AN INVESTIGATION INTO THE ARCHAEOLOGICAL RESOURCES OF IRISHTOWN GAP HOLLOW

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This research aims to connect the material culture of the cultural resources of Irishtown Gap Hollow to broader social and industrial systems of South Mountain. These resources include the Jacob Keller Sawmill and the Domestic Site, a mountain farmstead. Archaeological survey confirmed the location of the Jacob Keller Sawmill. It also identified an artifact assemblage from the Domestic Site that dates the site to the mid-nineteenth century, revealing a small portion of the inhabitants' lifeways from this time and the positionality of some of South Mountain's earliest inhabitants. The results of this research sheds light on the archaeological significance of the region to ultimately engage the public in the historical landscape of the Kings Gap Environmental Education Center and the Irishtown Gap Hollow.

ACKNOWLEDGEMENTS

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CHAPTER 1

INTRODUCTION

The purpose of this research is to record and interpret the cultural resources of Irishtown Gap Hollow, which consists of two, previously unrecorded archaeological sites, the Jacob Keller Sawmill (36CU0241) and the Domestic Site (36CU0240), a possible farmstead site. The sawmill is a pre-Civil War historic site located in South Mountain in Dickinson Township, Cumberland County, Pennsylvania. The Sawmill was owned by Jacob Keller, a prominent businessman in the region. It was sold to Jacob Keller in November of 1847 and reportedly included, in addition to the sawmill, a log house (Sayers 2020). In the course of this research, field survey encountered both the sawmill and the farmstead. The Domestic Site was not determined to be the log house previously mentioned as part of the Jacob Keller Sawmill acquisition, but rather a separate homestead site, that may have also been owned by Jacob Keller, and whose inhabitants may have been tenants who were either laborers or farmers.

This research aims to connect the material culture from Irishtown Gap Hollow to broader social and industrial systems that include the iron ore industrial system of South Mountain. The Jacob Keller Sawmill and the Domestic Site were excavated to reveal the function of remnant fieldstone foundations. Historical documentation was also examined to identify the role of these sites within the South Mountain region at the height of the sawmill's operation and the farmstead site's occupation. The results of this survey contribute to the holistic understanding and interpretation of the cultural resources within Kings Gap Environmental Education Center, which up until now, has had limited research conducted. The results of this research will be added to the continued preservation planning of the park's resources and planning methods regarding

ethical public engagement with these resources and allowing an avenue for the park's visitors to connect to the historic landscape of this unique hollow.

To connect the resources identified resources of Kings Gap Environmental Education Center with the broader social systems of South Mountain and to understand their role during their occupation and operation period, the following research questions will be explored to further understand these historic resources:

1). What was the relationship between the Jacob Keller Sawmill and the Domestic Site and how do these sites relate to the industrial landscape of South Mountain?

A) Were there similar mills in the vicinity of the Jacob Keller Sawmill?

B) Are there similar homestead/farmstead sites within other hollows near the Irishtown Gap Hollow of South Mountain?

2). What does the historical documentation suggest about the inhabitants and function of the Domestic Site as well as the Jacob Keller Sawmill Site?

3). Who were the inhabitants of the Jacob Keller Sawmill Site and Domestic Site and what was the social and economic status of these inhabitants?

Location

The Jacob Keller Sawmill and the Domestic Site are located within the Irishtown Gap Hollow, located in Cumberland County, in Dickinson Township, within the vicinity of the

Irishtown Gap Hollow Trail, which is located roughly ten miles southwest of Carlisle, PA in Kings Gap Environmental Education Center (Figure 1; Figure 2).

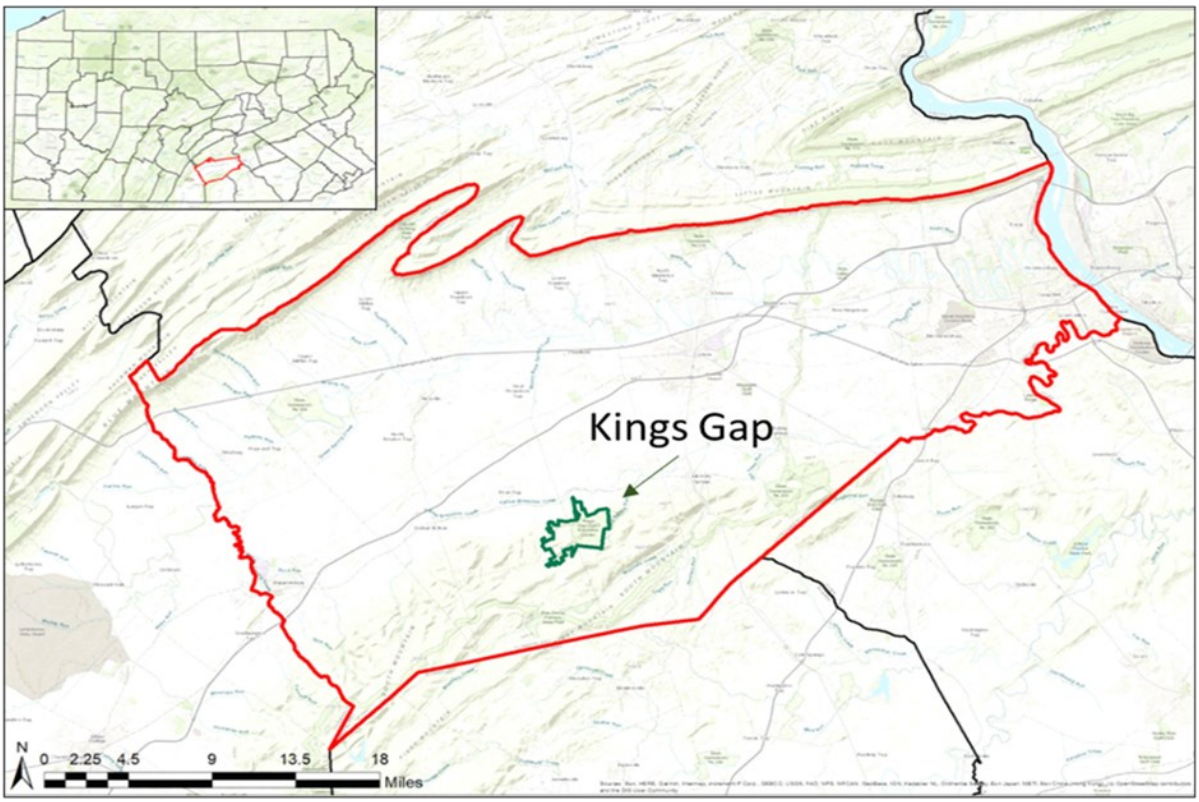

Figure 1. Overview Map of Pennsylvania, Cumberland County (Outlined in Red), Within Kings Gap Environmental Education Center DCNR Property (Outlined in Green).

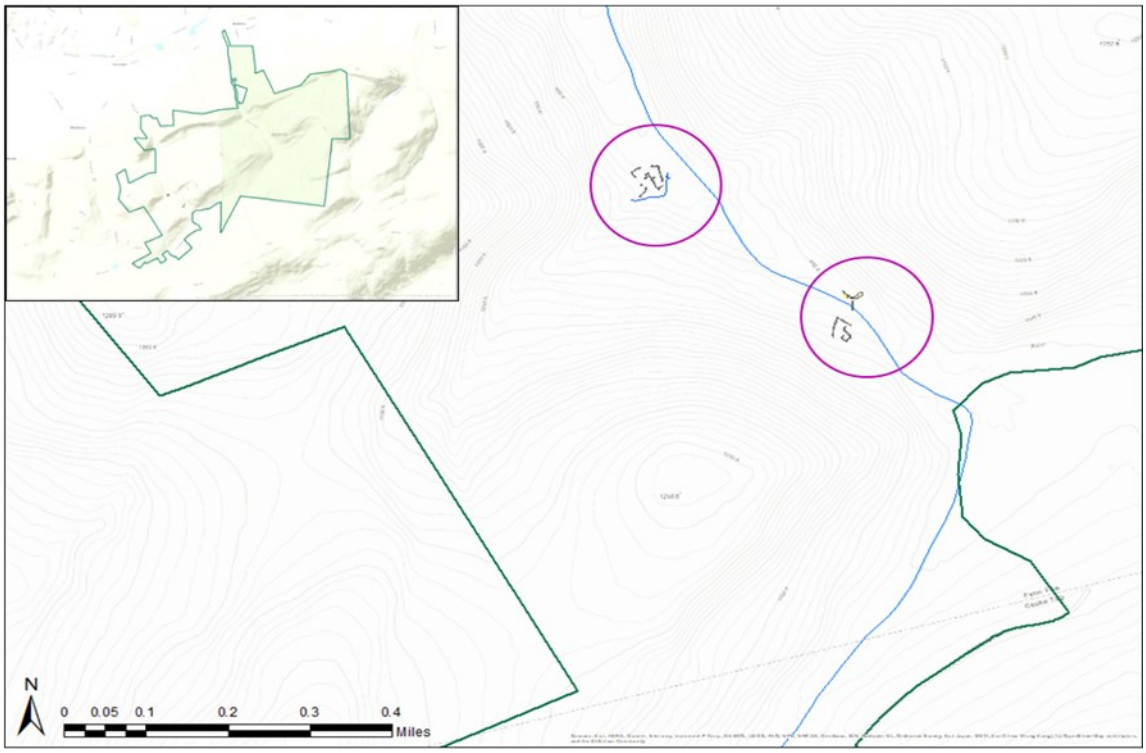

Figure 2. View of the Domestic Site in the North and the Jacob Keller Sawmill to the South Within Kings Gap Environmental Education Center (Purple Circles).

The Jacob Keller Sawmill is located roughly 1.3 miles from the northern trail head, within the hollow of the Kings Gap Environmental Education Center's property. The remains of the Jacob Keller Sawmill include a dam erected from field stones that bisects an unnamed tributary of Yellow Breeches Creek (Figure 3 [Top]). Within the creek, cut stone blocks line the creek sides slightly north of the dam site. Additionally, fieldstone foundations and field stone fence lines are visible.

Figure 3. Top: Overview of Jacob Keller Sawmill, Facing South. Note the Unnamed Tributary of Yellow Breeches Creek (Red arrow). Bottom: Overview of Domestic Site, Facing South. Note the Trail Running Through the Site (Yellow Arrow).

The Domestic Site is located 330 meters north of the Jacob Keller Sawmill. It also has fieldstone walls in addition to foundations on the upper and lower slopes of the site with the trail running directly through the site at the base of the slope (Figure 3 [Bottom]). The Domestic Site, north of the Jacob Keller Sawmill, appears to be larger than a typical domestic dwelling of the mid nineteenth century. The site is defined by field stone foundations and field stone walls that run parallel to the slope within the hollow. The largest field stone foundation measures 45x20 meters (148x66 feet), reminiscent of a warehouse or barn structure suggesting that the structure may have functioned, in addition to being a domestic dwelling, in an industrial capacity or agricultural capacity, the domestic dwelling possibly being located on the upper slope. The Domestic Site is located roughly 1700 meters south of the southern Irish Gap Road trail head, considered the lower hollow entryway.

The following chapter outlines the methods implored to complete this project which includes background research, excavation, and metal detecting. Additionally, a historic and environmental context was developed to describe the landscape of South Mountain and the Irish Gap Hollow's cultural resources. The results of the excavation and metal detection are then presented. The discussion of the results weaves the data together determining the overall interpretations of the cultural resources of Irishtown Gap Hollow. The results and interpretations of this project provide recommendations for the preservation and conservation of these resources within the Kings Gap Environmental Education Center.

CHAPTER 2

METHODS

The conception of the investigation into the Irishtown Gap Hollow site is the result of a request by the South Mountain Research Corps (SMRC) to enlighten the cultural history of the South Mountain region to better engage the community with its local history. In partnership with SMRC, this project fulfills the requested requirements that satisfy the problem statements communicated as part of a grant agreement between Indiana University of Pennsylvania and the South Mountain Research Corps. The problem statements from South Mountain include the need for a cultural and environmental context, mapping of visible features and evaluation of subsurface features of the cultural resources, and recommendations for continued preservation and conservation of the cultural resources within the Kings Gap Environmental Education Center (Appendix A). The following methods address the research questions posed as well as the problem statements mentioned.

Background Research

A cultural and environmental context was developed through multiple sources. The environmental context outlined the physiography, landforms, and the physiographic province of Irishtown Gap Hollow. It also captured the bedrock geology, surficial geology, and soil composition. These attributes identified in this area demonstrate the resources available to the hollow's inhabitants at the time of occupation as well as show the resources commonly extracted throughout the hollow's industrial and pre-industrial history.

The cultural context captured the cultural history of Cumberland County and analyzed the broader historical themes that have been a part of South Mountain. Historic maps were analyzed

to understand the cultural landscape of the period. A total of four sawmills are documented within South Mountain's hollows within proximity to the Jacob Keller Sawmill. The four sawmills are north of the Pine Grove Furnace, the largest furnace within South Mountain in Pennsylvania. It was determined that the Jacob Keller Sawmill may be the only existing sawmill from the nineteenth century located on public lands in this region. Similar farmsteads/homesteads were also analyzed, including the mountain farmsteads in Catoctin State Park from the nineteenth century, which appear similar in setting where fieldstone foundations are the only visible feature left on the surface of these previous residences.

The cultural context also explored the industrial history of the county and the immigrant groups that worked and lived within this region. The Cumberland County Historical Society and the Cumberland County Court House have been consulted throughout the process. Their sources have shed light on the inhabitants of the hollow in the mid nineteenth century to present through tax record assessments. Additionally, deed research was analyzed at the Cumberland County Courthouse to ascertain the parcel information from the Kings Gap Environmental Education Center and its conglomerate parcel process.

Collaboration with the Historical Society has produced photographs, newspaper articles, and synthesized interpretations of the Jacob Keller Sawmill and Irishtown. The Cumberland County Historical Society has also assisted in analyzing census records to understand who the inhabitants were in South Mountain, framing the industrial and cultural history of the region. This information has assisted with developing a concrete understanding of the site's occupational period and function and its relationship to the industrial and social landscape of South Mountain.

Field Methodology

The investigation of the archaeological resources in the Irishtown Gap Hollow was conducted using multiple methods. These methods were developed to address the proposed questions. These methods included, pedestrian survey, excavation using shovel testing and test units, and metal detecting.

The first phase of survey through the Irishtown Gap Hollow was conducted with pedestrian survey. The purpose of the survey was to identify any above ground archaeological resources in the hollow not previously identified by the park or by frequenting visitors who provided verbal intelligence about the hollow. The pedestrian survey was conducted in September 2022 and was conducted by a three-person field crew. The designated project area measures approximately 16.30 acres (6.59 ha). Pedestrian survey covered the area in its entirety at 15-meter interval spacing. Field crews covered the area in a zig-zag pattern, starting on the western side of the hollow, moving to the eastern side. Personnel, once on the eastern side of the project area, aligned along the perimeter of the project area and spaced 15 meters and moved to the western side of the project area (Figure 4). Any above ground archaeological features encountered were marked with orange flagging tape and recorded with a Trimble GPS unit registering sub-meter accuracy.

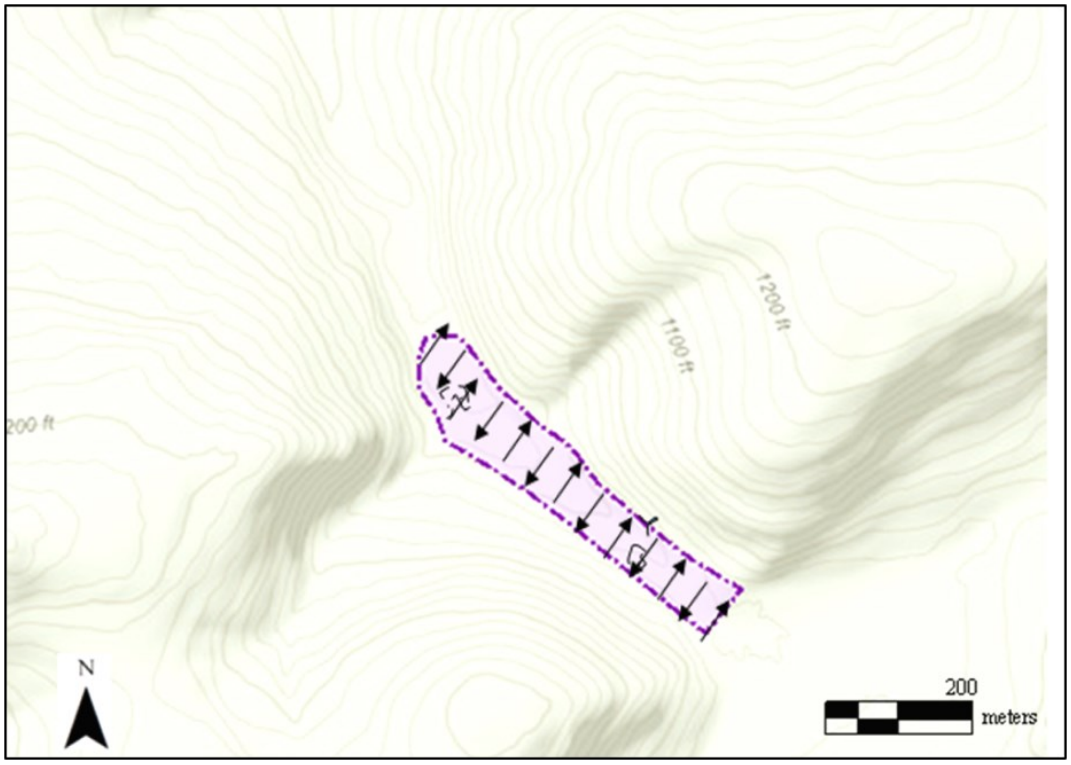

Figure 4. Pedestrian Survey Within the Project Area.

The results of the pedestrian survey did not identify any archaeological above-ground features aside from the previously identified fieldstone structures that define the Domestic Site and the Jacob Keller Sawmill. Additionally, no artifacts were encountered during the pedestrian survey. One flat landform at the base of the slope just north of the sawmill inspired curiosity and was later shovel tested as part of the shovel testing phase of the survey. No artifacts were identified from subsurface testing in this area. This area was tested during the shovel testing phase of the archaeological survey.

The second phase of the archaeological survey at Irishtown Gap Hollow consisted of shovel testing. The STPs were approximately 57 centimeters (cms) in diameter, as per the Pennsylvania State Historic Preservation Office guidelines (PHMC 2020). The soil was excavated in 10-centimeter levels within stratigraphic layers into culturally sterile soils and screened through ¼-inch mesh screen. Shovel tests were terminated at 20 centimeters into sterile

subsoil or if they were impeded by rocks or other obtrusions. Any artifacts found were collected and labeled according to their provenience. All artifacts collected from the Irishtown Gap Hollow site were processed and analyzed, the results of which will be discussed further as part of the results section of this thesis. All the artifacts were curated to the State Museum of Pennsylvania standards (PHMC 2020).

Shovel testing was conducted in and around the areas where the Jacob Keller Sawmill and Domestic Site are located and was conducted in two phases. The first phase of shovel testing was done at both the sawmill and homestead site, which consisted of targeted shovel testing.

At the sawmill, a total of five shovel tests were placed. Shovel test A1 was placed on the southern side of the field stone dam. Shovel test A2 and A3 were placed on the northern side of the dam to the east of the stream. Shovel tests A4 and A5 were placed in the previously

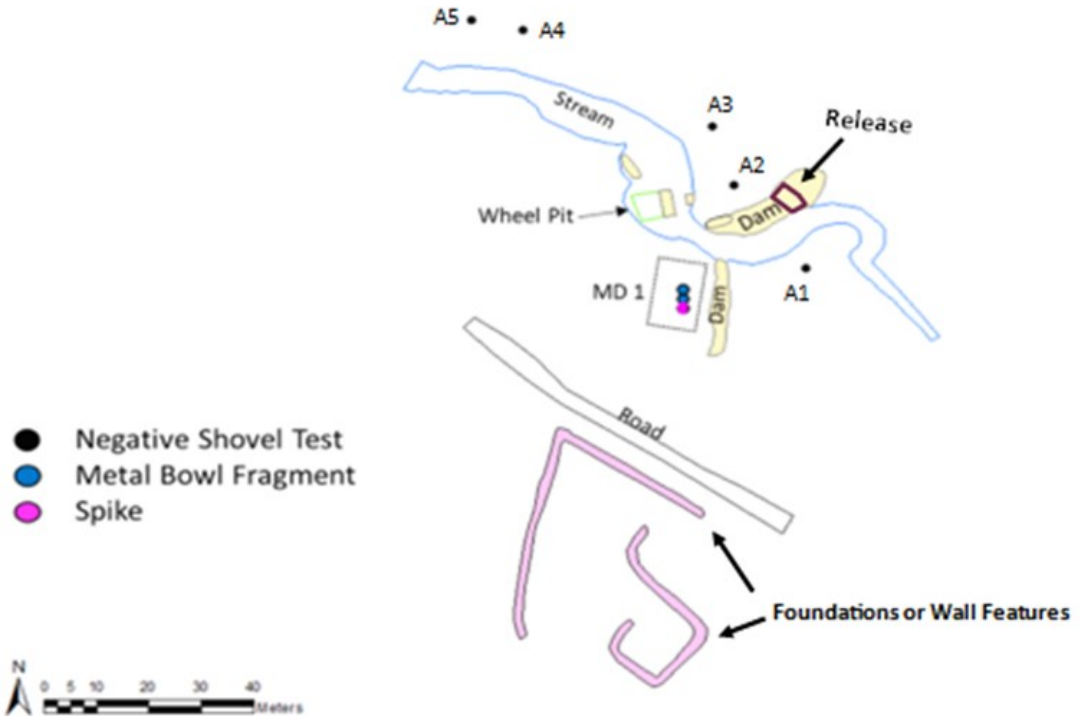

Figure 5. Overview of Testing Methodology at the Jacob Keller Sawmill.

mentioned flat area just north of the field stone dam (Figure 5). No artifacts were encountered as a result of the shovel testing at the Jacob Keller Sawmill.

The shovel testing conducted at the Domestic Site was more extensive and produced the majority of the artifacts found as a result of the archaeological survey at the Irishtown Gap Hollow. A total of 29 shovel tests were placed within and around the foundations at the Domestic Site. These shovel tests were conducted in two separate phases of excavation, the first being a targeted excavation, placing shovel tests within and outside the foundations. The second phase was systematic, conducted within an established grid (Figure 6).

During the first phase of shovel testing at the Domestic Site, a total of ten shovel tests were conducted (B1-B10). These shovel tests were placed in and around the fieldstone foundations at the Domestic Site. Shovel tests were placed within the interpreted foundations of the possible barn/warehouse at the Domestic Site and on the outer edges of these foundations on the eastern side of the former historic roadway now Irishtown Gap Trail. Shovel tests were also placed on the western side of the trail where foundations ran westward up the slope, where it exceeded 15% in some areas. In short, the shovel tests in the first phase of shovel testing operated as judgmental shovel tests that were centered around the foundations. Of the ten shovel

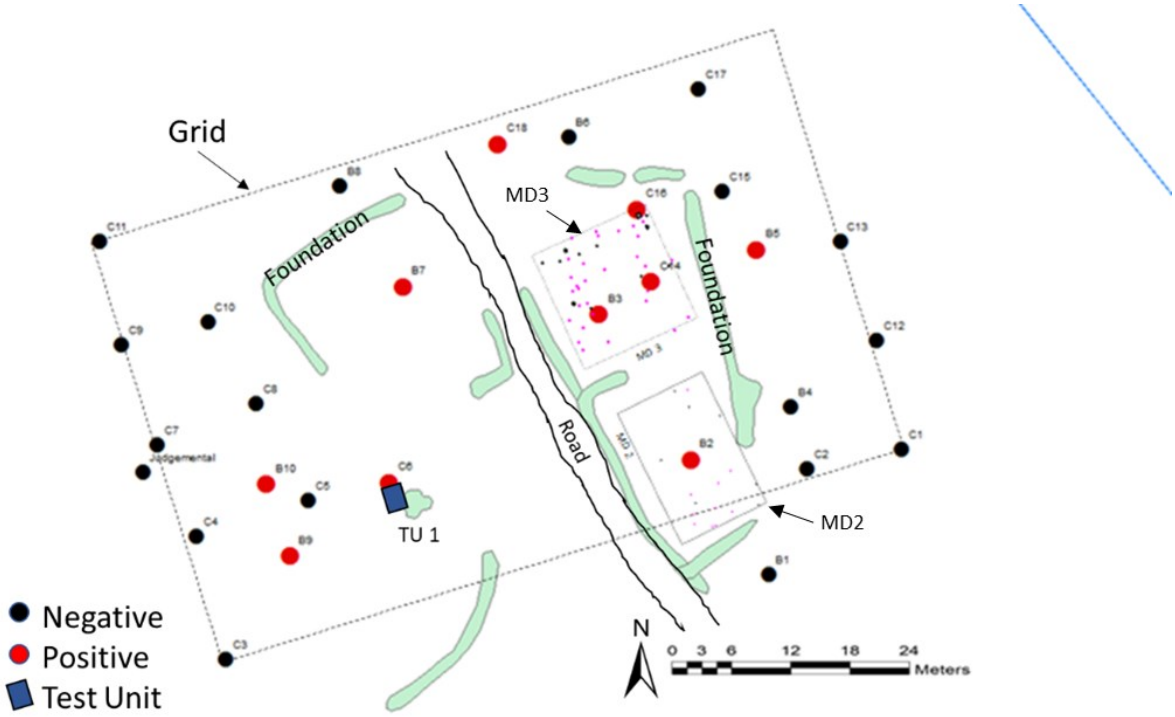

Figure 6. Overview of Excavation at the Domestic Site. Shovel Tests Labeled "B" Represent Judgmental Shovel Test Pits, and Those Labeled "C" Were Placed in 10-m Intervals Along a Grid Oriented to Grid North.

tests, six shovel tests were positive with historic artifacts (B2, B3, B5, B7, B9, and B10 (Figure 6).

The second phase of shovel testing at the Domestic Site was conducted on a grid that centered on the large fieldstone foundation of the Domestic Site to capture any archaeological features that included middens. The grid measured approximately 40x70 meters. Shovel testing was conducted on this grid in 10-meter intervals. Previous shovel tests were incorporated within this grid where they fell in line with a proposed shovel test on the 10-meter grid interval. Additionally, areas where shovel tests were unable to be excavated due to inundation or slope were not counted. In total, this grid consisted of 18 shovel tests (C1-18). Of these shovel tests, four were positive with historic artifacts (C6, C14, C16, and C18).

As a result of the shovel testing at the Domestic Site, a 1x1 meter test unit was excavated. The location of the 1x1 test unit was placed adjacent to C6, an artifact-dense shovel test located uphill of the western side of the trail on a berm. The berm is located next to a rock pile feature, potentially a remnant of a structure.

In addition to excavation, metal detecting was conducted at both the Domestic Site and the Jacob Keller Sawmill Site. All metal detecting was conducted in 2-meter intervals, moving north and south in a zig zag pattern to cover the entirety of the grids. At the sawmill, metal

Figure 7. Location of MD 1 at the Jacob Keller Sawmill, View Facing Southwest.

detection grid MD 1 was placed north of the western dam measuring 10x13 meters (Figure 5; Figure 7). A total of six artifacts were recovered from this grid (MD 1 Pts 1-3).

Figure 8. Overview Location of MD 2 Within the Domestic Site. View Facing Grid Southwest. The Orange pin Flags Indicate Positive Metal Hits.

At the Domestic Site a total of two grids were placed within the field stone foundation (MD 2 and MD 3). MD 2 measured 14.5x11 meters (Figure 6; Figure 8). A total of 14 artifacts were recovered from MD 2 (Pts 1-15, Pt 10 unrecovered). MD 3 measured 10.6x12 meters and was placed north of MD 2 (Figure 6; Figure 9). A total of 48 artifacts were recovered from MD 3. These artifacts were recovered from Pts 1-41, some locations having contained multiple metal artifacts.

Figure 9. Overview of Location of MD 3. Within the Domestic Site. View facing Grid South.

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The above ground features and excavation sites within Irishtown Gap Hollow were recorded using a Nikon Total Station and a Trimble GPS with an external antenna. The archaeological features such as field stone foundations were recorded using the total station where points were taken at the center of the foundations. To capture their total width, measurements were taken along with the points. This method was also done at the sawmill dam. Landscape features such as the embankments of the stream were also recorded. Shovel tests and grid corners were also captured using the Nikon Total Station. The total station hubs were recorded using the Trimble GPS with the external antenna. All the points from the total station were recorded in a handwritten notebook from the sawmill site. At the Domestic Site, all the points were recorded on the internal server of the Nikon Total Station. The points recorded from

the Nikon Total Station were then used to create hand drawn maps of the sites. These sites were then digitized and spatially applied in ArcMap.

Lab Analysis

The artifacts recovered from the site were processed and organized into an artifact table (Appendix B). All ceramics and glass were washed in water at the archaeological laboratory at Indiana University of Pennsylvania. All metal artifacts were dry brushed. Ceramics with diagnostic features such as decoration or glaze were temporally designated from the Domestic Site. Any other artifacts encountered that had any diagnostic features were identified and dated accordingly to the best of the researcher's ability. The results of the artifact analysis are discussed further in the results section of this thesis.

CHAPTER 3

HISTORICAL CONTEXT:

The Irishtown Gap Hollow is part of multiple social and industrial systems in Cumberland County, Pennsylvania. These systems include the charcoal iron ore industrial system, agricultural practices of the nineteenth century, the colonization of the forest by European and African immigrants, and the Underground Railroad system.

Charcoal Furnace Production

The Irishtown Gap Hollow is located within the South Mountain region, which has an industrial history revolving around iron ore production. Iron ore is an abundant resource in the Appalachian Mountains and was capitalized by a variety of iron ore furnaces.

Iron manufacture requires three ingredients to run successfully, iron ore, timber for charcoal, and a water source (Smith 2018). Although, fuels such as coal and coke were used as an alternative to charcoal (DCNR 2018). The water source needed enough velocity to power a large wheel that turned with the current. The wheel was connected to a bellows that supplied air for the fire to burn, up to 3000 degrees (Smith 2018). Iron furnace operation itself did not require many laborers but acquiring resources to run the furnace demanded a variety of labor. Skilled and unskilled workers such as wood cutters, colliers, miners, animal caretakers, blacksmiths, carpenters and office clerks made up the additional labor force aside from furnace workers (PHMC 2022; Smith 2018). The iron ore was hauled by oxen to the furnace to be used in production. Any surplus would be kept in storage facilities. Ironworkers fed the iron and charcoal into the top of the furnace. The furnace was typically constructed of stone or clay, varying in size but often 30 square feet at the bottom and as high as 40 feet tall (Smith 2018).

Charcoal makers, known as colliers, made charcoal for the iron smelting process that required charcoal production in outlying pits, called charcoal hearths. Maintaining these hearths was a laborious task that required constant attention (Smith 2018). To make charcoal, colliers would stack wood in domed piles called meiler, which measured between 30 to 50 feet in diameter and would reach more than 10 feet tall (Carter 2022). The stack of wood was encased by a layer of leaves and soil allowing it to be distilled rather than burn into gases (Carter 2022). This process of burning wood would take up to eight days. Colliers often managed multiple meilers at once to maximize time.

The demand for labor to support iron ore production attracted varying immigrant populations into South Mountain, settling in hollows like Irishtown Gap Hollow. The Jacob Keller Sawmill and the Domestic Site are located between two of the multiple furnace operations in South Mountain. These charcoal furnace operations include the Cumberland Iron Works Furnace and the Pine Grove Furnace (Figure 10).

Figure 10. The Jacob Keller Sawmill and the Domestic Site Between the Cumberland Furnace and the Pine Grove Furnace Within Park Boundaries [Orange].

The historical documentation of the sites in the hollow and the archaeological assemblage from them suggest that these sites were occupied from the mid-nineteenth to later nineteenth century, overlapping with the known operational periods of the charcoal furnace production in South Mountain.

Cumberland Iron Works is located 2.5 miles north of these sites, operating from 1793 to 1855. Michael Ege, a wealthy and successful ironmaster, built the furnace, beginning its operation (Watts 2019). Ege had bought the property from Rigby and Company, who had bought the land in 1762. Ege wanted to utilize the iron reserves and timber on the tracts of land along Yellow Breeches Creek in Dickinson Township (Watts 2019). The Cumberland Furnace was the fourth blast furnace built by Michael Ege as he rapidly expanded his operations in South Mountain (Flower 1975). The furnace was managed by his son Peter and later by Joseph Arthur Ege, Peter's son. In 1814 it was briefly operated by George Ege. The Cumberland Furnace, mill and the farms owned by Ege became the inheritance of Michael Ege's' two daughters when he died in 1815. The furnace was operated by Dr. Chambers, the husband of Mary Ege who sold the property to General Thomas Miller (Watts 2019). In 1841, Thomas Miller advertised the Cumberland Furnace for sale as it had been stated that Cumberland Furnace suffered from a lack of charcoal as a result of a major forest fire that burned approximately 35 square miles of South Mountain in April of 1839, including significant portions of timberland for the Cumberland Furnace (Watts 2019). He later advertised the discovery of a pure red ochre deposit, between 12 to 14 feet thick within the property (Watts 2019). The red ochre sales were not enough to make a profit and Miller filed for bankruptcy in 1848. One year after Jacob Keller acquired properties in South Mountain from John Keller, his son. The Cumberland Furnace estate was eventually bought by Peter Tritt in 1854 and the furnace was dismantled in 1854 or 1855 (Watts 2019). Tritt

also built a sawmill on Yellow Breeches next to the Cumberland Furnace, visible on the historic 1858 map.

In comparison to the Pine Grove Furnace, the Cumberland Iron Works was a much smaller operation than the Pine Grove Furnace, which was one of the largest charcoal iron furnace operations in the county. Pine Grove Furnace is located three miles south of the Jacob Keller Sawmill and the Domestic Site. It was also once owned by Michael Ege as part of his many iron manufacture holdings (DCNR 2023; Watts 2019). Pine Grove Furnace was founded in 1764 by partners George Stevenson, Robert Thornburgh, and John Arthur who built the iron furnace along Mountain Creek (DCNR 2023). In 1782, "[Michael] Ege… [purchased the ironworks and] grew the business until he was the sole owner of Pine Grove" (DCNR 2023; Watts 2019). Keeping the business in the family, "in 1830, [Ege's son Peter built] … Laurel Forge, which reheated and hammered cast iron from Pine Grove to produce wrought iron, a bendable metal that could be formed into [multiple] shapes" (DCNR 2023). In 1837, the Pine Grove Iron works was bankrupted and sold at a sheriff sale in 1838 (DCNR 2023). The ironworks was purchased by "…. Frederick Watts and his law partner Charles Bingham Penrose who wanted to try their luck in the iron business" (DCNR 2023). "In 1864 Jay Cooke and Company bought the ironworks and formed South Mountain Iron Company… [who] built [the] South Mountain Railroad to bring in raw materials to the furnace and more efficiently move iron products to market' (DCNR 2023). By the end of the Civil War, Jay Cooke was the wealthiest man in America and bought the Northern Pacific Railroad (DCNR 2023). However, the poor economy post-Civil War failed the railroad, causing Cooke to fall into financial ruin (DCNR 2023). "South Mountain Iron Works went up for sheriff sale…." again in 1873 but did not sell until 1877. This new operation did not come with the railroad as the "… railroad and iron works

were sold separately" in the later sale (DCNR 2023). "…Colonel John Fuller, Cooke [was able to] buy back the ironworks forming the South Mountain Mining and Iron Company" (DCNR 2023). John Birkinbine was the furnace's engineer who renovated the furnace in 1878 so that it could be used with "alternative fuels like coke and coal" in addition to charcoal as there were concerns about the dwindling forest reserves for charcoal production (DCNR 2023). Under Birkinbine, other improvements were made as the furnace "…increased [in] size, which produced 6,000 net tons of cast iron in 1883, the peak year of production" (DCNR 2023). However, "new technologies were quickly putting small iron [production] out of business" and Pine Grove Furnace was susceptible to these emerging technological changes (DCNR 2023). In 1895, Pine Grove Furnace went out of blast, ending 131 years of iron making in South Mountain (DCNR 2023). Today, the Pine Grove Furnace comprises of a 17,000-acre property that is part of the Michaux State Forest and Pine Grove Furnace State Park having been sold to the Commonwealth of Pennsylvania in 1913. It was entered in the National Register of Historical Places in 1977 and continues to be preserved as a commemorative symbol of the many iron furnace production sites within the county and the industrial history within the South Mountain region.

Cultural signatures of the charcoal furnace industry dominate the South Mountain landscape. These features include charcoal hearths, raceways and other manmade features such as collier huts. Charcoal hearths, in particular, have been the subject of recent research in South Mountain as these features are quite large and visible on LiDAR maps. Potter et al. (2013) has identified over 3,483 charcoal hearths in between South Mountain and Caledonia (State Park) Gap and the northeastern end of the mountains at Dillsburg. These hearths are large circular pits measuring between 30 to 50 ft in diameter tended by colliers who lived in charcoal huts nearby

to attend the hearths at all hours as the charcoal was an integral part of the iron production (DCNR 2018). Collier huts were constructed of local material that included fieldstones for hearths, and wood beams capped with an earthen mound (Carter 2022; DCNR 2018; Figure 11).

Collier huts were typically surrounded by circular trenches likely for drainage (Carter 2022; Emmanuel 2021). The trench was also likely the source of the soil that was used to plaster the structure (Carter 2022). Inside the hut, the "center may have been six feet high as the structure itself was typically conical in shape where the center of the hut was the highest point" (Carter 2022). "The mud was plastered over long straight poles made of wood with little to no gaps between" (Carter 2022). The only furniture was "two sleeping benches, one for the collier and the other for the assistant" (Carter 2022). "The interior diameter was around 6 to 8 feet" (Carter 2022).

Figure 11. An Example of a Collier Hut (DCNR 2018).

Recent research conducted by Michael C. Emmanuel (2021) has aimed at identifying collier huts throughout the South Mountain landscape where fieldstone concentrations are the only remaining evidence of these structures. “Hardwood charcoal was used extensively as fuel for iron furnaces and forges where charcoal iron furnaces averaged, between 1750 to 1800, 100-400 tons of pig iron annually” (Emmanuel 2021). To maintain that average, “200 to 400 bushels of charcoal was needed per year, which came from roughly 50 acres of woodland” (Emmanuel 2021). By the end of the nineteenth century, “furnace output reached 20,000 tons annually of pig iron and each ton required 80 to 100 bushels of charcoal equaling roughly 1400 acres of timber” (Emmanuel 2021; Whitney 1994).

The Jacob Keller Sawmill and the Domestic Site operated in the height of the charcoal iron industry, in the nineteenth century, possibly participating in the economic and social systems of the industrial operation in South Mountain. The sawmill, having been a water powered mill meant to cut trees, may have had some interactions with the colliers or other laborers in the forest. The closest charcoal hearths are located roughly 0.13 miles east of the mill according to LiDAR imagery (Figure 12). The use of LiDAR to locate and map charcoal hearths is a growing body of research conducted by Dr. Benjamin Carter of Muhlenberg College. Identifying these landscape features captures the extent of iron ore activity in South Mountain.

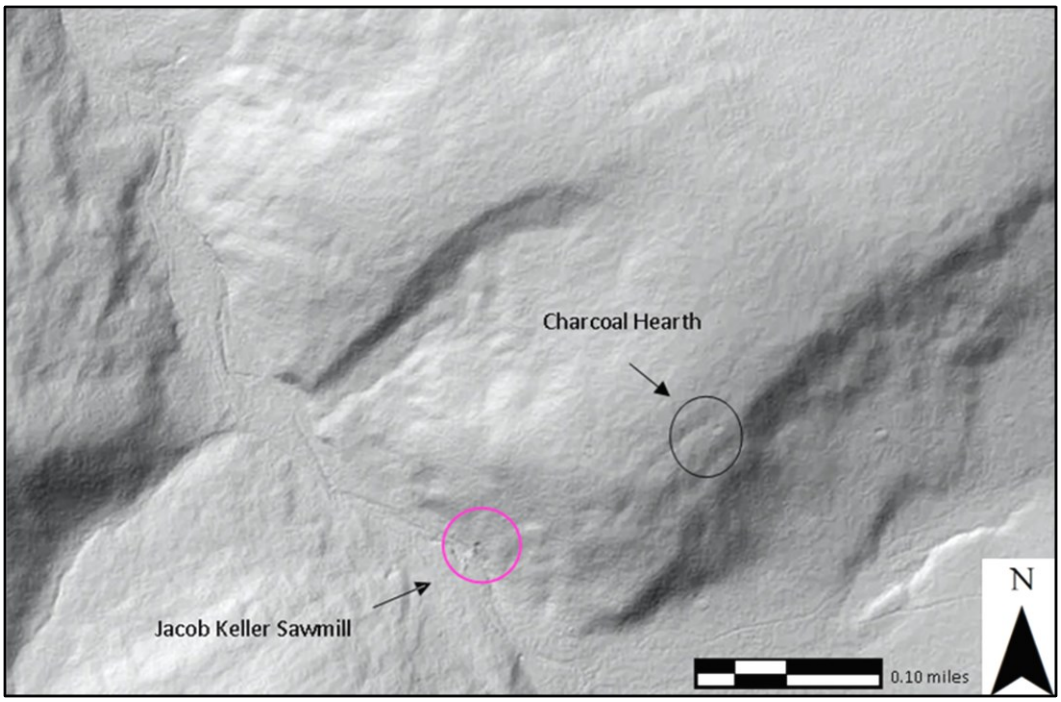


Figure 12. Overview of Jacob Keller Sawmill (Pink Circle) and the Nearest Charcoal Hearth (Purple Circle).

Analyzing the historic map of the area from 1858 shows that Jacob Keller Sawmill was one of four rural sawmills visible within the South Mountain landscape north of the Pine Grove Furnace (Figure 13). These sawmills would have been located within mountain land of

Figure 13. Sawmills on 1858 Map North of Pine Grove Furnace (Circled in Red). The Jacob Keller Sawmill is Circled in Purple.

Cumberland County among the first signs of industrialization of the region. The sawmills produced timber products that included cut wood for structures or other products that required cut wood.

Mills are a remnant feature of the industrial past. One-man operated mills were a commonly found structure before industrialized mass production became the norm (Brownstone 1984). Their presence on the landscape demonstrates the European colonization of the wilderness (Brownstone 1984). Most are found along streams where they were operated by water wheels, as steam powered technology was not as common, especially within backwoods operations where mills are commonly found (Brownstone 1984). “Sawmills are the most common type of mill ….as seemingly endless forests were transformed into enormous amounts of rough-cut lumber suitable for all types of construction” (Brownstone 1984). The “country sawmills [typically found] are large open shed constructed structures that were made from rough-cut posts and beams that housed the water-driven saw machinery” (Brownstone 1984). “In the early 19th century, saws were often ganged together, particularly in mills near growing population centers” where the necessity for greater cutting ability was crucial to the operation (Brownstone 1984). “Small water-powered sawmills in long settled farm country, [on the other hand], tended to resist innovation and continued to operate until their equipment was worn out” (Brownstone 1984).

The Jacob Keller Sawmill was likely operated under the latter description, being non-centrally located in the hollow and less dependent on a high demand of lumber. It operated with a waterwheel, a trademark of rural mills, which was pushed by water that was facilitated through an earthen and stone dam, the remnants of which are still visible on the surface today.

Nineteenth Century Agriculture

Agricultural practices in the nineteenth century in the United States underwent significant changes due to the Industrial Revolution. During this time an introduction of new technological advancements effected farming methods. These methods aimed at automation of farming techniques where previous farming methods utilized oxen and horses to power crude wooden plows. At the Domestic Site, farming likely took place, but whether these methods of farming occurred on the property is not known.

"By the 1700s through the 1820s, Pennsylvania's rich soils and… [skilled] farmers made it the leading producer of food in the colonies… [becoming] known as the 'granary of the Revolution' and [the] 'breadbasket' of the nation" following the American Revolution (Hoch 2017). In Cumberland County, agriculture was the economic base in the 18th and 19th centuries. "Wheat and corn…[were] the [primary cultivated] crops, along with flax, hemp, tobacco, barley, rye and oats" (Hoch 2017). "By the 1750s… [most of] the [fertile farmland] in the county had been claimed…" and utilized for agricultural purposes (Hoch 2017). "During this… [period, approximately] 90% of the colonial population in Pennsylvania was… [involved] in farming… [leading to the establishment of] water-powered gristmills… [and the growth of] rural villages… [which provided necessary services] and commercial markets [for the agricultural communities]" (Hoch 2017).

In response to rising soil depletion concerns, crop rotation was developed (Hoch 2017). This methodology increased the efficiency of the soil, forever changing the agricultural practices of Pennsylvania (Hoch 2017). The new approach involved fertilizing the soil with lime and gypsum, as well as implementing a rotation of crops that included "soil-enriching plants like grass and red clover alongside grains" (Hoch 2017). This differed from the traditional European

practice of solely cultivating grain crops (Hoch 2017). The presence of cattle herd livestock, which grazed on the grass and clover, provided ample manure for natural fertilization, creating a self-perpetuating cycle (Hoch 2017). As more land was cleared for crop cultivation, this innovative agricultural system played a crucial role in revitalizing and sustaining the productivity of Pennsylvania's farmland (Hoch 2017).

The Keller family had a history of farming in Cumberland County when they immigrated from Germany. According to census records, Henry Keller, Jacob Keller's father, was a farmer (CCHS 1793 SC, CCHS 1800 SC). However, it is not evidenced that Jacob Keller or his son, John Keller farmed the Irishtown Gap Hollow. Jacob Keller only has a documented history of milling in the area. From 1834 to 1862 Jacob Keller owned the McCracken's Mill located at the headwaters of Big Spring Creek, also located in Cumberland County (Mader 2023).

The Underground Railroad

The industrial furnace systems offered an ideal landscape for the Underground Railroad, especially those in Pennsylvania, which bordered slave states and are within the Appalachian Mountain system (Delle and Shellenhamer 2008; LaRoche 2014; McCoy 2012). Carlisle was a stopover between Shippensburg and Harrisburg stations (McCoy 2012). In fact, several of the furnaces of the South Mountain, specifically, the Carlisle Iron Works in Boiling Springs played a documented role in the facilitation of the Underground Railroad. Daniel Kaufman, who purchased Carlisle Iron Works in 1848, claimed to have assisted over 60 enslaved people on their way to freedom on the Underground Railroad. He was sued by slave owners and convicted in the US District court in Philadelphia (Tritt and Watts 1995). It is unknown whether the Cumberland Furnace or Pine Grove Furnace played a similar role. Ongoing research is also looking into the

use of collier huts and how they operated as a means of shelter for traveling fugitives on their way to freedom through South Mountain (Carter 2022).

Most collier huts were abandoned annually but some have been identified as permanent residences, particularly in Black communities, indicating deeper connections to these structures (Carter 2022). The long-term occupation of these structures' hints at the importance of the structure having been a place of refuge and a hint at how they symbolized security as vestiges for both hiding people and ensuring that, when necessary, people could move on and build new huts relatively easily using resources from the forest. Before the Civil War, much of the charcoal lands were littered with small abandoned, but easily repaired, collier structures (Carter 2022). If slave hunters came looking for the fugitives in the towns, Underground Railroad facilitators would take them into the woods to the collier huts (Carter 2022). The fugitives would hide out in the woods in the collier huts until it was safe. Through this method of hiding, freedom seekers were exposed to the charcoal furnace industry which may have led them to work as colliers, continuing the facilitation of the Underground Railroad and earning their living as charcoal burners, participating in the industrial systems of South Mountain (Carter 2022). Carter (2022) mentions that rural Black communities were found adjacent to charcoal lands. Six Penny Creek is one of these communities located near Joanna Furnace, which is located in Berks County Pennsylvania. Census records list five of the 15 residences there as colliers.

North of the Jacob Keller Sawmill and Domestic Site is a town called Irishtown. The Irishtown Gap Hollow settlement was an integrated community that may have included manumitted African Americans, in addition to Irish, German, and Welsh citizens (Penn Times Newsletter 2018). These individuals were laborers and farmers associated with the charcoal furnaces and industrial systems of South Mountain. The site was a small community that erected ten houses and a church with an adjacent cemetery (Penn Times 2018). All that remains of the church is a mounted pedestal in northwestern corner of the cemetery with the inscription: Elverson Memorial AME, Zion Church, June 19, 1892. Later in the early 1900s, the community inhabitants at Irishtown were reportedly all black citizens (Penn Times 2018). The earliest map of the area shows these houses were present by 1872, being part of a town called Milltown (Figure 14). It is possible that Milltown was originally constructed as part of the Cumberland

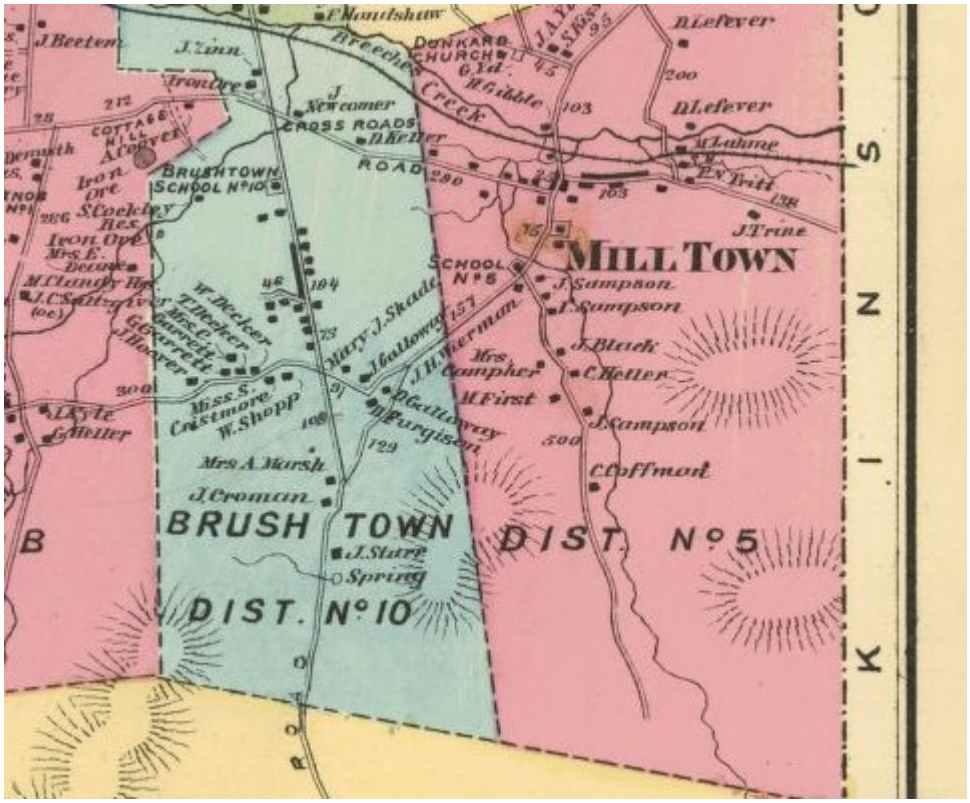


Figure 14. Map of Milltown to the North of Irishtown Gap Hollow.

Furnace operation to house workers by the Ege family, although the documentation is sparse in this area regarding the original construction of the town.

The site is located along Irish Gap Road and continuing toward the secluded Irishtown Gap Hollow (Figure 15). Depressions of the former standing structures are located on private property just north of the Kings Gap Environmental Education Center Park boundary.

Figure 15. Location of the Jacob Keller Sawmill and Domestic Site From Irishtown.

The remains of this settlement include a no longer standing row of log cabins, possibly the remnants of the ten houses reported and an adjacent small cemetery with marked and unmarked graves (Figure 16; Figure 17). These previous structures were made from log, having been totally dilapidated in photographs from 1980 (Figure 18). These structures were eventually dismantled in 2007.

Figure 16. Site of no Longer Standing Cabins of Irishtown Along Irish Gap Road, Facing North.

Figure 17. Overview of Irishtown Cemetery, Facing South.

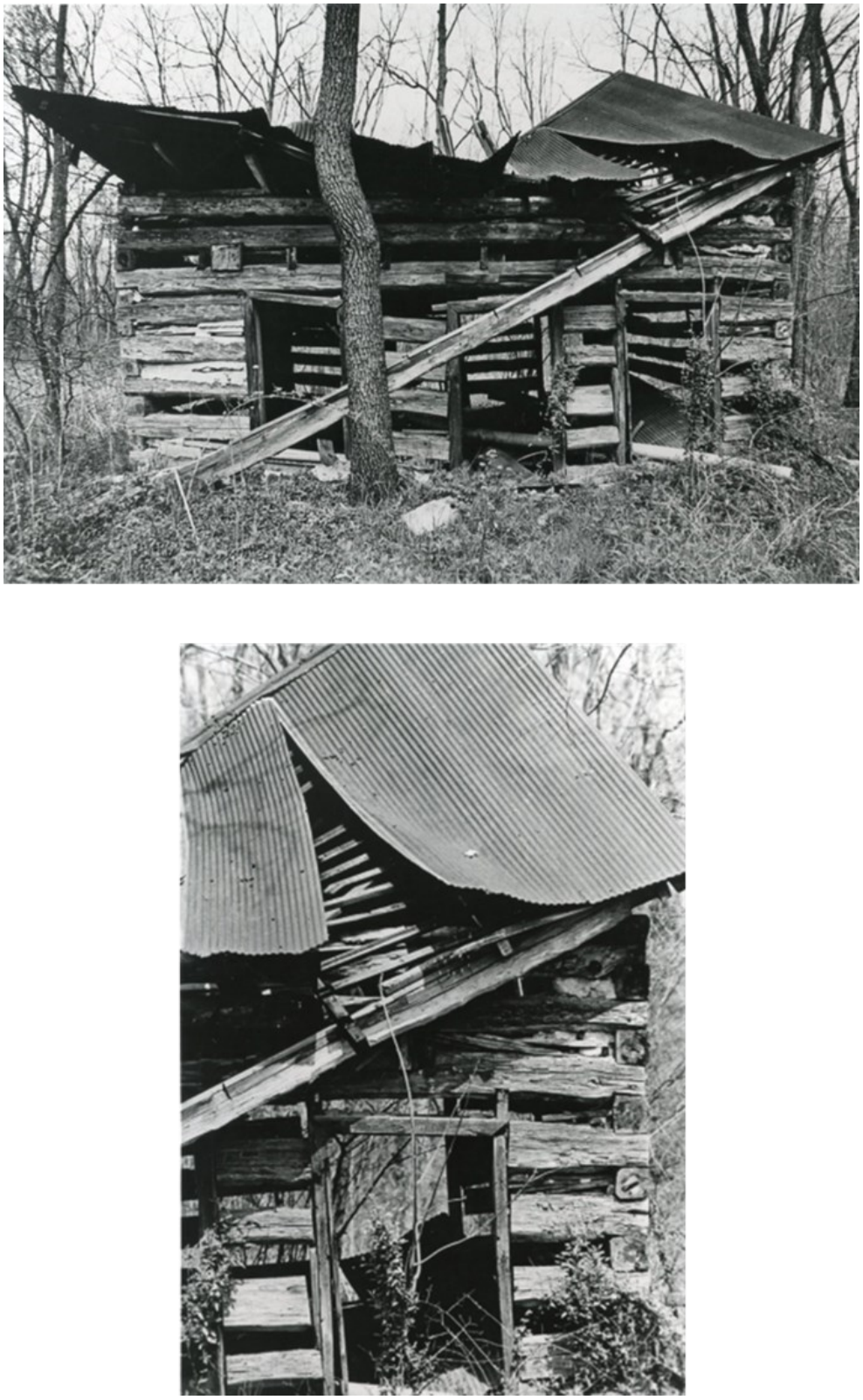


Figure 18. Irishtown Cabins Last Photographed in 1980 (Cumberland County Historical Society).

These former cabins and cemetery are immediately adjacent to Irish Gap Road, north of the hollow where the head of the Irishtown Gap Hollow trail is located. The site can be observed from the public roadway quite intimately where foliage does not impede the line of sight. The cemetery is a resting place for Irishtown community members, including men from of the United States Colored Troops, a division of non-white soldiers who served during the Civil War (Penn Times 2018, Mouser 2017). LaRoche (2014) mentions that AME churches were central to the Underground Railroad, operating as stations. Depots or safe houses were also often homes usually located between 10 and 25 miles apart (Delle and Shellenhamer 2008). The use of oral histories to identify potential depots along the Underground Railroad has had some success in identifying resources of this type. Certain religious groups, such as Quakers are also a good indication of abolitionist involvement where facilitation of the network can be linked to certain documented sympathizing communities (Delle and Shellenhamer 2008). Carter's (2023) research at Six Penny Creek, a small rural Black settlement in southern Berks County, was identified as a station on the Underground Railroad. It also possessed an AME church, Mt. Frisby African Methodist Episcopal Church and cemetery, and adjacent to charcoal lands.

The name Irishtown came to replace Milltown for unknown reasons. The 1858 map does not list Milltown as an official name of the area, nor does it show the ten houses reported from Irishtown. The structures listed on the 1858 map at the location of Irishtown belonged to a Phil P. Coale and a D. D. Galloway who are not listed as residents of Irishtown from the census records of the town. Therefore, the construction of the town would have happened after 1858, before 1872. Slavery was partially abolished in 1780 with the Gradual Abolition Act in Pennsylvania but was not abolished federally until the end of the Civil War in 1865 (Gradual Abolition Act 1780). It is possible that Irishtown was a refuge for formerly enslaved persons and

may have been a part of the network of the Underground Railroad for freedom seekers coming north from southern states that still recognized slavery. The location next to furnace systems and charcoal lands as well as the presence of an AME church on the property are offered as evidence toward this conclusion.

Additionally, according to census records from 1860, Irishtown or Milltown was constructed, and consisted of a small group of Black and 'Mulatto' inhabitants in addition to other non-Black residents. Census records of non-White residents were listed as laborers where White inhabitants were occasionally listed as farm laborers in addition to just laborers when occupation was mentioned. A picture of Irishtown shows the Sampson House with unidentified Irishtown residents pictured in front of the large log house. It shows two men dressed in clothing that would indicate that they were possibly laborers while the other men pictured are wearing suits (Figure 19). The clothing of these individuals signifies that this may have been an intentional and staged photograph. The women in the photo are wearing clothing that does not allude to a specific occupation outside of possible domestic activity. Interestingly, the woman on the far left is wearing a button jacket, an unconventional fashion choice for a woman in the nineteenth century but not uncommon.

Figure 19. Historic Photograph of Irishtown. Note the Unconventional Clothing (Button Jacket) Worn by one Woman (Second Individual From Left*).*

It is possible that the Irishtown settlement is a result of the African Diaspora, having been established through the Underground Railroad movement in this area. Evidence of the Underground Railroad is, archaeologically, difficult to identify. Therefore, other supporting features such as historical documentation and oral history as well as landscape archaeology are incorporated with interpreting, if found, material culture to determine if a site once functioned as a station. The evidence that Irishtown was a station on the Underground Railroad is not concrete but when examining all the other features of the landscape, which includes the furnace systems and adjacent charcoal lands as well as the AME church and presence of African Americans in the nineteenth century, it introduces the idea that the connection could be made with further research.

Irishtown Gap Hollow

The Irishtown Gap Hollow, named after Irishtown, is located within Kings Gap Environmental Education Center, DCNR property. The park consists of 2,456 acres that previously were multiple disparate parcels. After completing deed research for the park, the acquisition of the Jacob Keller Sawmill and possibly the Domestic Site were identified (CCC K GID 62:B, CCC K GID 62:C,CCC L GID 76) .

The Kings Gap Environmental Education Center is a conglomeration of multiple parcels. The Commonwealth of Pennsylvania acquired the property in 2011 from the Nature Conservancy who acquired the land from Pinebrook Corporation (Figure 20).

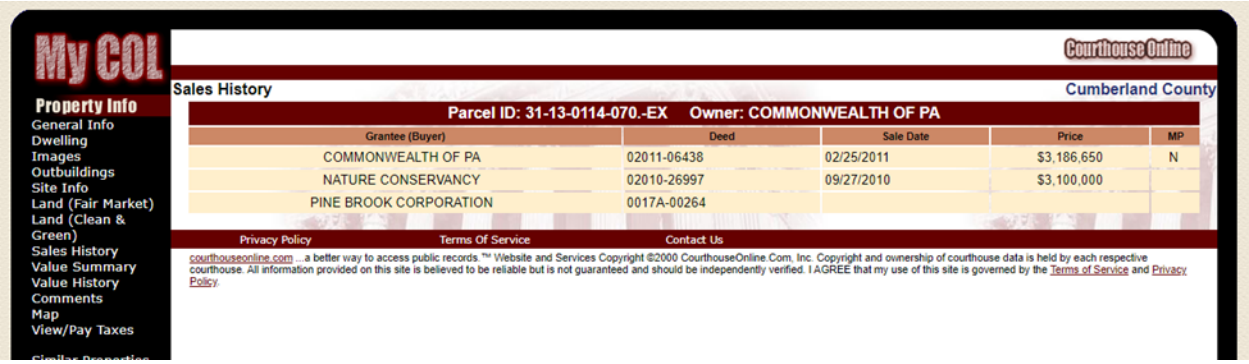


Figure 20. Parcel History of Conglomerated Kings Gap Environmental Education Center With Listed Deeds.

Pinebrook Corporation bought the land from Mark Garber who sold the conglomerated property in 1956 from the estate of James Cameron's heirs, who conglomerated the property in 1951 (CCC DB A 17:264, CCC DB Deed No 9972: 333). The location of the sawmill and farmstead was bought by Cameron in 1906 from Thomas Vale (CCC DB Deed No 9972: 333). Vale bought the property in 1903 from S.M. Leidich's et al (CCC L GID 76). Leidich et al was granted the property in 1880 from the J. H. B. Keller Attorney and heirs, John H. S. Keller's attorneys (CCC K GID 62:C). John H.S. Keller was granted the property in 1863, following

Jacob Keller's death in 1861 (CCC K GID 62: B). Jacob Keller had acquired the land from a sheriff's sale in 1847 from John Keller (Figure 21).

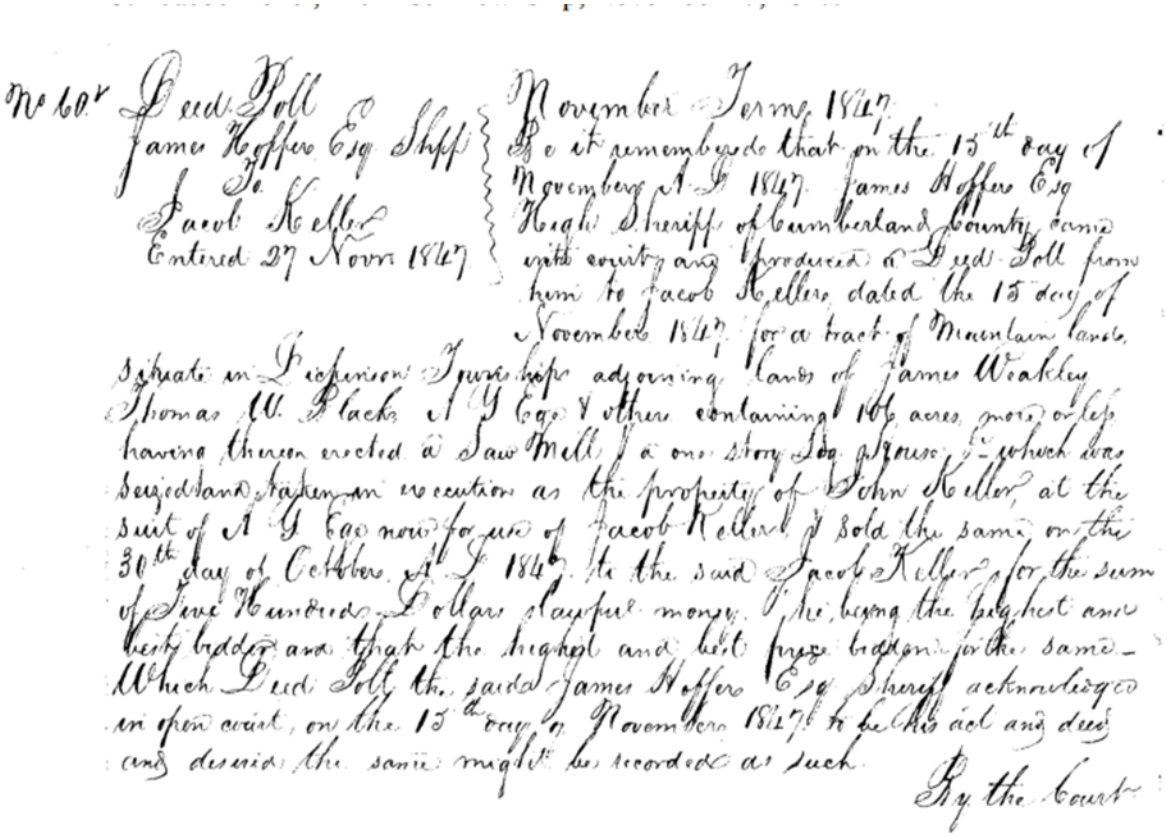


Figure 21. Deed Poll of Jacob Keller's Acquisition of the Jacob Keller Sawmill From John Keller (Sayers 2020).

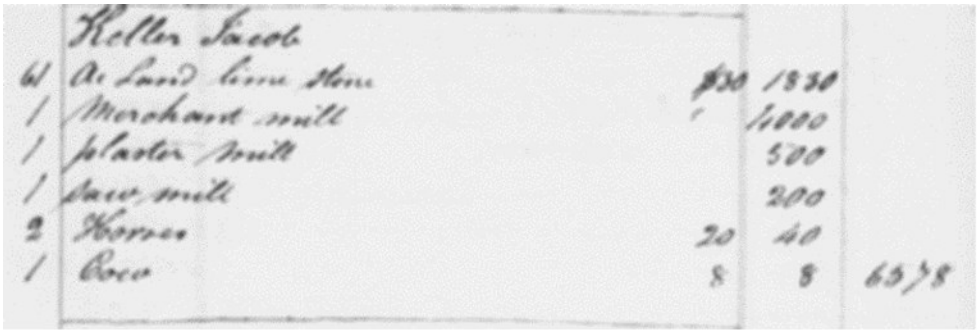
Deed research shows that Jacob Keller acquired 106 acres of mountain land in South Mountain in 1847. The property is located in South Mountain in Dickinson Township and having listed erected upon it a sawmill and a log house. The property was obtained in the form of a deed poll at a sheriff's sale, having been previously owned by John Keller, his son, who sold the property to pay off his debt as a result of a suit with A.G. Ege, a relative of Michael Ege (Sayers 2020). Jacob Keller bought the property for $500, equivalent to an estimated $20,000 today. An inventory listed common wood working tools and sawmill products (Sayers 2020).

The name and location of the Jacob Keller Sawmill was determined via the 1858 map Bridgens, H. F. (Henry F.) Friend & Aub. Wagner & M'Guigan Cumberland County Map

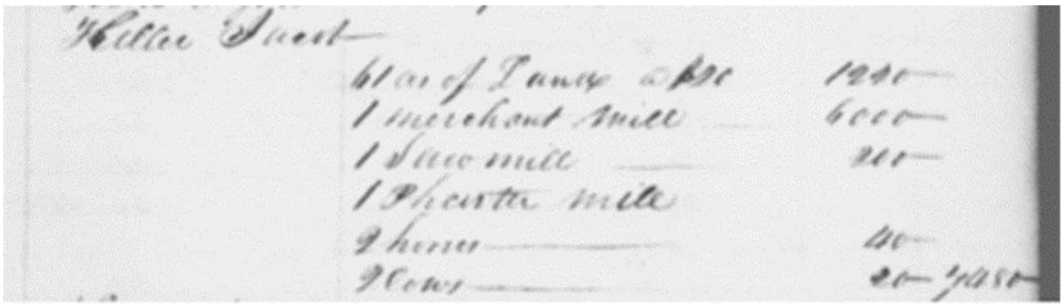
previously referenced. There are no earlier maps of Cumberland County that date before 1858 that are public record. Therefore, the exact construction date of the Jacob Keller Sawmill and the Domestic Site are unclear. The Jacob Keller Sawmill is along an unnamed stream within the hollow, a tributary of Yellow Breeches Creek. The hollow is located between the Kings Gap to the east and an unnamed hollow, referred to as the Heller Hollow to the west in a later map. The 1858 map lists the Jacob Keller Sawmill as the Heller Sawmill on some other copies of the 1858 maps, however, the Cumberland County Historical Society's printed 1858 map has Jacob Keller listed. Additionally, deed research has confirmed the property as having been owned by Jacob Keller and other Keller relatives (CCC K GID 62: B; CCC K GID 62:C; CCC L GID 76; CCC DB A 17:264).

Jacob Keller was a wealthy and successful miller in the nineteenth century. He was a resident of Cumberland County throughout his life, from 1800 until his death in 1861 (Sayers 2020). He owned many mills in addition to the sawmill according to tax records from 1823 through 1838 (Figure 22; Figure 23). These mills included a grist mill, a merchant mill, and plaster mill (Figure 22 [A]).

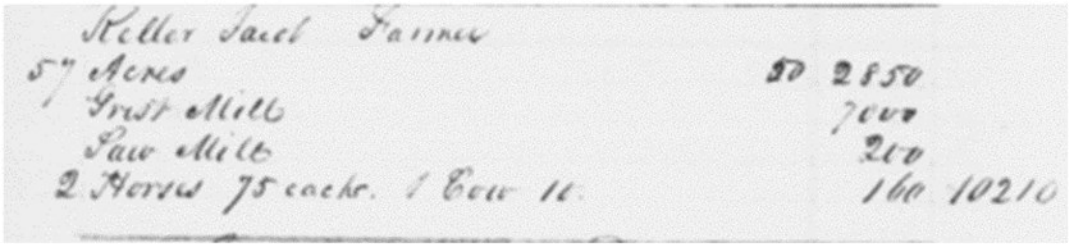
Jacob Keller did not live in Dickinson Township, as records show he lived in Springfield with his wife and two daughters in a two-story stone house which also contained a log stable and distillery (Sayers 2020). He owned land in Pennsborough, Newton, and South Middleton along with 496 acres of land in Dickinson township that contained the sawmill shown on the 1858 map.



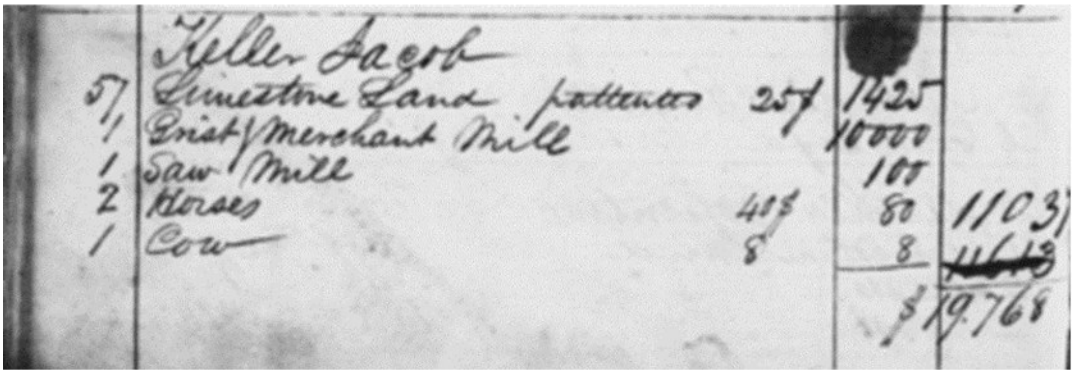
A: Jacob Keller 1823 Tax Records.



B: Jacob Keller 1826 Tax Records.

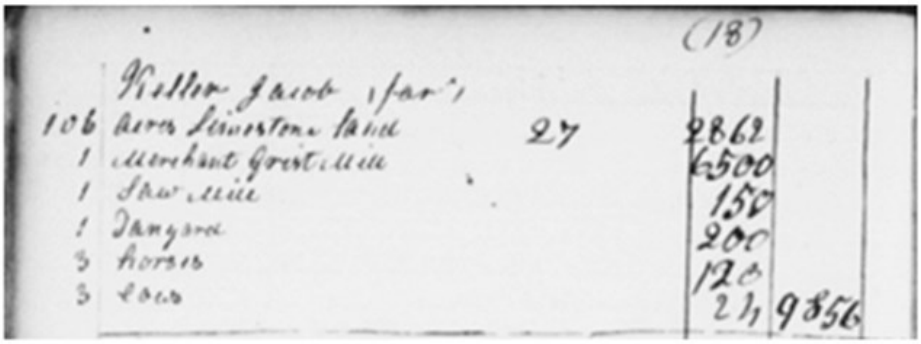


C: Jacob Keller 1829 Tax Records.



D: Jacob Keller 1832 Tax Records.

Figure 22. Jacob Keller Tax Records (A: 1823, B: 1826, C: 1829, D: 1832; Sayers 2020).



E: Jacob Keller 1835 Tax Records.

F: Jacob Keller 1838 Tax Records.

Figure 23. Jacob Keller Tax Records (E: 1835, F: 1838; Sayers 2020).

The Domestic Site is located just north of the Jacob Keller Sawmill. The deed research associated with this site is less clear having not been named on the 1858 map. The site itself has an odd spatial make up, having field stone foundations and walls that do not connect or align and are quite large where they do resemble square or rectangular pattern on the eastern side of the former historic roadway, indicting a former structure. It is possible that the larger foundation at the Domestic Site is a remnant barn structure when just examining its size. Jacob Keller may have also owned this property as deed research shows that he acquired many acres of land in addition to the 106 acres from John Keller in November of 1847. Deed research shows that in addition to the sawmill, Jacob Keller also acquired 100 acres of land having erected upon it a log house, a bank barn, a wagon shed and orchard, also located in Dickinson Township with adjoining lands of John Keller (Figure 24). It is possible that this deed may be describing the Domestic Site as the site is located over 200 meters away from the sawmill, leaving the impression that this was an entirely separate parcel.

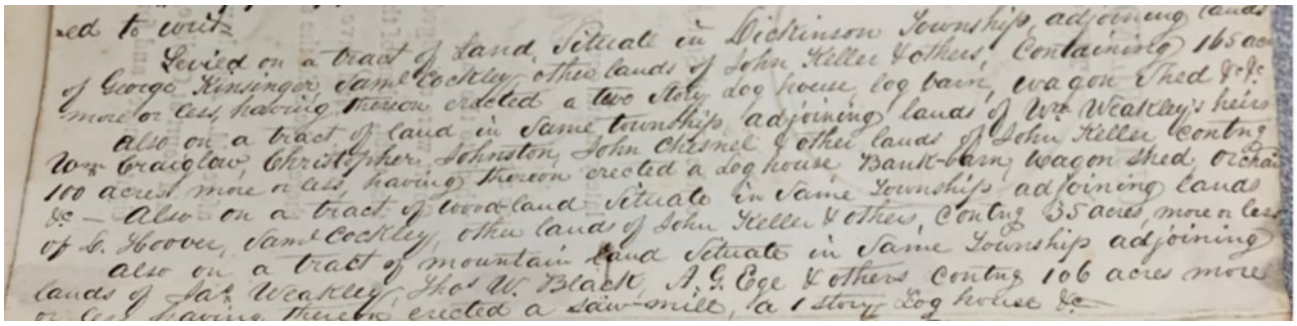


Figure 24. Deed Showing 100 Acre Acquisition of Land by Jacob Keller With Erected Log House, Bank Barn, Wagon Shed, and Orchard.

The chain of ownership, before John Keller acquired the land, is unclear. The earliest inception of ownership in Pennsylvania was the land grant to William Penn by King Charles II of England in 1681. Cumberland County was among some of the first counties founded in Pennsylvania, having been formed in 1750. The Jacob Keller Sawmill is located between the town of Shippensburg, which was established in the same year of Cumberland County, 1750, and Carlisle, having been established in 1751.

Colonization of the Wilderness

Cumberland County was settled by the English, German, and Scots Irish immigrants in the 1730s to farm the rich soil in the region. The majority of settlers or 'squatters' as they came to be known as, settled the land before established treaties with the Iroquois were developed. Early settlers inhabited near springs and along the Yellow Breeches and Conodoguinet creeks (Hoch 2017; Blethen 2004). German immigrants, by the end of the nineteenth century, made up half of the population in some townships. They had more success farming the land than other immigrant groups as their farming methods were well adapted to the similar climate of Pennsylvania, where their farming techniques maintained the productivity of the soil. German farmers also were the first to build herds of cattle in Pennsylvania, further demonstrating their

prowess within the agricultural industry of Pennsylvania, especially in Cumberland County (Hoch 2017).

The earliest inhabitants of Cumberland County were the indigenous populations that lived in the Susquehanna Valley for thousands of years. The Lenape are known to have inhabited eastern Pennsylvania for over 10,000 years, having settlements in present-day Allentown, Nazareth, and Bethlehem. They were the first Indigenous tribe to sign a treaty with the United States where they actively sought alliances with William Penn to broker peace as Europeans settled the Delaware Valley (Lenape Nation 2018). The Lenape may be related to the Algonquian tribes that settled in northern Pennsylvania who are also known to have inhabited Pennsylvania for thousands of years (Hoch 2017). The names of major waterways in "Cumberland County are of Algonquian origin including the Conodoguinet Creek and Callapatscink, the original name of Yellow Breeches" (Hoch 2017). The Susquehanna River, also named from Algonquian language is translated to 'falls stream' or 'muddy river'. The first written description of Indigenous tribes living along the Susquehanna River was from John Smith's accounts (Hoch 2017). He mapped a town along the Susquehanna River in 1612 known to be inhabited by the Susquehannocks, called Utchowig. By 1675, the Susquehannocks were driven out by the Iroquois.

Shawnee tribes began to settle Cumberland County and established villages in 1698 (Hoch 2017). Many of these settlements were established along Yellow Breeches Creek where some records refer to the stream as Shawnee Creek (Hoch 2017). "The Penn Family offered the Shawnee tribes… land in Cumberland County at the site of their original settlement in Carlisle… to discourage their alliance with the French" (Hoch 2017). The attempt to solidify the alliance failed as the Shawnee who were represented by Peter Charier, a tribe leader of French

and Shawnee descent, sided with the French in 1745, a contributing factor being poor relations as immigrants illegally settled in Cumberland County (Hoch 2017; Goode 2023).

South Mountain, within Pennsylvania, does not have many recorded open-air habitation sites of affiliated indigenous populations but has known, recorded, metarhyolite quarry sites that were used for thousands of years by these groups. These quarries are located on upper hillslopes and ridges within South Mountain and encompass large areas made up of surficial quarry pit depressions (Montgomery 2023). The material is durable, used for stone tools. It was almost exclusively used by indigenous groups in the South Mountain region and traded throughout the mid-Atlantic region (Marr 2018; Stewart 1984).

In sum, South Mountain has had an extensive history of human settlement and extraction over the years. The earliest inhabitants were known to have extracted the plethora of resources of the mountain, which included metarhyolite. The settlers of South Mountain included the English, Scots Irish, German, and African Americans populations. German immigrants made up the majority of the settlers in Cumberland County making up a large portion of the early farmers within the region. The charcoal iron industry was very active in South Mountain from 1750 to the end of the nineteenth century. Many of the charcoal iron ore archaeological features such as furnaces and charcoal hearths are visible on the landscape today. The Underground Railroad may have utilized these furnace systems where fugitives were hiding within South Mountain, using the many collier huts that were abandoned annually or working with Black colliers to earn money as they made their way to freedom. Rural Black communities such as Irishtown located to the north of the historic resources subject of this study in Kings Gap Environmental Education Center may serve as evidence of the African Diaspora. It is also possible that the Irishtown settlement was part of the Underground Railroad system having had an AME church listed

within the community. Further research would need to be conducted to prove the Underground Railroad presence at Irishtown. It is also possible that the inhabitants of Irishtown were former laborers who worked at the furnaces and mill sites in the area or were farm laborers as well. Perhaps these people interacted with the inhabitants of the Domestic Site or the Jacob Keller Sawmill.

Overall, the Jacob Keller Sawmill and Domestic Site within the hollow are part of these larger industrial and social systems having overlapped in occupation and use with the charcoal iron industry and the Underground Railroad network operation. The Jacob Keller Sawmill, having been located in the hollow between these furnaces may have cut timber for the iron and charcoal industries. The Domestic Site/Farmstead, although ownership is unclear, may have been owned by descendants of the earliest settlers of Cumberland County, being the Scots Irish or German immigrants who entered the lands before treaties were finalized with the Iroquois in the second quarter of the eighteenth century. It is also possible that this homestead/farmstead may have been used by the laborers of Irishtown. These laborers may have migrated to Milltown to laborer housing as the resources of South Mountain depleted as a result of over production of timber or farming soil.

CHAPTER 4

ENVIRONMENTAL CONTEXT

South Mountain, as previously discussed, has had a long history of extraction of its natural resources. The environmental context will shed light on the various resources present within South Mountain that were utilized by both the historic period settlers and the pre-contact and post-contact Indigenous Tribes in the region. This context will also focus on soil profiles of the Jacob Keller Sawmill and the Domestic Site where examination of the soil will shed light on the agricultural uses of the region, specifically comparing these results to the known and unknown uses of Domestic Site, having possibly been a farmstead.

Hydrology

The Kings Gap Environmental Education Center is located in southern central Pennsylvania in Cumberland County. It is located within watershed 07E, Yellow Breeches Watershed. The mainstream within watershed 07E is Yellow Breeches, a second order stream. The majority of the watershed is located in the southern portion of Cumberland County where the South Mountain range makes up the southern western portion. The major roadways that run through the watershed include State Route 233 or Pine Grove Road, State Route 34 or Carlisle Road and State Route 94 or the Baltimore Pike.

Yellow Breeches Creek runs 56 miles throughout Cumberland County draining into its primary drainage, the Susquehanna River, which runs adjacent to the Yellow Breeches watershed. The Susquehanna River is a subbasin of the Lower Susquehanna River Basin. It is one of the oldest existing rivers in North America, dating to approximately 320–340 (million years ago [mya]), which is older than the mountain ridges it cuts across. Due to isostatic

rebound, the mountains formed around the river instead of the river forming around the mountains. This tectonic activity uplifted the landscape while the river and its tributaries eroded valleys and gorges in the uplands (Susquehanna National Heritage Area 2021). Ultimately, the Susquehanna basin flows into the Chesapeake Bay.

The Upper Yellow Breeches watershed, located within the Yellow Breeches Watershed, is the primary subbasin of the Yellow Breeches Watershed where the Jacob Keller Sawmill and the Domestic Site are located. It is approximately 40,209 acres (62.9 sq miles). The drainage is typified by dendritic stream patterns. Its tributaries include Cold Spring Run, Spruce Run and the unnamed streams of South Mountain that drain the South Mountain hollows of Kings Gap, Bettem, Irishtown Gap, State Road, Peach Orchard, Kellers Gap, Watery, Sthromes and Hairy Springs Hollows (Skelly and Loy Inc 2002). The land use in the Upper Yellow Breeches Watershed consists of residential agricultural, open space and forest land which makes up the majority of land use in the Upper Yellow Breeches watershed (Skelly and Loy 2002).

Physiographic Province

South Mountain is located within the South Mountain Section of the Ridge and Valley physiographic province. The South Mountain Section is characterized by linear ridges, deep valleys, and flat uplands. Relief is moderate to high ranging from ~480 to 1,080 ft above mean sea level (amsl). The topography is shaped by fluvial erosion of highly variable rocks and some periglacial mass wasting. The underlying lithology within this section includes metavolcanic rocks, quartzite and some dolomite (PAGEODE 2023).

Bedrock Geology

South Mountain has a complex and wide variety of geologic formations located within the South Mountain Section of the Ridge and Valley physiographic province. These formations date from the Precambrian to the Cambrian period. There are many formations within South Mountain, the immediate formations near and within the Kings Gap Environmental Education Center include nine formations (Table 1). The oldest formations are Metarhyolite, Metabasalt, and Greenstone schist. which dates to the Precambrian period (older than 542 million years ago). Tomstown, Waynesboro, Weverton and Loudon (undivided), Montalto Member of Harpers, Harpers, and Antietam formations dominate the Cambrian Deposits which dates from 542 to 488.3 million years ago. The dominant lithology of these formations includes sedimentary, metamorphic and igneous rocks. These rocks include metamorphic rocks such as quartzite, phyllite, greenstone schist, sedimentary rocks such as shale and dolomite, and igneous rocks that include metarhyolite and metabasalt. These deposits were formed in the Paleozoic Geologic Epoch.

AGE	**NAME**	**DOMINANT LITHOLOGY**
Cambrian 542 mya – 488.3 mya	Antietam Formation	Quartzite
	Harpers Formation	Phyllite
	Montalto Member of Harpers Formation	Quartzite
	Weverton and Loudoun Formations, undivided	Quartzite
	Waynesboro Formation	Shale
	Tomstown Formation	Dolomite
Precambrian 4.6 billion ya – 542 mya	Greenstone schist	Greenstone schist
	Metabasalt	Metabasalt
	Metarhyolite	Metarhyolite

Table 1: Overview of Formations in South Mountain

Formations, especially at the highest ridges and hilltops in the South Mountain region, are hard, and dense sandstones and quartzites from the Weverton Formation and Harpers Formation, Montalto Member. These rock units are gray-green and purplish in color and are highly resistant to weathering. The Montalto Member is a type of sandstone and quartzite that has been metamorphosed, meaning it has been altered by heat and pressure over time. These formations are responsible for the formation of the highest ridge tops in the area.

In some of the low hillsides and valleys in the region, there is a carbonate rock called the Tomstown Dolomite. This rock unit is mostly gray dolomite with some white limestone interbeds. It is not as resistant to weathering as the sandstones and quartzites mentioned above and is often found in valleys. Iron ore was mined from the base of this rock unit extensively in this area in the nineteenth century.

Iron Ore or the "brown ores" of South Mountain are hydrous iron oxide minerals called goethite and limonite (DCNR 2016). These ores are located between contact zones between limestone/dolomite and quartzite rocks, namely the Tomstown Dolomite and the Antietam Quartzite. The mineral goethite is commonly found in two geological formations, namely siliceous wash and residual clay. It is formed in a highly fractured zone located at the base of limestone and dolomite beds (DCNR 2016). Over a long period of time, groundwater infiltrates the beds of limestone, carrying iron in solution as it moves. When the iron-rich waters come into contact with the fractured zone above the quartzite, they deposit iron oxide in the form of nodules and irregular masses (DCNR 2016). The largest and highest-grade deposits were smelted at the Pine Grove and other furnaces in South Mountain in the nineteenth century (DCNR 2016).

The location of the Jacob Keller Sawmill and Domestic Site are located on the Montalto Member of Harpers Formation, which dates to the Cambrian geological age. The lithological

constituent of this formation includes a light gray vitreous quartzite. It is green to bluish gray in some places and has dark gray phyllite at its top. Beds are crudely developed and thick to massive. It is approximately 75 feet thick and only present west of the Susquehanna River, in the South Mountain area (Geyer and Wilshusen 1982; DCNR 2021).

Surficial Geology

South Mountain is a prominent ridge that runs through Cumberland County in Pennsylvania. The surficial geology is characterized by a series of ridges and valleys, where colluvial deposits are frequent along hillslopes. Colluvium deposits are loose, heterogeneous, and incoherent mass of soil material and/or rock fragments deposited by rain wash, sheetwash, or slow, continuous downslope creep, usually collecting at the base of gentle slopes or hillsides (USGS 2021).

Soils

Per the United States Department of Agriculture, Natural Resources Conservation Service (USDA, NRCS) Web Soil Survey, there are four soil types mapped within the site area surveyed (Table 2).

Map Unit Symbol	Map Unit Name	Slope	Landform	Drainage Class	Parent Material	Typical Profile
AoB	Andover very stony loam	0 to 8%	Mountain slopes, foot slope, toe slope, and head slope	Poorly drained	Fine loamy colluvium derived from sedimentary rock	Oe A E Btg Btgx1 Btgx2 C
GoB	Glenville very stony silt loam	0 to 8%	Hillslopes, backslopes, foot slope, head slope, and side slope	Moderately well drained	Colluvium and/or residuum weathered from mica schist	Ap Bt1 Bt2 Btx Btgx Bc C

HfB	Hazleton channery sandy loam, rubbly	0 to 8%	Mountain slopes, summit, backslope, mountainflank	Well Drained	Residuum weathered from quartzite and/or conglomerate and/or sandstone	Oi Oe A E Bs Bw1 Bw2 C R
CmD	Clymer very stony loam	0 to 8%	Mountains, summit, blackslope, upper third mountainflank, mountaintop	Well drained	N/A	Ap Bt1 Bt2 BC C R

Table 2. Soils Mapped Within the Project Archaeological Survey Area.

The main soil type along the Yellow Breeches tributary creek within the project survey area encompassing both the Domestic Site and the Jacob Keller Sawmill is the Andover (AoB) very stony loam, which is found on 0 to 8 percent slopes. This soil type is typically found in mountain slope areas at the foot slope, toe slope or head slope. The parent material is a fine-loamy colluvium derived from sedimentary rock. The surface area is covered with cobbles, stones, and boulders. Being a poorly drained soil, it has a very high runoff class, not conducive to prime farmland. A typical soil profile of AoB consists of an Oe horizon (0-3 centimeters), an A horizon (3-8 centimeters), an E horizon (8-20 centimeters), a Btg horizon (20-48 centimeters), a Btgx1 (48-89 centimeters), a Btgx2 horizon (89-124 centimeters), and a C horizon (124-168 centimeters). Minor components of AoB include Buchanan (Figure 25).

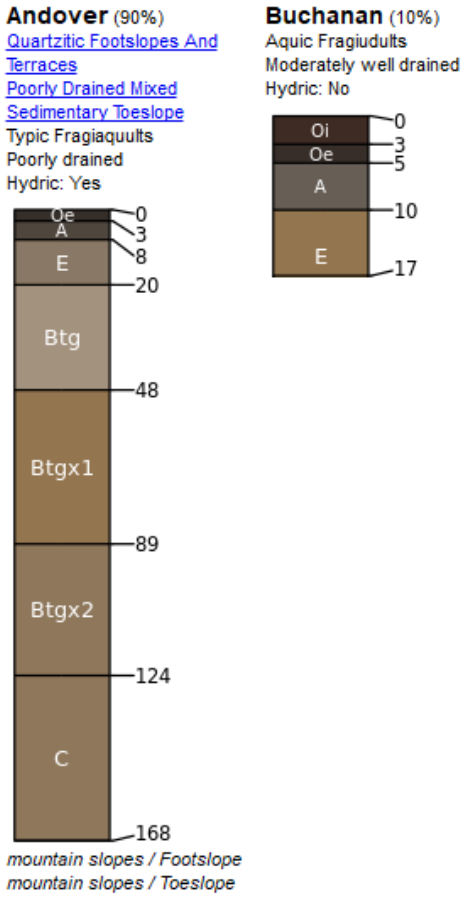


Figure 25. Andover Soil Profile (Web Soil Survey 2023).

The main soil type at the Jacob Keller Sawmill in addition to the AoB is Clymer (CmD) which is a very stony loam typically found on slopes between 8 to 25 percent. This soil type is also found in mountainous settings on summits, back slopes, upper third of mountainflank, and mountaintop. It is covered with cobbles, stones and boulders with a medium run off class and is well drained. A typical soil profile of AoB consists of an Ap horizon (0-20 centimeters), a Bt1 (20-38 centimeters), a Bt2 horizon (38-61 centimeters), a BC horizon (61-91 centimeters), a C horizon (91-127 centimeters) and an R horizon (127-142 centimeters) (Figure 26). This soil type, like all other soil types within Irishtown Gap Hollow is also not considered prime farmland.

Up slope to the west of the Jacob Keller Sawmill is another rock-lined field stone feature that is reminiscent of a former structure. This area consists of the Glenville (GoB) very stony silt loam soil type. GoB is found on hillslopes, backslope, head slope, side slope with a 0 to 8 percent gradient. The parent material is a colluvium and residuum weathered from mica schist. This area is also covered with cobbles, stones or boulders being moderately well drained with a

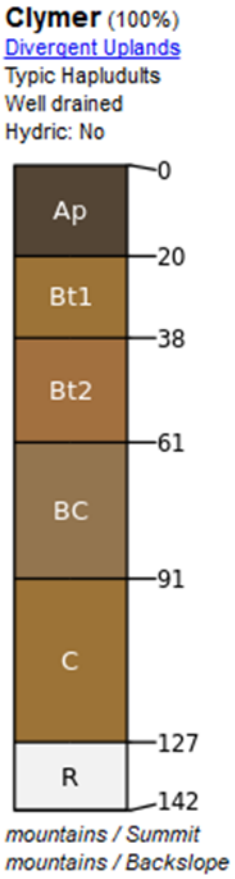


Figure 26. Clymer Soil Profile (Web Soil Survey 2023).

medium runoff class. A typical soil profile of GoB is an Ap horizon (0-23 centimeters), a Bt1 (23 to 41 centimeters), a Bt2 (41 – 48 centimeters), a Btx (48 to 64 centimeters), a Btgx horizon (64

to 84 centimeters), a BC horizon (84 to 99 centimeters) and a C horizon (99 to 208 centimeters) (Figure 27).

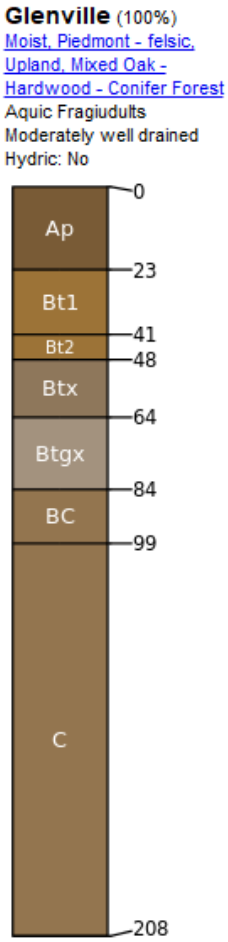


Figure 27. Glenville Soil Profile (Web Soil Survey 2023).

The Domestic Site contains the Hazleton channery sandy loam (HfB) soil type, encompassing the upper slope of the site's boundary. This soil type is found in mountain slopes such as summits, backslope, and mountainflank with 0 to 8 percent gradient. It is well drained and covered by cobbles, stones or boulders. HfB parent material is residuum weathered from quartzite and/or conglomerate and/or sandstone. A typical soil profile consists of an Oi (0-3 centimeters), an Oe horizon (3-5 centimeters), an A horizon (5-15 centimeters), an E horizon (15-23 centimeters), a Bs horizon (23-28 centimeters), a Bw1 horizon (28-61 centimeters), a B22

horizon (61-114 centimeters), a C horizon (114-137 centimeters), and an R horizon (137-162 centimeters). Minor components include Dekalb and Lehew (Figure 28).

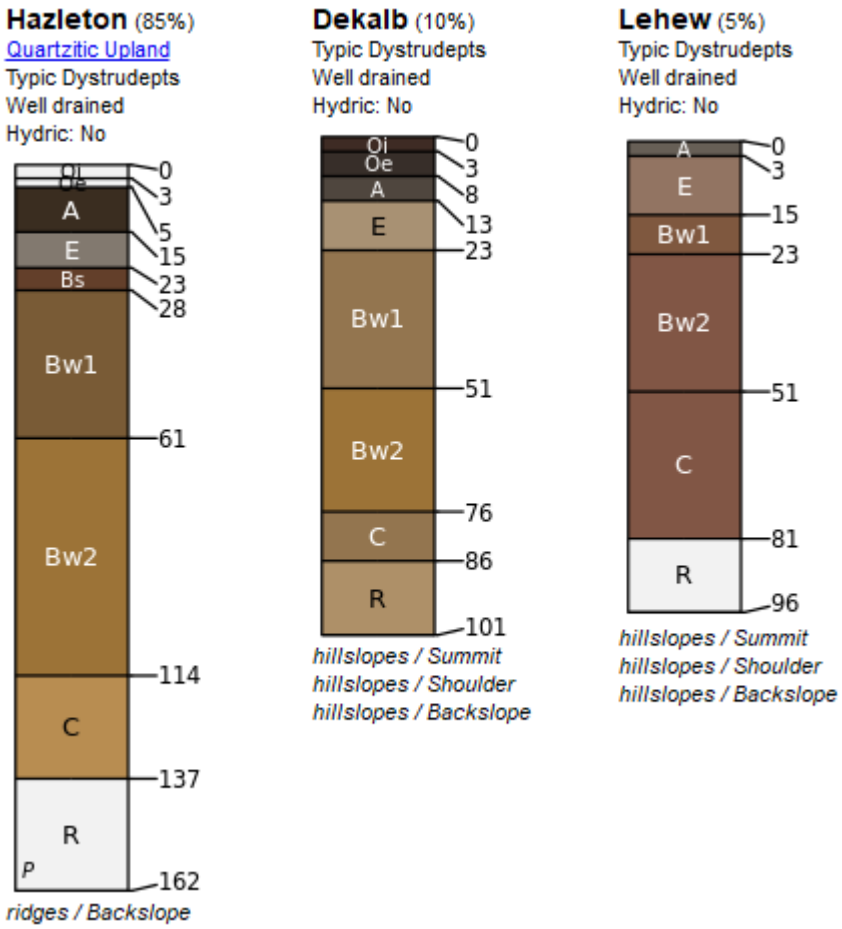


Figure 28. Hazleton Soil Profile (Web Soil Survey 2023).

The soils of Irishtown Gap Hollow are relatively consistent with expected soil types in this area, being defined by colluvium depositional process of the South Mountain region. The soil was not conducive to farmland as the majority, although mostly well drained or moderately well drained, had a high run off class, although there is an Ap horizon present in some areas. The surface of the soil is also characterized by cobble and boulders which would have made agricultural practice difficult. Due to the poor potential of agricultural development, it is possible that the Domestic Site, characterized as a farmstead, may have had a short occupational period as

the land did not prove to be applicable to farming crop but may have been better suited for raising livestock. The fieldstone utilized as the foundations of the structures within the hollow as well as utilized for the Jacob Keller Sawmill dam may have possibly been moved by farmers who cleared the land to use for agricultural purposes. These purposes could have included growing crops or orchards, or for grazing animals. Regardless of the soil being unconducive to farming, orchards were still grown in areas with similar soil characteristics. Peach Orchard, a historically mined area and known orchard site located five miles west of the Irishtown Gap Hollow also has Andover soil as well Buchannon soil types. Additionally, farmsteads are recorded in mountainous regions in Catoctin State Park, which is located within the same mountain range, 60 miles south of South Mountain. The mountain has a similar surficial geology, being made up of colluvium soils. Immigrants settled these mountainous areas and established farmsteads, working the land on hillslopes (NPS 2013).

CHAPTER 5

RESULTS

The results of the archaeological investigation at Irishtown Gap Hollow are examined through artifact data from subsurface testing and metal detecting as well as from above ground surface remains such as the fieldstone foundations and dam. Additionally, soil profiles from shovel testing and test unit excavation are also examined. The Jacob Keller Sawmill and the Domestic Site subsurface testing and metal detecting survey will be discussed separately as these sites had two separate functions and yield different results. The lack of artifacts recovered at the Jacob Keller Sawmill from the initial shovel testing survey did not warrant further shovel testing or placement of test unit excavations at this site. Therefore, the artifacts recovered from this site derive solely from the metal detecting survey.

The shovel testing survey at the Domestic Site produced a large artifact assemblage. These artifacts allude to the site's overall function as a historic farmstead or homestead of the nineteenth century, having contained a large ceramic dataset and other artifacts related to a domestic function that date to the early to mid-nineteenth century whose inhabitants were possibly farmers or labors of low socio-economic status in this region.

Jacob Keller Sawmill Site (36CU0241) Shovel Test Results

A total of five shovel tests were excavated at the Jacob Keller Sawmill site. These shovel tests included A1 through A5.

A1: Shovel test A1 was located on the southern side of the fieldstone dam. A1 consisted of five strata (Figure 29). Stratum I consisted of a 10 YR 3/2 very dark grayish brown sandy loam (0-14 centimeters below surface [cmbs]). Stratum II consisted of 10 YR 7/2 light gray coarse sand (14-

22 cmbs). Stratum III consisted of a 10 YR 3/2 very dark grayish brown sandy loam (22-42 cmbs). Stratum IV consisted of a 10 YR 4/2 dark grayish brown sandy loam (42 -56 cmbs). Stratum V consisted of a 10 YR 7/2 light gray sand (56 -70 cmbs). The base of the excavation was very wet. No artifacts were recovered from STP A1.

Figure 29. John Keller Sawmill Site, STP A1, Depicting Soil Strata Typical of the Site.

A2: Shovel Test A2 was located on the northern side of the fieldstone where the release would have poured water as a result of over fill in the pooling area of the dam. A2 consisted of a 7.5 YR 2.5/3 a very dark brown silty loam (0-18 cmbs). Stratum II consisted of a 10 YR 2/1 black sandy loam (18-32 cmbs). Stratum III consisted of a 10 YR 6/1 gray coarse sand (32-53 cmbs). No artifacts were recovered from STP A2.

A3: Shovel Test A3 was located on the northern side of the dam as well on a rise in the middle of the release area. This rise may have been the result of water being forced from the dam's release

at a rapid rate, creating a small channel that met the creek further downstream. A3 consisted of three strata. Stratum I consisted of a 10 YR 2/1 black sandy loam (0-17 cmbs). Stratum II consisted of 10 YR 6/6 brown yellowish coarse sand (17-32 cmbs). Stratum III consisted of a 10 YR 6/1 gray coarse sand (32-50 cmbs). No artifacts were recovered from STP A3.

A4: Shovel Test A4 was located further downstream of the dam on a flat rise on the eastern side of the creek. A4 contained four strata. Stratum I consisted of 10 YR 2/1 black sandy loam (0-15 cmbs). Stratum II consisted of 10 YR 4/1 dark gray sandy loam (15-27 cmbs). Stratum III consisted of 10 YR 6/2 light brownish gray sandy loam (27-47 cmbs). Stratum IV contained 10 YR 7/6 yellow sandy clay (47-60 cmbs). No artifacts were recovered from STP A4.

A5: Shovel test A5 was also located downstream of the dam on a flat rise on the eastern side of the stream. It contained four strata. Stratum I consisted of 10 YR 2/1 black sandy loam (0-18 cmbs). Stratum II consisted of a 10 YR 5/6 yellowish brown sand (18-29 cmbs). Stratum III contained a 10 YR 6/2 light brownish gray sand (27-30 cmbs). Stratum IV contained a 10 YR 6/6 brownish yellow sand (30-45 cmbs) with subangular rocks throughout. No artifacts were recovered from STP A5.

Jacob Keller Sawmill Site Metal Detecting Survey Results

The metal detecting survey produced the only artifact assemblage from the Jacob Keller Sawmill. This survey was conducted on the northern side of the western dam wall above the creek. A total of six artifacts were recovered as a result of this survey at the Jacob Keller Sawmill.

The artifacts included five cast iron vessel fragments and one large spike (Figure 30) These artifacts were located in a relatively tight cluster, one meter north of the western dam wall. The vessel fragments do not refit but are likely derived from the same object. These artifacts are a representation of the industrial past of the nineteenth century. They are reflective of the

Figure 30. Artifacts Recovered From the Jacob Keller Sawmill Site. From Left Cast Iron Bowl Fragments, Machine Cut Spike on Right.

sawmill's operation, possibly being the site of a smelting process as well or utilized for domestic purposes. The large spike suggests large timber fashions that are reminiscent of the possible open construction that may have been the site of the Jacob Keller Sawmill. The lack of artifacts at the site, especially nails, suggests that a structure was not present adjacent to the dam. The large

spike may represent the minimal construction of the sawmill structure. Historical documentation of nineteenth century sawmills suggests that it would have been constructed of local material and may have been an open shed structure. The machinery would have been powered by the waterpower harnessed from the water wheel. The large spike also suggests that there was large equipment on site during operation. Minimal historical documentation exists about the Jacob Keller Sawmill aside from deed records that mention a two-story log house as part of the parcel property. Equipment listing or products produced from this mill were not identified.

On the southern side of the trail that runs just north of the creek and the Jacob Keller Sawmill dam, there are more fieldstone features in linear patterns up the mountain that form an odd shape reminiscent of a square rock lined feature (Figure 31, [encased in red]). These fieldstone features could be stone fence-line or a historic property boundary. The odd, square shaped fieldstone feature could be a house structure, possibly the foundation of the log cabin described in the deed poll. This area is relatively flat on the upper slope of the hillside. Excavations were not conducted in this area to ascertain the function of these features as time constraints hindered further research in this area.

The spatial data was collected at the Jacob Keller Sawmill to understand the general makeup at the site and understand its function at the height of its operation. This data includes the Trimble GPS points, Total Station collected points, and a plan view sketch map of the area. Additionally, all metal detected points within MD 1 were mapped to understand the provenience of these artifacts within the Jacob Keller Sawmill. This data produced a better understanding of the spatial distribution of the site. The location of the dam release alluded to the location of the

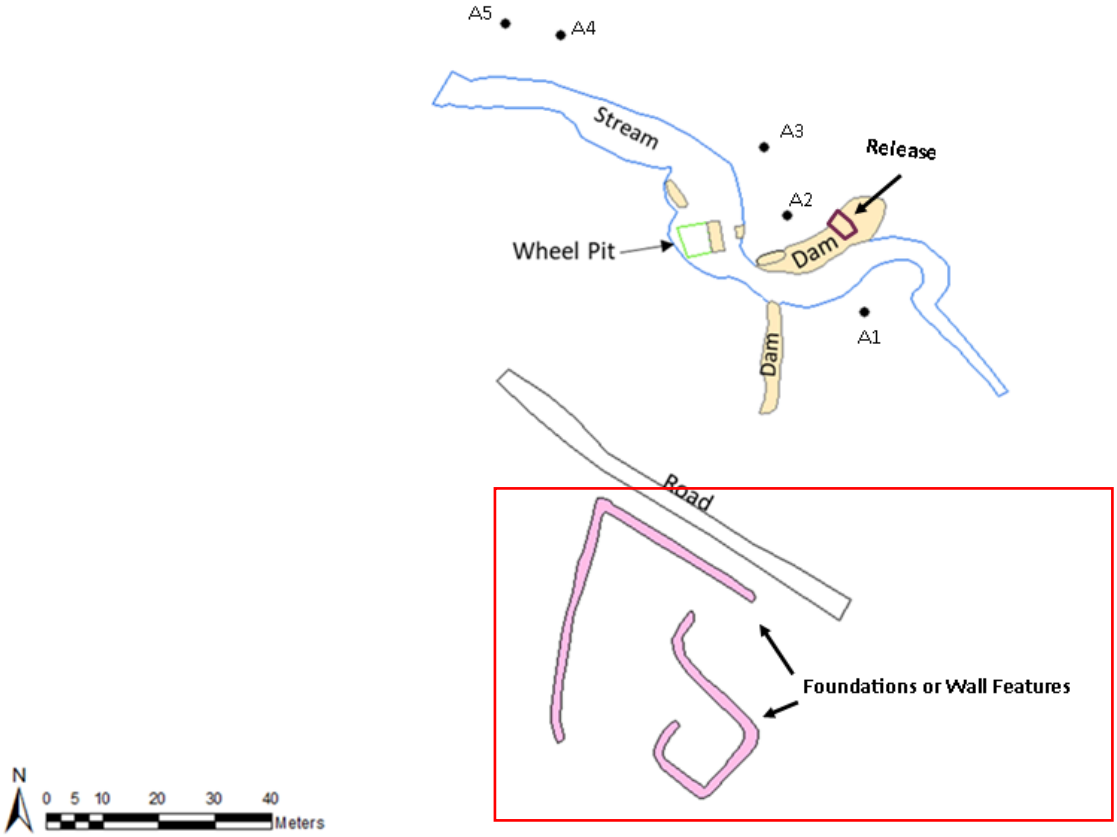


Figure 31. Jacob Keller Sawmill With Adjoining Fieldstone Features on the Southern Side of the Roadway Encased With Red.

mill race. Additionally, the dam, having remained well preserved since the nineteenth century, provided a clear indication of the makeup of the site that allowed for interpretation of the location of the water wheel. The wheel would have been located within a small, manufactured stream pool, slightly lower in elevation than from the dam.

The wheel at the Jacob Keller Sawmill was located on the western side of the abutment in the middle of the mill race within the creek adjacent to the western bank of the stream. The rest of the stream has also been modified as an earthen abutment was constructed on the eastern side of the embankment to reinforce the mill race and maintain the release area on the eastern side of the creek (Figure 32).

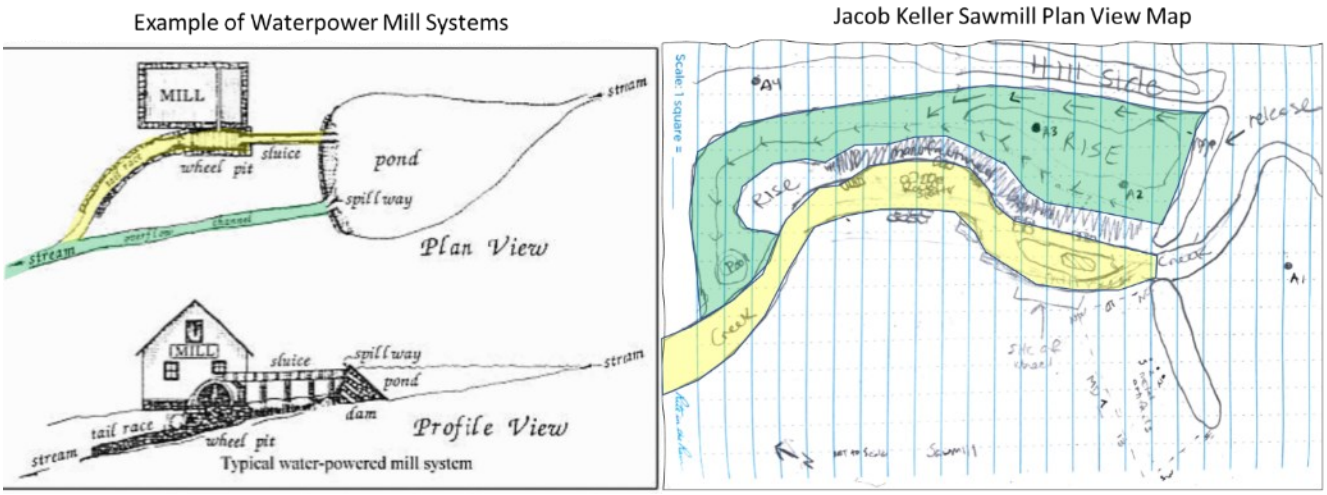


Figure 32. Comparative Diagrams of Release and Mill race. Left: Typical Water Powered Mill Makeup (Lord 1983). Right: the Jacob Keller Sawmill Planview map for Comparison.

The overview map allows for a better interpretation of the operation overall at the Jacob Keller Sawmill during its use period. The construction of the site is also more apparent as the boundaries and characteristics of the site are fully interpreted. This reveals the construction of backcountry sawmills in Cumberland County that are largely destroyed or located on private property, outside of the view of the general public to be preserved and understood as part of the larger historical landscape.

Domestic Site (36CU0240) Overview Artifacts Results

A total of 204 artifacts were recovered from the Domestic Site from the subsurface testing and the metal detecting survey. Of these artifacts, 86 ceramics, 77 nails, 29 metal artifacts, 7 glass artifacts, 4 brick fragments, and 1 pipe bowl fragment were recovered (Table 3).

Artifact Type	Sum of Quantity
Brick	**4**
Brick Fragment	4
Ceramic	**86**
Pearlware	9
Redware	46
Whiteware	31
Glass	**7**
Bottle Glass	3
Vessel Glass	2
Window Glass	2
Metal	**29**
Barbed Wire	3
Bullet in Shell	1
Copper Alloy Button	1
Lead Fragment	1
Lead Scrap	2
Metal Bowl Fragment	2
Metal Buckle	1
Metal Can	1
Metal Ring	1
Miscellaneous Metal	10
Modern Bullet Shells	2
Shotgun Shell	3
Tin Can	1
Nail	**77**
Machine Cut	48
Unidentifiable Nail	29
Pipe	**1**
Pipe Bowl	1
Grand Total	**204**

Table 3. Artifact Table From Domestic Site.

Ceramics

Of the 86 ceramics, three types were identified, they include redware, pearlware, and whiteware (Figure 33). Of the whiteware, the majority are plain and with some decorated. The redware assemblage contains black glaze redware and lead glaze. The majority of pearlware is plain pearlware (Figure 34).

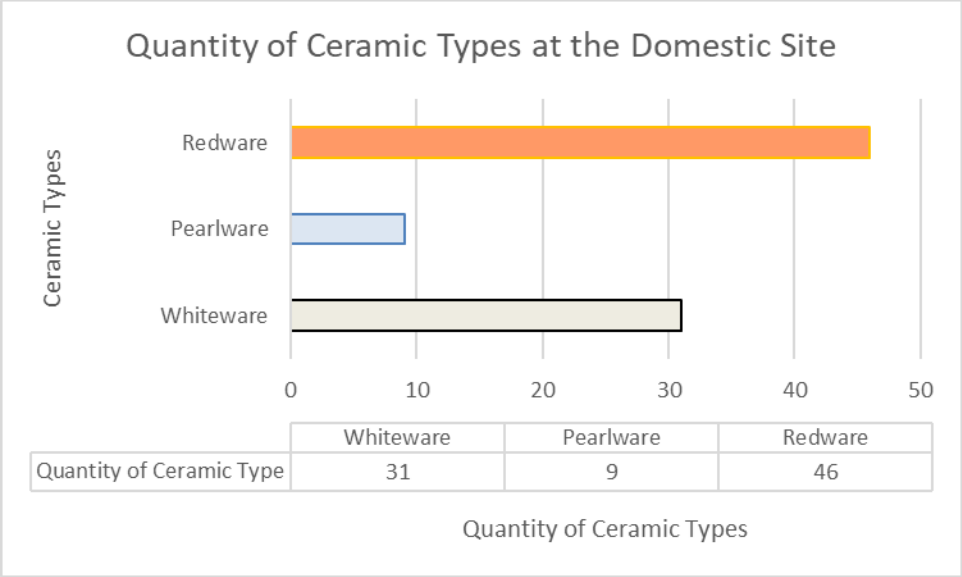


Figure 33. Ceramic Distribution Within the Domestic Site Assemblage.

The majority of ceramic artifacts were recovered from the STP C6 (26 ceramic sherds) located on the upper slope of the site on a berm adjacent to a concentration of rock rubble identified on the surface. STP C6 was the highest density STP at the Domestic Site and determined the location of TU 1.

Figure 34. Sample of Ceramic Types Within the Ceramic Assemblage. From Left to Right on the Top, Transfer Print Whiteware, Blue Shell Edge Pearlware, Flow Blue Whiteware, Sponge Whiteware, Gold Gilding Whiteware. On Bottom From Left to Right: Lead Glazed Redware, Black Glaze Redware, Plain Whiteware.

The majority of ceramics at the Domestic Site are redware. Redware sherds are considered more utilitarian vessels, indicative of food preparation, storage, and consumption during the nineteenth century (Majewski 1987; Mansberger 1986; Miller 1980). A high density of redware ceramic sherds in an assemblage suggests that the inhabitants of the site were engaged in food production, processing and consumption, an expected activity at a domestic homestead/farmstead site (Deetz 1996; Farnsworth 2008). The density of redware ceramic sherds provides insight into the economic status of the inhabitants. Redware is among the most commonly found ceramic type throughout the nineteenth century, having been a low-cost material, made locally or otherwise, that would have been widely available and capitalized upon

(Hunter 1987; Miller 1980). The majority of the redware from the redware ceramic assemblage has a glaze. A total of 6 redware sherds have black glaze, 18 have lead glaze which varies in color between light and dark brown, 16 have missing glaze and 6 are plain, no glaze. Black glazed redware was used throughout the 18th century into the early to mid-19th century (Miller 2000). The most common vessel forms are utilitarian jars, jugs, and pots. These redware glazes were considered inexpensive, utilitarian wares (Hunter 1987; Miller 1980). Lead glazed redwares are also commonly found throughout the early 18th and 19th centuries having many types and varieties. These ceramic types were also relatively inexpensive and were also used for utilitarian purposes that included food preparation and storage (Turnbaugh 1983).

The second most commonly found ceramic type at the Domestic Site is whiteware. Whiteware, like redware, was a commonly used ceramic type in the nineteenth century. It was mass produced, making it relatively inexpensive and widely accessible to people of different socioeconomic classes. Whiteware was used for a variety of purposes, including tableware, washbasins, chamber pots and decorative pieces. The quality and quantity of whiteware such as decoration or plain whiteware can be indicative of the overall quality of the artifact. Decorated whiteware in comparison would have been more expensive than plain whiteware. At the Domestic Site, a total of 31 whiteware ceramic sherds were recovered. The majority of whiteware recovered is undecorated whiteware (22 sherds). Two of the undecorated whiteware sherds are slightly burned, modifying the appearance to a darker grey glaze (STP B7). The decorated whitewares include one blue edge rim sherd (1840-1860), one flow blue transfer print sherd (1840-1900), one decorated gold rim gilding sherd (1870-2000), a sponge pink decorated sherd (1840-1900), a green transfer print sherd (1820-1900) and a blue transfer print sherd (1830-1870). Overall, the decorated whiteware makes up 29% of the total assemblage.

Undecorated, plain whiteware sherds make up 71% of the total whiteware assemblage. From this sample, the Domestic Site, with its majority of redware sherds as well as whiteware sherds, indicates that the inhabitants at the site were likely of mid to lower socio-economic status.

Pearlware was also recovered from the Domestic Site, representing the smallest proportion of ceramic types in the assemblage (11%). Pearlware was developed in the late 18th century to mimic the costly Chinese porcelain popular at the time. It became the standard earthenware of tableware until 1830 (Hunter 1987; Miller 1980; Miller 2000). The least expensive pearlware type was plain or undecorated pearlware. Decorated pearlware was slightly more expensive. Ranked from cheapest to most expensive, edge decoration, painted, dipped and printed pearlware can be interpreted as a representation of wealth and socioeconomic status (Deetz 1996; Hunter 1987; Miller 1980). The pearlware assemblage from the Domestic Site contains a majority of plain or no decoration. There is a single pearlware ceramic blue shell edge fragment in the assemblage that is the least expensive decoration type, falling in line with previous interpretations regarding the socio-economic status of the inhabitants at the site. Thus, the portion of pearlware is represented by the least expensive pearlware ceramic types, having a majority of plain and one blue shell edge ceramic fragment.

Nails

A total of 77 nails were recovered from the Domestic Site from all the phases of survey, which includes the targeted shovel testing, systematic shovel testing and the metal detecting survey. The majority of nails found at the site consist of a total of 48 machine cut nails making up, 62%, of the total assemblage of nails. A total of 29 unidentifiable nails, 38%, of the total nail assemblage make up the other portion of nails recovered at the site (Figure 35). Nails deemed

unidentifiable are highly corroded, unable to be confidently identified as machine cut or any other type of nail.

The majority of nails came from the metal detecting survey making up 53% of the total assemblage of nails from the site, accounting for 30 of the 48 or 62% of the total machine cut

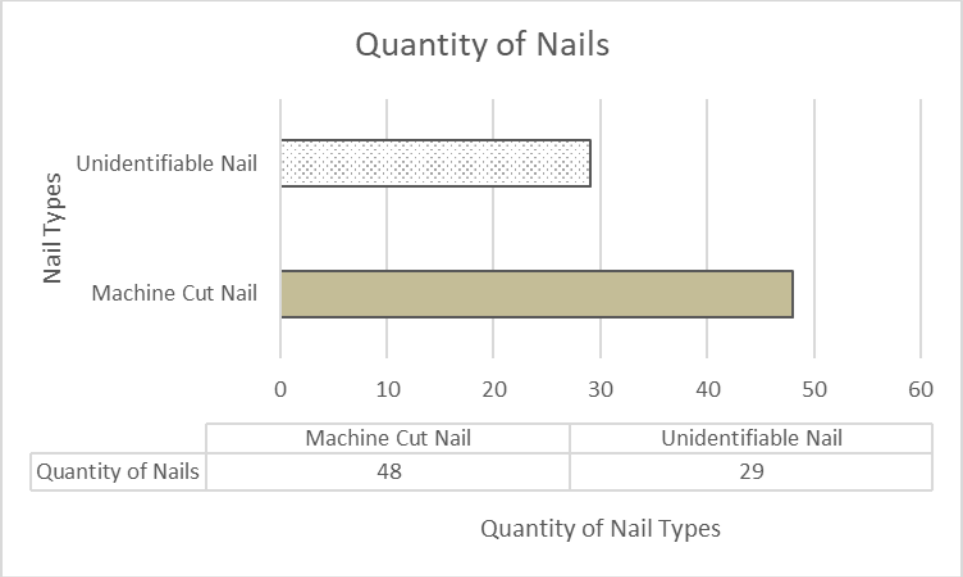


Figure 35. Distribution of Nails in Domestic Site Assemblage.

nails recovered. A total of 18 machine cut nails were found on the upper slope of the site near the rubble during subsurface testing from TU 1 and STP C6. These nails were largely broken at the tip, mostly consisting of the head and the shank. Machine cut nails date to roughly between 1850 to 1900. The location of nails at the upper slope and lower foundations suggests that there were possibly two structures in this area. The window glass recovered from Stratum I TU 1 in the upper slope area and the lower area in B2 also support this theory. The presence of domestic artifacts in the upper slope area, especially the higher proportion of ceramics in B7, C6 and TU 1 and the recovery of the kaolin bowl fragment in B10 are indicative of a possible additional structure or the concentration of habitation being the upper slope where a former structure was located.

Glass

Glass artifacts make up 3% of the total assemblage from the Domestic Site, having a total of 7 artifacts represented. The three types of glass within the glass assemblage include bottle glass, vessel glass and window glass (Figure 36). The difference between bottle glass and vessel glass within the assemblage is that bottle glass originated from a bottle source while vessel glass could not be associated with a specific vessel type, but it was not consistent with a bottle. Typically bottle glass can be attributed to its rounded shape having originated from the base, body, shoulder, neck or finish of the bottle. The color can also have some variation where copper blue, amethyst, or dark olive green are typically originated from bottles although color is not always a determining factor.

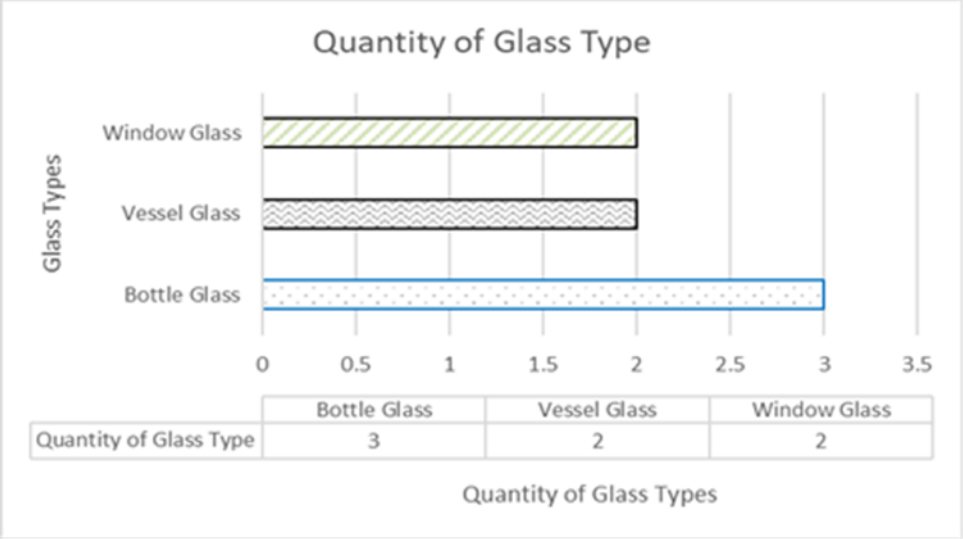


Figure 36. Distribution of Glass in Domestic Assemblage.

Bottles fall into two categories, utilitarian or specialty. Some examples of utilitarian bottles include soda, mineral water, beer, milk, proprietary medicine wine bottles etc. (Society for Historical Archaeology 2023). Specialty bottles include barber bottles, fancier upscale perfume and cologne bottles, decorative snuff bottles, inkwells, etc. (Society for Historical

Archaeology 2023). The Domestic Site bottle glass assemblage includes light cobalt blue and clear bottle glass colors. One fragment of the light cobalt blue bottle glass has bubbles visible within the glass. This is indicative of the manufacture style of the bottle. Typically, mouthblown or "handmade" bottles were produced by skilled craftsmen who manually gathered hot glass, placing it on the end of the blowpipe. At the end of the blowpipe, the glass would be shaped in a mold (Society for Historical Archaeology 2023). The result of the blown glass would sometimes have imperfections such as bubbles within the bottle due to the air bubbles from blowing into the mold.

Window glass is identified by its flat shape. The window glass at the Domestic Site is olive green and was found near or adjacent to the fieldstone foundations at the site. A total of two window glass fragments were recovered from the site. The presence of window glass supports the presence of former structures on the upper slope of the Domestic Site.

Brick

The least represented artifact type within the Domestic Site are the brick fragments recovered from STP C18. These fragments were located outside of the foundations on the eastern side of the roadway. Bricks were a popular architectural material from the late 19th century until the 1930s. In the later nineteenth century, brick clays were pressed into molds and were often unevenly fired (National Park Service 2023). With technological advances in the brick making process, bricks became more durable and evenly distributed over time (National Park Service 2023). The presence of brick fragments is indicative of a former structure, although no other brick fragments were recovered at the site. This may be the result of the use of organic materials such as wood, rather than brick for previously standing structures. It is possible that the brick fragments were the result of a former chimney or fireplace, paving, retaining walls, and or were a

decorative feature (National Park Service 2023). The latter is less likely, as the ceramics assemblage suggests that the inhabitants at the Domestic Site were less concerned about decoration and more concerned with utility.

Domestic Site Shovel Test Survey Results

At the Domestic Site, the subsurface testing from shovel testing and test unit excavation produced a total of 204 artifacts. These artifacts reveal the overall function of the Domestic Site, having been a former homestead or farmstead belonging to some of Cumberland County's early European American immigrants. The artifact assemblage includes domestic and architectural artifacts such as ceramics, window glass, vessel glass, metal artifacts, and a kaolin pipe bowl fragment (Figure 37). Metal artifacts have multiple functions such as architectural, utility and personal adornment as well as unknown functions. The highest density of artifact type comes from the Domestic Site which has a total 86 ceramic sherds making up 75% of the total assemblage which were all located as a result of the subsurface testing at the site.

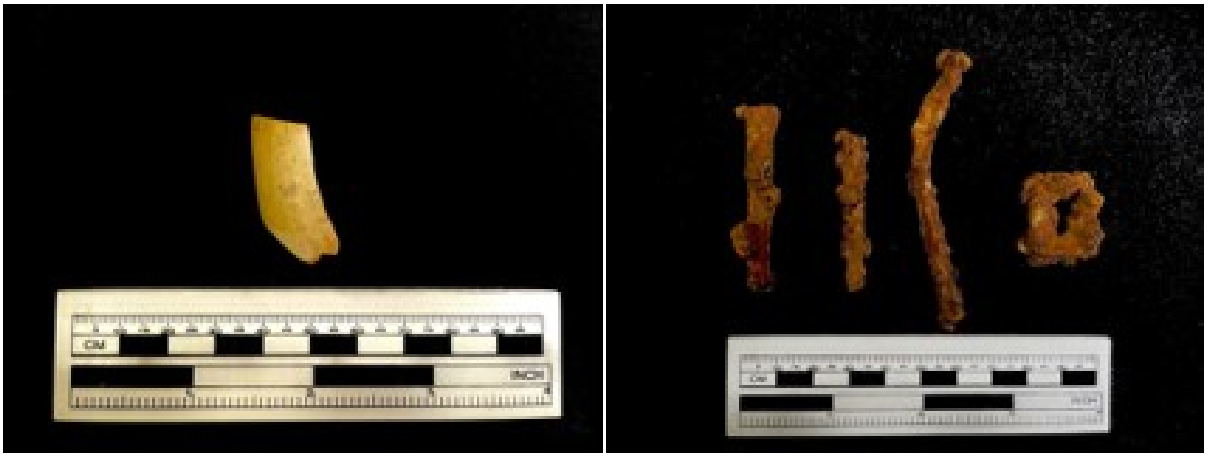


Figure 37. Domestic Site, Representative Artifacts. Left: Kaolin Pipe Bowl Fragment. Right: Metal Artifacts, From Left to Right: Machine Cut Nails and a Buckle.

A total of 29 shovel tests were conducted at the Domestic Site. The first phase of shovel testing was conducted within and outside of the fieldstone foundations at the site. These shovel tests comprise of STP's B1 through B10.

B1: Shovel test B1 was located on the southern side of the fieldstone foundation on the eastern side of the road. The profile consisted of four strata. Stratum I was a 10 YR 2/2 very dark brown sandy loam (0-12 cmbs), Stratum II was a 10 YR 6/1 gray sandy loam (12-31 cmbs), Stratum III was a 10 YR ¾ dark yellowish brown silt loam (31-48 cmbs) and Stratum IV was a 10 YR 5/6 yellowish brown sandy loam (48-58 cmbs). No artifacts were recovered from shovel test B1.

B2: Shovel test B2 was located within the foundation on the eastern side of the roadway. The profile consisted of three strata (Figure 38). Stratum I contained a 10 YR 2/2 very dark brown

Figure 38. Domestic Site, STP B2, Depicting Soil Strata.

sandy loam (0-7 cmbs), Stratum II was a 10 YR ¾ dark yellowish brown silt loam (7-25 cmbs), Stratum III was a 10 YR 6/6 brown, yellow sandy clay loam with 20% gravels. A total of five artifacts were recovered from STP B2, all from Stratum II. These artifacts included two whiteware ceramic sherds, one vessel glass fragments, one bottle glass fragment and one window glass fragment.

B3: Shovel test B3 is located north of STP B2 also within the foundation on the eastern side of the roadway. It contained three strata (Figure 39). Stratum I was a 10YR 2/2 very dark brown sandy loam (0 -16 cmbs). Stratum II was a 10 YR ¾ dark yellowish brown sandy loam (16-26 cmbs). Stratum III is a 10 YR 6/6 sandy loam (26-40 cmbs). A total of eight artifacts were recovered from STP B3. One redware sherd was recovered from Stratum I. The other seven artifacts were located in Stratum II. These artifacts include four whiteware sherds, two redware sherds and a brick fragment.

Figure 39. Domestic Site, STP B3, Depicting Soil Strata.

B4: Shovel Test B4 was located on the outside of the foundation, beyond the farthest east wall in line with STP B2. B4 contained four strata. Stratum I contained a 10 YR 2/2 very dark brown sandy loam (0-12 cmbs). Stratum II had a 10 YR 6/1 gray sandy loam (12-24 cmbs). Stratum III had a 2.5 YR 6/2 light brownish gray sandy loam (24-44 cmbs). Stratum IV contained a 10 YR 4/4 dark yellowish brown sandy loam (44-54 cmbs). No artifacts were recovered in STP B4.

B5: Shovel Test B5 to the north of B4 on the east side of the eastern most foundation wall. B5 consisted of four strata (Figure 40). Strata I contained a 10 YR 2/2 very dark brown sandy loam (0-8 cmbs). Stratum II contained a 10 YR 6/1 gray sandy loam (8-27 cmbs). Stratum III contained a 10 YR 4/4 dark yellowish brown sandy loam (27-40 cmbs). Stratum IV contained a

Figure 40. Domestic Site, STP B5, Depicting Soil Strata.

10 YR 6/6 brownish yellow sandy loam (40-50 cmbs). One, clear pressed vessel glass artifact was recovered from Stratum II within STP B5.

B6: STP B6 was located on the northern outside wall on the eastern side of the road. It contained two strata. Stratum I contained a 10 YR 3/2 sandy loam (0-17 cmbs). Stratum II contained a 10 YR 5/6 sandy loam (17-27 cmbs). No artifacts were recovered from STP B6.

B7: Shovel Test B7 was located on the western side of the road in the center of field stone foundations or walls at the base of the hillslope. It contained three strata (Figure 41). Stratum I was a 10 YR 2/2 very dark brown silt loam (0-7 cmbs). Stratum II contained a 10 YR 5/3 brown sandy loam (7-23 cmbs). Stratum III contained a 10 YR 5/4 yellowish brown compact sandy clay loam (23-33 cmbs). A total of 15 ceramic artifacts were recovered from Stratum II. These ceramics include, six glazed redware sherds and eight whiteware ceramic sherds.

Figure 41. Domestic Site, STP B7, Depicting Soil Strata.

B8: Shovel Test B8 was located north of B7 on the outside of the foundation wall on the western side of the road. It contained three strata. Stratum I was a 10 YR 2/2 very dark brown sandy loam (0-5 cmbs). Stratum II contained a 10 YR 4/4 dark yellowish brown sandy loam (5-12 cmbs). Stratum III contained a 10 YR 5/6 yellowish brown sandy loam (12-22 cmbs). No artifacts were recovered from STP B8.

B9: Shovel Test B9 was located on the western side of the roadway on a flat area on the hillslope. It contained three strata (Figure 42). Stratum I was a 10 YR 2/2 very dark brown sandy loam (0-4 cmbs). Stratum II was a 10 YR 4/4 dark yellowish brown sandy loam (4-17 cmbs). Stratum III was a 10 YR 5/6 yellowish brown sandy loam (17-33 cmbs). One earthenware ceramic fragment was recovered from Stratum II in STP B9.

Figure 42. Domestic Site, STP B9, Depicting Soil Strata.

B10: Shovel Test B10 was located adjacent to STP B9 on the flat area on the hillslope to the west of the road. STP B10 contained three strata (Figure 43). Stratum I was a 10 YR 2/2 very dark brown sandy loam (0-4 cmbs). Stratum II was a 10 YR 4/4 dark yellowish brown sandy loam with 10% gravels (4-11 cmbs). Stratum III was a 10 YR 5/6 yellowish brown sandy loam with tabular rock (11-27 cmbs). A kaolin pipe bowl fragment embossed with stars and "T" was recovered from Stratum II within STP B10.

Figure 43. Domestic Site, STP B10, Depicting Soil Strata.

Domestic Site Second Phase of Survey Shovel Test Results

After completing the targeted shovel testing, a second phase of shovel testing was conducted to capture a systematic, larger coverage of the site. Since no middens or features were found in the initial survey, it was the objective of the systematic survey to identify possible features or middens near and outside the areas where the foundations were located on a grid. These shovel tests included STPs C1 through C18.

C1: Shovel test C1 was located on the southeast corner of the grid outside the foundations. It consisted of three strata. Stratum I contained a 10 YR 2/1 black silty loam (0-9 cmbs). Stratum II contained a 10 YR 4/1 dark gray sandy loam (9-12 cmbs). Stratum III contained a 10 YR 5/6 yellowish brown sandy clay (12-22 cmbs). No artifacts were recovered from STP C1.

C2: Shovel test C2 was located on the grid, 10 meters west of C1. It consisted of three strata. Stratum I contained a 10 YR 4/4 dark yellowish brown sandy loam (0-4 cmbs). Stratum II contained a 10 YR 6/6 brownish yellow (4-25 cmbs). Stratum III was a 10 3/2 very dark grayish brown sandy clay (25-35 cmbs). No artifacts were recovered from STP C2.

C3: Shovel test C3 was located at the corner of the southwest corner of the grid, upslope to the west of the roadway. It contained two strata. Stratum I consisted of a 10 YR 2/1 black silty loam (0-5 cmbs). Stratum II consisted of a 10 YR 3/6 dark yellowish brown silty clay (5-20 cmbs). No artifacts were recovered from STP C3.

C4: Shovel test C4 was located on the western side of the grid north 10 meters north of STP C3. It contained two strata. Stratum I consisted of a 10 YR 2/1 black silty loam (0-5 cmbs). Stratum II consisted of a 10 YR 5/6 yellowish brown silty clay (5-25 cmbs). No artifacts were recovered from STP C4.

C5: Shovel Test C5 was located 10 meters east of STP C4 on the upper slope on the western side of the roadway. It contained two strata. Stratum I consisted of a 10 YR 2/1 black silty loam.

Stratum II consisted of a 10 YR 5/6 yellowish brown silty clay. No artifacts were recovered from STP C5.

C6: Shovel test C6 was located 10 meters east of STP C5 on the upper slope of the site, adjacent to a rubble feature. It contained three strata (Figure 44). Stratum I consisted of a 10 YR 2/1 black silty loam with 20% sub angular rocks (0-1 cmbs). Stratum II consisted of a 10 YR 5/2 grayish brown sandy clay (1-38 cmbs). Stratum III consisted of a 10 YR 5/6 yellowish brown sandy clay (38-48 cmbs). All the artifacts recovered from STP C6 derived from Stratum II. A total of 43 artifacts were recovered from STP C6, containing 23 redware ceramic sherds, six of which have dark brown lead glaze, four have light brown lead glaze, four have black glaze, six have sheen on the outer edge, and five are unglazed. Other artifacts include, 9 nails, 8 miscellaneous metal fragments, 2 undecorated whiteware ceramic sherds and 1 blue edge whiteware sherd.

Figure 44. Domestic Site, STP C6, Depicting Soil Strata.

C7: Shovel test C7 was located 10 meters north of C4 on the western side of the grid on the upper slope of the site. It contained two strata. Stratum I consisted of a 10 YR 2/1 black silty loam (0-10 cmbs). Stratum II consisted of a 10 YR 5/6 yellowish brown silty clay (10-20 cmbs). No artifacts were recovered from STP C7.

C8: Shovel test C8 is located 10 meters east of C7 on the upper slope of the site, on a 10% slope adjacent to a possible road cut. It contained two strata. Stratum I consisted of a 10 YR 2/1 black silty loam (0-2 cmbs). Stratum II consisted of a 10 YR 5/6 yellowish brown silty clay (2-20 cmbs). No artifacts were recovered from C8.

C9: Shovel test C9 is located 10 meters north of C7 on the eastern side of the grid. It contained two strata. Stratum I consisted of a 10 YR 2/1 black silty loam (0-5 cmbs). Stratum II consisted of a 10 YR 5/6 yellowish brown silty clay (5-20 cmbs). No artifacts were recovered from STP C9.

C10: Shovel test C10 is located 10 meters east of C9. It contained two strata. Stratum I consisted of a 10 YR 2/1 black silty loam (0-8 cmbs). Stratum II consisted of a 10 YR 5/6 yellowish brown sandy clay (8-28 cmbs). No artifacts were recovered from STP C10.

C11: Shovel test C11 is located on the northwest corner of the grid, 10 meters north of C9. It contained two strata. Stratum I consisted of a 10 YR 2/1 black silty loam (0-10 cmbs). Stratum II consisted of a 10 YR 5/6 yellowish brown sandy clay (10-25 cmbs). No artifacts were recovered from STP C11.

C12: Shovel test C12 was located on the lower, east of the roadway, 10 meters north of C1. It contained three strata. Stratum I consisted of a 10 YR 2/2 very dark brown silty loam (0-7 cmbs). Stratum II consisted of a 10 YR 6/1 gray sandy loam (7-20 cmbs). Stratum III consisted of a 10 YR 6/6 sandy loam (20-25 cmbs). No artifacts were recovered from STP C12.

C13: Shovel test C13 was located on the lower edge of the site, on the eastern side of the roadway, 10 meters north of C12. Stratum I contained three strata. Stratum I consisted of a 10 YR 2/2 very dark brown silty loam (0-14 cmbs). Stratum II consisted of a 10 YR 6/1 gray silty loam (14-18 cmbs). Stratum III consisted of 10 YR 6/6 brownish yellow (18-28 cmbs). No artifacts were recovered from STP C13.

C14: Shovel test C14 was located on the lower end of the site on the eastern side of the road within the foundations, 20 meters west of C13. It contained three strata (Figure 45). Stratum I consisted of a 10 YR 2/1 black silty loam (0-11 cmbs). Stratum II consisted of a 10 YR 4/4 dark yellowish brown sandy clay (11-31 cmbs). Stratum III consisted of a 10 YR 6/6 brownish yellow sandy clay. A total of 7 ceramic artifacts were recovered from Stratum II. These ceramics include six whiteware ceramic sherds and one pearlware ceramic sherd.

Figure 45. Domestic Site, STP C14, Depicting Soil Strata.

C15: Shovel test C15 was located 10 meters north of B5 on the lower end of the site on the eastern side of the fieldstone foundation. It contained three strata. Stratum I consisted of a 10 YR 2/2 very dark brown silty loam (0-5 cmbs). Stratum II consisted of a 10 YR 3/2 very dark grayish brown silty loam (5-25 cmbs). Stratum III consisted of a 10 YR 6/6 brownish yellow sandy loam (25-35 cmbs). No artifacts were recovered from STP C15, however, at the base of excavation, a darker, possible feature was identified in the subsoil. Upon further investigation, it was determined that this was the result of bioturbation.

C16: Shovel test C16 was located 10 meters west of C15 within the fieldstone foundation on the lower east side of the grid. It contained three strata (Figure 46). Stratum I consisted of a 10 YR 2/1 black silty loam (0-5 cmbs). Stratum II consisted of a 10 YR 4/4 dark yellowish brown sandy clay (5-15 cmbs). Stratum III consisted of a 10 YR 6/6 brownish yellow sandy clay (15-25 cmbs). A total of 11 artifacts were recovered from Stratum II, ten of which included ceramics, and one bottle glass fragment. Ceramic artifacts include four unglazed redware, three lead glazed redware and three undecorated whiteware sherds.

Figure 46. Domestic Site, STP C16, Depicting Soil Strata.

C17: Shovel test C17 was located 10 meters north of C15 on the northern side of the grid, outside of the fieldstone foundations. It contained three strata. Stratum I consisted of a 10 YR 2/1 black silty loam (0-3 cmbs). Stratum II consisted of a 10 YR 6/1 gray sandy clay (3-8 cmbs). Stratum III consisted of a 10 YR 6/6 brownish yellow sandy clay (8-20 cmbs). No artifacts were recovered from STP C17.

C18: Shovel test C18 was located on the northern side of the grid on the eastern side of the roadway, outside of the fieldstone foundations. It contained three strata (Figure 47). Stratum I consisted of a 10 YR 2/1 black silty loam (0-5 cmbs). Stratum II consisted of a 10 YR 6/1 gray sandy clay (5-15 cmbs). Stratum III consisted of a 10 YR 6/6 brownish yellow sandy clay (15-25 cmbs). A total of 3 brick fragments were recovered from Stratum II of STP C18.

Figure 47. Domestic Site, STP C17, Depicting Soil Strata.

In sum, shovel tests from the second phase of testing at the Domestic Site demonstrated that soil stratigraphy was more eroded in the upper slope of the site while the lower shovel tests on the eastern side of the roadway had more developed stratigraphy. The shovel tests in the upper slope had less strata, typically a shallow O horizon and a B horizon with base of excavation reaching 20 centimeters. The lower shovel tests on the eastern side of the road had more strata, typically having an O horizon, an A horizon and a B horizon.

Test Unit 1

A total of 47 artifacts were recovered from TU 1, which was placed adjacent to shovel test C6, which had the highest artifact density of all subsurface testing at the Domestic Site (n=43). TU 1 measured 1x1 meters having a total of three strata. TU 1 was excavated in arbitrary 10-centimeter levels within strata. The datum was located in the southwest corner of the grid 10 centimeters above ground surface (cmags). The opening of the unit therefore measured 10 cmags and closed at 12 centimeters below datum (cmbd), having a 2 cm thick O horizon. Stratum I, Level 1, consisted of a 10 YR 2/2 very dark brown silty loam (Figure 48). A single window glass fragment was recovered from Stratum I, Level 1 on top of a rock concentration in the southwest

Figure 48. Domestic Site, TU 1, Base of Excavation Stratum I, Level 1.

corner where large sub angular rocks were concentrated. The rocks were displaced during excavation.

Stratum II, Level 1 of TU 1, consisted of a 10 YR 5/3 brown sandy loam with 10% gravels. The opening depth in the southwest corner of TU 1 was 12 cmbd with a closing depth of 22 cmbd, having a 10-centimeter thickness (Figure 49). A total of 38 artifacts were found in Stratum II Level 1. These artifacts included 13 ceramic artifacts, which consist of 1 blue shell edge pearlware, 7 undecorated pearlware, 2 lead glazed redware sherds, 1 undecorated redware sherd, 1 sponge decorated whiteware sherd, 1 transfer print whiteware sherd. A clear vessel glass bottle fragment was also recovered. A total of 24 nails were also found that consisted of 10

Figure 49. Domestic Site, TU 1, Base of Excavation Stratum II Level 1.

machine cut nails, 4 were identified as masonry nails, and 5 were identified as shingle nails. A total of 14 unidentifiable nails were also recovered. Additional notes regarding Stratum II Level 1 include an observed higher gravel content in the eastern portion of TU 1.

Stratum II, Level 2 of TU 1, consisted of 10 YR 5/3 brown sandy loam with 10% gravels. The opening depth in the southwest corner of TU 1 was 22 cmbd with a closing depth of 32 cmbd, having a 10-centimeter thickness (Figure 50). There were heavy roots throughout and an increased gravel content was observed. Additionally, a large rock was located at the base of the Level 2. A total of 8 artifacts were found in Stratum II Level 2 which consisted of 3 lead glazed redware sherds, 1 undecorated redware sherd, a common nail, and 2 unidentifiable nail, and a

Figure 50. Domestic Site, TU 1, Base of Excavation Stratum II Level 2.

pearlware sherd. These artifacts were recovered from the upper level of the layer. Artifacts decreased in density as the level progressed in TU 1.

Stratum II, Level 3 of TU 1 consisted of a 10 YR 5/3 brown sandy loam mottled with 10 YR 5/6 yellow brown sandy clay which was observed at the base of the level where Level 3 met the interface between Stratum II and III (Figure 51). The opening depth in the northwest corner of TU 1 was 37 cmbd with a closing depth of 44 cmbd. The southwest corner of the unit had a large rock at the opening of Level 3 and therefore had the same closing depth. Stratum II Level 3 contained less gravel than Level 2 and had a higher clay accumulation which was stickier on top of the B horizon. Additionally, charcoal flecks were found within Stratum II Level 3 at the

Figure 51. Domestic Site, TU 1, Base of Excavation Stratum II Level 3.

interface within the mottled 10 YR 5/6 sandy clay layer. No artifacts were recovered within Stratum II Level 3.

Stratum III, Level 1 consisted of a B horizon, 10 YR 5/6 yellowish brown sandy clay (Figure 52). The opening depth in the northwest corner was 44 cmbd with a closing depth of 54 cmbd. Level 3 was the final level of excavation within Stratum III and within TU 1. No artifacts were recovered within Stratum III Level 1.

Figure 52. Domestic Site, TU 1, Base of Excavation Stratum III Level 1.

Examination of the profile of TU 1 showed that Stratum I, the O horizon is consistent throughout (Figure 53; Figure 54; Figure 55; Figure 56). Stratum II, the A horizon on the east

and south wall is deeper within TU 1 as it straddles the berm. It was also deeper in the southeast corner of TU 1. The B horizon is consistent throughout TU 1 except in the west wall where it appears slightly thicker in the bottom right portion (Figure 56). The south wall was rocky, especially in the O horizon (Stratum I) (Figure 55).

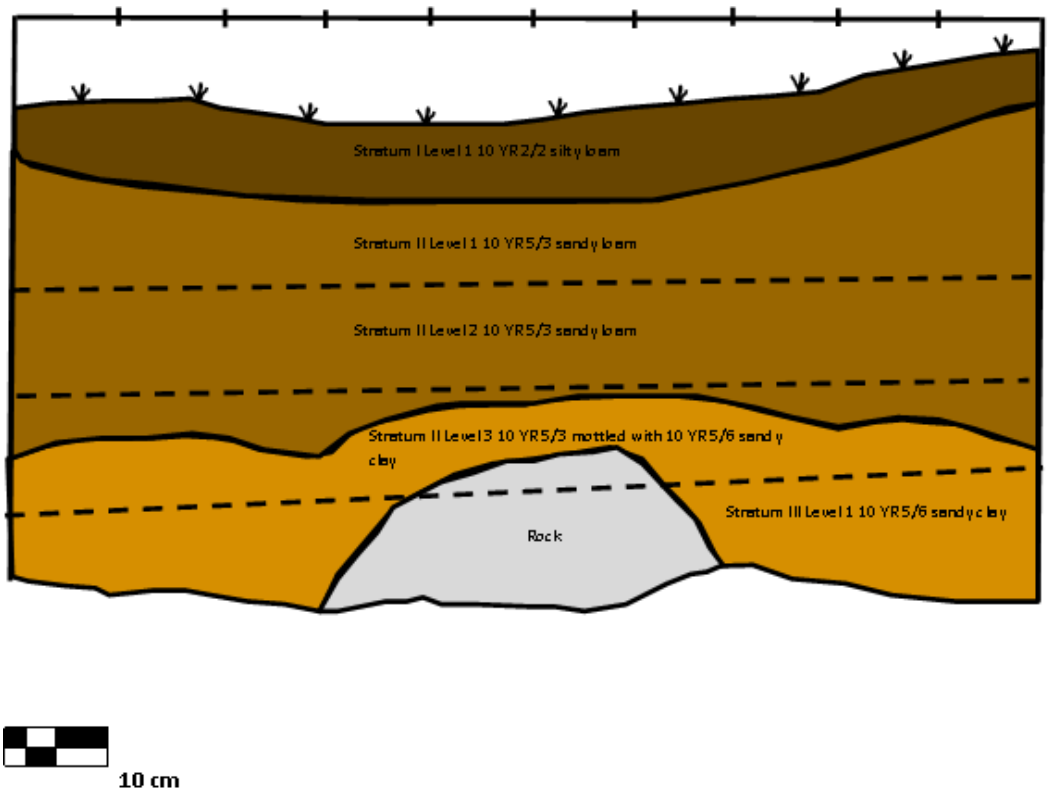


Figure 53. Domestic Site, TU 1, East Wall Profile.

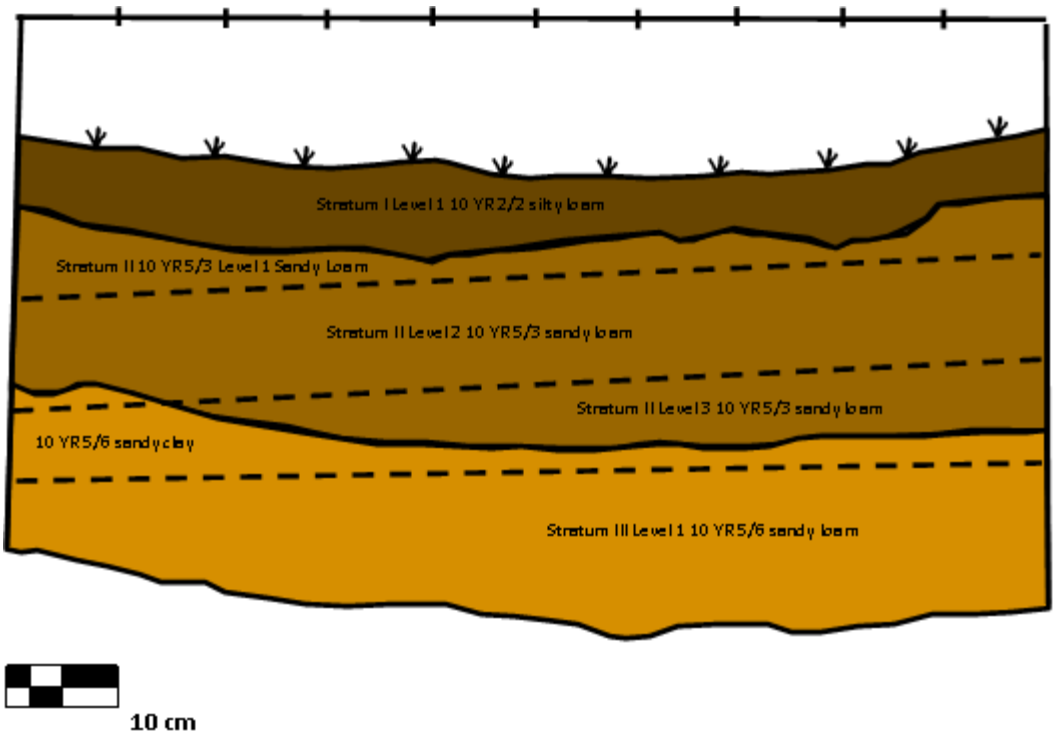


Figure 54. Domestic Site, TU 1, North Wall Profile.

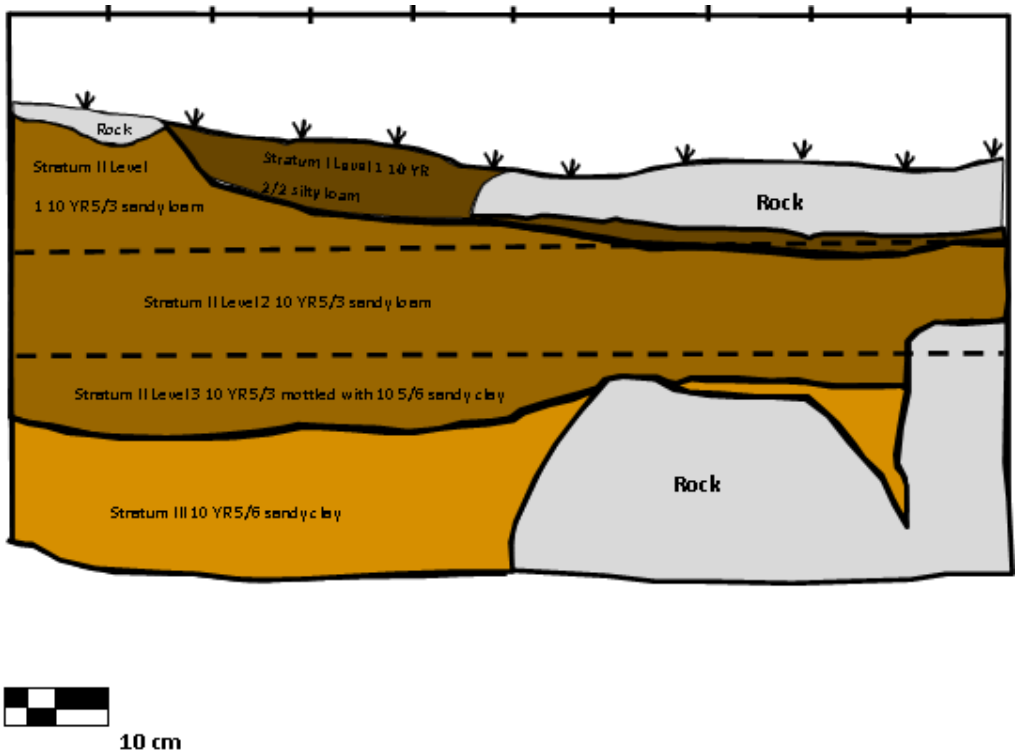


Figure 55. Domestic Site, TU 1, South Wall Profile.

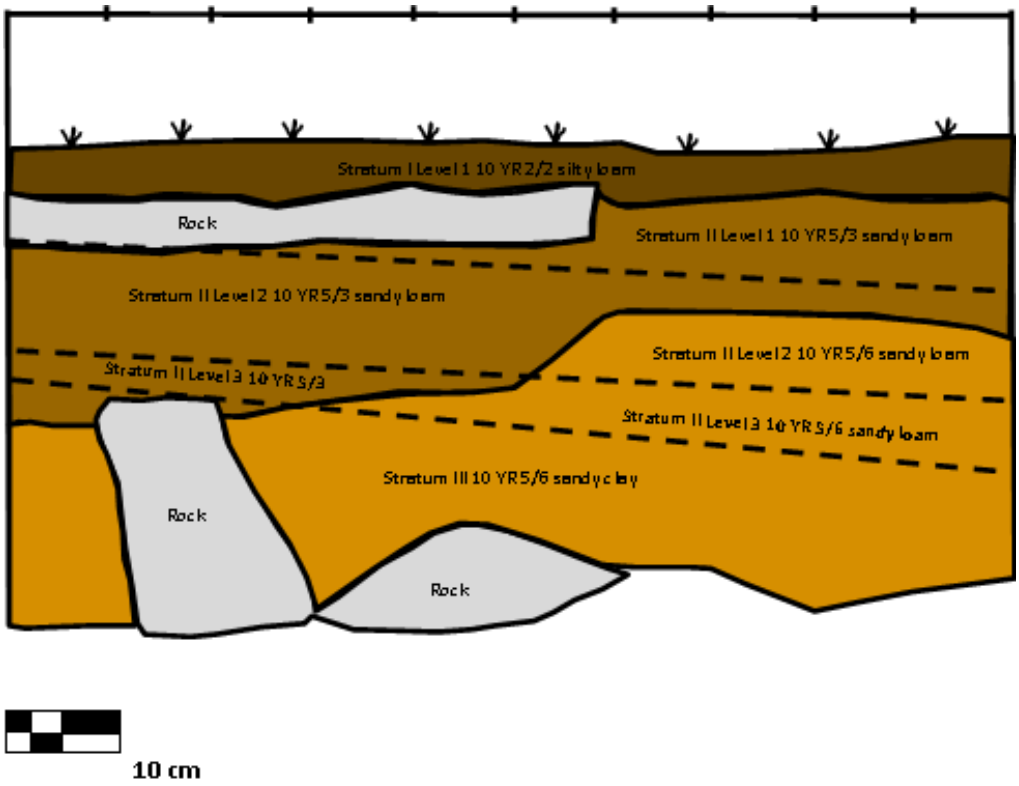


Figure 56. Domestic Site, TU 1, West Wall Profile.

Metal Detecting Survey Domestic Site Results

Two grids were placed within the fieldstone foundation on the eastern side of the road within the lower part of the site. The following results discuss the proportions of the metal types found within Grids MD 2 and MD 3 at the Domestic Site and will analyze the spatial distribution of the nails recovered.

A total of 14 metal artifacts were recovered from MD 2. These artifacts include machine cut nails, machine cut sheathing nails, a cast iron bowl fragment, a metal ring, and unidentifiable nails (Figure 57; Figure 58).

Figure 57. Sample of Artifacts From Domestic Site, MD 2 Grid. From Top Left to Right: Cast Iron Bowl Fragment, a Machine Cut Shank From a Shingle Nail, a Machine Cut Sheathing Nail, a Bent Unidentifiable Nail, a Ring of Unknown Function, a Machine Cut Nail and an Unidentifiable Nail.

The spatial distribution of the nails within the context of the grid shows that the majority of nails within MD 2 are located on the western side of the gird, closer to the roadway along the interior of the fieldstone foundation. The majority of the nails are machine cut nails (7). Two of which are identifiable sheathing nails.

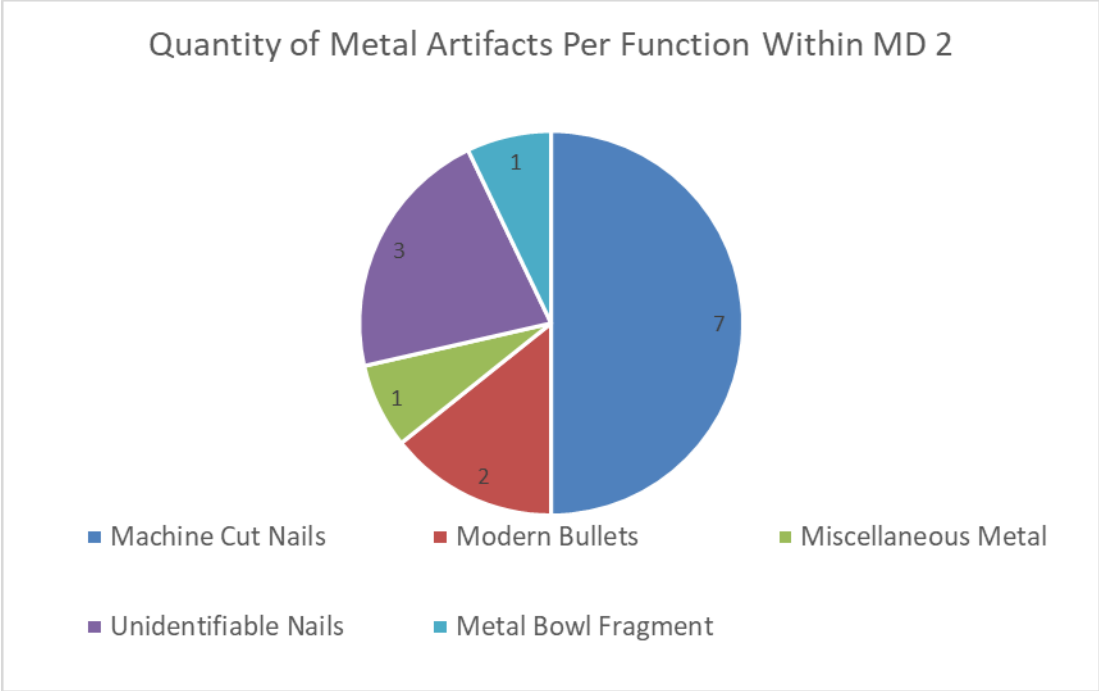


Figure 58. Artifact Distribution from the Domestic Site, MD 2 Grid.

Machine cut nails indicate that a former structure was located on top of the fieldstone foundations at the Domestic Site, rather than a former fieldstone enclosure or a random pattern of fieldstone walls that mark a boundary. The presence of machine cut nails suggest that the date range of the former structure is between 1850 and 1900. Machine cut nails were manufactured in the mid nineteenth century, largely phased out by 1900 when a vast majority of nails in the United States transitioned to "wire nails" (Meritt 2014; Horn 2005; Adams 2002). The presence of a cast iron bowl fragment, similar to the cast iron bowl fragment found at the Jacob Keller Sawmill, suggests that casting was not exclusively happening at either site. More likely, casting was not happening at either site but rather the furnaces. Additionally, lead casting fragments in MD 3 suggest that lead casting was happening at the Domestic Site, but the purpose of that casting is unknown.

A total of 48 metal artifacts were recovered from MD 3. These metal artifacts had a wider range of function in comparison to MD 2. These artifacts included, like MD 2, a majority of machine cut nails and unidentifiable nails. Additionally, MD 3 had a copper alloy button, lead scrap, a lead gasket cover, barbed wire, a cast iron bowl fragment, modern bullets, can fragments, and miscellaneous metal (Figure 59; Figure 60).

Figure 59. Sample of Metal Artifacts From the Domestic Site, MD 3 Grid. From Left to Right: Barbed Wire, Unidentifiable Nail, Cast Iron Bowl Fragment, Machine Cut Nail, Shingle Nail, Bent Machine Cut Nail, Miscellaneous Metal, Lead Scrap, Copper Alloy Button, Lead Gasket Seal.

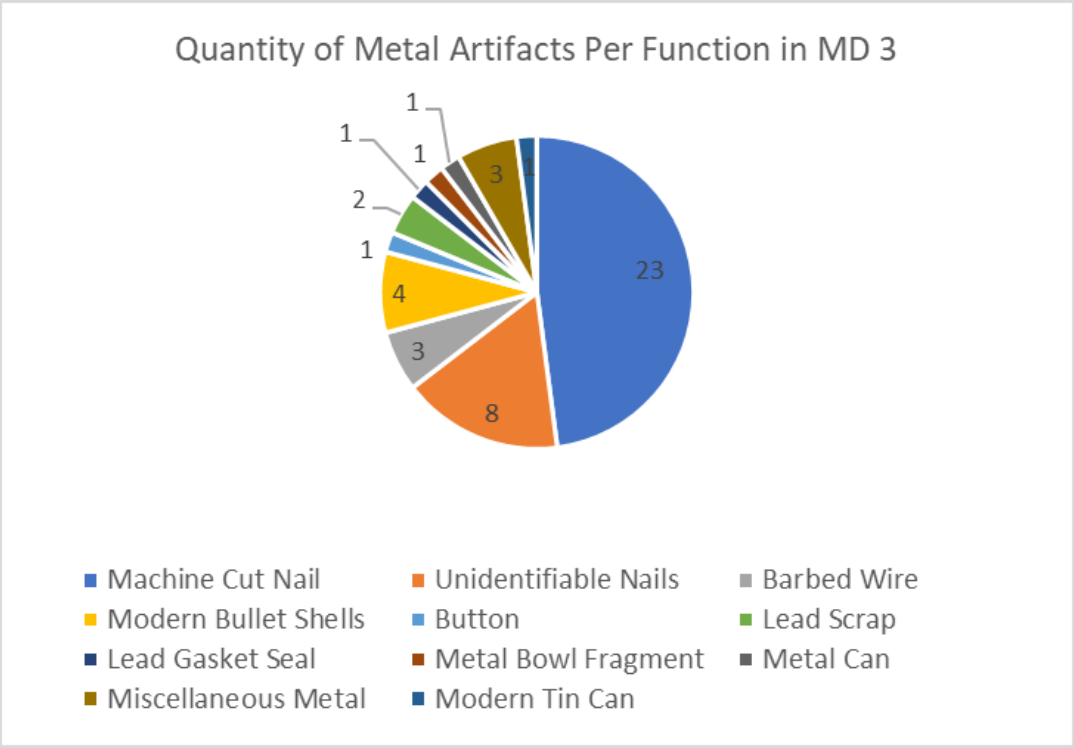


Figure 60. Distribution of Artifacts from the Domestic Site, MD 3 Grid.

A concentration of metal artifacts, especially machine cut nails was also observed in MD 3 where a large portion of machine cut nails are also observed in the western portion of the grid along the interior of the fieldstone foundation (Figure 61).

There is also a larger portion of nails observed in the eastern side of the grid as well in comparison to MD 2. This large portion of nails suggests that there was a former structure that possibly continued throughout the fieldstone foundation from MD 2. The concentration of nails observed on the edges of the interior foundation of the structure and not in the center suggests that the former structure may have been mortise and tenon timber construction with siding and roofing nailed on. The presence of sheathing nails, as well as shingle nails supports the presence of the former structure and its possible mortise and tenon construction. Additionally, the window glass recovered from the subsurface testing supports this conclusion.

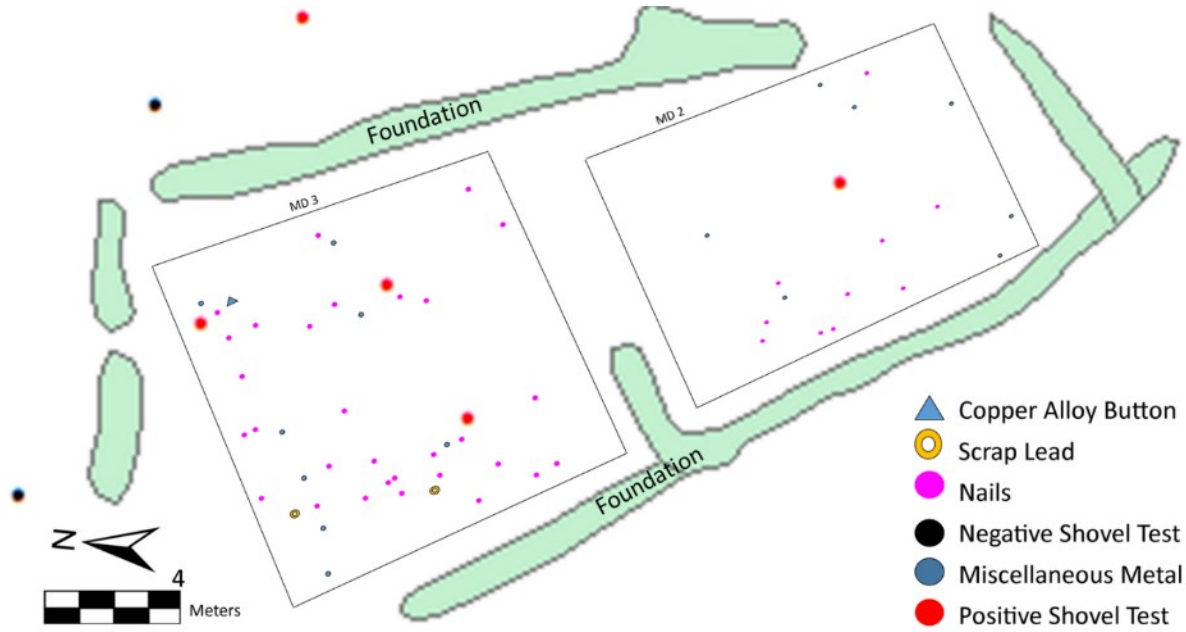


Figure 61. Distribution of Metal Artifacts From the Domestic Site Within MD 2 and MD 3 Grids.

The copper alloy button identified in MD 3 provided a tight date range between 1796 and 1812, identified from the diagnostic inscription on the back of the button which reads “Treble Guilt” providing the date range (Ford et al. 2008). The button found on site was recovered from Stratum II. It represents the small proportion of artifacts that are representative of personal adornment at the site, which also includes a buckle recovered from the systematic shovel testing survey (STP C6). It is also the earliest diagnostic artifact recovered from the site, suggesting that the site was possibly occupied earlier than the mid-nineteenth century. It may also suggest reuse by later occupants at the site who, rather than purchasing new clothing material, recycled an earlier garment and it buttons.

Lead scrap in the assemblage poses an interesting question about what other activities were happening at the Domestic Site. Crude lead use in a domestic setting could have been used as the material for a number of objects. These objects include, especially in military setting, bullet manufacture. Other items include paint or glazes, figurines, pipes, fish weights or sinkers

or roofing products such as flashing (Petroski 1994; Ingalls 1905). A lead seal used for pressure sealing a can or gaskets was also found within MD 3. It is possible that the lead scrap was a byproduct of the manufacture of lead sealing products at this site.

Barbed wire was also recovered from MD 3. The presence of barbed wire suggests that fencing was used in this area possibly for agricultural purposes, separating grazing areas. Barbed wire on fencing was also used as a property boundary marker in the historic period having been invented in the 1860s and proliferating in the 1870s. The presence of barbed wire suggests an occupation, or use of the structure throughout the latter half of the nineteenth century.

Many modern artifacts were also recovered from MD 3. These artifacts included modern bullets and bullet shells that came from Stratum I, in the O horizon. All other artifacts were found in Stratum II, in the A horizon between 5 to 25 cmbs.

The overall results from the excavation and metal detecting survey produced a wide variety of artifacts. These artifacts assist in interpreting the overall function of the Domestic Site. The site was inhabited in the mid to later nineteenth century. The fieldstone foundations are remnants of a former structure that was located over the foundations on the eastern side of the road and the upper slope of site on the western side of the roadway. The site functioned as a former homestead/farmstead site whose inhabitants favored inexpensive utilitarian wares, reusing older more expensive tableware such as pearlware. The presence of a copper alloy button with an earlier date range also possibly supports the inhabitants reuse of older garments at the site. These interpretations suggest that the inhabitants of the farmstead/homestead were of lower in socioeconomic class.

CHAPTER 6

DISCUSSION

The results of the archaeological survey at the Jacob Keller Sawmill and the Domestic Site produced results that reflect the broader historical themes of South Mountain. These themes include the industrial landscape, dominated by the charcoal iron furnace systems, colonization of the forest, agricultural practices, and the Underground Railroad network. As previously stated, the Underground Railroad network likely ran through this area. The evidence of this is determined by the landscape as well as in examination of the patterns of settlement of African Americans in Irishtown.

Research aimed to identify the Jacob Keller Sawmill and the Domestic Site as part of these broader sociological systems. Therefore, the following chapter will revisit the previously stated research questions, addressing how the results of the survey do and do not answer these questions.

1). What was the relationship between the Jacob Keller Sawmill and the Domestic Site and how do these sites relate to the industrial landscape of South Mountain?

The relationship between the Jacob Keller Sawmill and the Domestic Site aside from proximity is that these sites were occupied during the same period, being the mid to late nineteenth century. This is confirmed by the historic 1858 map of the landscape that shows both the Jacob Keller Sawmill and structures to the north, possibly the Domestic Site. Additionally, artifacts from the Domestic Site demonstrate that the site was occupied in the mid to late nineteenth century from the high density of machine cut nails, as well as the ceramic assemblage. It is possible that the site dates to the early nineteenth century with the presence of the copper

alloy button. This date range, however, is an outlier in comparison to the other date ranges from the assemblage.

The only artifacts recovered from the Jacob Keller Sawmill include the large metal spike and the cast iron bowl fragments. Cast iron bowl fragments were also found at the Domestic Site. It is possible that domestic casting was happening at the Domestic Site as well as at the Jacob Keller Sawmill Site. Scrap lead was found at the Domestic Site, suggesting that the material was being manipulated on the premises. Cast iron bowl fragments are also indicative of cooking, an expected activity at the Domestic Site.

According to the deed research, it is possible that the land where the Domestic Site is located was also owned by Jacob Keller as he had acquired multiple properties at the sheriff sale in November 1847 from John Keller. The description of the property boundaries from these sales are not clear on the exact location of the boundaries. However, the deed research lists that Jacob Keller also acquired 100 acres of land that was bounded by land owned by John Keller and others that contained mountain land where a log house, bank barn, wagon shed, and orchard were erected. This parcel was located in Dickinson Township as well. The Domestic Site may be the remnants of these listed structures where the largest foundation on the lower part of the site may be the location of the former barn. The wagon shed and log house are less clear spatially within the site from the remaining foundations. The wagon shed could be the foundation on the north side of the barn foundation. A log building could be log on the ground, leaving no foundation or just piers at the corners. That is consistent with the western side of the Domestic Site, where domestic artifacts were more prevalent, which included ceramic and the pipe bowl fragment. Also, according to the soil survey at the site, the soil is not prime farmland. However, there are

other orchards located within similar environments such as those located within Cumberland County at Peach Orchard as well as the mountain farmsteads in Catoctin Mountain Park.

The Jacob Keller Sawmill and the Domestic Site related to the broader industrial system of South Mountain in a few ways. The Jacob Keller Sawmill, being in a rural setting in a prime area between the furnace systems in South Mountain, was likely operated to support the charcoal and iron industries. Timber was a vital part of the charcoal iron industry process where the sawmill may have assisted with the cutting process of the local timber to prepare it to be used for construction of and maintenance at the furnaces and/or forges. It is also possible that wood was cut to assist with charcoal furnace production to meet the market demands for iron. This process reached peak production at 20,000 tons of iron in the height of its operation, and charcoal was needed to supply the furnaces. To produce the iron, required 200-400 bushels of charcoal which came from roughly 50 acres of woodland. This is a large-scale operation that may have required sawmills to cut the wood. However, colliers more likely cut the wood themselves utilizing all parts of the log for the charcoal. The Jacob Keller Sawmill operated as a facet of this larger operation, contributing to the need for construction of buildings or other structures in the mountain land and possibly the deconstruction of the wood for charcoal furnace operation. It offers a small window into this past system that highlights the ingenuity of the technology of the time that surrounded water powered mill production.

A) Were there similar mills in the vicinity of the Jacob Keller Sawmill?

The Jacob Keller Sawmill was one of four sawmills located within the hollows of South Mountain visible on the 1858 map of Cumberland County. All of these sawmills were also located along streams that ran to the Yellow Breeches Creek. To harvest the forest land, especially on such a large scale, required multiple sawmills to maintain the demand for charcoal

bushels required for iron production or to support the construction of buildings affiliated with the operation. The Jacob Keller Sawmill may be the only surviving sawmill from this time when the charcoal iron ore industry dominated South Mountain. The remaining three sawmills are located on private property or were disturbed due to roadway construction through the hollows. Therefore, the Jacob Keller Sawmill site represents a unique opportunity to preserve sites of this nature having an undisturbed landscape where examination of technological adaptations can be researched further.

B) Are there similar homestead/farmstead sites in South Mountain?

The Domestic Site has a different but equally important role in the industrial landscape of South Mountain. It also reveals a small window into the past regarding the legacy of South Mountain's early European American inhabitants. The mountain farmstead represents the people of the past and their daily lives in an unforgiving landscape. It highlights their agency as individuals who despite the less-than-ideal soil and the rough terrain, carved out a home within the landscape, using the materials available to them to build lives shaped by the opportunities of the industrial landscape of South Mountain. The inhabitants may have perhaps been tenants of Jacob Keller who found jobs as laborers within the surrounding industry or at the sawmill. They may have been farmers as well, who tended the possible orchard that was located within the hollow. The artifacts suggest that these people were utilitarian by nature, not possessing a large amount of decorative or expensive items. This may be reflective of their minimal needs for material wealth or their access to it. Future research should expand the use of the land by conducting a soil analysis of the hollow. A soil analysis would reveal the efficacy of the soils use as it may be more conducive to cultivation than previous predictions. Ultimately, a soil analysis could add further evidence to support or refute the use of the hollow's farming capacity.

The Domestic Site within the Irishtown Gap Hollow is one of the few, if only, farmstead/homestead sites located within a remote hollow in South Mountain, according to PA-SHARE. This may be due to the lack of recent development in the South Mountain area where these sites have not yet been identified as they are not subjected to compliance archaeological survey. Referencing the 1858 map, adjacent hollows have homesteads that are located closer to the main roadways north of the mountain. Within the Irishtown Gap Hollow, three buildings are present, one of which includes the identified Domestic Site and the Jacob Keller Sawmill. The third building was not located in the course of this survey. The Domestic Site is located deeper into the mountain in comparison to other homesteads within the area.

Analyzing the larger South Mountain landscape, sites of similar nature are located within private property. The location of these sites may be inaccessible as these areas, being privately owned, are unable to be researched outside of compliance work. Therefore, the Domestic Site may be among the few representations left of mountain farmsteads in Cumberland County.
2). What does the historical documentation suggest about the inhabitants and function of the Domestic Site as well as the Jacob Keller Sawmill Site?

The historical documentation of the Jacob Keller Sawmill and the Domestic Site is limited. Deed research as well as tax information regarding Jacob Keller provided a history of the area regarding the owners and the socio-economic status of Jacob Keller. Keller, having been a wealthy miller, owned a large quantity of land and had many assets including a grist mill, a merchant mill, and plaster mill as well as the sawmill subject to research here. The deed research provided a history of the area, having been largely undisturbed by commercial development. It also led to the other transactions made by Jacob Keller in November 1847 when he not only

acquired the sawmill but also other parcels of land in Dickinson Township, the Domestic Site, possibly being within those parcels.

The Domestic Site has a less clear function in comparison to the Jacob Keller Sawmill, having no indication about its previous function aside from what can be interpreted from the archaeological record and the above ground spatial distribution of the fieldstones left at the site. Therefore, the deed research guides the interpretation of this site. In addition to the 106-acre deed showing the sawmill, other land was acquired by Jacob Keller from John Keller in Dickinson Township. This includes 100 acres of land that included the log house, wagon shed, bank barn and orchard. It is possible that due to its size, the Domestic Site could be this complex of structures. It could also be remnants of the log house listed from the deed that mentioned the sawmill as well. The latter is less likely as the site is quite large for a single log house dwelling. Additionally, it is farther away from the sawmill which, intuitively, does not support this interpretation. Further research would need to be conducted to confidently address the identity of the inhabitants at the site and match its function with the available deed research.

The lack of historical documentation regarding the Underground Railroad in this area could also be researched further. It is possible that the inhabitants at the Domestic Site could have been laborers of the South Mountain industrial system, which may have also played a role in the Underground Railroad. It is likely that whoever inhabited the area, were among some of the earlier immigrants to settle in South Mountain.

Overall, historical documentation of the area supports that the Jacob Keller Sawmill has been located as a result of this survey. The log house named on the deed research is less clear. Additionally, the exact location of the 100 acres that contains the log house, barn, wagon shed,

and orchard is also unclear. The Domestic Site could be the archaeological register of either of these resources.

3). Who were the inhabitants of the Jacob Keller Sawmill Site and Domestic Site and what was the social and economic status of these inhabitants?

The inhabitants of the Jacob Keller Sawmill and the Domestic Site left different archaeological signatures. The Domestic Site showed that the inhabitants during the occupational period were likely of low socioeconomic class having larger portions of inexpensive ceramics such as redware. Whiteware was recovered, with a small proportion having decoration. Additionally, a very small proportion of plain pearlware was recovered with one fragment exhibiting blue shell edge decoration, the least expensive decorated type of pearlware. These results show that the inhabitants at the Domestic Site made more use of utilitarian wares, having had a large proportion of redware. The lack of a higher proportion of more expensive ceramics or decorated whiteware is indicative of less concern for showing wealth. This may also be due to the lack of access to more expensive items, possibly due to having less money to spend on more expensive items. Due to these results, coupled with the historical documentation, it is likely that these inhabitants were tenants of Jacob Keller's or were subsistence farmers or laborers in the area, making a modest living in Irishtown Gap Hollow.

The Jacob Keller Sawmill had very few artifacts recovered. These artifacts were found during the metal detecting survey, consisting of a spike and a cast iron vessel fragment. The spike suggests that large equipment or a structure was present here that required more support than what a regular machine cut nail could provide. Additionally, the cast iron vessel is an industrial product. The location of the log house mentioned in the deed research was not identified during this survey. It is possible that, in the future, with more excavation, the log house

location could be confidently determined, shedding light on the inhabitants of the Jacob Keller Sawmill Site. It is possible that on the western side of the road, on the upper hills, the stone wall features may be the location of the log house or related to gardens or animal pens associated with a house. In the future, if confidently identified, these findings would allude to the social and economic status of the inhabitants at the Jacob Keller Sawmill that would complement the historical documentation of the site having possibly been operated by tenants of Jacob Keller.

In sum, there is more work to be done within Irishtown Gap Hollow. The archaeological survey within the Domestic Site and the Jacob Keller Sawmill produced information that can be built upon with future research. This research could solidify the current findings regarding the inhabitants of the site and what the function of the Domestic Site was beyond being a possible mountain farmstead in the nineteenth century.

The relationship of the Jacob Keller Sawmill and the Domestic Site are not only tied through spatial circumstance but also through their relationship with the broader sociological systems within South Mountain that include the industrial systems characterized by the charcoal iron industry, the colonization of the forest and possibly the Underground Railroad. These relationships are maintained through examination of the historic landscape which shows that the charcoal iron industry was efficiently supplied by the abundant forests of South Mountain, which was tamed by the descendants of the earliest immigrants in Pennsylvania who included the Scots Irish, German, English and African American populations. These groups sought work within the industrial landscape of South Mountain to make a living in this region. This is evidenced in the density of sawmills within the South Mountain hollows between the Cumberland Furnace to the north of the mountain and the Pine Grove Furnace to the south. The individuals responsible for this large-scale production were the laborers who lived and worked within South Mountain. They

are recognized in the archaeological assemblages produced from these sites, especially from the Domestic Site within Irishtown Gap Hollow. African American populations, within South Mountain may have been indirectly or directly involved with the Underground Railroad, having established a settlement in the north at Irishtown, of which the hollow derives its name. The town housed a majority of Black community members by the late nineteenth century according to census records. It is possible that this town has a connection to the Underground Railroad having had an AME church and proximity to charcoal lands. Current research regarding these relationships suggests that this is a strong possibility. Additionally, it is possible that those who inhabited the hollow interacted with these groups.

CHAPTER 7

CONCLUSION

The purpose of the survey was to capture a glimpse of the cultural history of Irishtown Gap Hollow through an analysis of the resources identified through spatial and artifact analyses, which include the Jacob Keller Sawmill and a Domestic Site, contextualized as a mountain farmstead. These sites were occupied in the nineteenth century overlapping with important sociological systems of South Mountain that include the industrial systems of the charcoal iron industry, nineteenth century farming, the colonization of the forest by European immigrant populations and, indirectly, the Underground Railroad. Within the web of United States history, South Mountain is a vital component of the industrial past that has the latter sociological systems built in. Through the South Mountain Partnership with Indiana University of Pennsylvania, these broader themes were able to be examined in Kings Gap Environmental Education Center in inventory of the cultural resources within Irishtown Gap Hollow.

Archaeological surveys were conducted at two identified resources of the hollow which include the Jacob Keller Sawmill and the Domestic Site. This survey included subsurface testing using shovel test pits and test unit excavation. Metal detecting was also used at both sites to identify metal artifact spatial distribution within the sites. The results of this survey identified minimal artifacts at the Jacob Keller Sawmill Site. At the Domestic Site, however, a noteworthy assemblage was uncovered that consisted of many ceramic artifacts in addition to metal, brick, glass and nails. These artifacts supported interpretations that the fieldstone foundations at the Domestic Site are remnants of a domestic structure, possibly a previous mountain farmstead that could have been the log house mentioned in the deed research when Jacob Keller acquired the sawmill (CCHS 1847: DB No 67). It could also be the farmstead complex that included a log

house, bank barn, wagon shed, and orchard listed within another deed that was also issued to Jacob Keller at the same time, which listed this farmstead complex erected on 100 acres of land and within the same township. The artifacts at the site corroborate to the 1847 deed date, having originated from the mid-nineteenth century. Further research would need to be conducted to determine if the Domestic Site operated as either of these historically documented structures. The Jacob Keller Sawmill, although minimal artifacts were recovered, was positively identified, as the fieldstone dam present at the site is indicative of water powered mills of the nineteenth century. The log house listed on the deed at the time of acquisition was not identified but it is possible that it could be the Domestic Site or the odd fieldstone foundations uphill from the dam to the south. Further research would need to be conducted to make a confident interpretation of the location of the log house listed in the deed research.

The Domestic Site and the Jacob Keller Sawmill offer a small window into the broader sociological themes of South Mountain which are defined by the charcoal iron industrial that dominated the economic and social sphere of South Mountain in the nineteenth century. Charcoal furnace industrial systems required extensive labor in multiple facets of production which attracted immigrants into the area. Additionally, these furnace systems operated in conjunction with the Underground Railroad network. It is unclear whether the Domestic Site or the Jacob Keller Sawmill were directly part of the Underground Railroad but the relationship of these sites to the charcoal iron industry suggests that there is a possibility. Further research would also need to be conducted to confirm this connection. The Domestic Site is a representation of the colonization of the forest by immigrants who sought work in South Mountain. These people may have been laborers in addition to farmhands as the artifact assemblage suggests that they lived within modest means. The Jacob Keller Sawmill offers a

connection to the industrial system as well as to the colonization of the forest by immigrant populations having been erected before the mid nineteenth century, possibly to cut wood to use for meilers or for construction of buildings associated with the industrial systems of South Mountain.

Preservation and Conservation of the Cultural Resources within Irishtown Gap Hollow

As per the South Mountain Partnership problem statement issued as part of the objectives of the grant, the following will address the recommended course of action regarding the continued preservation and conservation of the cultural resources within Irishtown Gap Hollow. The Jacob Keller Sawmill and the Domestic Site are currently located along the Irish Gap Trail. This trail is moderately to lightly traveled by the park's visitors. At the Domestic Site, the trail runs directly through the site, between the upper and lower foundations. At the Jacob Keller Sawmill, the trail runs approximately 30 feet to the west of the dam. The sawmill is visible from the footpath where it is clear from the flattened ground running toward the top of the western dam, visitors walk to the resource from the path.

The Domestic Site, being among the early examples of nineteenth century mountain farmsteads, should be protected from any disturbance brought on by direct contact from visitors at the park who walk the path here. It is also important for visitors to engage with these resources as they are tangible representations of the lived past of South Mountain and its rich industrial history. Therefore, it is recommended that signage be posted along the path where these resources are located in order to deter visitors from disturbing the site, as well as engaging them in the historic landscape. Signs would include the history of the site as well as the archaeological information ascertained from this project. Additionally, signage would describe the ethical engagement of archaeological resources on public land.

Signage is also recommended at the Jacob Keller Sawmill Site. The signage would include the same information regarding ethical engagement of the site but would also include information regarding nineteenth century water powered mill technology. The Jacob Keller Sawmill is the only documented example of water powered mill technology that has been undisturbed in South Mountain within public lands. It has unique features such as the field stone dam and earthen mound reconstruction to support the embankment on the southern side of the eastern dam. This type of technological construction is eligible for the National Register of Historic Places under Criterion C, which cites that a resource is significant if it has a "good example of a product of a master craftsman or good example of a period or style that embodies distinctive characteristics of a type of period or method of construction." The integrity of the site is also sustained as the fieldstone dam is well intact, despite no evidence of the mill structure's remains.

Criterion A should also be considered for both the Domestic Site and the Jacob Keller Sawmill site as they are representative of the broad cultural patterns of Carlisle and the greater cultural patterns of Pennsylvania in the nineteenth century. The sites are related to the industrial systems of South Mountain in the nineteenth century as well as the colonization of the forest and farming activity in the area county. Additionally, they may relate to the Underground Railroad activity in the region. As previously mentioned, further research is needed to confirm this connection.

It is also vitally important that any modifications to the trail be subject to evaluation of impact on the cultural resources, especially in the areas where the trail intersects with the cultural resources within the hollow. To mitigate the potential effects, metal detecting should be implemented within and along the trail to verify that no artifacts are located within the pathway.

If identified, these artifacts could contribute to the overall assemblage of the Domestic Site or the Jacob Keller Sawmill.

Finally, it is recommended that DCNR consider acquiring the property to the north where Irishtown is located. As previously mentioned, Irishtown is a community that consisted of mostly African Americans, especially toward the end of the nineteenth century. This site holds significant information regarding the African Diaspora and may also contribute to the overall knowledge of the Underground Railroad network within South Mountain.

Overall, the result of the survey identified cultural resources within Irishtown Gap Hollow for the purpose of inventorying these resources and providing a historical and environmental context to frame the history of the hollow within Kings Gap Environmental Education Center. In the course of this survey two resources were identified. They include the Jacob Keller Sawmill and the Domestic Site. It is recommended that any future projects within this hollow consider the impact on these resources as they are representative of the local history of the area. Further consideration is recommended for the Jacob Keller Sawmill as possibly being listed in the NRHP under Criterion A and Criterion C. The Domestic Site is also recommended as potentially eligible under Criterion A. Additionally, further research should be done to examine the history of the Irishtown, the site located to the north of the hollow, as the site may yield important data regarding the African Diaspora in the region and the state.

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Appendix A

Survey permit

Pennsylvania State Historic Preservation Office
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

October 18, 2022

Amanda Telep
Indiana University of Pennsylvania
Applied Archaeology
1011 South Drive
Indiana PA, 15701

RE: Permit to conduct archaeological investigations on Commonwealth of Pennsylvania property under the State History Code.

Dear Ms. Telep,

The Pennsylvania State Historic Preservation Office (PA SHPO) has reviewed your proposal to conduct archaeological investigations within Irishtown Gap Hollow located in the South Mountain region in Penn Township, Cumberland County. Because this area is located on Commonwealth lands, a permit is required as per the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 506.d (amended 1995).

This letter constitutes the permit required for you to conduct the archaeological survey outlined in your proposal. The following conditions apply:

- This permit is in effect from the date of this letter until October 18, 2023. If you decide prior to that date that you would like for the project to be extended to a later date, you must contact us to request renewal. A new proposal and proposed extension dates will be necessary.

- All archaeological survey activities must be completed in accordance with the procedures outlined in the permit request submission received via PA-SHARE on October 6, 2022. The excavations will be conducted by you or under your direct supervision.

- All archaeological sites identified by the proposed survey will be submitted to the PA SHPO via PA-SHARE to receive a PASS number. Archaeological site identification and boundary delineation should follow the guidance outlined in the *Site Identification Criteria* (see attached).

- All recovered artifacts must be processed and catalogued as per the State Museum of Pennsylvania's *Curation Guidelines* (revised June 2006). Before assigning catalog numbers, the State Museum of Pennsylvania's Section of Archaeology must be contacted to obtain the next catalog numbers available in the sequence for the site

- All artifacts are the property of the Commonwealth of Pennsylvania. At the completion of the proposed research activities, arrangements must be made to have the State Museum of Pennsylvania retain the excavation records and artifacts for permanent curation.

- A complete draft technical report must be submitted to the PA SHPO via PA-SHARE within a year of the completion of the proposed survey. The report is a requirement of the state history code and must follow the documentation standards as outlined in the *Guidelines for Archaeological Investigations in Pennsylvania* (see attached). Following the PA SHPO's approval of the draft report, a copy of the approved report must accompany the artifacts and project records when they are submitted to the State Museum. Copies of the approved report and curation materials must also be submitted to Angela Jaillet-Wentling (ajailletwe@pa.gov), Cultural Resources Program Coordinator for the Department of Conservation and Natural Resources (DCNR).

If you need further information or clarification on these conditions, please contact Taylor Napoleon at tnapoleon@pa.gov or (717) 346-0616. If you have questions regarding the State Museum's curation guidelines and policies, please contact Janet Johnson (717) 705-0869 of the State Museum of Pennsylvania.

Sincerely,

Andrea L. MacDonald
Director & Deputy State Historic Preservation Officer
PHMC-State Historic Preservation Office

Appendix B

Domestic Site (36CU0240) Artifact Catalog

Date of Excavation	Site Name	Excavated By	Catalog Number	Grid Number	Test Pit/trench/ Excavation Unit Number	Stratum	Depth	Artifact Description	Artifact Additional Traits	Quantity	Comments
11/19/2022	Domestic Site	ART		MD 3	Point 25	II	5-25 cmbs	Barbed Wire	Corroded Fragment	1	
11/19/2022	Domestic Site	ART		MD 3	Point 34	II	5-25 cmbs	Barbed Wire	Barbed Wire	1	
11/6/2022	Domestic Site	BDC	1		B2	II	7-25 cmbs	Bottle Glass	Light Cobalt Blue with bubbles	1	
11/13/2022	Domestic Site	RJS	8		C16	II	15-25 cmbs	Bottle Glass	Light Cobalt Blue	1	
11/25/2022	Domestic Site	ART	10		TU 1	Strat II Level 1	2-12 cmbs	Bottle Glass	Clear Vessel Glass	1	Bubbles
11/6/2022	Domestic Site	ART	2		B3	II	16-26 cmbs	Brick Fragment	Terra Cotta	1	
11/13/2022	Domestic Site	RJS	9		C18	II	5-15 cmbs	Brick Fragments	Terra Cotta	3	
11/19/2022	Domestic Site	ART		MD 3	Point 11	I	0-5 cmbs	Bullet in Shell	Modern Bullet	1	

Date of Excavation	Site Name	Excavated By	Catalog Number	Grid Number	Test Pit/trench/ Excavation Unit Number	Stratum	Depth	Artifact Description	Artifact Additional Traits	Quantity	Comments
11/19/2022	Domestic Site	ART		MD 3	Point 30	II	5-25 cmbs	Cast Iron Bowl	Cast Iron Bowl Fragment	1	
11/19/2022	Domestic Site	ART		MD 3	Point 5	II	5-25 cmbs	Copper Alloy Button	Treble Guilt Inscription on back 1796-1812	1	
11/6/2022	Domestic Site	ART	5		B9	II	4-17 cmbs	Earthenware	Decorated Tin Glaze(?) Green and Pink	1	
11/19/2022	Domestic Site	ART		MD 3	Point 31	II	5-25 cmbs	Lead Fragment	Gasket Cover	1	
11/19/2022	Domestic Site	ART		MD 3	Point 22	II	5-25 cmbs	Lead Scrap	Melted Cast Fragment	1	
11/19/2022	Domestic Site	ART		MD 3	Point 37	II	5-25 cmbs	Lead Scrap	Scrap	1	
11/12/2022	Domestic Site	ART	6		C6	I	0-1 cmbs	Metal	Buckle (?)	1	

Date of Excavation	Site Name	Excavated By	Catalog Number	Grid Number	Test Pit/trench/ Excavation Unit Number	Stratum	Depth	Artifact Description	Artifact Additional Traits	Quantity	Comments
11/12/2022	Domestic Site	ART	6		C6	I	0-1 cmbs	Metal	Miscellaneous Metal	7	
11/13/2022	Domestic Site	ART		MD 2	Point 14	II	5-25 cmbd	Metal	Ring	1	
11/13/2022	Domestic Site	ART		MD 2	Point 2	II	5-25 cmbs	Metal Bowl Fragment	Cast Iron Bowl Fragment	1	
11/19/2022	Domestic Site	ART		MD 3	Point 36	II	5-25 cmbs	Metal Can	Can in multiple pieces	1	
11/19/2022	Domestic Site	ART		MD 3	Point 18	II	5-25 cmbs	Miscellaneous Metal	Corroded	1	
11/19/2022	Domestic Site	ART		MD 3	Point 22	II	5-25 cmbs	Miscellaneous Metal	Corroded	1	
11/19/2022	Domestic Site	ART		MD 3	Point 24	II	5-25 cmbs	Miscellaneous Metal	Heavy, corroded	1	
11/13/2022	Domestic Site	ART		MD 2	Point 1	I	0-5 cmbs	Modern Bullet Shells		2	
11/12/2022	Domestic Site	ART	6		C6	I	0-1 cmbs	Nail	Machine Cut Nail	4	

Date of Excavation	Site Name	Excavated By	Catalog Number	Grid Number	Test Pit/trench/ Excavation Unit Number	Stratum	Depth	Artifact Description	Artifact Additional Traits	Quantity	Comments
11/12/2022	Domestic Site	ART	6		C6	I	0-1 cmbs	Nail	Machine Cut Nail	1	
11/12/2022	Domestic Site	ART	6		C6	I	0-1 cmbs	Nail	Machine Cut Nail	2	Highly Corroded
11/12/2022	Domestic Site	ART	6		C6	I	0-1 cmbs	Nail	Unidentifiable Nail	2	
11/25/2022	Domestic Site	ART	10		TU 1	Strat II Level 1	2-12 cmbs	Nail	Machine Cut Nail	4	Masonry (?)
11/25/2022	Domestic Site	ART	10		TU 1	Strat II Level 1	2-12 cmbs	Nail	Machine Cut Nail	1	
11/25/2022	Domestic Site	ART	10		TU 1	Strat II Level 1	2-12 cmbs	Nail	Machine Cut Nail	5	Shingle Nails (?)
11/25/2022	Domestic Site	ART	10		TU 1	Strat II Level 1	2-12 cmbs	Nail	Unidentifiable Nail	14	
11/25/2022	Domestic Site	ART	11		TU 1	Strat II Level 2	12-22 cmbs	Nail	Machine Cut Nail	1	Rosehead (?)
11/25/2022	Domestic Site	ART	11		TU 1	Strat II Level 2	12-22 cmbs	Nail	Unidentifiable Nail	2	
11/13/2022	Domestic Site	ART		MD 2	Point 4	II	5-25 cmbs	Nail	Machine Cut Nail	1	
11/13/2022	Domestic Site	ART		MD 2	Point 5	II	5-25 cmbs	Nail	Machine Cut Nail	1	

Date of Excavation	Site Name	Excavated By	Catalog Number	Grid Number	Test Pit/trench/ Excavation Unit Number	Stratum	Depth	Artifact Description	Artifact Additional Traits	Quantity	Comments
11/13/2022	Domestic Site	ART		MD 2	Point 7	II	5-25 cmbs	Nail	Unidentifiable Nail	1	
11/13/2022	Domestic Site	ART		MD 2	Point 8	II	5-25 cmbs	Nail	Machine Cut Nail	1	Large Spike
11/13/2022	Domestic Site	ART		MD 2	Point 9	II	5-25 cmbs	Nail	Unidentifiable Nail	1	
11/13/2022	Domestic Site	ART		MD 2	Point 11	II	5-25 cmbs	Nail	Unidentifiable Nail	1	Bent
11/13/2022	Domestic Site	ART		MD 2	Point 12	II	5-25 cmbs	Nail	Machine Cut Nail	1	Sheathing Nail
11/13/2022	Domestic Site	ART		MD 2	Point 13	II	5-25 cmbs	Nail	Machine Cut Nail	1	Sheathing Nail
11/13/2022	Domestic Site	ART		MD 2	Point 15	II	5-25 cmbs	Nail	Machine Cut Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 2	II	5-25 cmbs	Nail	Unidentifiable Nail	1	Highly corroded
11/19/2022	Domestic Site	ART		MD 3	Point 6	II	5-25 cmbs	Nail	Unidentifiable Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 7	II	5-25 cmbs	Nail	Unidentifiable Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 8	II	5-25 cmbs	Nail	Machine Cut Nail	1	

Date of Excavation	Site Name	Excavated By	Catalog Number	Grid Number	Test Pit/trench/ Excavation Unit Number	Stratum	Depth	Artifact Description	Artifact Additional Traits	Quantity	Comments
11/19/2022	Domestic Site	ART		MD 3	Point 9	II	5-25 cmbs	Nail	Machine Cut Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 10	II	5-25 cmbs	Nail	Machine Cut Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 11	II	5-25 cmbs	Nail	Machine Cut Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 13	II	5-25 cmbs	Nail	Unidentifiable Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 14	II	5-25 cmbs	Nail	Unidentifiable Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 15	II	5-25 cmbs	Nail	Machine Cut Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 16	II	5-25 cmbs	Nail	Machine Cut Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 17	II	5-25 cmbs	Nail	Machine Cut Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 19	II	5-25 cmbs	Nail	Unidentifiable Nail	1	Corroded
11/19/2022	Domestic Site	ART		MD 3	Point 20	II	5-25 cmbs	Nail	Machine Cut Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 21	II	5-25 cmbs	Nail	Machine Cut Nail	1	

Date of Excavation	Site Name	Excavated By	Catalog Number	Grid Number	Test Pit/trench/ Excavation Unit Number	Stratum	Depth	Artifact Description	Artifact Additional Traits	Quantity	Comments
11/19/2022	Domestic Site	ART		MD 3	Point 21	II	5-25 cmbs	Nail	Machine Cut Nail	1	Shank
11/19/2022	Domestic Site	ART		MD 3	Point 25	II	5-25 cmbs	Nail	Machine Cut Nail	2	
11/19/2022	Domestic Site	ART		MD 3	Point 26	II	5-25 cmbs	Nail	Unidentifiable Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 27	II	5-25 cmbs	Nail	Machine Cut Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 28	II	5-25 cmbs	Nail	Machine Cut Nail	1	Shingle Nail
11/19/2022	Domestic Site	ART		MD 3	Point 29	II	5-25 cmbs	Nail	Machine Cut Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 32	II	5-25 cmbs	Nail	Machine Cut Nail	2	
11/19/2022	Domestic Site	ART		MD 3	Point 33	II	5-25 cmbs	Nail	Machine Cut Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 35	II	5-25 cmbs	Nail	Machine Cut Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 38	II	5-25 cmbs	Nail	Machine Cut Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 39	II	5-25 cmbs	Nail	Machine Cut Nail	1	Head

Date of Excavation	Site Name	Excavated By	Catalog Number	Grid Number	Test Pit/trench/ Excavation Unit Number	Stratum	Depth	Artifact Description	Artifact Additional Traits	Quantity	Comments
11/19/2022	Domestic Site	ART		MD 3	Point 40	II	5-25 cmbs	Nail	Unidentifiable Nail	1	
11/19/2022	Domestic Site	ART		MD 2	Point 6	II	5-25 cmbs	Nail	Machine Cut Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 23	II	5-25 cmbs	Nail	Machine Cut Nail	1	
11/19/2022	Domestic Site	ART		MD 3	Point 39	II	5-25 cmbs	Nail	Machine Cut Nail	1	Shank
11/12/2022	Domestic Site	ART	7		C14	II	11-31 cmbs	Pearlware	Undecorated	1	Blue tinted
11/25/2022	Domestic Site	ART	10		TU 1	Strat II Level 1	2-12 cmbs	Pearlware	Shell Blue Edge	1	
11/25/2022	Domestic Site	ART	10		TU 1	Strat II Level 1	2-12 cmbs	Pearlware	Undecorated	7	
11/25/2022	Domestic Site	ART	11		TU 1	Strat II Level 2	12-22 cmbs	Pearlware	Handpainted (Chinoisere?)	1	
11/6/2022	Domestic Site	ART	5		B10	II	4-11 cmbs	Pipe Bowl	Bowl Fragment Embosssed with stars "T"	1	Possible TD pipe
11/6/2022	Domestic Site	ART	2		B3	I	16-26 cmbs	Redware	Rim Sherd Black Glazed	1	

Date of Excavation	Site Name	Excavated By	Catalog Number	Grid Number	Test Pit/trench/ Excavation Unit Number	Stratum	Depth	Artifact Description	Artifact Additional Traits	Quantity	Comments
11/6/2022	Domestic Site	ART	2		B3	II	16-26 cmbs	Redware	Unglazed	1	
11/6/2022	Domestic Site	ART	2		B3	II	16-26 cmbs	Redware	Glazed	1	
11/6/2022	Domestic Site	ART	4		B7	II	7-23 cmbs	Redware	Glazed Redware	6	1 burned fragment
11/12/2022	Domestic Site	ART	6		C6	I	0-1 cmbs	Redware	Dark Brown Lead Glaze	6	
11/12/2022	Domestic Site	ART	6		C6	I	0-1 cmbs	Redware	Light Brown Lead Glaze	2	
11/12/2022	Domestic Site	ART	6		C6	I	0-1 cmbs	Redware	Black Glaze	4	
11/12/2022	Domestic Site	ART	6		C6	I	0-1 cmbs	Redware	Sheen on outer edge	6	
11/12/2022	Domestic Site	ART	6		C6	I	0-1 cmbs	Redware	Undecorated Whiteware	5	
11/13/2022	Domestic Site	RJS	8		C16	II	15-25 cmbs	Redware	Undecorated	4	
11/13/2022	Domestic Site	RJS	8		C16	II	15-25 cmbs	Redware	Lead Glazed	3	
11/25/2022	Domestic Site	ART	10		TU 1	Strat II Level 1	2-12 cmbs	Redware	Lead Glazed	2	

Date of Excavation	Site Name	Excavated By	Catalog Number	Grid Number	Test Pit/trench/ Excavation Unit Number	Stratum	Depth	Artifact Description	Artifact Additional Traits	Quantity	Comments
11/25/2022	Domestic Site	ART	10		TU 1	Strat II Level 1	2-12 cmbs	Redware	Undecorated	1	
11/25/2022	Domestic Site	ART	11		TU 1	Strat II Level 2	12-22 cmbs	Redware	Lead Glazed	3	
11/25/2022	Domestic Site	ART	11		TU 1	Strat II Level 2	12-22 cmbs	Redware	Undecorated	1	
11/19/2022	Domestic Site	ART		MD 3	Point 3	I	0-5 cmbs	Shotgun Shell	Modern	1	
11/19/2022	Domestic Site	ART		MD 3	Point 4	I	0-5 cmbs	Shotgun Shell	Modern	1	
11/19/2022	Domestic Site	ART		MD 3	Point 5	I	0-5 cmbs	Shotgun Shell	Modern	1	
11/19/2022	Domestic Site	ART		MD 3	Point 1	I	0-5 cmbs	Tin Can	Modern Can	1	

Date of Excavation	Site Name	Excavated By	Catalog Number	Grid Number	Test Pit/trench/ Excavation Unit Number	Stratum	Depth	Artifact Description	Artifact Additional Traits	Quantity	Comments
11/6/2022	Domestic Site	BDC	1		B2	II	7-25 cmbs	Vessel Glass	Light Cobalt Blue thin glass fragment	1	
11/6/2022	Domestic Site	BDC	3		B5	II	8-27 cmbs	Vessel Glass	Clear Pressed Glass	1	Possible Candy Dish Fragment
11/6/2022	Domestic Site	BDC	1		B2	II	7-25 cmbs	Whiteware	Undecorated Whiteware	2	4 whiteware fragments deteriorated from initial identified fragments
11/6/2022	Domestic Site	ART	2		B3	II	16-26 cmbs	Whiteware	Undecorated Whiteware	4	
11/6/2022	Domestic Site	ART	4		B7	II	7-23 cmbs	Whiteware	Undecorated Whiteware	5	
11/6/2022	Domestic Site	ART	4		B7	II	7-23 cmbs	Whiteware	Blue Edge	1	
11/6/2022	Domestic Site	ART	4		B7	II	7-23 cmbs	Whiteware	Flow Blue Transfer (?)	1	
11/6/2022	Domestic Site	ART	4		B7	II	7-23 cmbs	Whiteware	Grey/Burned (?)	2	

Date of Excavation	Site Name	Excavated By	Catalog Number	Grid Number	Test Pit/trench/ Excavation Unit Number	Stratum	Depth	Artifact Description	Artifact Additional Traits	Quantity	Comments
11/12/2022	Domestic Site	ART	6		C6	I	0-1 cmbs	Whiteware	Undecorated Whiteware	2	
11/12/2022	Domestic Site	ART	6		C6	I	0-1 cmbs	Whiteware	Blue Edge	1	
11/12/2022	Domestic Site	ART	7		C14	II	11-31 cmbs	Whiteware	Decorated gold rim with mold	2	Plate Fragments
11/12/2022	Domestic Site	ART	7		C14	II	11-31 cmbs	Whiteware	Undecorated	4	Possibly to same plate
11/13/2022	Domestic Site	RJS	8		C16	II	15-25 cmbs	Whiteware	Undecorated	3	
11/25/2022	Domestic Site	ART	10		TU 1	Strat II Level 1	2-12 cmbs	Whiteware	Sponge Decorated (Pink)	1	
11/25/2022	Domestic Site	ART	10		TU 1	Strat II Level 1	2-12 cmbs	Whiteware	Transfer Print (Green)	1	
11/6/2022	Domestic Site	BDC	1		B2	II	7-25 cmbs	Window Glass	Olive green fragment	1	
11/25/2022	Domestic Site	ART	10		TU 1	Strat I Level 1	0-2 cmbs	Window Glass	Olive Green Fragment	1	
11/19/2022	Domestic Site	ART		MD 3	Point 21	II	5-25 cmbs	Wire	Corroded	1	

Appendix C

Jacob Keller Sawmill Site (36CU0241) Artifact Catalog

Date of Excavation	Site Name	Excavated By	Catalog Number	Grid Number	Test Pit/trench/ Excavation Unit Number	Stratum	Depth	Artifact Description	Artifact Additional Traits	Quantity	Comment
11/7/2022	Sawmill	ART		MD 1	Point 1	II	5-15 cmbs	Metal Fragment	Cast Iron Bowl Fragment	3	
11/7/2022	Sawmill	ART		MD 1	Point 2	II	5-15 cmbs	Metal Fragment	Cast Iron Bowl Fragment	1	
11/7/2022	Sawmill	ART		MD 1	Point 3	II	5-15 cmbs	Metal Fragment	Cast Iron Bowl Fragment	1	
11/7/2022	Sawmill	ART		MD 1	Point 3	II	5-15 cmbs	Spike	Large Spike	1	