on the 1917 Piketon quadrangle (USGS 15' topographic map), and the Atomic Energy Commission (1952) property map and is visible on 1938 and 1951 aerial photographs of the area. The site is defined by a large rubble pile that appears to be the house remnants, three barn foundations, the remnants of smaller outbuilding, a silo base, a developed spring and two cisterns. No remains of the superstructures of any of the buildings were observed at the site. All of the site elements are made of poured or cast concrete and modern, three-hole concrete block. Testing revealed very few artifacts around in the vicinity of the three barns, which appear to be arranged on a modified linear plan. Barn 1 is located near the silo base and is surrounded by a paved barnyard or feedlot, indicating that this was likely a dairy farm.

- 
- \*2. Discuss the relationship between the site and other known sites in the area in terms of location, physical characteristics, size, etc.

**J. Continuation Section:** Specify Section & Item (use additional Continuation Sheet(s) if necessary)

Cont. from D-15

Whiteware sherd. - 3

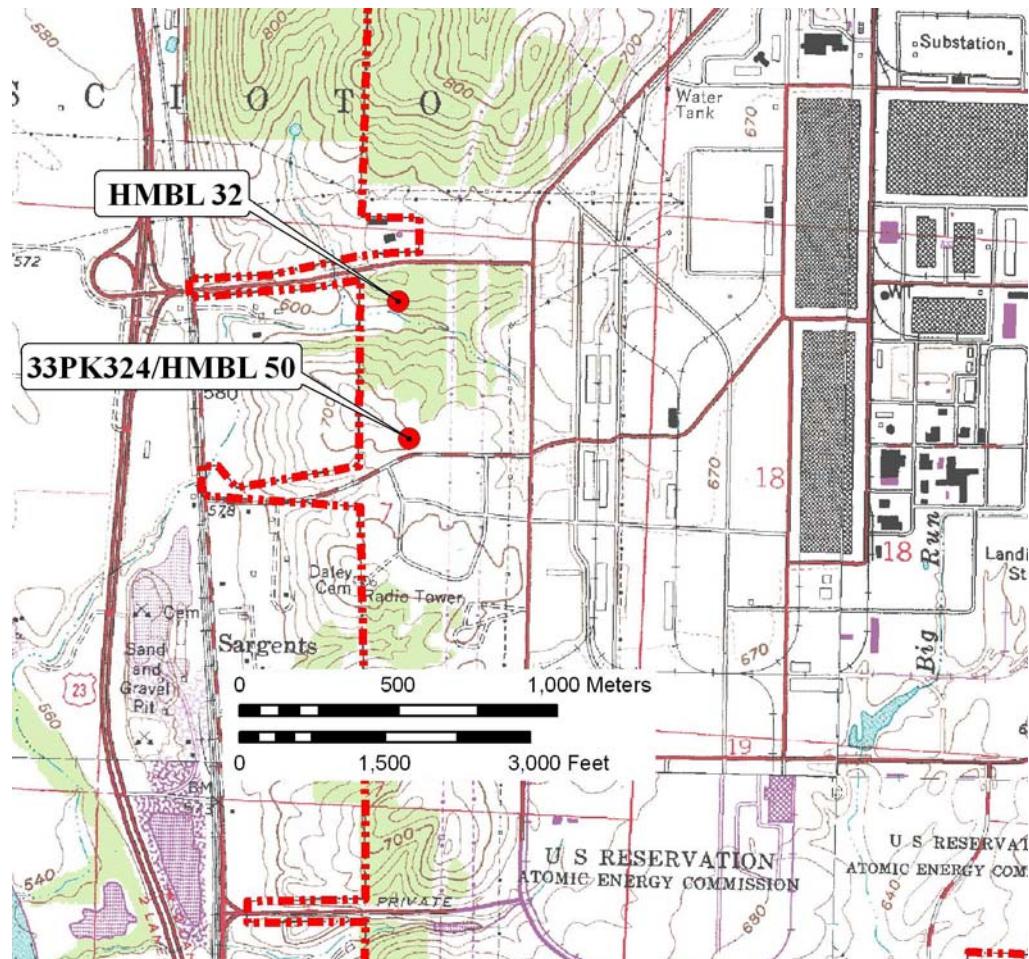
Iron file/rasp frag. -1

Iron railroad spike - 1

Iron strap hinge frag. -1

### \*K. Sketch Map or Copy of Project Map of Site

Include north arrow and scale. Attach a Xeroxed section of the appropriate U.S.G.S. quadrangle on a separate sheet. Outline total area surveyed and include locations of all identified sites on the Xerox of the quadrangle.



\*Site Location  
Permanent Feature

Distance (m)

Direction/Bearing from Site to  
Terrain Feature



April 18, 2012

Ms. Wendy Stewart  
Fluor-B&W Portsmouth, LLC  
3930 US Rte 23 South  
Piketon, OH 45661

**RE: Addendum letter report for Site 33PK322 as documented in Mustain and Klinge (2011)  
*Phase I Archaeological Survey of Sites 33PK322, 33PK323, and 33PK324 at the Portsmouth  
Gaseous Diffusion Plant (PORTS), Pike County, Ohio.***

Dear Ms Stewart,

This letter is intended as an addendum to the Phase I Archaeological Investigation of Site 33PK322 as documented by Mustain and Klinge (2011a, 2011b) during Phase I surveys in 2011. The site was first documented as a historic map building location (HMBL) by Burks (2011) during a review of mid-twentieth century aerial photography of the PORTS plant property. The site is located in the northwestern quadrant of the PORTS plant, near a set of post-1952 railroad tracks (Attachment 1).

After the site was identified as an HMBL, the ASC Group, Inc. (ASC) conducted a preliminary assessment to locate the site in the field (Mustain and Klinge 2011a). That preliminary assessment documented the remains of a house with a continuous stone or stone pier foundation. A Phase I survey was recommended for the site, as similar residential sites are not well-represented among the archaeological sites that have been documented and evaluated on the PORTS property.

ASC returned to the site in 2011 to conduct a Phase I survey, following methodology that had been established to address several sites that were advanced to Phase I from the preliminary assessments (Mustain and Klinge 2011b). In advance of that survey, the covering vegetation was cleared from the site by other contractors, exposing the remnants of three outbuildings (Attachment 2). The clearing also revealed that the house foundation was a continuous stone foundation with two stone and concrete features that were interpreted as a stove base and a concrete stoop/step for an entryway. One of the small outbuildings was built with a stone foundation and the two others were built with poured concrete foundations.

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During the investigation a series of shovel test pits was excavated across the site at 16.4-ft (5-m) intervals to define the site limits and evaluate the horizontal distribution of artifacts. The shovel test pits and a visual inspection of the site indicated that portions of the site were intensely disturbed by demolition activities. Due to limits on the depth of excavation it was not possible to evaluate the extent of the disturbance below 12 in (30 cm). The site limits were defined by a roadway that passes south of the house, the horizontal extent of the artifacts and foundation elements to the east and west, and by a set of post-occupation railroad tracks that overlay portions of the outbuildings to the north.

A total of 334 artifacts was recovered from the shovel test pits. They were primarily recovered from the co-mingled and disturbed demolition deposit around the house and contained artifact types that span the mid-nineteenth to mid-twentieth centuries. Whereas most of the historic sites examined on the PORTS property contain items that may have been produced in either the nineteenth or twentieth centuries, the assemblage from 33PK322 contained several items that were certainly dated to the nineteenth century (Mustain and Klinge 2011b).

At the conclusion of this investigation, the site was defined as a residential site. The outbuildings were relatively small and appeared to be garages or sheds, rather than agricultural barns. The presence of two construction methods in the foundations—continuous stone for the house and one outbuilding and poured concreted for two outbuildings—was interpreted as evidence of two construction episodes. The presence of nineteenth-century artifacts in the admittedly co-mingled and disturbed sheet midden was enough to suggest that one construction episode occurred in the nineteenth century and the second after ca. 1920 based on the presence of the poured concrete foundation (Mustain and Klinge 2011b).

It was not possible to make a recommendation of this site's eligibility for inclusion on the National Register of Historic Places (NRHP) at the conclusion of the Phase I. There was no question that portions of the site were intensely disturbed and that the sheet midden deposit surrounding the site was generated during the demolition event rather than during the occupation of the site. However, the vertical extent of the disturbance was unknown. It was determined that the site may represent a long-term occupation and the possibility of intact deposits, particularly shaft features like privies, persisting below the disturbed topsoil could not be ruled out. Additional Phase I survey was recommended focusing on a geophysical survey of the site to search for shaft or pit features that might contain intact and sealed archaeological deposits (Mustain and Klinge 2011b).

Since the Phase I investigation, two subsequent surveys have documented further elements of the site: a geophysical survey (Jagel 2012) and a Phase I survey for prehistoric resources that has just been completed by ASC. The geophysical survey investigated the entirety of the site as it was defined by Mustain and Klinge (2011b). It documented disturbed soils and rubble deposits across an area substantially broader than the disturbed area documented archaeologically. The intensive disturbance was concentrated between the house foundation and two of the outbuilding foundations near the railroad tracks. The geophysical survey did not identify any shaft or pit features extending through the subsoil within the site limits, precluding the possibility of sealed archaeological deposits existing beneath the disturbed topsoil.

Recently, ASC documented portions of this site to the north of the railroad tracks that served as the site boundary during the 2011 Phase I (Attachment 3). This portion of the site was discovered during fieldwork for a larger Phase I survey for prehistoric sites, the report for which is currently being written. The additional site element appears to be the remnants of a livestock barn that is partially buried beneath the post-1952 railroad tracks. The barn remnants consist of a poured concrete floor and sill to the west

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and a pier-supported lean-to or pen to the east (Attachment 4). The entire structure is approximately 29.5 ft (9 m) wide and it extends approximately 29.5 ft (9 m) from the railroad bank. It is divided into roughly equal halves with the western portion constructed of poured concrete and the eastern portion defined by a slightly raised earthen platform and several stones that may have served as pole supports.

In keeping with the original Phase I methodology (Mustain and Klinge 2011b), this portion of the site was shovel tested at 16.4-ft (5-m) intervals (Attachment 3). A total of 28 additional shovel tests were completed, 12 of which documented disturbed soils from the site demolition and railroad construction, and two of which produced artifacts. In general, the soil profile from the undisturbed shovel test pits showed approximately 6 in (15 cm) of dark brown clayey loam topsoil overlying yellowish-brown silty loam subsoil. Just two artifacts were recovered, one from each of the positive shovel tests. They include one iron nail that is too corroded to identify further and a single fragment of undecorated ironstone, a ceramic type manufactured from 1842 to the present (Miller et al. 2000). The artifacts do not add to our understanding of the site.

Based on this new data, our conception of the site can be revised in several ways. First, the site can be reclassified from a residential site to a small farmstead based on the presence of the barn, which is interpreted as a livestock barn. Second, the site size can be revised as the northern boundary now extends past the railroad tracks to Little Beaver Creek. The site is approximately 262 ft (80 m) wide and 262 ft (80 m) long and encompasses 68,644 sq ft (6,377 sq m). Finally, the barn must be added to list of site components from the second quarter of the twentieth century based on the poured concrete foundation.

The geophysical data also allows a more accurate assessment of NRHP eligibility. The geophysical survey and both episodes of shovel testing documented extensive disturbance across the site limits. Large bulldozer scars indicate that much of this disturbance was caused when the site was demolished, although some disturbance associated with the railroad construction was also documented. All of the artifacts that have been recovered were found in co-mingled rubble deposits and it is not possible to stratigraphically distinguish older items from more recent items. The geophysical survey did not document any potential features beneath the disturbed topsoil, indicating that there is no potential to identify intact, sealed archaeological deposits on site. The site does not possess sufficient archaeological integrity to be determined significant.

Accordingly, it is unlikely that additional investigation will recover information significant to the local or regional history. Site 33PK322 is recommended not eligible for inclusion the NRHP. No further work is recommended.

Please contact me at 440.845.7590 or dklinge@ascgroup.net if you have any questions or require additional information.

Sincerely,



David F. Klinge, M.A.  
Manager of the Northern Ohio Region/Principal Investigator

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## REFERENCES:

Burks, Jarrod

2011 *Additional Farmsteads and Buildings at PORTS Not Documented During the Initial Phase I Survey*. Ohio Valley Archaeology, Columbus, Ohio. Submitted to Restoration Services, Oak Ridge, Tennessee. Copies on file at the Ohio Historic Preservation Office, Columbus.

Jagel, Donald

2012 *Subsurface Survey Services Report: Geophysical and Buried Utility Investigation Historic Farmstead Site 33PK322 (HMBL 4), PORTS Facility, Piketon, Ohio*. Advanced Geological Services, Malvern, Pennsylvania. Report on file with Fluor B&W Portsmouth, LLC, Piketon, Ohio.

Miller, George L., Patricia Stamford, Ellen Shiasko, and Andrew Madsen

2000 Telling Time for Archaeologists. *Northeast Historical Archaeology*, 29:1–22.

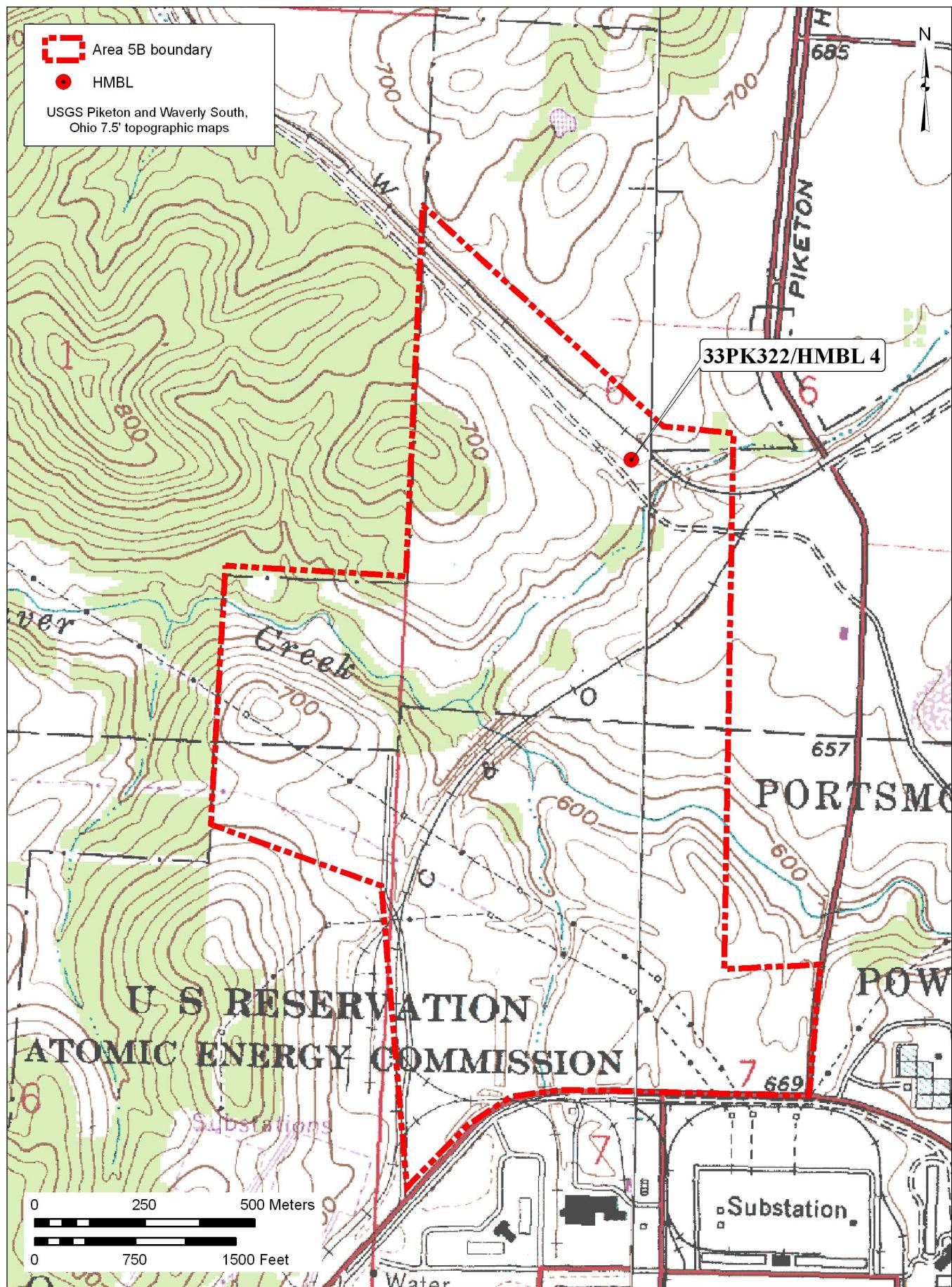
Mustain, Chuck, and David F. Klinge

2011a *Summary Report for Preliminary Assessment of 12 Historic Archaeological Sites at the PORTS Plant, Piketon, Ohio*. ASC Group, Columbus, Ohio. Submitted to Fluor-B&W Portsmouth, LLC, Piketon, Ohio. Copies on file at the Ohio Historic Preservation Office, Columbus.

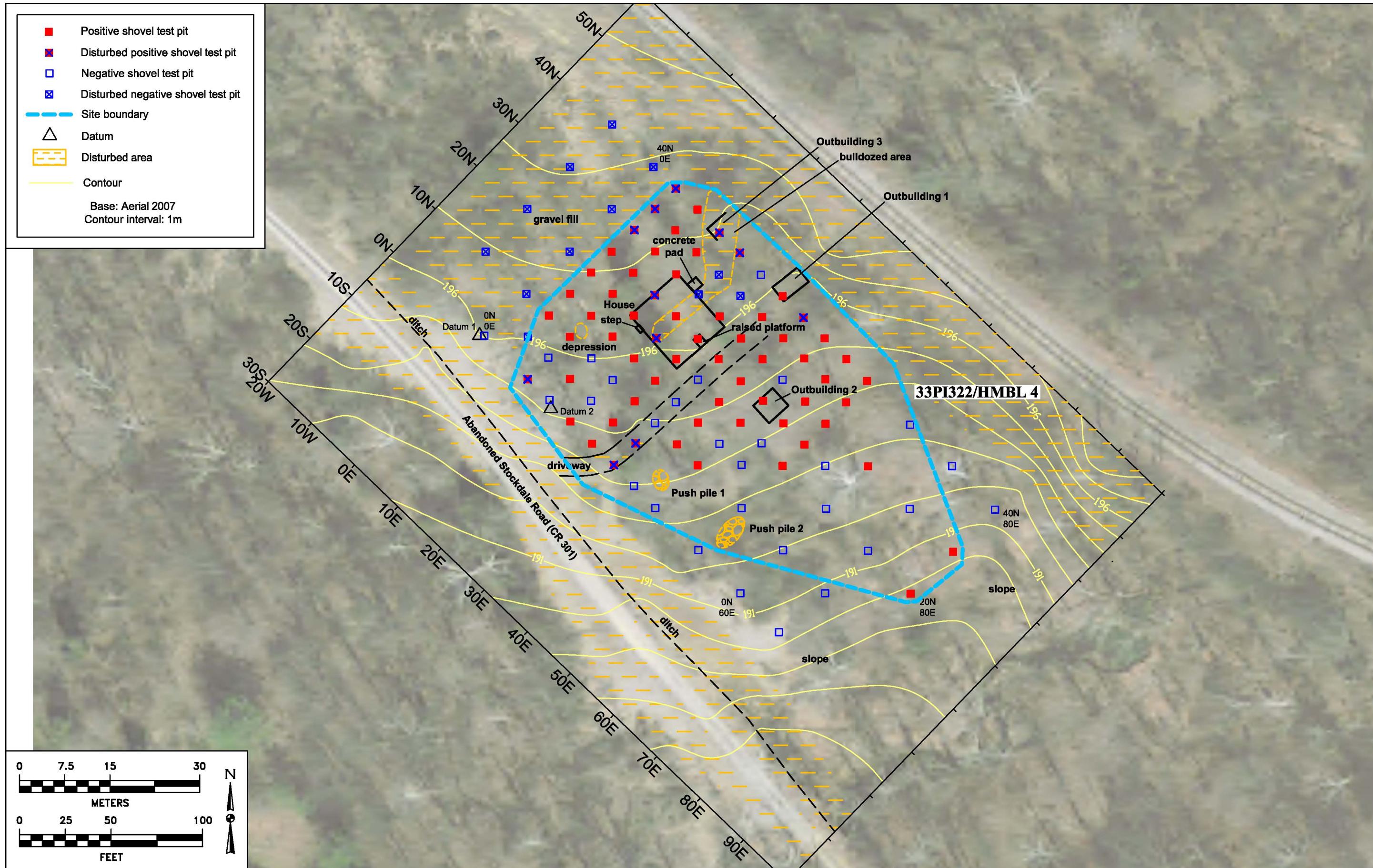
2011b *Phase I Archaeological Survey of Sites 33PK322, 33PK323, and 33PK324 at the Portsmouth Gaseous Diffusion Plant (PORTS), Pike County, Ohio*. ASC Group, Columbus, Ohio. Submitted to Fluor-B&W Portsmouth, LLC, Piketon, Ohio. Copies on file at the Ohio Historic Preservation Office, Columbus.

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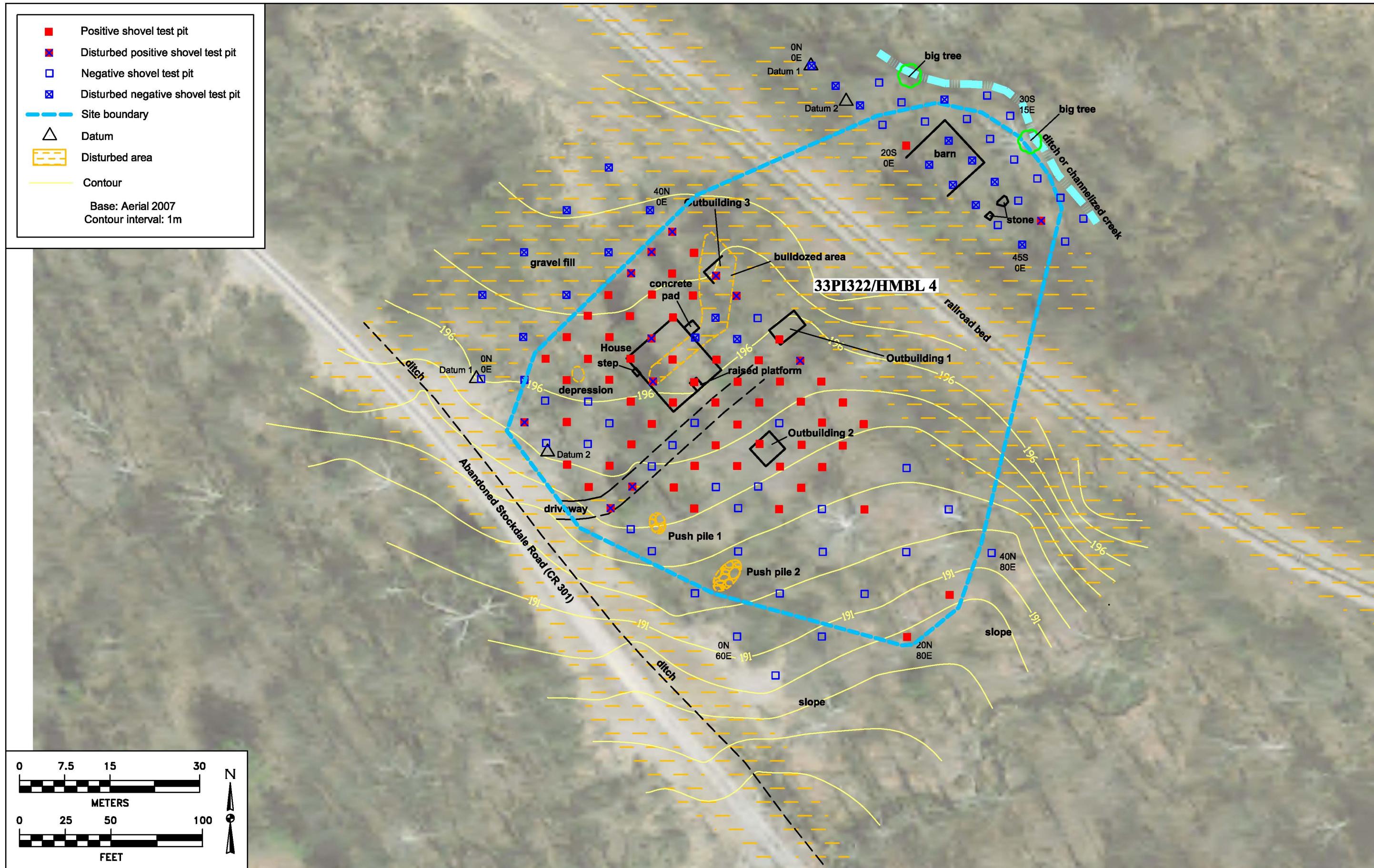
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Attachment 1: Portions of the Piketon and Waverly South quadrangles (USGS 7.5' topographic maps) showing the location of HMBL 4/33PK322.



Attachment 2: Topographic map of 33PK322 detailing the original Phase I archaeological testing.



Attachment 3: Topographic map of 33PK322 detailing the archaeological testing after the most recent survey.



Attachment 4. View facing southwest of a moss-covered portion of the concrete barn floor at 33PK322.



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Malvern, PA 19355  
(610) 722-5500 (ph.)  
(610) 722-0250 (fax)

AGS Reference: 12-148-1

## SUBSURFACE SURVEY SERVICES REPORT

Prepared for: Flour-B&W Portsmouth LLC

TOR No.: TOR019; Task 2

Contract No.: PO-0000059

March 30, 2012

**Subject:** Geophysical and Buried Utility Investigation  
Historic Farmstead Site 33PK322 (HMBL 4)  
PORTS Facility, Piketon, Ohio

Advanced Geological Services (AGS) presents this submittal to Flour-B&W Portsmouth LLC (FBP) summarizing the geophysical investigation completed by AGS on March 13, 2012 at Historic Farmstead Site 33PK322 (HMBL 4), located west of Shyville Road on the PORTS property located in Piketon, Ohio.

The objectives of this investigation were to 1) identify potential underground shafts, backfilled pits, or other subsurface features that may be related to the former farmstead, and 2) to identify any potential buried utilities that are present within the investigation area.

At the time of the investigation, the survey area was lightly wooded. Underbrush had been cleared from the survey area prior to the arrival of AGS. The geophysical survey area was approximately 0.7 acres in size.

### **Methods**

To achieve the project objective, AGS utilized a combination of the terrain conductivity electromagnetic (EM) method, the ground penetrating radar (GPR) method, and the radio frequency (RF) utility locating method. All identified features were marked on the ground surface with spray paint and/or pin flags.

#### *Terrain Conductivity Electromagnetic (EM) Method*

Terrain conductivity EM data were collected across accessible portions of the investigation area to identify anomalies that could indicate the presence of potential cultural features, or underground utilities. The EM method uses the principle of electromagnetic induction to measure the variability of terrain conductivity of subsurface materials. This method detects soil conductivity changes that are caused by variations in soil composition, the presence of fill material, or variations in porosity or moisture content often associated with disturbed soils. This technique also responds strongly to the presence of metal, making it particularly well suited to identifying buried metal pipelines, utilities, and underground storage tanks (USTs).

A Geonics EM31 terrain conductivity meter was used to collect EM data throughout the investigation area. The EM31 operates in accordance with the theory of operation at low induction numbers. An alternating current is passed through the transmitter coil to induce eddy currents into the ground. These eddy currents generate a secondary magnetic field. A component of the induced magnetic field is detected by a receiver coil and measured by the instrument. The receiver measures the field strength of both the quadrature and the in-phase components. The quadrature response is displayed as terrain conductivity in units of milliSeimens per meter (mS/m). The in-phase response is displayed in units of parts per thousand (ppt) of the transmitted signal.

EM data were collected along parallel traverses spaced 5 feet apart. Data were recorded at a rate of 2 measurements per second, resulting in one measurement approximately every 2 feet. Locations of measured data points and real time navigation were determined using an integrated Trimble Pro-XRS global positioning system (GPS) capable of sub-meter accuracy. Upon completion of EM data collection, the data were transferred to a laptop computer and contoured to identify any additional anomalous features that could indicate the presence of cultural features and utilities.

#### *Ground Penetrating Radar (GPR) Method*

GPR traverses were completed in a grid pattern to detect locations of fill materials, soil disturbance, or buried utilities. A Geophysical Survey Systems SIR System 3000 GPR instrument and a 400 megahertz (MHz) antenna were used for remote sensing and imaging of subsurface features within the investigation area.

The GPR method is based upon the transmission of repetitive, radio frequency electromagnetic (EM) pulses into the subsurface. When the down-going wave contacts an interface of dissimilar electrical character, it returns to the surface in the form of a reflected signal. This reflected signal is detected by a receiving transducer within the GPR unit and added to the data file. The GPR anomaly remains prevalent as long as the electrical contrast between media is present and constant. Any lateral or vertical changes in the electrical properties of the subsurface result in an equivalent change in the GPR signature. The system records a continuous image of the subsurface by plotting two-way travel time versus distance traveled along the ground surface. Two-way travel time values are then converted to depths using known soil velocity functions.

A scan length of 60 nanoseconds (ns) was used providing a maximum depth of investigation of 10 feet below the ground surface under ideal site conditions. Local soil conditions limited GPR signal penetration to approximately 6 feet below grade at this site. GPR traverses were collected in a grid pattern, along traverses spaced 10 feet apart in the site grid north-south, and grid east-west directions. Additional GPR traverses were completed across various locations, and along various orientations as-needed to further characterize any potential subsurface anomalies identified during data collection. All identified utilities were marked on the ground surface using spray paint and/or pin flags.

### *Radio Frequency (RF) Utility Locating Methods*

The investigation area was inspected using a RF utility locating system to identify and trace potential electrical, telecommunication, water, and other potential identifiable utilities.

AGS utilized a Radiodetection RD4000 utility locating instrument. This instrument consists of a receiver/tracer and a remote transmitter which operates at multiple radio-frequencies (RF) ranging from 8 kHz to 65 kHz. The receiver unit detects the transmitted RF signals as well as standard 60 Hz electrical power lines and broad-band RF signals when operated in passive detection modes. This utility tracing instrument is an analog device which provides visual and audible feedback to the operator when a utility coupled with the transmitted signal is crossed. The transmitter produces a radio-frequency signal in the utility to be traced by either induction coupling or direct hook-up. The receiver output varies an audible pitch and visual feedback depending upon how far the utility is from the receiver. By carefully adjusting the gain of the receiver it is possible to determine the location of the utility and to separate it from adjacent utilities.

The investigation area was scanned using passive 60 Hz and the broad-band RF detection modes to identify potential utilities that may be present. Identified utilities were marked on the ground surface with spray paint and/or pin flags.

### *Results and Discussion*

Historic Farmstead Site 33PK322 is located at the northern end of the PORTs property, approximately 1,500 feet west of Shyville Road, and centered at approximate coordinates 182376E/377815N (Ohio State Plane, NAD83, feet). The investigation area was approximately 0.7 acres in size, and had been cleared of underbrush by FBP personnel prior to the arrival of AGS.

A site map of contoured terrain conductivity EM results is shown on Figure 1. The archaeological survey grid, and features identified on a map produced by the archaeologists (Figure 8. Topographic map of 33PK322 detailing the archaeological testing and keyed to Plates I 10; page 54) have been transposed onto Figure 1 for reference.

Overall, the quality of the terrain conductivity data were very good. The range of the terrain conductivity values was between -33 mS/m and 78 mS/m, with the average background level at 21 mS/m. Generally the majority of the site was at, or near background conductivity levels, with slight gradational variations caused by variations in soil composition, or soil moisture. Background conductivity levels at the northern end of the investigation area were higher (approximately 28 mS/m) compared to the background conductivity levels at the southern side of the investigation area (approximately 16 mS/m). Based on the conductivity results, the soil at the southern side of the site may be finer grained, with a higher clay content, or may have a higher moisture content than the soil at the north side of the site.

Two anomalies were noted in the terrain conductivity results. The first anomaly, Anomaly A, encompasses an area approximately 600 ft<sup>2</sup> in size, located between the northeast side of the former house, the northwest side of Outbuilding 1, and covering Outbuilding 2 (Figure 1). Anomaly A is consistent with the type of response expected from the presence of building debris and disturbed soil/fill. Strong negative conductivity responses within a portion of Anomaly A indicates that a portion of the debris contains metal. The archaeologists had noted a "Disturbed Area" within a portion of Anomaly A (Figure 1). The terrain conductivity results indicate that the "Disturbed Area" is likely larger than the archaeologists had indicated.

GPR traverses collected across Anomaly A indicated that the debris/disturbed soil was limited to a thin veneer that was less than approximately 1.5 feet thick. Below this veneer, the soil appeared to be undisturbed. No large individual metal objects were noted in the GPR traverses that crossed Anomaly A, suggesting the the metal that is present is composed of small scrap/debris with irregular geometry, and may be partially to heavily corroded.

Anomaly B was caused by a portion of a crushed corrugated metal culvert lying on the ground surface.

GPR traverses were collected across the investigation area in a 10-foot by 10-foot grid pattern to better understand the soil/fill distribution throughout the site. Additional GPR traverses were collected at various orientations as needed to further characterize specific features observed in the terrain conductivity results, or seen in other GPR traverses. The GPR results indicated that soil disturbance throughout the site was limited to the upper 1 to 2 feet below existing grade, with most of the site showing little or no disturbance. No backfilled pits, basements, or root cellar type of features were noted in any of the GPR records. The general lack of soil disturbance noted in the GPR records was consistent with the terrain conductivity results.

The site was also scanned using a RF utility locator to identify any utilities that may be present. No utilities were identified from the RF utility locator scan. No features that would indicate the presence of any underground utilities were identified in either the terrain conductivity or GPR results.

In summary, a terrain conductivity anomaly (Anomaly A) approximately 600 ft<sup>2</sup> in size was noted on the northeast side of the former house. Terrain conductivity and GPR results indicate that Anomaly A is composed of building debris and disturbed soil to a depth of approximately 1.5 feet below existing grade. Some of the debris is metallic, or metal containing. Anomaly B was caused be a piece of metal culvert on the ground surface. No backfilled pits, basements, or root cellar types of features were identified on site. No buried utilities were identified within the investigation area.

Upon completion of field activities, the results of the investigation were reviewed and discussed with the on site FBP representative.

### ***Closing***

All geophysical data and field notes collected as a part of this investigation will be archived at the AGS office. The data collection and interpretation methods used in this investigation are consistent with standard practices applied to similar geophysical investigations. The correlation of geophysical responses with probable subsurface features is based on the past results of similar surveys although it is possible that some variation could exist at this site. Due to the nature of geophysical data, no guarantees can be made or implied regarding the presence or absence of additional objects or targets beyond those identified.

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attachment: Figure 1.

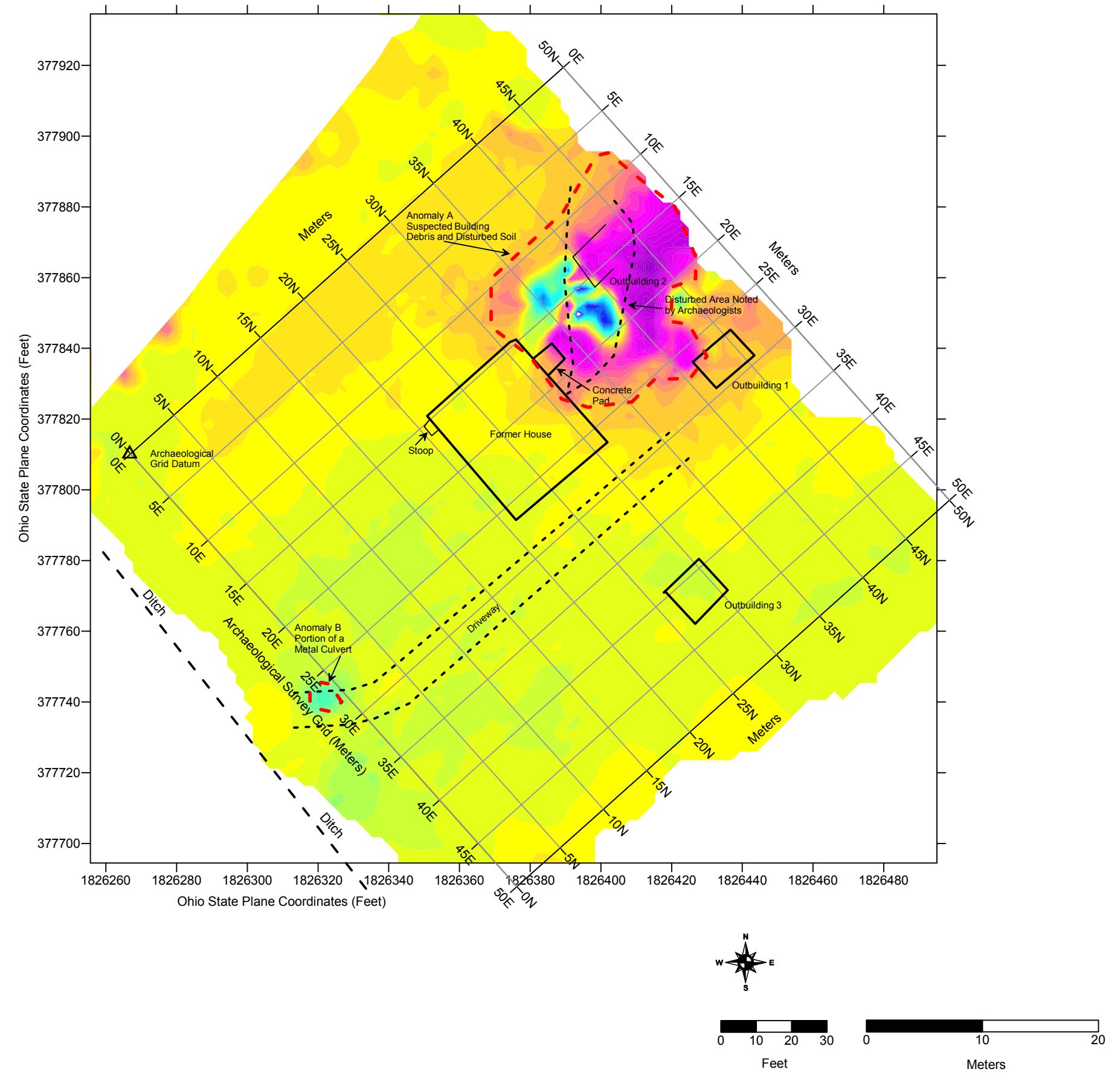


Figure 1  
Terrain Conductivity Anomaly  
Map

Site: PORTS Archaeological Area 4	Prepared For: Fluor-B&W Portsmouth LLC Portsmouth Gaseous Diffusion Plant Piketon, Ohio
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